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Executive Summary

Our journal aims to reveal more current, higher quality and more original research studies and to publish them in the light of accurate publishing principles. In our 30th volume, 54th issue, we present twenty-five studies that included socioeconomic-based findings and reviews, which broadly the case contain research papers. Research papers provide a clear contribution to knowledge in the field with solid theoretical and/or methodological support and provide a critical, concise, comprehensive, and contemporary examination of economics in real life and its applications.

Görkey's study, which confirms the relationship and causality between technological change and employment for 16 OECD countries between 1985 and 2018, using GMM Panel-VAR analysis and multi-factor productivity as a projection of technological change, is the first article of our issue. Culture, as another structural element that affects a country at least as much as technological elements, is discussed in terms of its effect on financial systems in the second article. The second study of the issue, which investigated the impact of cultural descriptive norms on national financial systems by comparing the incentives of success and risk aversion of 32 different nations' cultures, revealed that performance and future orientation are positively related to market value. Still, corporate collectivism and uncertainty aversion are negatively correlated. The third study aims to reveal the factors affecting the university preferences of students in Kyrgyzstan. In contrast, the fourth study would expose the relationship between technostress and organisational cynicism and performance, particularly for teachers who are the other actor in the education sector. Likewise, another study belonging to the behavioural economics school, which evaluates the subjects individually, is the fifth article that deals with the overconfidence of company managers. In this study, only mergers and acquisitions from companies traded in Borsa Istanbul are taken into account, and it is determined that the decisions of the overconfident managers might be wrong.

The sixth study deals with a very impressive topic, especially for those who live in Istanbul or pass through the Bosphorus Bridges in Istanbul. The current toll regime has been evaluated for the maximisation of welfare after the opening of the Eurasia tunnel. Although a clear numerical answer could not be given within the framework of the proposed models, a determination is made to reduce the high pricing. The seventh study by Kurnuç and Güzel examines the impact of social media marketing and innovation on the performance of food and beverage businesses through the technology acceptance model. In contrast, Sevecan and Uslu explore whether trade agreements and customs unions create any international grouping by creating an attraction force. The ninth study, written by Karadeniz, İskendeoğlu and Öcek, carries out a detailed analysis of European accommodation businesses as one of the limited numbers of studies examining the effect of the financial failure of accommodation businesses on financial performance in the finance literature. The tenth article, as another study conducted on a firm basis, aims to determine the factors affecting the capital structure of textile and apparel companies in the BIST between 2010 and 2019; it is noteworthy in clearly defining the validity of the finance hierarchy theory in the mentioned sector.

The eleventh study of this issue is about agriculture, which is one of the barely studied fields in economics. According to the study evaluating the validity of Okun's law through the ARDL bounds test approach, the growth rate and unemployment rate are cointegrated, statistically significant, and positive in the long run. The twelfth and thirteenth articles are related to the banking sector. The twelfth article examines the factors affecting the capital structure of banks, and the thirteenth study models the Turkish Central Bank's weighted average monthly funding cost between 2011 and 2020. With the fourteenth article, we moved away from analysing based on companies or sectors and returned to analysis individually. It is aimed to develop a scale for the compliance of Syrian people who are income taxpayers within the borders of the Republic of Turkey with the Turkish tax system. The analysis is carried out in Şanlıurfa via survey, and it is observed that they are evaluated under similar conditions with the Turkish taxpayers.

The fifteenth and sixteenth articles of this issue aim to investigate the attitudes of economic agents in the consumption and production side of the economy. In this context, when the fifteenth study discusses consumers' attitudes towards auction sites, the sixteenth study discusses the economy-literacy, which tradesmen can evaluate within their thoughts on economic indicators. Meanwhile, the two subsequent studies are both about growth. The seventeenth study deals with the relationship between innovation and growth, and the eighteenth study deals with the relationship between democracy and growth. The importance of innovation continued to be emphasised in the nineteenth study. The article, which proposes to explain the acceptance of the digital Turkish lira through structural equality, has found that the reliability of virtual currencies issued by countries is higher than other cryptocurrencies. Moreover, in the twentieth article titled "*Identification of Factors Affecting Housing Prices in Erzurum with the Help of Hedonic Analysis*", building typologies, which are thought to be significant in the differentiation of the prices of apartments for sale and rental in the city, and the variables that affect the housing prices have been endeavoured to be determined.

In this issue, several studies approach social sciences with different dimensions. One is Karaman and Yıldırım-Karaman's study on inflation in the Ottoman Empire and Europe. This historical motif study claims that the inflation occurred due to the silver discovered in the Americas, the states' debasements to earn income, and the political reasons that led to the debasements. Similarly, another study that serves multidimensionality is Demirel and Tayfur-Ekmekçi's study examining the behaviour patterns of blue-collar workers in the furniture industry. Here, it is aimed to determine the mediating role of employee well-being in the relationship between psychological capital and turnover tendency.

Another factor that gained our appreciation as the editorial board for this issue, as we often observe in other issues, is the effort to increase collaboration among researchers in social sciences. In this context, another multi-collaboration study is the article by Ergin-Ünal, Nas and Heybeli on BIST 100 Index. Şener and Uzun's assessment of migration in the context of economic and social security, which is the twenty-second study of our issue, is a successful example of bilateral cooperation in this context. It should also be emphasised that twenty of the twenty-five articles in this issue are studies carried out by researchers in collaboration. The last article of our issue is also a collaboration study prepared by Alkaya and Işık. In this study, in which the primary macroeconomic factors affecting unemployment in OECD countries and the effects of the population are examined, it is also revealed that all of the analysed factors have statistically significant effects on unemployment as theoretically accepted.

Dear researchers, scientists, and readers, we know that publishing in quality academic and scientific journals like *Sosyoekonomi* is always challenging. However, please do not let the waiting time nor longness of the evaluation process your determination to succeed. No one knows better than you how arduous the road to success is.

We hope you will share our enjoyment and academic pleasure while reading this issue. We are truly grateful for your ongoing interest in our journal.

Sevilay Ece GÜMÜŞ-ÖZUYAR

Editorial Board Member

Editörün Notu

Dergimizin amacı, sizlere daha güncel, daha kaliteli ve daha özgün araştırma çalışmalarını ortaya çıkarmak ve doğru yayıncılık ilkeleri ışığında yayımlamaktır. 30. cildimizin 54. sayısında sosyoekonomik temelli bulgu ve incelemeleri içeren yirmi beş araştırma makalesi yer almaktadır. Araştırma makaleleri, sağlam teorik ve/veya metodolojik destekle alandaki bilgiye açık bir katkı sağlar ve gerçek hayatta ve uygulamalarında ekonominin eleştirel, özlü ancak kapsamlı ve çağdaş bir incelemesini gerçekleştirir.

16 OECD ülkesi için 1985-2018 yılları arasında teknolojik değişim ile istihdam arasındaki ilişkiyi ve nedenselliği, GMM Panel-VAR analizi ile çoklu faktör verimliliğini teknolojik değişimin izdüşümü olarak kullanarak teknolojik gelişmelerin istihdam artışına neden olduğunu doğrulayan Görkey'in çalışması sayımızın ilk makalesidir. Bir ülkeyi en az teknolojik unsurlar kadar etkileyen bir diğer yapısal unsur olarak kültür, ikinci çalışmada finansal sistemler üzerine etkisi bakımından ele alınmıştır. 32 farklı ulusun kültürünün başarı ve riskten kaçınma teşviklerini karşılaştırarak kültürel tanımlayıcı normların ulusal finansal sistemler üzerindeki etkisini araştıran sayının ikinci çalışması, en belirgin sonuç olarak performans yönelimi ve geleceğe yönelimin piyasa değeri ile pozitif ilişkili olduğunu, ancak kurumsal kolektivizm ve belirsizlikten kaçınmanın negatif ilişkili olduğunu göstermiştir. Üçüncü çalışma Kırgızistan'da öğrenci adaylarının tercihlerini etkileyen faktörleri açığa çıkarmaya çalışırken, dördüncü çalışma ise eğitim sektörünün bir diğer aktörü olan öğretmenler özelinde teknostres ve örgütsel sinizm ile performans arasındaki ilişkiyi açığa çıkarma gayretindedir. Benzer şekilde konuların birey bazında değerlendirmesini yapan ve davranışçı iktisat ekolüne ait bir diğer çalışma da firma yöneticilerinin aşırı güven davranışlarını ele alan beşinci makaledir. Bu çalışmada sadece Borsa İstanbul'da işlem gören firmalardan birleşme ve satın alma gerçekleştiren yöneticiler dikkate alınmıştır ve aşırı güvenli yöneticilerin kararlarının hatalı olabileceği saptanmıştır.

Altıncı çalışma özellikle İstanbul'da yaşayan ya da İstanbul'daki Boğaz Köprülerini kullananlar için oldukça ilgi çekici güncel bir konuyu ele almaktadır. Avrasya tünelinin açılmasından sonraki dönemi ele alan çalışmada refahın maksimizasyonu için mevcut geçiş ücret rejimi değerlendirilmiş ve önerilen modeller çerçevesinde net bir sayısal cevap verilemeye de yüksek fiyatlandırmanın düşürülmesine yönelik bir tespit yapılmıştır. Kurnu ve Güzel'e ait yedinci çalışma yiyecek ve içecek işletmelerinin performansı üzerinde sosyal medya pazarlaması ve inovasyonun etkisinin teknoloji kabul modeli aracılığıyla incelenirken, Sevecan ve Uslu'nun çalışması ise ticaret anlaşmaları ve gümrük birliklerinin bir çekim gücü yaratarak herhangi bir uluslararası gruplaşma yaratıp yaratmadığını araştırmaktadır. Karadeniz, İskenderoğlu ve Öcek tarafından kaleme alınan bir makale olarak dokuzuncu araştırma ise finans literatüründe konaklama işletmelerinin finansal başarısızlığının finansal performans üzerindeki etkisini inceleyen sınırlı sayıda araştırmadan biri olarak Avrupa konaklama işletmeleri özelinde detaylı bir inceleme gerçekleştirmektedir. Firma bazında yapılan çalışmalardan bir diğeri de 2010 ile 2019 yılları arasında BİST'te yer alan tekstil ve hazır giyim firmalarında sermaye yapısını etkileyen faktörleri belirleme amacı güden onuncu makaledir ki bahsedilen sektörde finansman hiyerarşisi teorisinin geçerliliğinin net bir biçimde saptaması açısından dikkate değerdir.

Bu sayının on birinci çalışması ise yine ekonomik anlamda nadir olarak çalışılan alanlardan biri olan tarımdır. Okun yasasının geçerliliğini ARDL sınır testi yaklaşımı aracılığıyla değerlendiren çalışmaya göre büyüme oranı ile işsizlik oranı uzun dönemde eşbütünleşik ve istatistiksel olarak anlamlı ve pozitifdir. On ikinci ve on üçüncü makaleler ise bankacılık sektörü ile ilişkilidir. On ikinci makale bankaların sermaye yapısını etkileyen unsurları incelemekte ve on üçüncü makale de Türk Merkez Bankasının ağırlıklı ortalama fonlama maliyetini 2011 ile 2020 yılları arasında aylık olarak modellemektedir. On dördüncü makale ile sayıda, firma ya da sektörel bazda analiz yapmaktan uzaklaşarak, birey bazında analizlere geri dönmüştür. Türkiye Cumhuriyeti sınırları içerisinde gelir vergisi mükellefi olan Suriyelilerin Türk vergi sistemine uyumuna dair ölçek geliştirilmesi amaçlanmıştır. Şanlıurfa'da anket metoduyla bir uygulama gerçekleştirilmiştir ve Türkiye'de yaşayan Suriyelilerin Türk vergi mükellefleri ile benzer şartlarda değerlendirildiklerine dair bir kanı sahibi oldukları gözlemlenmiştir.

Bu sayının on beşinci ve on altıncı makaleleri, ekonominin tüketim ve üretim kanadındaki ekonomik ajanların tutumlarını araştırma gayesine sahiptir. Bu bağlamda on beşinci çalışmada tüketicilerin açık artırma siteleri hakkındaki tutumları, on altıncı çalışmada ise esnafın ekonomik göstergeler hakkındaki düşünceleri dahilinde değerlendirebildiği ekonomi-okuryazarlığı tartışılmaktadır. Akabinde gelen iki çalışma ise büyüme üzerinedir. On yedinci çalışma inovasyon ve büyüme ilişkisini, on sekizinci çalışma ise demokrasi ile büyüme ilişkisini konu edinmektedir. İnovasyonun önemi on dokuzuncu çalışmada da vurgulanmaya devam etmiştir. Dijital Türk Lirasının kullanımının kabulünü yapısal eşitlik üzerinden açıklamaya çalışan makale, diğer kripto paralara kıyasla ülkelerin çıkardığı sanal paraların güvenilirliğinin daha yüksek olduğuna dair bulgular tespit etmiştir. Ek olarak *"Erzurum'da Konut Fiyatlarına Etki Eden Faktörlerin Hedonik Analiz Yardımıyla Belirlenmesi"* başlıklı

taşıyan yirminci makalede şehirdeki satılık ve kiralık daire fiyatlarının farklılaşmasında önemli olduğu düşünülen bina tipolojileri ile konut fiyatlarına etki eden değişkenler saptanmaya çalışılmıştır.

Bu sayıda sosyal bilimlere daha farklı boyutları ile yaklaşan birden çok sayıda çalışma bulunmaktadır. Bunlardan birisi de Karaman ve Yıldırım-Karaman'ının Osmanlı Devleti ve Avrupa'da enflasyonu ele alan çalışmasıdır. Tarihi analiz niteliği ağır basan çalışmada, enflasyonun Amerika kıtasında keşfedilen gümüş, devletlerin gelir elde etmek için başvurdukları taşışlar ve taşışlara yol açan siyasi sebepler nedeniyle oluştuğu iddia edilmiştir. Benzer şekilde çok boyutluluğa hizmet eden bir diğer çalışma da Demirel ve Tayfur-Ekmekçi'nin mobilya sektöründeki mavi yakalıların davranış kalıplarının incelendiği çalışmadır. Burada da psikolojik sermaye ve işten ayrılma eğilimi ilişkisinde, çalışan iyi olma halinin aracı rolünün belirlenmesi hedeflenmektedir.

Bu sayı ile ilgili editör kurulu olarak takdirimizi kazanan bir diğer unsur da diğer sayılarımızda da artık sıklıkla gözlemlediğimiz üzere, sosyal bilimlerde araştırmacılar arasında işbirliğinin artmasına yönelik gayretin sonuç vermesidir. Bu kapsamda bir diğer çoklu işbirliği çalışması ise Ergin-Ünal, Nas ve Heybeli'nin BİST100 Endeksi ile ilgili makalesidir. Öyle ki sayımızın yirmi ikinci çalışması olan Şener ve Uzun'un ekonomik ve toplumsal güvenlik bağlamında göç değerlendirmesi de bu kapsamda başarılı bir ikili işbirliği örneğidir. Bu sayıdaki yirmi beş makaleden yirmisinin araştırmacılar tarafından ortaklaşa yürütülen çalışmalar olduğunun da altını çizmek gerekir. Sayımızın son makalesi Alkaya ve Işık tarafından hazırlanan bir diğer ortak çalışmadır. OECD ülkelerinde işsizliği etkileyen temel makroekonomik faktörlerin ve nüfusun etkilerinin incelendiği bu çalışmada, analiz edilen tüm faktörlerin teorik olarak kabul edildiği gibi işsizlik üzerinde istatistiksel olarak anlamlı etkilerinin olduğu da ortaya konmuştur.

Değerli araştırmacılar, bilim insanları ve okuyucular, Sosyoekonomi gibi kaliteli akademik ve bilimsel dergilerde yayın yapmanın ne kadar zor olduğunun her zaman bilincindeyiz. Ancak ne bekleme süresinin ne de değerlendirme süresinin sizin başarılı olma kararlılığınızı etkilemesine izin vermeyin. Başarıya giden yolun ne derece zahmetli ve meşakkatli olduğunu sizlerden daha iyi kimse bilemez.

Bu sayımızı okurken aldığımız zevke ve akademik zevkimize ortak olacağınızı umuyoruz. Dergimize gösterdiğiniz ilgiye samimiyetle minnettarız.

Sevilay Ece GÜMÜŞ-ÖZUYAR

Yayın Kurulu Üyesi

The Dynamic Relationship between Technological Change and Employment: A Comparison of Youth and Total Employment using Panel VAR Approach and Causality Analysis

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Teknolojik Değişme ve İstihdam Arasındaki Dinamik İlişki: Genç İstihdamı ile Toplam İstihdamın Panel VAR ve Nedensellik Analizleri ile Karşılaştırılması

Abstract

This study empirically examines the relationship and causality between technological change and employment by comparing youth and total employment. It covers data from 16 OECD economies from 1985 to 2018 and uses multifactor productivity (MFP) as a proxy for technological change. The findings from the general method of moments panel vector autoregression (GMM Panel-VAR) approach indicate significant and positive effects of MFP on youth and total employment, and a significant yet negative impact of youth employment on MFP. According to Panel-VAR-Granger-Causality analysis results, there is a two-way causality between MFP and youth employment and a one-way causality from MFP to total employment. Thus, this study empirically confirms the job-creation effect of technology and finds out that the technological change and employment nexus differs for youth employment compared to that for total employment.

Keywords : Technological Change, MFP, Multifactor Productivity, Youth Employment, Employment, Job-Creation, Panel VAR, Panel VAR Granger-Causality.

JEL Classification Codes : O33, O11, J21, O50.

Öz

Bu çalışma teknolojik değişme ile istihdam arasındaki ilişkiyi ve nedenselliği, genç istihdamı ile toplam istihdamı karşılaştırarak, ampirik olarak incelemektedir. Çalışma, 16 OECD ülkesi için 1985-2018 arası dönemdeki verileri kapsamakta olup teknolojik değişimin göstergesi olarak çoklu faktör verimliliğini (ÇFV) kullanmaktadır. Genelleştirilmiş Momentler Panel Vektör Otoregresif (GMM Panel-VAR) analizi bulguları, ÇFV'nin genç ve toplam istihdamın üzerinde anlamlı ve pozitif etkisinin bulunduğunu; genç istihdamın ÇFV üzerindeki etkisinin ise anlamlı fakat negatif olduğunu göstermektedir. Panel VAR-Granger Nedensellik analizi bulgularına göre ise ÇFV ile genç istihdamı arasında çift-yönlü, ÇFV'den toplam istihdama doğru ise tek-yönlü nedensellik bulunmaktadır. Böylelikle bu çalışma ile teknolojik değişimin iş yaratma etkisi ampirik olarak doğrulanmakta ve teknolojik değişme-istihdam ilişkisinin genç istihdamı için, toplam istihdama kıyasla, farklı olduğu sonucunu ulaşılmıştır.

Anahtar Sözcükler : ÇFV, Çoklu Faktör Verimliliği, Genç İstihdamı, İstihdam, İş Yaratma, Panel VAR, Panel VAR-Granger Nedensellik.

1. Introduction

Youth constitute one of the vulnerable groups in labour markets, as their access to labour market opportunities is relatively limited compared to adults. Even if they reach employment opportunities, they may face some difficulties due to their lack of experience. They are generally paid low wages and may be at the top of the list to lose their jobs in an economic downturn (Caliendo & Schmidl, 2016: 1; Maguire et al., 2013: 196). In addition, labour market opportunities may be insufficient to provide decent jobs to youth. Their lack of inexperience may result in many difficulties, which in turn cause them to work in precarious jobs (ILO, 2020: 15-6). Considering all these, youth employment¹ can be regarded as more sensitive to economic fluctuations and can be affected significantly by many economic factors.

One of the most important economic factors has been technological change which had shown a rapid increase from the 1980s until the 2008 crisis and slowed down afterwards (OECD, 2018: 52). The impact of technological change on employment is specifically crucial for the youth because new jobs are held mainly by machines or artificial intelligence. As newly graduates or as lowly experienced individuals, youth mostly feel threatened that they may remain idle because of the displacement of workers by machines (ILO, 2020: 14). From this point of view, it is crucial to examine employment and technological change nexus, particularly for the youth. Aside from youth employment, there has been no consensus on the nexus of (total) employment and technological change to date. The latter's impact on the former is accepted as negative according to some studies, whereas it is argued to be positive according to others. The supporters of the first view put forward those advances in process innovation result in lower usage of factors of production. In most cases, labour is saved during the production phase. Such a decline in labour is regarded as the labour-saving effect of technology which is argued to be offset by compensation theory, another impact resulting from technological change. According to the compensation theory, technology may first result in higher usage of capital (machines) and lower usage of labour (Piva & Vivarelli, 2017: 4). Yet, after a while, demand for labour is expected to increase because the production of new capital will require higher labour. Compensation theory can take place through many mechanisms, including the production of new machines, changing investment structures, lower price levels, and wages (Campa, 2018: 63; Marx, 2015 [1867]: 293; Ricardo, 2018 [1821]: 350; Piva & Vivarelli, 2017: 4-5). On the other hand, the supporters of the second view argue that the different type of innovation, product innovation, yields a higher level of employment through the production of new goods. This is regarded as the job creation effect of technology (Piva & Vivarelli, 2017: 10). Even though some

¹ The youth is generally used to refer individuals either aged 15-24 years or aged 15-29 years. (Eurofound, 2012: 3, 21). An examination of the 25-29 age group is also crucial in youth employment studies as the group mostly includes individuals with little experience or new entrants. Thus, in addition to the 15-24 age-group, the 25-29 age-group is also more sensitive to business fluctuations compared to the adults (Görkey, 2019: 225). For this reason, this study considers the 15-29 age group for its youth definition and investigate the youth employment accordingly.

studies discuss that the positive effects of technology are more effective on employment compared to the negative effects (Alic, 1997: 1), there is still no agreement on the relevant nexus in the literature.

The literature on the relationship between employment and technological change includes many studies that differ in their level of analysis. The vast of the literature comprises firm-level studies (Coad & Rao: 2011; Evangelista & Vezzani, 2012; Falk, 2012; Lachenmaier & Rottmann, 2011; Piva & Vivarelli, 2004, 2018; Van Roy et al., 2018) and industry-level studies (Bogliacino & Vivarelli, 2012; Buerger et al., 2012; Dosi et al., 2019; Piva & Vivarelli, 2017); both of which mostly empirically evidence employment creation effects of technology. However, the studies that examine the relevant nexus at the macro-level are quite limited, and the findings from these indicate either mixed results (Simonetti et al., 2000: 42; Tancioni & Simonetti, 2002: 185; Vivarelli, 1995) or negative effects (Pini, 1995: 208). According to Piva & Vivarelli (2017: 13), macro-level studies offer mixed findings because the empirical findings are subject to changes depending on the proxy for technological change used in studies. On the other hand, macro-level studies are more successful in presenting the overall effect of technological change on employment as they cover all parts of economies. Thus, empirical findings from macro-level studies are more likely to indicate whether the compensation effect of technological change fully works or not (Matuzeviciute et al., 2017: 5; Piva & Vivarelli, 2017: 15).

The limited macro-level literature on the relationship between employment and technological change shows that no study in the literature examines the issue specifically for the youth. Reading the relevant nexus in youth is crucial considering the sensitivity of youth in labour markets. In addition to this, it is not only technological change that affects employment, but it is also employment that results in changes in technological level through skill structures (Greenan, 2003: 288). Thus, employment and technological change are subject to a mutual relationship. However, the relevant nexus is only examined as a one-way relationship, from technological change to employment. Moreover, technological change and employment are not only affected by each other but also by their own past values. Thus, examining the relevant relationship using dynamic econometric models is crucial.

This study aims to contribute to the literature by empirically examining the dynamic relationship and causality between employment and technological change by comparing youth and total employment. Such a comparison is crucial because the employment and technological change nexus may be different for the youth than for total employment when one considers the higher sensitivity of youth employment to business fluctuations. The study uses multifactor productivity (MFP) for the technological change variable. Applying the general method of moments (GMM) panel vector autoregression (VAR) approach and panel Granger-causality Analysis as the methodology, the study covers 16 OECD countries from 1985 to 2018. Accordingly, the contribution of this study to the literature is threefold. First, it investigates the relationship focusing on youth employment and compares the findings to total employment. Second, it examines the relevant nexus mutually. Lastly, the mutual

relationship is investigated dynamically rather than statically. The study also includes a discussion that provides a basis for future research directions and policy recommendations.

The rest of the study is organised as follows: Section 2 reviews the empirical literature, section 3 describes the data and the methodology, section 4 presents empirical findings, section 5 makes a discussion and offers policy recommendations, and section 6 concludes the study.

2. Empirical Literature Review

Many studies focus on the relationship between employment and technological change. Most of these studies have examined the impact of technological change on employment and aim to empirically find out whether technological change results in employment creation or destruction. The majority of these studies have examined the topic either at the firm level (Coad & Rao: 2011; Evangelista & Vezzani, 2012; Falk, 2012; Lachenmaier & Rottmann, 2011; Piva & Vivarelli, 2004, 2018; Van Roy et al., 2018) or at the industry-level (Bogliacino & Vivarelli, 2012; Buerger et al., 2012; Dosi et al., 2019; Piva & Vivarelli, 2017).

The findings from firm-level analysis mainly indicate significant and positive effects of technological change on new job opportunities. Van Roy et al. (2018: 762) analysed the impact of innovation on job-creation effect in twenty-thousand patenting firms in Europe from 2003-2012 using the GMM-SYS estimator. Empirical evidence from this study showed that innovation positively affects job opportunities only in high-technology manufacturing sectors. Using firm-level data in Europe, Piva & Vivarelli (2018: 5, 10-1) investigated the labour impact of R&D expenditures and found positive effects only in medium and high-technology sectors. Piva & Vivarelli (2004: 374-5) examined the relationship between innovation and employment using GMM-SYS panel data analysis and found a positive yet low impact of innovation on employment in Italian firms in the 1990s. The labour-friendly effect of technological change was also evidenced in Falk (2012: 19), which analysed the effect of R&D on employment growth in Austrian firms from 1995 to 2016. Coad & Rao (2011: 255), Evangelista & Vezzani (2012: 889-92), and Lachenmaier & Rottman (2011: 218) also confirmed the employment creation effect of technology at the firm level. The literature clearly shows that numerous firm-level studies have mainly evidenced the positive impact of technological change on employment.

The literature is also rich in studies focusing on the industry-level issue. Piva & Vivarelli (2017: 17, 26) examined the impact of technological change on employment by using R&D expenditures as a measure of technological change. This study focused on the manufacturing and services industries in European economies from 1998 to 2011 using dynamic panel data analysis. It found out that technological change yields a positive impact in medium and high-technology sectors. Dosi et al. (2019: 13-18) investigated whether embodied and disembodied technological change result in more jobs or destroys existing ones in upstream and downstream sectors. It covered 19 European countries between 1998

and 2016 and found that disembodied technological change positively affected employment in the upstream sectors. On the other hand, employment increased by embodied technological change in downstream sectors. Covering sectoral data in 15 European economies from 1996 to 2005, Bogliacino & Vivarelli (2012: 96, 105-8) analysed the impact of R&D expenditures on job creation. Empirical findings from GMM-SYS panel data analysis confirmed that R&D creates new jobs. Buerger et al. (2012: 576-7) investigated the job-creation effect of innovation and found either positive or no significant impact on industries in Germany.

Contrary to the rich empirical literature at the firm and industry-level studies, the studies that focus on the issue at the macro level are quite limited (Pini, 1995; Simonetti et al., 2000; Tancioni & Simonetti, 2002; Vivarelli, 1995). While firm and industry-level studies mainly indicate the labour-friendly impact of technological change, macro-level studies present mixed results. Using aggregate annual data for the US and Italy, Vivarelli (1995) found out that the labour-saving impact of technological change could only be partially eliminated. Simonetti et al. (2000: 34, 42) examined the effect of innovation on 4 OECD economies from 1965 to 1993 using 3SLS analysis. This study distinguished the compensation effect of technology in its empirical evidence, which indicated mixed results. Tancioni & Simonetti (2002: 185) studied the employment impact of technology in the US and Italy by extending the empirical model of Vivarelli (1995). This study considered the effect of trade and economic growth, as well. The findings of this study presented mixed findings depending on the type of compensation effect of technology. Finally, Pini (1995: 194, 208) investigated the employment and technological change nexus for a panel of 9 OECD economies from 1960-1990 and found a negative impact of the innovation process on employment through the capital. In addition to this, the study also evidences the compensation mechanism through exports.

Table 1 shows the summary of mentioned studies from the empirical literature. The empirical literature review indicates a gap in recent macroeconomic studies because the nexus has not been examined for a long time. The empirical findings from the existing studies show mixed findings. Thus, there is no consensus on the relevant nexus at the macro-level. In addition, no study in the literature focuses on the issue of youth employment. This study aims to fill the relevant gaps in the literature.

Moreover, this study is the first attempt in the literature to examine the relevant nexus using dynamic econometric methods and causality analyses. It is crucial to investigate the mutual effect of technological change and employment using dynamic methods because the past values of macroeconomic variables are effective on their present values (Yerdelen-Tatoğlu, 2020: 115). Thus, this study empirically examines the dynamic relationship and causality between employment and technological change by comparing youth employment to total employment. It aims to reveal whether such a connection is empirically different for youth employment than total employment.

Table: 1
Empirical Literature Review Summary

| Level | Author(s) and year | Data & Method | Findings |
|----------------|-------------------------------|---|--|
| Firm-level | Van Roy et al. (2018) | Europe firms, 2003-2012, GMM-SYS | Innovation positively affects job opportunities only in high-technology manufacturing sectors. |
| | Piva & Vivarelli (2018) | Firms from manufacturing and services sectors in 11 European countries, 1998-2011, GMM-SYS and LSDVC | The positive impact of R&D expenditures on labour only in medium and high-technology sectors and capital formation negatively affects employment. |
| | Piva & Vivarelli (2004) | Italian manufacturing firms, 1992-1997, GMM-SYS and OLS. | Positive yet low impact of innovation on employment. |
| | Falk (2012) | Austrian firms, 1995-2016, Quantile regression | R&D activities increase employment. |
| | Coad & Rao (2011) | USPTO Patent data from 1920 firms, patents granted between 1962-2002 and citations between 1975-2002. | Innovative activity creates employment at the firm level. |
| | Evangelista & Vezzani (2012) | Firm-level CIS4 (2002-2004) data from selected EU countries, index generation. | The indirect positive impact of innovation on employment at the firm level. |
| | Lachenmaier & Rottman (2011) | German manufacturing firms, 1982-2003, GMM-SYS. | Innovation affects employment positively with a time-lag at the firm level. The impact of process innovation is higher than that of product innovation. |
| Industry-level | Piva & Vivarelli (2017) | Manufacturing and services industries in European economies, 1998-2011, dynamic panel data | Technological change positively affects employment in medium and high-technology sectors. |
| | Dosi et al. (2019) | Upstream and downstream sectors in 19 European countries, 1998-2016, Panel data | Disembodied technological change affects employment positively in the upstream sectors, while embodied technological change affects employment positively in downstream sectors. |
| | Bogliacino & Vivarelli (2012) | 25 manufacturing and services sectors in 15 European economies, 1996-2005, GMM-SYS panel data. | R&D expenditures lead to the creation of new jobs. |
| | Buerger et al. (2012) | 4 industries in German regions, 1999-2005, VAR model. | Mixed findings for the job-creation effect of innovation in industries. |
| Macro-level | Vivarelli (1995) | US and Italy, 1960-1988, 3SLS. | Labour-saving impact of technological change can only be partially eliminated. |
| | Simonetti et al. (2000) | 4 OECD economies, 1965-1993, 3 SLS | Mixed findings for the impact of innovation on employment. |
| | Tancioni & Simonetti (2002) | UK and Italy - extends the study of Vivarelli (1995), ARDL. | Mixed findings for the impact of technology on employment. |
| | Pini (1995) | 9 OECD economies, 1960-1990, 3SLS. | The negative impact of the innovation process on employment through the capital. Evidence for compensation effect through exports. |

Source: Compiled by the author.

3. Data and Methodology

3.1. Data

This study examines the dynamic relationship and causality between technological change and employment by distinguishing the latter variable as youth employment and total employment. Thus, the variables used in this study are youth employment, total employment, and MFP as a proxy for technological change. The study covers annual data for 16 OECD economies from 1985 to 2019.

Total employment data are compiled from OECD (2020a) and represent thousands of persons who are 15 years old and over. As mentioned earlier, the youth definition in this study includes individuals between 15-29-year-olds rather than 15-24-year-olds. Accordingly, youth employment data are constructed as the sum of employment from 15 to 24 and 25 to 29 ages. Employment by age statistics is collected from OECD (2020b) statistics and presented in thousands of persons. Finally, MFP data are collected from the OECD Productivity Database (OECD, 2020c) as an index with the base year of 2015. This

variable represents spillover effects; thus, it measures technological change. All the variables are expressed in natural logarithms.

The study includes Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Portugal, Spain, Sweden, the UK, and the US. Sixteen economies limit the analysis because of two reasons. First, not all OECD economies' employment statistics go back to the 1980s. However, it is better to cover a more extended time dimension since the methodologies of this study are panel time-series analysis. Second, MFP statistics are only available for some economies. The study covers a period from 1985 to 2018. Accordingly, covering 16 economies in its cross-section and 34 years in its time dimension, the panel has 544 observations.

Table: 2
Summary Statistics, 16 OECD Economies, 1985-2018

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---------------|-----|-------|-----------|-------|--------|
| <i>lnEMP</i> | 544 | 9,333 | 1,207 | 7,192 | 11,956 |
| <i>lnEMPY</i> | 544 | 7,919 | 1,193 | 6,085 | 10,525 |
| <i>lnMFP</i> | 544 | 4,538 | 0,0846 | 4,214 | 4,676 |

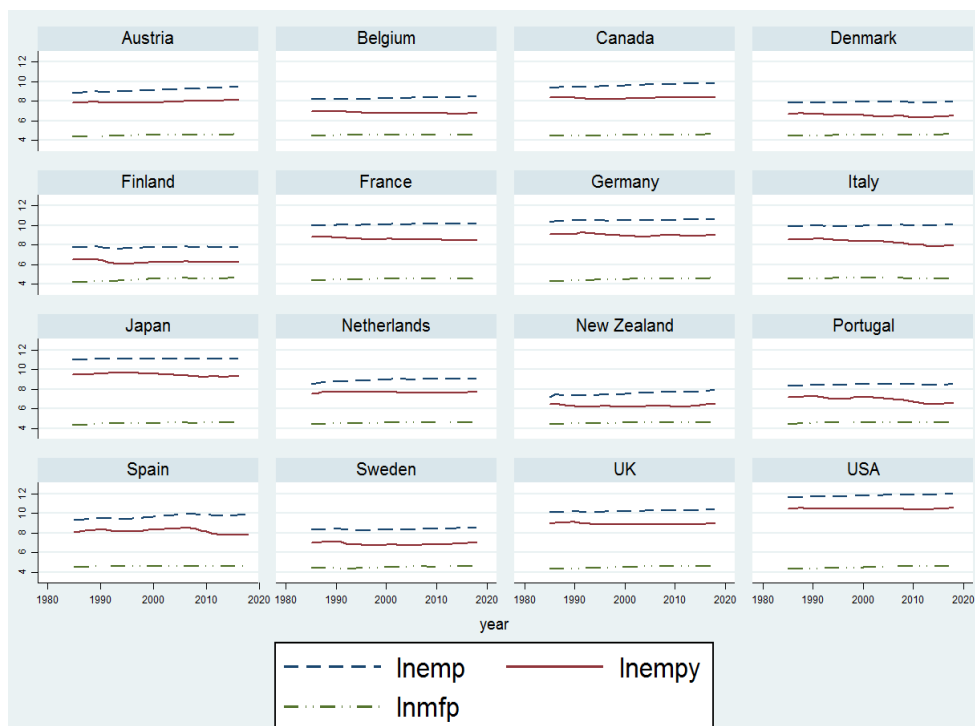
Source: Author's calculations.

Notes: *lnEMP*, *lnEMPY*, and *lnMFP* are the natural logarithms of employment, youth employment, and multifactor productivity, respectively.

Table 2 presents summary statistics of the variables and shows that the standard deviation of youth employment (*lnEMPY*) is lower than that of total employment (*lnEMP*). The standard deviation of *lnMFP* can be regarded as low compared to the deviations in the employment variables. Table 2 shows summary statistics for the whole panel. However, it is also important to examine the data by economies when working with panel data. Thus, Figure 1 shows the time series of variables, and Appendix A presents summary statistics by economies.

Figure 1 shows that youth employment (*lnEMPY*) declines in some economies, which is more apparent in Italy, Portugal, and Spain after the 2008 crisis. Thus, the time-series graphs show that the negative impact of the 2008 crisis was more severe on youth employment in the Southern European economies. Figure 1 also shows that the gap between total employment (*lnEMP*) and youth employment (*lnEMPY*) has increased in most economies when one compares the start and the end of the period examined. However, the relevant gap is more significant in Belgium, France, Italy, Portugal, and Spain than in other economies.

Figure: 1
Time-Series by Economies, 1985-2018



Source: Author's calculations.

3.2. Methodology

This study investigates the dynamic relationship and causality between (youth and total) employment and MFP by using the panel VAR approach and causality analysis as the methodology. The panel VAR approach is a technique for panel time series analysis that aims to investigate the dynamic relationship between variables. Frequently used together with the panel VAR approach, causality analysis investigates whether the variables of interest are subject to causation with each other. Because both are time series analyses, stationary variables must be used in analyses (Yerdelen-Tatoğlu, 2018: 123). Accordingly, a preliminary step for these analyses is to apply unit-root tests to check the stationarity of variables.

Examining the cross-sectional dependence of variables is necessary to choose between first- or second-generation unit-root tests. This study used the Pesaran - Cross-Sectional Dependence (Pesaran-CD) (2004) test. CD-test statistic is tested under a null hypothesis of cross-sectional independence. If null is not rejected, first-generation unit-root

tests are applied. Otherwise, second-generation unit-root tests are used (Yerdelen-Tatoğlu, 2018: 21, 67). Because the variables are cross-sectionally dependent, this study used Breitung and Pesaran's Cross-Sectionally Augmented Dickey-Fuller (CADF) tests from second-generation unit-root tests. Breitung test was applied by demean function, which subtracts cross-section means from the series to eliminate cross-sectional dependence. Breitung's test statistic and Pesaran CADF's t-bar statistic are tested against a null hypothesis of non-stationarity (Breitung & Das, 2005: 416; Pesaran, 2007: 287). Rejection of the null hypothesis denotes that the series does not contain a unit root. Thus they are stationary and can be used for analysis. On the other hand, if null is not rejected, variables are not stationary and cannot be used in time series analysis. In such a case, the first differences of the variables are tested for Stationarity by repeating the same steps. If the null hypothesis is rejected for the first difference of variables, the variables can be used in their first difference in the analysis. All the variables used in this study were not stationary in their level but became stationary in their first differences. Thus, the first differences (d) were used in the analyses.

This study uses the GMM estimator of the Panel VAR approach. The variables used in the present study are plugged into the empirical model proposed by Holtz-Eakin et al. (1988: 1373). Thus, total employment and youth employment models can be presented in Equations (1) and (2), respectively.

$$dlnEMP_{it} = \alpha_{0t} + \sum_{l=1}^m \alpha_{lt} dlnEMP_{it-l} + \sum_{l=1}^m \delta_{lt} dlnMFP_{it-l} + \varphi_t f_i + u_{it} \quad (1)$$

$$dlnEMPY_{it} = \alpha_{0t} + \sum_{l=1}^m \alpha_{lt} dlnEMPY_{it-l} + \sum_{l=1}^m \delta_{lt} dlnMFP_{it-l} + \varphi_t f_i + u_{it} \quad (2)$$

where, *i* denotes OECD economies and *t* denotes time. α_0 parameters are constants, φ is time effects, *f* is individual effects and *u* is the error term. *m* shows lag length which requires a separate procedure for optimal determination. *lnEMP*, *lnEMPY*, and *lnMFP* are the variables used in this study and they represent natural logarithms of total employment, youth employment, and multifactor productivity (MFP), respectively. All the variables are in their first differences because they are not stationary in their levels and have become stationary in their first differences. This is shown with the letter *d* in front of the variables. α_{lt} and δ_{lt} are the estimated parameters and their statistical significance shows that the relevant variables' impact is significant. All the variables in equations (1) and (2) are endogenous. In addition to this, the equations are in dynamic form because all the endogenous variables are affected by the past values of their own and the other variable. As Arellano & Bover (1995) proposes, this study uses forward orthogonal deviations (FOD) in its estimation technique to minimize data loss (Abrigo & Love, 2016: 780).

Before applying GMM panel VAR analysis, it is necessary to determine the optimal lag length (*m*) based on the criterion Andrews & Lu (2001) proposed. According to this study, the lag length selection criterion is based upon model and moment selection criteria (MMSC) for GMM estimation. MMSC depends on the coefficient of determination (CD), Hansen's J statistic, and minimisation of modified Bayesian Information Criteria (MBIC), modified Akaike Information Criteria (MAIC), and modified Hannan Quinn Information

Criteria (MQIC). Hansen's J statistic is used to test over-identifying restrictions. Among the lag lengths with valid over-identifying restrictions, the one which minimises MAIC, MBIC, and MQIC is chosen as the optimal lag length (Yerdelen-Tatoğlu, 2018: 138-9).

An important step in the panel VAR approach is determining whether the empirical findings are stable. Stability can be checked by examining moduli values in the eigenvalue stability condition. Moduli values smaller than 1 confirm the stability condition. Stability can also be analysed using a graph that visualises the roots of the companion matrix. If all the roots are placed inside the unit circle, the panel VAR findings are accepted as stable. Determining stability is also necessary to generate forecast-error variance decomposition (FEVD) analysis and impulse response functions (IRFs). These two tools are used to track how each variable affects itself and the other variable throughout time. Determining impulse and response variables is crucial to generate IRFs and FEVD to interpret the findings. The findings from the panel Granger-Causality test and the relevant theory must be followed to determine impulse and response variables (Abrigo & Love, 2016: 793-6).

The study applies Panel VAR-Granger Causality Analysis to investigate causality between variables of interest. Equations (3) and (4) present empirical models of the relevant analysis (Yerdelen-Tatoğlu, 2018: 153), which include the variables used in this study.

$$dlnEMP_{it} = \alpha_i + \sum_{k=1}^K \gamma_k dlnEMP_{it-k} + \sum_{k=1}^K \beta_k dlnMFP_{it-k} + \varepsilon_{it} \quad (3)$$

$$dlnEMPY_{it} = \alpha_i + \sum_{k=1}^K \gamma_k dlnEMPY_{it-k} + \sum_{k=1}^K \beta_k dlnMFP_{it-k} + \varepsilon_{it} \quad (4)$$

where, i denotes economies and t denotes the year. α_i is the constant parameter, k is the lag length, and ε is the error term. All the variables are endogenous in equations in 3 and 4, and the equations indicate a dynamic relationship between variables. $lnEMP$, $lnEMPY$, and $lnMFP$ are the variables used in this study and they represent natural logarithms of total employment, youth employment, and multifactor productivity, respectively. The variables included in the analysis are not stationary in their first difference and they become stationary in their first difference. Thus, all the variables are used in their first difference in the analysis. (The first differences are shown by the letter 'd' in front of the names of variables.) γ_k and β_k are the estimated parameters. The significance of β_k parameter shows that there is causality from MFP to (youth) employment. The causality can also be examined through the Wald test which tests chi-square statistic under the null hypothesis of no Granger-causality. The findings only show whether there is causality from one variable to another. They do not provide information about the magnitude of causality (Yerdelen-Tatoğlu, 2018: 153-4).

4. Empirical Findings

4.1. Testing for Stationarity of Variables

The study first tests the stationarity using panel unit-root tests. To choose between first and second-generation tests, Pesaran-CD (2004) test is applied to investigate the

existence of cross-sectional dependence. The findings from this test are presented in Table 3.

Table: 3
Pesaran’s Cross-Sectional Dependence Test, 16 OECD Economies, 1985-2018

| Variable | CD-Test | p-value | corr | abs(corr) |
|---------------|---------|---------|-------|-----------|
| <i>lnEMP</i> | 46.24 | 0.000 | 0,724 | 0,729 |
| <i>lnEMPY</i> | 16.32 | 0.000 | 0,256 | 0,446 |
| <i>lnMFP</i> | 52.77 | 0.000 | 0,826 | 0,826 |

Source: Author’s calculations.

Notes: *lnEMP* is employment, *lnEMPY* is youth employment, and *lnMFP* is multifactor productivity. All the variables are presented in natural logarithms.

The findings from Pesaran-CD (2004) test indicate the rejection of the null of cross-sectional independence. Because all the variables are cross-sectionally dependent, the study applies second-generation panel unit-root tests to test for the stationarity of variables. Table 4 presents findings from Breitung and Pesaran’s CADF panel unit-root tests.

Table: 4
Breitung and Pesaran’s CADF Panel Unit-Root Tests, 16 OECD Economies, 1985-2018

| Variables | Breitung (Lambda statistics) | | Pesaran’s CADF (t-bar statistics) | |
|----------------|------------------------------|-----------|-----------------------------------|-----------|
| | C | C+T | C | C+T |
| <i>lnEMP</i> | 4,524 | 1,663 | -2,186* | -2,457 |
| <i>lnEMPY</i> | 2,109 | 2,843 | -2,032 | -2,041 |
| <i>lnMFP</i> | 2,189 | 1,032 | -2,546*** | -2,423 |
| <i>dlnEMP</i> | -5,425*** | -6,277*** | -3,245*** | -3,273*** |
| <i>dlnEMPY</i> | -8,547*** | -6,385*** | -2,744*** | -2,815*** |
| <i>dlnMFP</i> | -9,083*** | -9,693*** | -3,168*** | -3,122*** |

Source: Author’s calculations.

Note: C denotes model with constant, and C+T denotes model with constant and trend. *, **, *** denotes the rejection of the null hypothesis of non-stationarity (presence of unit root) at the 10%, 5%, and 1% levels, respectively. For Pesaran CADF test, critical values for the models with constant are -2,11, -2,20, and -2,36; with constant and trend are -2,63, -2,71, and -2,85 at the 10%, 5% and 1% levels, respectively.

Findings in Table 4 indicate that all variables are non-stationary in their level. Two exceptions are the total employment (*lnEMP*) and the MFP (*lnMFP*) according to Pesaran’s CADF test for the model with constant. Because all the other test statistics present the non-stationary of these variables at their level, they are accepted to be non-stationary. The findings from the first difference of the variables ($\Delta \ln EMP$, $\Delta \ln EMPY$, and $\Delta \ln MFP$) indicate the rejection of the null hypothesis of the presence of uni-root; thus, non-stationary variables. Because the panel VAR approach and causality analysis can be applied to stationary variables, the rest of this study uses the first differences of all variables: *dlnEMP*, *dlnEMPY*, and *dlnMFP* to apply the relevant methodologies.

4.2. GMM Panel VAR Approach

The first step to apply the GMM Panel VAR Approach is determining the optimal lag length for the analysis. Table 5 shows the estimated coefficient of determination (CD), Hansen’s J statistics, p-values for Hansen’s J statistics, MBIC, MAIC, and MQIC. As the study investigates the employment and MFP nexus separately for total and youth employment, findings from the two models are presented independently. The upper part of

Table 5 presents findings for optimal lag length for the total employment model, whereas the below part shows the findings from the youth employment model.

Table: 5
Determining Optimal Lag Length, 16 OECD Economies, 1985-2018

| <i>Employment, MFP</i> | | | | | | |
|------------------------------|----------|---------|-----------|----------|----------|----------|
| lag | CD | J | J p-value | MBIC | MAIC | MQIC |
| 1 | 0,5417 | 11,3165 | 0,7895 | -83,2129 | -20,6835 | -45,5258 |
| 2 | 0,5218 | 5,8164 | 0,9251 | -65,0806 | -18,1836 | -36,8153 |
| 3 | -0,0261 | 3,8471 | 0,8707 | -43,4176 | -12,1529 | -24,5740 |
| 4 | 27,4944 | 0,9472 | 0,9177 | -22,6851 | -7,0528 | -13,2633 |
| <i>Youth Employment, MFP</i> | | | | | | |
| lag | CD | J | J p-value | MBIC | MAIC | MQIC |
| 1 | 0,2449 | 13,9179 | 0,6048 | -80,6114 | -18,0821 | -42,9244 |
| 2 | 0,2929 | 6,8678 | 0,8662 | -64,0292 | -17,1322 | -35,7639 |
| 3 | -9,8143 | 1,3313 | 0,9952 | -45,9334 | -14,6688 | -27,0899 |
| 4 | -30,8507 | 0,3837 | 0,9838 | -23,2486 | -7,6163 | -13,8269 |

Source: Author's calculations.

According to findings from Hansen's J statistics and p-values for J statistics in Table 5, the null hypothesis of the validity of over-identifying restrictions is not rejected. The lag length that minimises MBIC, MAIC, and MQIC is lag 1 for both employment and youth employment models. Thus, the optimal lag length is selected as 1 lag for both models.

Table 6 presents GMM Panel VAR Analysis findings for total employment and youth employment models with 1 lag. Table 6 shows that the lagged MFP variable significantly and positively affected total employment, whereas the lagged employment variable did not significantly affect the MFP variable during the period examined. In addition, the lagged variables significantly and positively affect their current values. Empirical findings from the youth employment model indicate that the lagged value of MFP significantly and positively affects youth employment; however, the impact of lagged youth employment on MFP is significant, negative, and relatively low. Youth employment and MFP are significantly and positively affected by their lagged values. These findings show that although MFP leads to an increase in total and youth employment, youth employment leads to a decline in MFP, and total employment does not significantly affect MFP.

Table: 6
Findings from GMM Panel VAR Analysis, 16 OECD Economies, 1985-2018

| Employment, MFP | | Youth Employment, MFP | |
|-----------------------------|-----------------------------|------------------------------|-----------------------------|
| | Coefficient [Std. Error] | | Coefficient [Std. Error] |
| <i>dlnEMP</i> | | <i>dlnEMPY</i> | |
| <i>dlnEMP_{t-1}</i> | 0,3792*** [0,0956] | <i>dlnEMPY_{t-1}</i> | 0,5866*** [0,0698] |
| <i>dlnMFP_{t-1}</i> | 0,2223*** [0,0599] | <i>dlnMFP_{t-1}</i> | 0,3130*** [0,1304] |
| <i>dlnMFP</i> | | <i>dlnMFP</i> | |
| <i>dlnEMP_{t-1}</i> | -0,0420 [0,0357] | <i>dlnEMPY_{t-1}</i> | -0,0683*** [0,0169] |
| <i>dlnMFP_{t-1}</i> | 0,2878*** [0,0654] | <i>dlnMFP_{t-1}</i> | 0,2923*** [0,0639] |

Source: Author's calculations.

Notes: *lnEMP*, *lnEMPY*, and *lnMFP* are the natural logarithms of employment, youth employment, and MFP, respectively. *d* presents the first differences, and *t-1* denotes the first lag of variables. Standard errors are in brackets. *, **, *** denotes the significance of the coefficients at the 10%, 5%, and 1% levels, respectively. The optimal lag length is 1.

4.3. Causality Analysis

After examining the dynamic relationship between variables of interest through the GMM Panel VAR approach, the study applies the panel Granger Causality test to determine whether variables of interest Granger cause each other. Table 7 presents findings from Panel VAR-Granger Causality Wald Test.

Table: 7
Findings from Panel VAR-Granger Causality Wald Test, 16 OECD Economies, 1985-2018

| Equation | Excluded | Chi-square | Equation | Excluded | Chi-square |
|---------------|---------------|------------|-----------------|-----------------|------------|
| <i>dlnEMP</i> | <i>dlnMFP</i> | 13,749*** | <i>dlnEMP_Y</i> | <i>dlnMFP</i> | 5,763** |
| | ALL | 13,749*** | | ALL | 5,763** |
| <i>dlnMFP</i> | <i>dlnEMP</i> | 1,382 | <i>dlnMFP</i> | <i>dlnEMP_Y</i> | 16,262*** |
| | ALL | 1,382 | | ALL | 16,262*** |

Source: Author's calculations.

Notes: Findings are based on Panel VAR analysis with 1 lag. *lnEMP*, *lnEMPY*, and *lnMFP* are the natural logarithms of employment, youth employment, and MFP, respectively. *d* presents the first differences of variables. *, **, *** denotes rejection of null of the excluded variables does not Granger-cause the equation variable at the 10%, 5%, and 1% levels, respectively.

Empirical findings in Table 7 show that MFP Granger-caused employment and youth employment, while only youth employment Granger-caused MFP over the period examined. Total employment did not Granger-cause MFP. Thus, even though the past values of MFP were beneficial in predicting total and youth employment levels, the reverse causality was valid only for youth employment. The findings indicate a two-way causality between youth employment and MFP and a one-way causality from MFP to total employment. These findings are summarised as follows:

Employment \leftarrow MFP

Youth Employment \leftrightarrow MFP

4.4. Stability of the Findings

It is necessary to test models' stability in panel VAR analyses. The stability test also serves as a necessary step to generate IRFs and FEVD. Table 8 presents findings from the eigenvalue stability condition, and Figure 2 shows the roots of the companion matrices.

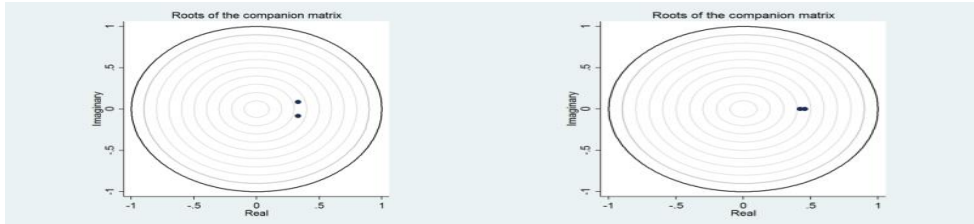
Table: 8
Eigenvalue Stability Condition, 16 OECD Economies, 1985-2018

| Employment, MFP | | | Youth Employment, MFP | | |
|-----------------|-----------|---------|-----------------------|-----------|---------|
| Eigenvalue | | Modulus | Eigenvalue | | Modulus |
| Real | Imaginary | | Real | Imaginary | |
| 0,3335 | 0,0850 | 0,3441 | 0,4563042 | 0 | 0,4563 |
| 0,3335 | -0,0850 | 0,3441 | 0,4226 | 0 | 0,4226 |

Source: Author's calculations.

Table 8 shows that modulus values are smaller than one. Thus, panel VAR models of interest are stable.

Figure: 2
Roots of the Companion Matrices, 16 OECD Economies, 1985-2018



Source: Author's calculations.

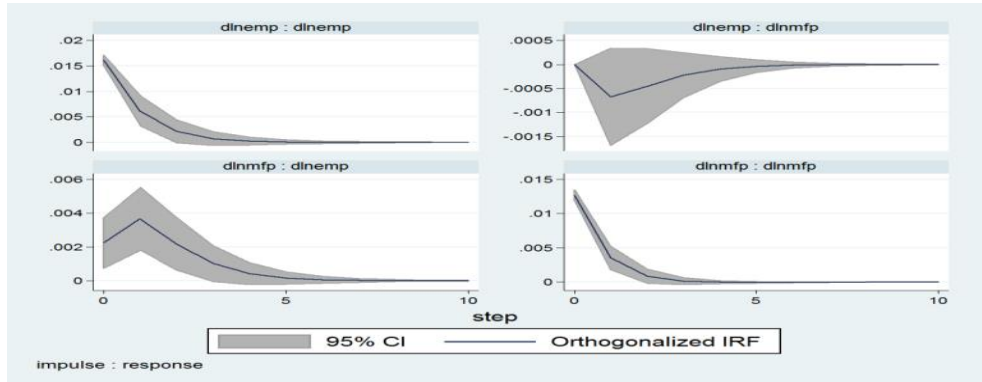
Notes: Matrix for total employment on the left and youth employment on the right.

Figure 2 shows that all the roots are inside the unit circle and smaller than 1. These findings confirm the stability of panel VAR models.

4.5. Impulse Response Functions and Forecast-Error Variance Decomposition

After confirming the stability of panel VAR models using eigenvalue stability conditions and companion matrices, IRFs and FEVD can now be generated. Considering the theoretical considerations and findings from the panel Granger Causality test, this study generates IRF and FEVD to represent the impact (impulse) of MFP on employment measures (response). Figures 3 and 4 indicate IRFs for MFP and total employment and MFP and youth employment models, respectively. Table 9 presents FEVD for both models. 95% Confidence intervals were generated using 200 Monte Carlo simulations from the panel VAR findings.

Figure: 3
Impulse Response Functions (IRFs) for MFP and Employment, 16 OECD Economies, 1985-2018

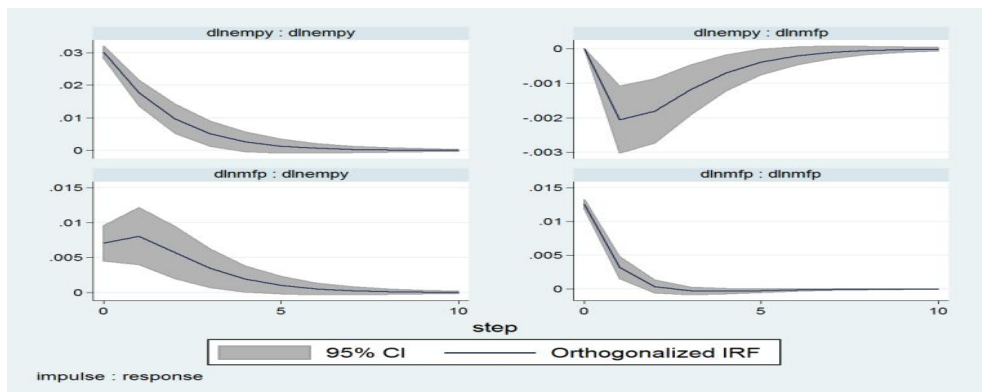


Source: Author's calculations.

Notes: Findings are based on Panel VAR analysis. $\ln EMP$, $\ln EMPY$, and $\ln MFP$ are the natural logarithms of employment, youth employment, and MFP, respectively. d presents the first differences in variables.

The top-right panel in Figure 3 shows that lagged total employment ($d\ln EMP$) did not significantly affect MFP ($d\ln MFP$) because the confidence intervals contain all parts of the zero line. On the other hand, the impact of MFP ($d\ln MFP$) was significant, as presented in the bottom left panel in Figure 3. MFP resulted in a positive effect on total employment. Such impact was the highest in the second period, declined afterwards, and disappeared in 6-7 years.

Figure: 4
Impulse Response Functions (IRFs) for MFP and Youth Employment, 16 OECD Economies, 1985-2018



Source: Author's calculations.

Notes: Findings are based on Panel VAR analysis. $\ln EMP$, $\ln EMPY$, and $\ln MFP$ are the natural logarithms of employment, youth employment, and MFP, respectively. d presents the first differences of variables.

Figure 4 indicates that youth employment and MFP variables significantly affected each other. The top-right panel shows a negative impact of lagged youth employment on MFP to be disappeared in 8-9 years. The impulse of MFP on youth employment can be tracked in the bottom-left panel in Figure 4, and it presented a positive impact that disappeared in 8-9 years. The IRFs in Figures 5 and 6 confirm the findings from the panel VAR approach and panel VAR Granger Causality tests.

Table: 9
Forecast-Error Variance Decomposition, 16 OECD Economies, 1985-2018

| (a) MFP, Employment | | | (b) MFP, Youth Employment | | |
|--|------------------|---------------|--|------------------|----------------|
| Response variable and forecast horizon | Impulse Variable | | Response variable and forecast horizon | Impulse Variable | |
| | <i>dlnmfp</i> | <i>dlnemp</i> | | <i>dlnmfp</i> | <i>dlnempy</i> |
| <i>dlnmfp</i> | | | <i>dlnmfp</i> | | |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 |
| 2 | 0.997369 | 0.002631 | 2 | 0.9755 | 0.0245 |
| 3 | 0.996219 | 0.003781 | 3 | 0.957418 | 0.042582 |
| 4 | 0.995942 | 0.004058 | 4 | 0.949775 | 0.050225 |
| 5 | 0.995892 | 0.004108 | 5 | 0.947199 | 0.052801 |
| 6 | 0.995884 | 0.004116 | 6 | 0.946429 | 0.053571 |
| 7 | 0.995883 | 0.004117 | 7 | 0.946215 | 0.053785 |
| 8 | 0.995883 | 0.004117 | 8 | 0.946159 | 0.053841 |
| 9 | 0.995883 | 0.004117 | 9 | 0.946145 | 0.053855 |
| 10 | 0.995883 | 0.004117 | 10 | 0.946142 | 0.053858 |
| <i>dlnemp</i> | | | <i>dlnempy</i> | | |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0.018942 | 0.981058 | 1 | 0.052267 | 0.947733 |
| 2 | 0.058443 | 0.941557 | 2 | 0.086451 | 0.913549 |
| 3 | 0.071349 | 0.928651 | 3 | 0.101459 | 0.898541 |
| 4 | 0.074189 | 0.925811 | 4 | 0.106955 | 0.893045 |
| 5 | 0.074681 | 0.925319 | 5 | 0.108726 | 0.891274 |
| 6 | 0.074753 | 0.925247 | 6 | 0.109246 | 0.890754 |
| 7 | 0.074762 | 0.925238 | 7 | 0.109388 | 0.890612 |
| 8 | 0.074763 | 0.925237 | 8 | 0.109425 | 0.890575 |
| 9 | 0.074763 | 0.925237 | 9 | 0.109435 | 0.890565 |
| 10 | 0.074763 | 0.925237 | 10 | 0.109437 | 0.890563 |

Source: Author's calculations.

Notes: Findings are based on Panel VAR analysis. *lnEMP*, *lnEMPY*, and *lnMFP* are the natural logarithms of employment, youth employment, and MFP, respectively. *d* presents the first differences of variables.

FEVD in Table 9 shows how much of the forecast-error variance (FEV) in variables was determined by themselves and the other variable of interest. Panel (a) indicates the findings for MFP and total employment overall, and panel (b) indicates the findings for MFP and youth employment model. 0 values of MFP in the 0-time horizons in the bottom part of both panels show that FEVD findings were generated by the impact of MFP on employment variables. 0 values of employment variables can also confirm the ordering of the relevant relationship in the 1-time horizons in the upper part of both panels. These 0 values indicate that the impacts of MFP on employment variables were investigated concurrently, whereas the reverse impacts were examined with a one-period lag.

The bottom part of the panel (a) in Table 9 indicates that 92.5% of FEV of total employment (*dlnEMP*) was explained by the shocks in itself, and 7.5% of the FEV was explained by the MFP (*dlnMFP*) on the tenth lag. On the other hand, panel (b) shows the relevant values for youth employment. Approximately 89.1% of the FEV shocks of youth

employment ($dlnEMPY$) could be determined by itself, and 11% of such shocks could be determined by the MFP ($dlnMFP$). Lastly, panel (b) showed that 94.6% of the FEV of MFP ($dlnMFP$) was explained by self-shocks, and 5.4% of it was explained by the shocks in youth employment ($dlnEMPY$) variable. Table 9 shows that MFP resulted in more significant shocks in FEV on youth employment than it did in total employment over the period examined.

5. Discussion of the Empirical Findings and Policy Recommendations

Discussion of the empirical findings of this study focus on two different issues. The first issue focuses on the potential reasons why macro-level studies on the topic - including this study - reach different findings in the empirical literature. Even though there is only a limited number of empirical macro studies, the literature evidence mixed outcomes. The primary reason may be the selection of countries and periods in different studies. Aside from this, one reason may depend on the choice of proxy for technological change variable among many other proxies, as Piva & Vivarelli (2017: 13) points out. The relevant proxy used in this study is MFP, which presents technology's network and spillover effects (OECD, 2020d). Thus, the insignificant total employment parameter on MFP can be understood as newly-created jobs do not contribute to technological progress through network and spillover effects. The insufficiency of total employment to contribute to technological progress will be addressed in a more detailed manner during the discussion of the second issue.

The second issue requires an in-depth understanding of the empirical findings reached in this study. To put together, the findings in this study point out a job-creation effect of MFP for both total and youth employment. However, the inverse of this relationship is not confirmed in this study. Total employment cannot contribute to technology creation in the countries examined. In addition, while youth employment generates a change in technological level, this level is evidenced to be negative. In other words, higher youth employment leads to a decline in technological change. These findings on the mutual relationship between employment and technological change in this study require attention because these two variables are expected to affect each other mutually. While higher technological level creates changes in the labour market, it is evident and well-known in the literature that labour also contributes to knowledge and technology creation. For the study sample, even though technological change creates jobs, these jobs cannot contribute to the technological progress through the network and spillover effects in these 16 OECD economies over the period examined. Considering that most of the economies in the analysis are from developed economies - OECD members - the examination of the reason(s) for these empirical findings becomes even more necessary for further consideration. A discussion on the topic is needed from this perspective.

To better understand why total employment does not lead to technological progress, one can focus on the choice of proxy for technological change, as this issue was briefly introduced at the beginning of this section. As this study uses MFP, the study finds out that

total employment in the 16 OECD economies cannot significantly affect the MFP level. The MFP variable in this study refers to "the network and spillover effects from production factors", as explained by the source of the relevant dataset of OECD (OECD, 2020d). Thus, the insufficiency of employment to create or activate spillover effects may, at least partially, stem from structural issues related to the labour market, such as job-skill mismatch. Even though the countries that constitute the study sample are from OECD economies and these economies are well-known for their highly skilled labour force, the market forces do not always guarantee the most suitable job-skill match for labour supply and labour demand. Job-skill mismatch occurs when an employed person's skills or education are not in line with the required task of the job. Accordingly, examining the job-skill mismatch for the study sample can explain why total employment remains insufficient to create technological progress in these 16 OECD economies. Table 10 shows field-of-study-mismatch and qualification mismatch for all the countries included in the empirical analysis except Japan.

Table: 10
Job-Skill Mismatch, 15 OECD Economies, 2016

| Country | Field-of-study mismatch (%) | Qualification mismatch (%) | Qualification mismatch | |
|----------------|-----------------------------|----------------------------|-------------------------|------------------------|
| | | | Under-qualification (%) | Over-qualification (%) |
| Australia | 32,7 | 38,7 | 18,5 | 20,2 |
| Belgium | 28 | 34,5 | 23,8 | 10,6 |
| Canada | | 37,9 | 21,7 | 16,2 |
| Denmark | 30,8 | 34 | 20 | 14 |
| Finland | 23,7 | 28,2 | 20,3 | 7,8 |
| France | 33,4 | 34,2 | 23,5 | 10,6 |
| Germany | 20,1 | 37,2 | 19,7 | 17,2 |
| Italy | 36,5 | 38,2 | 20 | 18,2 |
| Netherlands | 33,2 | 37,7 | 25,1 | 12,6 |
| New Zealand | | 40,7 | 23,5 | 17,2 |
| Portugal | 35,9 | 42,4 | 18,7 | 23,6 |
| Spain | 33,7 | 41,2 | 21,2 | 20 |
| Sweden | 35,4 | 37 | 22,3 | 14,6 |
| United Kingdom | 38 | 41 | 27,7 | 13,5 |
| United States | | 33,5 | 17,7 | 15,6 |

Source: OECD, 2022.

Notes: The values in the table represent percentages of the total number of workers.

Job-skill mismatch statistics in Table 10 clearly show that more than one-third of workers in all economies other than Finland report qualification mismatch, meaning that their skills do not match the required skill of their job. Table 10 also reports data on under-qualification, over-qualification, and field-of-study mismatch. Over-qualification occurs when a worker has higher skills than the tasks required in a job, and under-qualification occurs in the opposite situation. In most of these economies, it is evident that under-qualification is a more critical issue compared to over-qualification. Field-of-study mismatch statistics are similar yet slightly lower than qualification mismatch statistics. Considering the development levels and human capital accumulation in these economies, it is clear that mismatch - particularly field-of-study mismatch and under-qualification - is an important issue for the study sample. Such a matter requires not only further analyses but also policy recommendations. Because the endowed skills are mainly acquired through education, the most critical policy recommendation would be directed to the educational structure in these economies. After assessing the necessities of labour demand in these

economies, the required jobs contributing to technological advancement should be determined. Following that, necessary educational programs should be activated or increased to ensure sufficient employed persons to build future labour supply. Another policy recommendation would be making revisions in education programs, if necessary.

Undoubtedly, the job-skill mismatch can be only one factor that shapes the labour market structure. Thus, further research would be necessary to understand why total employment cannot contribute to the technology creation process in these economies. Future research can address the interconnection between technological progress and factors that build the labour market structure in the OECD economies.

Even though the mismatch data is only announced for total workers, the job-skill mismatch can be an important issue, particularly for the youth. It is well-known that youth generally face more difficulty finding a job than adults (Signorelli, 2017: 1), mainly if they are newly graduates. Keeping their jobs is riskier for the youth during crisis periods because they are less experienced than adults. In addition, young workers frequently get lower wages, are offered part-time jobs and/or temporary contracts, and may face more precarious work conditions. Because of their vulnerability in the labour market, they usually accept to be employed in jobs that do not fit their qualities or field-of-study, rather than remaining unemployed (Dunsch, 2017: 378; Gorkey, 2020: 4). Such job-skill mismatch may create disadvantages for youth employment to a more significant extent for generating technological progress. This reason may, at least partially, explain the negative impact of youth employment of MFP, as empirically evidenced in this study. Thus, some policy actions can be recommended in this manner. First, it would be beneficial to determine the level of both field-of-study and qualification mismatch specifically for the youth in the 16 OECD economies included in this study. After determining the level of a mismatch for the youth, either revision in study programs can be made, or these programs can be increased in numbers, depending on the necessity. Active labour market policies specifically for the youth can also be worthwhile. Such policies can offer more extensive employment opportunities for the youth while they can help to decrease the extent of mismatch at the same time.

Finally, future research directions can be offered based on the empirical findings obtained and the discussion held in this study. Further research can be suggested to examine the technological change and employment nexus by distinguishing technological change from its different proxies. Another future research can focus on determining the country-specific structural labour market problems and examining the relationship between these problems and technological progress. The last future research direction can discuss the technological progress and youth employment by skill structure.

6. Conclusion

This study investigates the dynamic relationship and causality between employment and technological change by distinguishing employment by youth employment and total

employment in 16 OECD economies from 1985 to 2018. It aims to reveal whether the relevant mutual relationship is different for youth employment compared to the total. It uses MFP as a proxy for technological change.

This study finds that the dynamic relationship and the causality between employment and technological change are different for the youth than for total employment. The findings from GMM Panel VAR approach estimates indicate a significant and positive impact of MFP on total employment; however, the inverse of such relationship yields an insignificant effect. On the other hand, the results show that youth employment and MFP significantly affect each other. While MFP affects youth employment positively, the impact of youth employment on MFP is evidenced negatively. The findings from the Granger-causality analysis confirm panel VAR estimates. There is a one-way causality from MFP to employment and a two-way causality between MFP and youth employment. The eigenvalues and roots of companion matrices confirm the stability of the empirical findings. Findings from IRFs and FEVDs show parallelism with panel VAR and causality estimates. IRFs indicate an insignificant lagged effect of MFP on total employment and a significant positive effect of total employment on MFP that disappears in 6-7 years.

On the other hand, IRFs confirm a two-way relationship on the nexus for the youth. While the impact of MFP on youth employment is positive, youth employment results in a decline in MFP with a one-year time lag. Both effects disappear in 8-9 years. Thus, the empirical findings show that technological change affects youth employment at a higher magnitude and more extended period than total employment.

The findings from the empirical evidence of this study are crucial as they signal some critical issues on the matter. First of all, the findings indicate the job-creation effect of technological change for both total and youth employment in the selected OECD economies during the period examined. However, the inverse relationship is not significant for total employment. In other words, even though technological change creates jobs, the employed persons in these jobs cannot lead to an increase in technological level. While total employment does not significantly affect the technological level, youth employment negatively affects the technological level. Thus, the second important issue empirically evidenced in this study is that higher youth employment results in decline in MFP. The incapability of total and youth employment to increase MFP may arise for different reasons. One of the reasons is that other studies may find different empirical outcomes depending on the proxy they choose for their technological change variable, as Piva & Vivarelli (2017: 13) point out. This may be considered one of the most important reasons for mixed findings in the macro empirical literature on the topic. The technological change variable used in this study is MFP, which presents technology's network and spillover effects (OECD, 2020d). Thus, the insignificant total employment parameter on MFP can be understood as newly created jobs cannot generate technological change through network and spillover effects. Another reason behind the two important issues may be a job-skill mismatch, particularly for the youth. In addition to their vulnerability in the labour markets, young individuals generally face more difficulty finding a job than adults (Signorelli, 2017: 1), mainly if they

are newly graduates. Because of these difficulties and the limited number of job opportunities, they may choose to work in jobs that do not fit their qualifications well rather than remain unemployed. Therefore, the job-skill mismatch can be regarded as a more important problem for the youth, even in developed economies.

By empirically evidencing distinct outcomes on the technological change and employment nexus for the youth and total employment, this study does not only suggest future research directions but also policy recommendations. Future research attempts can be directed to distinguishing the analysis by skill structure, different proxies for technological change, and examining the relevant nexus focusing on various structural labour market problems. Such examination and the comparison of findings from these future research directions and the present study would be beneficial to provide a better understanding of the technological change-employment nexus. Policy recommendations on the issue mainly include actions that aim to reduce the mismatch in these economies. For this purpose, particular policies, such as revisions in study programs and increasing the number of programs that can fulfil the requirements of labour demand, are offered. Finally, the implementation of active labour market policies is suggested as these policies increase the employment opportunities for the youth so that young individuals can match with jobs that correspond to their educational background and skills in a better way.

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Appendix A. Summary Statistics by Economies

Table: A.1.
Summary Statistics by Economies, 1985-2018

| <i>Economy</i> | <i>Variable</i> | <i>Obs</i> | <i>Mean</i> | <i>Std. Dev.</i> | <i>Min</i> | <i>Max</i> |
|----------------|-----------------|------------|-------------|------------------|------------|------------|
| Austria | <i>lnEMP</i> | 34 | 9,133 | 0,184 | 8,809 | 9,440 |
| | <i>lnEMPY</i> | 34 | 7,948 | 0,094 | 7,818 | 8,139 |
| | <i>lnMFP</i> | 34 | 4,516 | 0,077 | 4,393 | 4,613 |
| Belgium | <i>lnEMP</i> | 34 | 8,310 | 0,095 | 8,165 | 8,467 |
| | <i>lnEMPY</i> | 34 | 6,828 | 0,086 | 6,732 | 6,996 |
| | <i>lnMFP</i> | 34 | 4,562 | 0,047 | 4,441 | 4,614 |
| Canada | <i>lnEMP</i> | 34 | 9,615 | 0,144 | 9,361 | 9,834 |
| | <i>lnEMPY</i> | 34 | 8,326 | 0,071 | 8,191 | 8,416 |
| | <i>lnMFP</i> | 34 | 4,540 | 0,059 | 4,446 | 4,626 |
| Denmark | <i>lnEMP</i> | 34 | 7,895 | 0,027 | 7,839 | 7,949 |
| | <i>lnEMPY</i> | 34 | 6,546 | 0,118 | 6,369 | 6,744 |
| | <i>lnMFP</i> | 34 | 4,549 | 0,053 | 4,445 | 4,642 |
| Finland | <i>lnEMP</i> | 34 | 7,768 | 0,061 | 7,623 | 7,840 |
| | <i>lnEMPY</i> | 34 | 6,294 | 0,125 | 6,084 | 6,542 |
| | <i>lnMFP</i> | 34 | 4,489 | 0,145 | 4,214 | 4,657 |
| France | <i>lnEMP</i> | 34 | 10,096 | 0,074 | 9,958 | 10,206 |
| | <i>lnEMPY</i> | 34 | 8,626 | 0,107 | 8,498 | 8,838 |
| | <i>lnMFP</i> | 34 | 4,546 | 0,068 | 4,399 | 4,629 |
| Germany | <i>lnEMP</i> | 34 | 10,517 | 0,064 | 10,385 | 10,643 |
| | <i>lnEMPY</i> | 34 | 9,026 | 0,105 | 8,849 | 9,300 |
| | <i>lnMFP</i> | 34 | 4,506 | 0,093 | 4,312 | 4,630 |
| Italy | <i>lnEMP</i> | 34 | 9,980 | 0,050 | 9,896 | 10,053 |
| | <i>lnEMPY</i> | 34 | 8,322 | 0,265 | 7,871 | 8,688 |
| | <i>lnMFP</i> | 34 | 4,619 | 0,036 | 4,535 | 4,676 |
| Japan | <i>lnEMP</i> | 34 | 11,056 | 0,031 | 10,969 | 11,107 |
| | <i>lnEMPY</i> | 34 | 9,456 | 0,143 | 9,243 | 9,645 |
| | <i>lnMFP</i> | 34 | 4,515 | 0,076 | 4,330 | 4,620 |
| Netherlands | <i>lnEMP</i> | 34 | 8,906 | 0,150 | 8,542 | 9,082 |
| | <i>lnEMPY</i> | 34 | 7,664 | 0,058 | 7,487 | 7,737 |
| | <i>lnMFP</i> | 34 | 4,550 | 0,064 | 4,428 | 4,623 |
| New Zealand | <i>lnEMP</i> | 34 | 7,545 | 0,176 | 7,192 | 7,863 |
| | <i>lnEMPY</i> | 34 | 6,287 | 0,091 | 6,181 | 6,491 |
| | <i>lnMFP</i> | 34 | 4,542 | 0,061 | 4,379 | 4,610 |
| Portugal | <i>lnEMP</i> | 34 | 8,449 | 0,071 | 8,308 | 8,546 |
| | <i>lnEMPY</i> | 34 | 6,940 | 0,256 | 6,467 | 7,225 |
| | <i>lnMFP</i> | 34 | 4,590 | 0,056 | 4,396 | 4,631 |
| Spain | <i>lnEMP</i> | 34 | 9,645 | 0,203 | 9,297 | 9,932 |
| | <i>lnEMPY</i> | 34 | 8,187 | 0,227 | 7,769 | 8,501 |
| | <i>lnMFP</i> | 34 | 4,595 | 0,020 | 4,538 | 4,624 |
| Sweden | <i>lnEMP</i> | 34 | 8,387 | 0,071 | 8,274 | 8,536 |
| | <i>lnEMPY</i> | 34 | 6,882 | 0,126 | 6,704 | 7,115 |
| | <i>lnMFP</i> | 34 | 4,494 | 0,086 | 4,375 | 4,605 |
| UK | <i>lnEMP</i> | 34 | 10,230 | 0,082 | 10,096 | 10,384 |
| | <i>lnEMPY</i> | 34 | 8,912 | 0,079 | 8,835 | 9,109 |
| | <i>lnMFP</i> | 34 | 4,506 | 0,103 | 4,320 | 4,621 |
| US | <i>lnEMP</i> | 34 | 11,795 | 0,103 | 11,582 | 11,956 |
| | <i>lnEMPY</i> | 34 | 10,459 | 0,039 | 10,389 | 10,525 |
| | <i>lnMFP</i> | 34 | 4,491 | 0,096 | 4,340 | 4,621 |

Source: Author's calculations.

Notes: *lnEMP*, *lnEMPY*, and *lnMFP* are the natural logarithms of employment, youth employment, and multifactor productivity, respectively.

The Effect of Cultural Descriptive Norms on Financial Systems: A Cross-Cultural Analysis

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Kültürel Tanımlayıcı Normların Finansal Sistemler Üzerindeki Etkisi: Kültürlerarası Bir Analiz

Abstract

We investigated the effect of descriptive, cultural norms on national financial systems by comparing the incentive for achievement and risk-aversion attributes of 32 different nations' cultures. Multiple regression analyses showed that performance and future orientation positively relate to market capitalisation, but institutional collectivism and uncertainty avoidance negatively correlate. Performance orientation boosted market capitalisation, but institutional collectivism, whereas uncertainty avoidance hindered it. We could not find any relationship between the cultural norms and the bank deposit ratios. Two steps scatter plot analysis showed clusters between cultural norms, bank deposit, and future orientation norms.

Keywords : Descriptive Cultural Norms, Financial Systems, Bank-Based Systems, Capital Market-Based System, Risk-Taking.

JEL Classification Codes : G15, Z13.

Öz

Bu çalışmada, 32 farklı ulusun kültürünün başarı ve riskten kaçınma teşviklerini karşılaştırarak kültürel tanımlayıcı normların ulusal finansal sistemler üzerindeki etkisini araştırdık. Çoklu regresyon analizleri, performans yönelimi ve geleceğe yönelimin piyasa değeri ile pozitif ilişkili olduğunu, ancak kurumsal kolektivizm ve belirsizlikten kaçınmanın negatif ilişkili olduğunu göstermiştir. Performans yönelimi, piyasa kapitalizasyonunu artırdığını, ancak kurumsal kolektivizm, belirsizlikten kaçınmanın piyasa kapitalizasyonunu azalttığını gördük. Kültürel normlar ile banka mevduat oranları arasında herhangi bir ilişkiye rastlamadık. İki aşamalı dağılım grafiği analizi, kültürel normlar, banka mevduatı ve geleceğe yönelik yönelim normları arasındaki kümeleri göstermektedir.

Anahtar Sözcükler : Tanımlayıcı Kültürel Normlar, Finansal Sistemler, Banka Tabanlı Sistemler, Sermaye Piyasası Tabanlı Sistemler, Risk Alma.

1. Introduction

In modern economies, financial systems are critical for how growth is supported and how resources are allocated. The financial system serves as a bridge for transferring household savings to firms through banks or stock markets. However, cross-country differences exist in how households prefer alternative use of banks versus stock markets for investing their savings (Kwok & Tadesse, 2006; Barth et al., 1997). From an organisational perspective, the relative use of alternative financial systems, especially the use of the stock market, is important in the development of organisations (Whitley, 1991). As Whitley (1991) argued, in stock-market-based countries, capital is more easily converted into cash, which affects the development of business organisations in the country.

There are three approaches to explaining the differences across countries' financial systems. First, Pagano and Volpin's (1999) political approach looks at how the attitudes of governments based on corporatism, labour market coalitions, and the biases of workers and employers affect how the financial markets change. Too many studies have shown a strong link between political and financial risks. Their substantial contributions to the political approach are that increases in political risk raise financial risks (İltaş & Üçler, 20219; Çiçen, 2021; Nakhli & Gaines, 2021). Secondly, the legal approach investigates how countries' legal systems differ to protect shareholder rights, make the companies and stock market more transparent, and prevent unethical behaviour in the stock market, such as insider trading, as a result of the development of the capital market (La Porta et al., 1997, 1998, 2000). Thirdly, the cultural approach developed by Stulz and Williamson (2000) investigated how established beliefs and risk-taking attitudes affect the differences in developing bank-based or market-based financial systems among different societies.

Several studies document different financial systems among countries regarding the points above. For instance, Barth et al. (1997) compared five industrialised nations in research (United States, United Kingdom, Japan, France, and Germany). This study revealed significant differences in how countries' financial systems are organised. For instance, the United States and Germany represent the polar extremes of different financial systems. In the U.S, the bank-based system is relatively trivial; the ratio of bank assets to GDP is 53%, which is roughly one-third of the 152% ratio in Germany.

In contrast, the United States has a ratio of stock market capitalisation to GDP of 82%, which is three times the German ratio of 24%. Japan and France have a more bank-based financial system than the United States and Germany. Still, the United Kingdom has a stock market-based financial system similar to the United States. Similarly, Rajan and Zingales (1998; 2001) and Demirgüç-Kunt and Levine (1999) stated similar findings that countries with weaker legal systems tend to have more bank-based financial systems, whereas countries that have stronger protection of shareholder rights tend to have a more market-based financial system. Kwok and Tadesse (2006) were the pioneering researchers investigating culture's effects on financial markets. They found that, as a cultural value, uncertainty avoidance is an important determinant of a country's financial system.

According to this research, countries that are high on uncertainty avoidance tend to have more bank-based financial systems compared to countries that are low on uncertainty avoidance with a risk aversion explanation.

While these studies are important in shedding light on the cross-country and cross-cultural differences in financial systems, the literature is still lacking from a cross-cultural perspective. Firstly, the missing part is other cultural value dimensions such as individualism-collectivism or from globe framework performance orientation. Moreover, within the scope of the cross-cultural research framework, in recent years, it has been claimed that norms rather than values are more relevant predictors of behaviour (Shteynberg et al., 2009; Gelfand et al., 2011; Aktas et al., 2016; Stephan & Uhlaner, 2010). And the research stream can also be further developed using descriptive norms rather than values.

Therefore, this study aims to extend the cross-cultural financial systems literature by using descriptive, cultural norms, namely performance orientation, institutional collectivism, uncertainty avoidance, and future orientation, and investigating their effects on market capitalisation and bank deposits.

2. Theoretical Framework

2.1. Financial Systems

A financial system has two primary goals: to channel resources to the most productive uses and place risks where they are best borne (Rajam & Zingales, 2001). Economies seem to emphasise either institutions or markets, and this has led economists to classify financial systems as relationship-based (or bank-dominated) and arm's-length (or market-based) financial systems (Rajam & Zingales, 2001; De Jong & Semenov, 2002).

Financial markets, especially debt and stock markets, are markets where an increase in investments facilitates fast economic growth by moving surplus or inefficiently utilised funds to those in need of cash. There are many financial markets, mainly commercial and investment banks, insurance companies, and investment funds, except regulated governmental organisations (Mishkin & Eakins, 2012). The banking sector hosts tools that directly finance companies' investments through the credit channel, just as in the borrowing market. The operating mechanism of capital markets, namely stock markets, is built on partnerships. Financial markets aim to assist enterprises needing cash by connecting them with idle funds in capital markets or somewhat risk-loving investors.

It would appear that countries' legal systems are a critical factor in explaining the differences in countries' financial systems (Rajam & Zingales, 1998; 2001). Rajam and Zingales (1998; 2001) argue in their research that the banking sector forms extra-legal contractual links with the market forces of nations that govern themselves with poor regard for the rule of law and the sanctions imposed on it their citizens. As a result, they stated that the entity itself is responsible for handling financial transactions (internalisation). For this reason, bank-based financial systems are being supported, and market-based systems are

being developed in the standard rule of law and sanction-imposing countries. According to the findings of Demirgüç-Kunt and Levine's (1999) research on the relationship between the legal framework and financial systems in countries with robust systems for the protection of minority shareholders, these countries have a higher tendency toward market-based financial systems. (Demirgüç-Kunt & Levine, 1999). While legal-based explanations acknowledge that having a strong shareholder protection regulation for boosting the stock markets is initially required, behavioural explanations do not. A centric risk-based approach focuses on the risk reduction capabilities of financial systems. Therefore, this approach assigns a key role to the bank sector to smooth financial risks over time (Allen & Gale, 1997; Dow, 2000; Dowd, 2009). While individual investors may suffer from the risks, such as oil risks mentioned by Allen and Gale (1997) during the oil crisis or, more recently, during the COVID-19 Pandemic, investors in banks did not have any losses because of the decline in the stock market price. As a result, we might reach the following conclusion: different financial systems have varying possibilities for both gains and losses and hence, other risks.

As a result of individuals' risk-taking tendencies, a negative relationship was found between the stock market's development and the banking sector's success in the Japanese and Chinese economies. Stock markets with high market capitalisations interrupting the funding functions of the banking sector have been found to reduce profit margins and bank performance. As a result of the complex interactions between the capital and banking markets, as well as countries with different legal and political systems and cultural norms, the study's hypotheses can be supported (Liu & Wilson, 2009; Tan & Floros, 2012).

In this study, we aim to monitor the cultural differences of investors through the inter-country GLOBE data discussed and to reveal the findings of the developmental differences in financial markets. In this regard, the novel approach of the study is to examine how the value attached to the capital and banking markets differs according to cultural values. The relationship between the increase in the market capitalisation and the economic growth in the concerned countries is an indicator that the short-term idle funds, one of the most important targets of financial markets, are transferred to long-capital markets and that investments in this area contribute significantly to the growth of the national economies.

2.2. The Role of National Culture in Financial Systems

Hofstede (1980) defines culture as a society's shared values, beliefs, and norms that distinguish it from others and are passed down through social learning to succeeding generations. Culture affects the attitudes and behaviours of the individuals within the same society, including how people are motivated, satisfied, connected, how people learn, the type of leaders they prefer, etc. (Hofstede et al., 1990). Related to our argument, culture is important in determining a society's risk-taking intentions for potential gains and losses (Hofstede, 1980; House et al., 1997). The existing research well documented this (Li et al., 2013; Kreiser et al., 2010; etc.). Regarding the financial system, stock market investment has the potential for higher gains and losses than banking and carries risk for investors. In contrast, bank investments guarantee specific interest rates for the period, predictable

income, and potentially fewer gains but no losses, much lower risks. Compared to bank depositors, capital market investors have a greater risk tolerance and profit motivation due to the systemic and systematic nature of the market and their greater exposure to risk. Under conditions of risk, uncertainty, and ambiguity, it is the primary duty of policy-making mechanisms and regulatory institutions to extend the forecast period of decisions taken by economic agents and to make them measurable (De Jong & Semenov, 2002; Liu & Wilson, 2009; Mishkin & Eakins, 2012; Tan & Floros, 2012; Enciso et al., 2016; Saraç et al., 2016). Therefore, risk-taking and tolerating the ambiguity of gains and losses is an important part of the national financial systems (Kwok & Tadesse, 2006). It can be argued that, in addition to the legal system and uncertainty avoidance, other cultural phenomena such as performance orientation, institutional collectivism, and future orientation might affect the country's financial systems through their effect on encouraging proactive behaviour, monetary gains, and risk-taking. This, in turn, will characterise society's financial system.

2.3. Cultural Descriptive Norms

Culture is an important phenomenon in explaining cross-national differences (Hofstede, 1980; Gelfand, 2011). Before the ground-breaking work of Hofstede (1980), cross-national differences have also been investigated by scholars. However, because these studies used the country as a proxy, they did not provide a detailed explanation for why the differences exist (Gelfand, 2011). After the work of Hofstede (1980), values are seen as the most important component of culture. They have begun to explain differences across nations in managerial, organisational, and other social phenomena.

In his 1980 research, Hofstede introduced four cultural value dimensions: power distance, uncertainty avoidance, masculinity and femininity, and individualism and collectivism. In 1991 and 2008, he added the long-term orientation and indulgence dimensions, respectively. Hofstede's (1991) cultural value dimensions are the predominant framework in the cross-cultural study. House founded the Globe (Global Leadership and Organizational Behaviour Effectiveness) research program in 1991. The program, run in 62 countries, distinguished cultural practices and values and put forward nine dimensions of cultural value and descriptive practices (House et al., 2004). These dimensions are power distance, uncertainty avoidance, gender egalitarianism, assertiveness, performance orientation, in-group collectivism, and institutional collectivism.

The most notable distinction of the Globe study is that it pioneered a new path in organisational and cross-cultural research by distinguishing values and norms. Norms are the rules and standards that regulate conduct in a society (Gelfand et al., 2011).

This study will apply descriptive norms (practices, or "as is" measures of GLOBE) to measure the cultural differences rather than values. Since then, in recent years, research has demonstrated that cultural norms are a more important predictor of behaviour than values (Gelfand et al., 2011; Gelfand & Harrington, 2015; Aktaş et al., 2016). The value approach acknowledges that the country's culture is likely to statistically measure the scores of the

participants' individual preferences (Hofstede, 2001). In contrast, descriptive, cultural norms are measured by describing the participants' typical behaviour in their cultural belongings (Fischer, 2006; Fischer, 2009; House et al., 2004; Shteynberg et al., 2009). Before predicting social level ratings, numerous definitions of participants' ethnocentric classes should be statistically and collectively analysed (Fischer, 2009; House et al., 2004). In contrast to examining values (e.g., national culture to predict national entrepreneurship rate), descriptive norm differences are better reflected at the societal level, as shown by these findings (Arthur et al., 2007; Fischer, 2008; Klein & Kozlowski, 2000).

Regarding the difference between the meanings of values and descriptive norms, we contend that values are logically considered to have a tenuous relationship with financial systems due to their weaker connection with behaviour, as individuals do not act according to their definitions of personal preferences (e.g., Swidler, 1986; Verplanken & Holland, 2002; Wicker, 1969). In contrast, too many studies in the extant literature suggest the normative impacts of descriptive norms on people living in particular cultural forms (e.g., Fischer, 2006; Shteynberg et al., 2009). Some societal-level research on cultural norms has yielded poor and inconsistent results regarding values (Fischer, 2006; House et al., 2004; Javidan et al., 2006; Peng et al., 1997; Van Oudenhoven, 2001).

2.4. Cultural Descriptive Norms and Financial System: Hypothesis Development

Of the nine cultural descriptive norm dimensions, in this paper, we will focus on four dimensions: performance orientation, institutional collectivism, uncertainty avoidance, and future orientation, which are important in determining the investment attributes and risk-taking profiles of society.

Performance orientation is the degree to which a collective encourages and rewards group members for performance improvement and excellence (House et al., 2004). Societies with a high-performance orientation tend to value materialism, reward performance, achieve goals and emphasise what you do more than who you are. In contrast, societies with a low-performance orientation tend to value societal and family relationships, have deep concerns for the quality of life and emphasise who you are more than what you do (House et al., 2004). Research has shown that performance-based cultures are supportive of entrepreneurial orientation because of the motivation of high performance and achievement (Stephan & Uhlaner, 2010). On the investment side, while the bank-based systems offer investors a reasonable (a nominal interest rate approximately equal to or greater than the currency price index) and risk-free return (without having a counterparty risk or suffering moral hazard), the stock market-based systems aim to attract more risk-loving investors who consider that the higher the risk, the higher the potential return (Rajam & Zingales, 1998; Demirgüç-Kunt & Levine, 1999). Hence, it can be argued that the market-based financial system will be the entire financial system in a society that encourages risk-taking for achievement. Contrarily, a bank-based financial system will be less preferred because of the lack of competition and

reward for performance. Hence, our hypotheses regarding performance orientation and the financial system are as follows:

Hypothesis-1. The more performance-oriented the society is, the more market-based financial system the society will have.

Hypothesis-2. The more performance-oriented the society is, the less bank-based financial system the society will have.

Secondly, "institutional collectivism" is defined as "the degree to which organisational and societal institutional practices encourage and reward collective distribution of resources and collective action" (House et al., 2004: 30). The dependence between the individual and the organisations, the superiority of the group goals to individual goals, rewarding people according to seniority, personal needs, and group equity rather than performance are the main characteristics of institutional collectivist societal practices. Moreover, society's economic system tends to maximise the interests of collectives rather than individuals. Therefore, more individual achievement-oriented stock-market-based investments can be a less preferred investment for institutional collectivist societies whose economic system encourages the collective distribution of resources rather than a merit-based system (House et al., 2004; Hofstede, 1980). Hence, our hypotheses are as follows:

Hypothesis 3: The more institutional collectivist the society is, the more bank-based financial system the society will have.

Hypothesis 4: The less institutional collectivist the society is, the more market-based financial system the society will have.

Our following argument is about the relationship between uncertainty avoidance, descriptive, cultural norms, and financial systems. It is "the extent to which a society, organisation, or group relies on social norms, rules, and procedures to alleviate the unpredictability of future events" (House et al., 2004: 30). Uncertainty-avoidance societies are characterised by being orderly, relying on formal policies and procedures, being formal in relationships, and being change-resistant (House, 2004; Hofstede, 1980; 1991). Regarding our argument, the most important characteristic of uncertainty avoidance cultures is their risk avoidance (Hofstede, 1980; 1991; House et al., 2004). Uncertainty-avoidant societies do not like risks and ambiguity; when they face uncertainty, they feel anxious. These societies prefer predictability and order (Hofstede, 1980; 1991).

On the other hand, in terms of individual investments, while the stock market is volatile and stock investment is risky and bears uncertainty in earnings, bank loans offer predetermined interest rates and constant income (Kwok and Tadesse, 2006). Therefore, we can conclude that a society with high uncertainty avoidance will prefer more bank-interest-based investments. As a result, society will have a more bank-based financial system. A society that is more tolerant of ambiguity will take more risks and prefer more stock market investment; as a result, society will have a market-based financial system. As a result, our

hypotheses regarding uncertainty avoidance and financial system relationships are as follows:

Hypothesis 5: The more uncertainty avoidant the society is, the more bank-based financial system the society will have.

Hypothesis 6: The less uncertainty avoidant the society is, the more market-based financial system the society will have.

Our final argument is about future-oriented cultural descriptive norms. "Future orientation" is defined as "the degree to which a collectivity encourages and rewards future-oriented behaviours such as planning and delaying gratification" (House et al., 2004: 282). Emphasis on long-term success, saving for the future, and seeing material success and spiritual fulfilment as integrated are the most important characteristics of the future-oriented culture (House et al., 2004). Stephan and Uhlaner (2010) stated future orientation as a performance-oriented cultural characteristic. Coget (2011) has found a link between future orientation and firms' investment in training and development. Another study has found that future orientation is directly linked to young adults' savings practices, and the more future-oriented individuals are, the more they save for the future (Webley & Nyhus, 2013). While future orientation increases performance-oriented behaviour and savings, this might link with market capitalisation and bank deposits. Hence, it can be argued that a higher level of savings in a future-oriented society will develop both the stock market and bank deposits. Therefore, our hypotheses regarding future-oriented cultural descriptive norms are as follows.

Hypothesis 7: The more future-oriented the society is, the more market-based financial system the society will have.

Hypothesis 8: The more future-oriented the society is, the more bank-based financial system the society will have.

3. Methodology

In this study, secondary data from several sources were utilised. The data collection contains relevant economic indicators and cultural practices for 32 countries.

Table: 1
Countries, Variables and Values in the Dataset

| | Countries | Code | UApr | ICpr | POpr | FOpr | MC | BD | WGI |
|----|---------------|------|------|------|------|------|-------------|-------------|---------|
| 1 | Argentina | ARG | 3,63 | 3,66 | 3,63 | 3,1 | 15,50119843 | 17,93990625 | 73,4 |
| 2 | Austria | AUT | 4,4 | 4,31 | 4,37 | 4,09 | 30,61712917 | 72,87315 | 50,2 |
| 3 | Brazil | BRA | 3,74 | 3,94 | 4,11 | 3,9 | 50,32163283 | 50,45845 | 73,3 |
| 4 | Chile | CHL | 4,81 | 4,67 | 4,37 | 3,68 | 105,7414505 | 46,25565625 | 68,6 |
| 5 | China | CHN | 3,84 | 3,95 | 4,1 | 3,64 | 54,21180873 | 44,6738875 | 67,3 |
| 6 | Costa Rica | COS | 4,66 | 4,2 | 4,43 | 3,74 | 5,838257331 | 22,5012125 | 60,6 |
| 7 | France | FRA | 4,66 | 4,2 | 4,43 | 3,74 | 78,19562187 | 71,84406875 | 52,8 |
| 8 | Germany | GER | 5,19 | 3,67 | 4,16 | 4,04 | 45,00905753 | 71,38820625 | 52,4 |
| 9 | Greece | GRC | 3,52 | 3,41 | 3,34 | 3,53 | 37,43048469 | 80,34425625 | 52,0 |
| 10 | Hong Kong | HKG | 4,17 | 4,03 | 4,69 | 3,88 | 896,2339404 | 289,4628125 | 45,8 |
| 11 | Hungary | HUN | 3,26 | 3,63 | 3,5 | 3,31 | 20,54936589 | 44,49080625 | 65,6 |
| 12 | India | IND | 4,02 | 4,25 | 4,11 | 4,04 | 76,25880442 | 58,09780625 | 68,0 |
| 13 | Indonesia | IDN | 3,92 | 4,27 | 4,14 | 3,61 | 37,71052206 | 32,96318125 | 71,6 |
| 14 | Ireland | IRE | 4,25 | 4,57 | 4,3 | 3,93 | 47,16301065 | 84,49249375 | 49,3 |
| 15 | Israel | ISR | 3,97 | 4,4 | 4,03 | 3,82 | 74,33341244 | 77,65359375 | 49,8 |
| 16 | Japan | JPN | 4,07 | 5,23 | 4,22 | 4,29 | 81,58287547 | 199,711125 | 53,3 |
| 17 | Kazakhstan | KAZ | 3,76 | 4,38 | 3,72 | 3,72 | 19,60694844 | 24,9584625 | 67,2 |
| 18 | Korea (South) | KOR | 3,52 | 5,2 | 4,53 | 3,9 | 81,28082413 | 69,8718625 | 62,1 |
| 19 | Malaysia | MAL | 4,59 | 4,45 | 4,16 | 4,39 | 137,5784969 | 113,10625 | 68,6 |
| 20 | Mexico | MEX | 4,06 | 3,95 | 3,97 | 3,75 | 32,20373669 | 23,89240625 | 74,3 |
| 21 | New Zealand | NZL | 4,86 | 4,96 | 4,86 | 3,46 | 34,91048418 | 92,90900833 | 51,8 |
| 22 | Nigeria | NGA | 4,14 | 4 | 3,79 | 3,95 | 12,43201072 | 14,52747813 | 74,1 |
| 23 | Philippines | PHL | 3,69 | 4,37 | 4,21 | 3,92 | 62,17128309 | 52,137575 | 69,8 |
| 24 | Poland | POL | 3,71 | 4,51 | 3,96 | 3,23 | 31,33589282 | 44,6170375 | 68,6 |
| 25 | Portugal | POR | 3,96 | 4,02 | 3,65 | 3,77 | 34,50675482 | 81,85933125 | 45,1 |
| 26 | Slovenia | SVN | 3,76 | 4,09 | 3,62 | 3,56 | 22,25287738 | 50,5317875 | 62,5625 |
| 27 | South Africa | SAF | 4,64 | 4,47 | 4,72 | 4,66 | 236,4250542 | 56,0450125 | 79,1875 |
| 28 | Spain | SPA | 3,95 | 3,87 | 4 | 3,52 | 79,52542115 | 88,7565125 | 52,7 |
| 29 | Switzerland | SWI | 5,42 | 4,2 | 5,04 | 4,8 | 213,6167004 | 136,7897333 | 48,3 |
| 30 | Thailand | THA | 3,79 | 3,88 | 3,84 | 3,27 | 77,18072814 | 101,6174375 | 68,625 |
| 31 | Turkey | TUR | 3,67 | 4,02 | 3,82 | 3,74 | 26,70963513 | 39,8388 | 72,125 |
| 32 | United States | USA | 4,15 | 4,21 | 4,45 | 4,13 | 126,5976768 | 75,07030625 | 56,375 |

Notes: *UApr:* Uncertainty avoidance practices; *ICpr:* Institutional collectivism practices; *POpr:* Performance orientation practices; *FOpr:* Future orientation practices; *BD:* Bank deposits; *MC:* Market capitalisation; *WGI:* World Governance Index.

3.1. Measures

3.1.1. Dependent Variables

Market Capitalization to GDP: National-level market capitalisation values are derived from the World Bank. And it is a measure of the country’s market value as a proportion to GDP. All the country measures used in this study are average values between 2002 and 2017. We used averages rather than annual data since we believe it will reduce the effect of the yearly fluctuations, which might happen because of country-specific problems.

Bank Deposits to GDP: Country-level bank deposit statistics are derived from the Federal Reserve Bank of St. Louis. The value is the proportion of a country’s bank deposits to GDP. Country values are the average of 2002-2017 to eliminate the effect of annual fluctuations.

3.1.2. Independent Variables

Cultural Descriptive Practices: Data regarding societal culture, namely performance orientation, institutional collectivism, and uncertainty avoidance, were obtained from the GLOBE study (House et al., 2004). Sample items for the societal practices

scales include "In this society, orderliness and consistency are stressed, even at the expense of experimentation and innovation (uncertainty avoidance)"; "In this society, teenaged students are encouraged to strive for continuously improved performance (performance orientation)", and "The economic system in this society is designed to maximise (1) individual interests and (7) collective interests (institutional collectivism)". "In this society, people place more emphasis on (solving current problems: 1; planning for the future: 7) (Future orientation)." (For more detailed information about the GLOBE scales and the methodology used to develop them, see Hanges & Dickson, 2004; House & Hanges, 2004).

3.1.3. Control Variables

World Governance Index (WGI): The World Government Index is a composite of six indicators: Voice and Accountability; Political Stability; Absence of Violence and Terrorism; Government Effectiveness; Regulatory Quality; and Corruption Control. With the inclusion of the WGI variable, the political and legal approach developed by Pagano and Volpin (1999) and La Porta et al. (1997, 1998, 2000), we could consider the development of the financial markets through these approaches. The cultural approach created by Williamson and Stulz (2000) allows us to investigate the relationship between cultural components and the banking sector and stock markets about the study's primary research issue about the GLOBE variables. According to Soumaré and Tchana (2015), stock markets have developed in countries where investors are legally protected, and administrative laws are complete. And this is why research has demonstrated the importance of the legal environment in investment decisions. In their study, Donadelli and Persha (2014) dealt with the crisis and post-crisis periods in their research. They also examined the relationship between the capital market's risk premium and WGI. In particular, they have shown that WGI can explain the movements in capital risk premiums in the stocks of industries based on consumer goods. In particular, they have demonstrated that WGI can explain the fluctuations of capital risk premiums in consumer-goods-based firms' stock prices (Kwok & Tardesse, 2006; Kaufmann et al., 2010; Donadelli & Persha, 2014; Soumaré & Tchana, 2015). When we control for WGI, we can be more confident about the relationships between cultural practices and the financial system. The data is derived from the governments.org website. The data is the average for 2002-2017 to eliminate the effect of yearly fluctuations.

4. Findings

Analysis-1

Two multiple regression analyses are applied to test our hypotheses about market capitalisation and bank deposits. The model R^2 for the market capitalisation is ,408 showing that our model has important explanatory power.

Table: 2
Regression Model Results

| Independent Variables | Dependent Variables | |
|-----------------------|----------------------------|--------------------|
| | Market Capitalization (MC) | Bank Deposits (BD) |
| <i>POpr</i> | ,926** | ,436 |
| <i>ICpr</i> | -,456* | -,070 |
| <i>UApr</i> | -,529* | -,389 |
| <i>FOPr</i> | ,149 | 0,21 |
| <i>WGI</i> | -,221 | -,576** |
| <i>Model R Square</i> | 0,408 | 0,493 |
| <i>Model F</i> | 3,578** | 5,062** |

Notes: ***: $p < 0.001$; **: $p < 0.01$; * $p < 0.5$

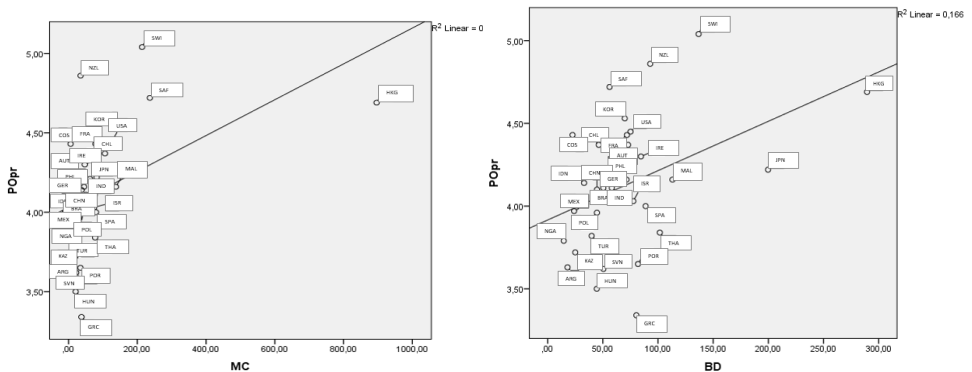
As it can be seen from Table 2, while controlling for the World Governance Index, the effect of the performance-orientation cultural practice on the market cap is significant ($p .01$). This shows that hypothesis 1 is supported. Second, Table 2 shows that the impact of institutional collectivist cultural practice on market capitalisation is significant ($p.05$). This indicates that the data also support the third hypothesis. Regarding our fifth hypothesis, the effect of the uncertainty avoidance cultural practice on market capitalisation is also supported ($p \leq .05$). Our final cultural hypothesis regarding market capitalisation was about future orientation. However, this hypothesis is not supported.

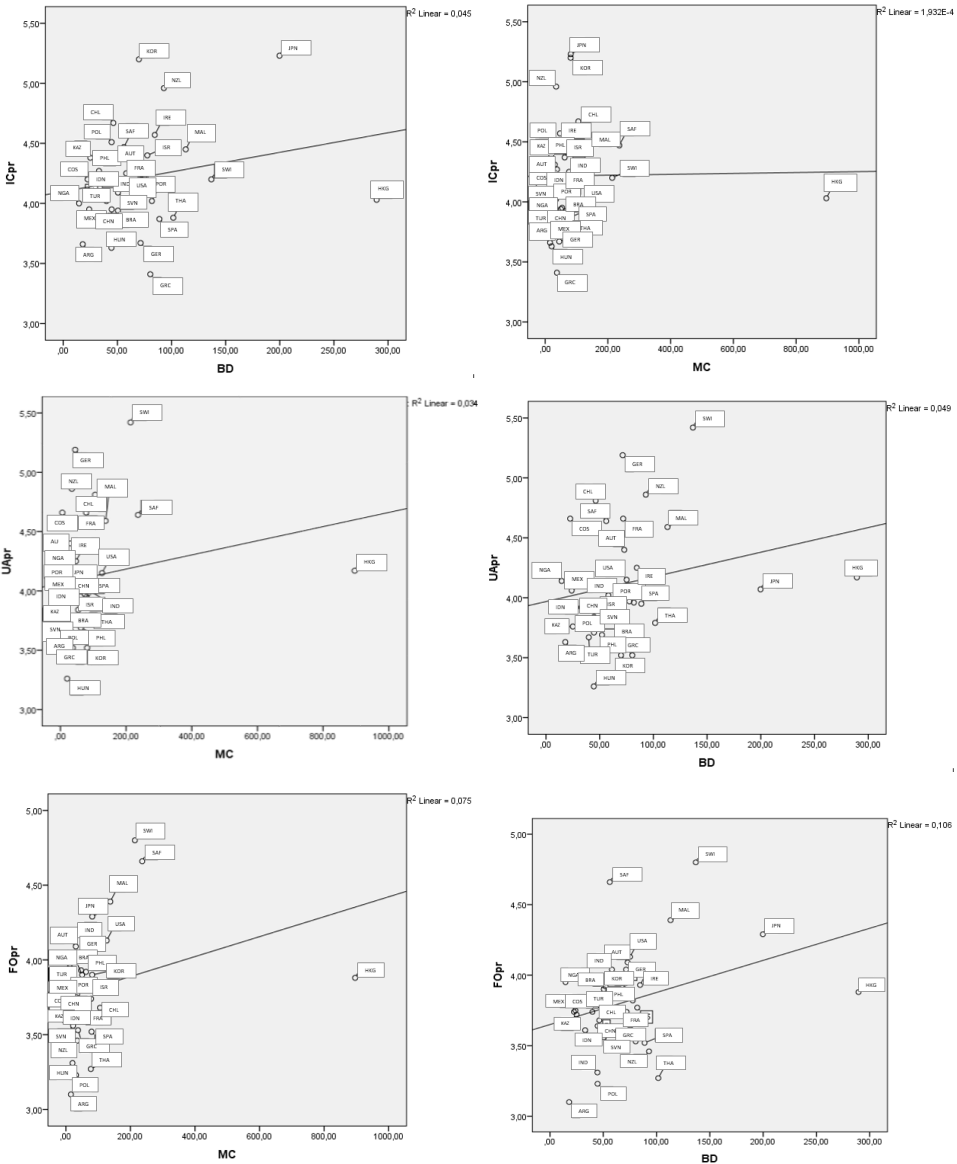
The second regression analysis is applied to test our hypotheses regarding the relationship between cultural practices and bank deposits at the national level. However, as seen in Table 2, none of the hypotheses was supported.

Analysis-2

We applied several scatter plot analyses with our variables in the model to show how the countries are grouped according to the variables.

Figure: 1
The Cultural Descriptive Practices and Financial Variables Position of the 32 Countries





In line with our hypothesis and regression results, countries such as the USA, Switzerland, and Chile are both high on performance orientation and market capitalisation. Argentina, Kazakhstan, and Slovenia are low on performance orientation and market capitalisation.

In terms of the relationship between performance orientation and bank deposits, the plot seems to challenge our hypothesis. The countries grouped as high-performance orientation countries (South Africa, USA, and New Zealand) also seem to be countries that have high bank deposit rates.

Similar to our hypothesis and significant regression results, countries such as New Zealand, Poland, and Kazakhstan have high institutional collectivism and low market capitalisation levels. And countries such as Spain, the USA, and Thailand have lower levels of institutional collectivism and higher levels of market capitalisation.

Even though our regression coefficient is insignificant regarding our hypotheses about institutional collectivism and bank deposit, countries such as New Zealand, Korea, Japan, and Ireland have high levels of institutional collectivism and bank deposit.

In our dataset, the least uncertainty-avoidant countries appear to be Thailand, the Philippines, and South Korea. The graph shows that these countries also have higher market capitalisation levels. The USA and Spain appear to be the countries with a mid-level of uncertainty avoidance and a mid-level of market capitalisation. Costa Rica, Austria, and Nigeria appear to be the countries that have higher uncertainty avoidance and lower levels of market capitalisation.

Even though the regression coefficient between uncertainty avoidance and bank deposits is not statistically significant, there are signs of groupings of countries that are compatible with our hypotheses based on the graph. Germany, New Zealand, Malaysia, and Switzerland rank well in uncertainty avoidance and bank savings. In addition, consistent with our hypotheses, countries such as Argentina and Kazakhstan have low levels of bank deposits and a release of uncertainty.

While our hypotheses regarding future orientation indicate large market capitalisation and high bank deposits, the regression analysis does not support them. The scatter plot shows that Switzerland, Malaysia, and South Africa have the highest scores for future orientation, market capitalisation, and bank deposits, respectively.

5. Conclusions and Discussions

In this research, we build an argument about the relationship between culture and national financial systems. While the effect of the legal system on national financial systems is well documented by the existing research (Boot & Thakor, 1997; La Porta et al., 1998; Rajan & Zingales, 1998; Demirgüç-Kunt & Levin, 1999), there are only two research papers that try to explain the culture and financial system linkage (see De Jong & Semenov, 2002; Kwok & Tadesse, 2006). However, as discussed in this research, culture is an important phenomenon that might influence people's investment behaviours through risk-taking attitudes and achievement motivation.

Regarding our argument, we hypothesised in our study that descriptive, cultural norms, which describe human behaviour more effectively than values (Fischer, 2006; Shteynberg et al., 2009), will have a significant role in determining national financial systems. We propose that performance orientation positively relates to a market-based financial system, whereas institutional collectivism and uncertainty avoidance will be negatively correlated. We explored how performance orientation will be negatively associated with a bank-based national financial system, whereas institutional collectivism and uncertainty avoidance will be positively related.

We tested seven theoretically developed hypotheses; a significant portion of the findings indicate strong pieces of evidence about the validity of descriptive, cultural norms regarding the market-based financial systems hypothesis. Based on the data, performance orientation positively, but institutional collectivism and uncertainty avoidance negatively relate to market-based financial systems. Even though our hypotheses about uncertainty avoidance, institutional collectivism, and bank deposit relationships are significant, our hypotheses about the relationship between future orientation, bank deposit, and market capitalisation are not; the Scatter Plot shows us some signs that support our hypotheses. We can conclude that achievement motivation and risk-taking attitudes of performance orientation norms, low achievement motivation and risk aversion attitudes of institutional collectivists, and uncertainty avoidance practices make a difference in investment decisions.

One of the practical implications of this study for policymakers is establishing a more transparent stock market system to regulate the market to reduce uncertainty and volatility and expand the coverage of individual investors in the stock market. In addition, boosting financial literacy in countries would reduce uncertainty and increase the number of stock market investors. Consequently, the country's financial system would be more conducive to economic development (Choe & Moosa, 1999). As discussed in the legal and political approaches, countries must enhance the investment climate and ensure that the regulations protect investors. In terms of the contribution of the real and financial sectors, this is the most crucial phase for economies. Results indicate that performance-oriented societies focused on maximising the benefits of individuals have developed capital markets. Societies, which are more collectivistic and uncertainty-avoidant, can establish more detailed legal systems to prevent unethical behaviour in the stock market. This reduces uncertainty and volatility and, as a result, increases market capitalisation levels.

In this research, we examined the effect of cultural practices on the financial systems at the national level using national-level data. Further research can investigate this relationship with an individual-level analysis. Culture can also be observed and measured at the individual level in the form of individual differences (Triandis, 1989). Therefore, cultural values measured at the personal level can be an important determinant of how individuals invest their savings. Research can also use scenarios that represent actual situations and measure how individuals with different cultural values act. Another further research recommendation derived from the study is to conduct a neuroscience-based financial investment study and to see how the brains of individuals respond to the same investment

risk situations from different nationalities. Future research can also cover legal, political, and cultural approaches in the same study as a determinant of this bank and market-based financial system, analyse their comparative effects on the financial systems and develop more rigorous policy implications for developing financial markets.

In terms of limitations of this study, the data we used covers 32 countries, but it is secondary data, and this study might be replicated with more recent data in the future.

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What Defines the University Choice? The Case of Higher Education in Kyrgyzstan¹

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Üniversite Tercihinin Belirleyenleri Nelerdir? Kırgızistan Yükseköğretim Örneği²

Abstract

This study analysed the effectiveness of university promotion methods and factors affecting applicants' choices. The study used a quantitative approach with a sample of 7839 university applicants. Results show that the most influential factor affecting university choice is the economic factors such as tuition fees, scholarships, etc.; nevertheless, family income is not among them. Education quality and academic staff also affect the choice. Besides, there were differences in the factors such as gender, region, family structure and secondary school background of the applicants.

Keywords : Marketing Higher Education, Decision-Making, Information Source, University Choice, Kyrgyzstan.

JEL Classification Codes : M3, I23, P46.

Öz

Bu çalışmada, üniversite tanıtım yöntemlerinin etkinliği ve öğrenci adaylarının tercihlerini etkileyen faktörler araştırılmaktadır. Araştırma nicel yöntemler yardımıyla 7839 üniversite adayı üzerinde yürütülmüştür. Sonuçlar, üniversite tercihinde en etkili faktörün öğrenim ücretleri, burs vb. ekonomik faktörler olduğunu; ancak, aile gelirinin bu faktörler arasında olmadığını ortaya koymuştur. Eğitim kalitesi ve akademik kadronun da üniversite tercihinde önemli olduğu anlaşılmaktadır. Ayrıca öğrenci adaylarının cinsiyet, bölge, aile yapısı ve mezun olduğu ortaokul türü gibi faktörlerde de farklılıklar tespit edilmiştir.

Anahtar Sözcükler : Yükseköğretim Pazarlaması, Karar Verme, Bilgi Kaynağı, Üniversite Seçimi, Kırgızistan.

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1. Introduction

Nowadays, higher education institutions (HEI) are important for applicants who try to make the right choice affecting their future and for universities that try to attract applicants in a highly competitive environment. It is continuously emphasised that analysing the image of universities is central to identifying the necessary attributes for HEIs' sustainability in this competitive environment (Pampaloni, 2010; Manzoor et al., 2020). In such a dynamic environment, applicants are now mindfully approaching HEI choice; however, it is a notably sophisticated process for them, as there are many options (Aydin, 2015).

HEIs are faced with the necessity of positioning in the increasingly competitive market and the challenge of finding eligible students (Obermeit, 2012). Therefore, universities inevitably have to consider applicants from a marketing view. Discussions about university marketing started with the emergence of private universities. Marketing was not always vital since there was a strong demand for universities, so schools were not forced to compete for a more significant number of student candidates. Only in the 2010s, the first problems in the university market were caused essentially by the situation when employers' demand for university graduates gradually decreased (Białoń, 2015). As Guilbault (2016) discussed that even though marketing in higher education is well recognised, there is an ongoing dispute on who the customer is, with many still not accepting that students might be viewed as customers and suggesting instead of continuing to reject those students are customers, to explore how to react to students as customers.

To react to higher competition universities, develop and implement enrolment management strategies to influence the size and characteristics of the students' structure. As a result, marketing is perceived as the primary function in universities, helping them get more prospective applicants (Rika et al., 2016). In this context, it is important to understand how the young generation chooses a university and what factors affect their choice.

Today in Kyrgyzstan, with a 6.4 million population, more than 160 thousand students are carrying on their studies in 73 HEIs, of which 40 are public (Ministry of Education and Science, 2021). On the other hand, approximately 50,000 students graduate from secondary education every year and become university applicants. Consequently, the increasing competition in HEIs requires Kyrgyzstani universities to design and reconsider their customer-oriented marketing strategies according to the factors affecting applicants' university choices. They especially need to pay attention to comprehend their future students' motives. However, in the study, we do not consider the tuition issue as it concerns the choice of a public university, so there are no tuition fee concerns that could affect the applicants' choice.

Therefore, to develop effective marketing strategies and to know their target group, the university administration should comprehend students' university choice reasons and paths.

Moving from these considerations, this study aims to determine what factors affect an applicant's university choice in Kyrgyzstan, Central Asia. The research findings will enable HEIs to use their resources better, improve their marketing activities, and use marketing budgets effectively (Rika et al., 2016). The data on the factors driving students' HEIs choices is important for all stakeholders like universities, government, policymakers, academicians and researchers, students, and their families in their decision-making process.

The study is organised as follows: In Section 2, related works were reviewed; in Section 3, we present the research questions. Results are given in Section 4, Section 5 covers discussions of the results, and Section 6 concludes the research outputs.

2. Related Literature

The factors affecting university choice have drawn attention all over the world. Related studies are conducted by academicians from different parts of the world. Previous studies have focused more on factors affecting the university choice of enrolled bachelor students or graduates (Lindblom-Ylänne et al., 1999; Adams & Hancock, 2000; Fraser & Killen, 2003; Manoku, 2015, van der Zanden et al., 2018, Azzone & Soncin, 2019, Manzoor, 2020). Aydın (2015) explained the university choice decision by four different models: economic, sociological, mixed, and marketing approach models. Next, the author introduced the nine main factors (reference groups, families, reputation and attributes of universities, personal characteristics, location, postgraduate job prospects, university fees, financial aid/scholarship, and information sources) that impact applicants' choices.

In the study conducted by Kallio (1995) in the USA, the factors affecting university preferences include the academic reputation of the institution, the quality, and other educational environment determinants, work-related issues, the quality and size of the program, tuition fees, financial assistance, geographic location, and campus social environment. Obermeit (2012) emphasised the complexity of the decision-making processes of freshmen and identified reputation, financial considerations, location, curriculum, others' advice, information sources, publications, social networks, campus visits, and rankings as relevant factors in applicants' university choice in Germany. Drewes and Michael's (2006) survey of 27,981 Canadian applicants showed that they consider proximity, scholarships and teaching, and level of non-academic student services. Raposo and Alves (2007) identified factors affecting university choice of 1024 surveyed students in Portugal as the reputation of the institution (education quality, quality of academic staff, the modernity of facilities and equipment, campus social life, etc.), educational offer (courses variety, the existence of actualised courses, employment opportunities, etc.), previous information about the institution, individual factors (geographic location, proximity to the family, tuition fees, friends and relatives), the influence of others (advice of parents, teachers at secondary school and friends). As Misran et al. (2012) showed, in Malaysia, the factors influencing the university and significant choice were personality fit, family and intimate environment influence, cost of study and financial support, good reputation of the university, university proximity to parents, physical facilities, and quality of academicians. Besides, career

opportunities, interests, expected salaries, and competent academicians were the reasons for the significant choice. On the other side, Manzoor et al. (2020) stated external communication and values, university ranking and reputation, tuition fee, and the cost-to-quality ratio constitute university image from the perspective of international students in Malaysia.

In a study conducted by Manoku in 10 Albanian universities in 2015 (1532 students), nine main factors were: cost of education and living expenses during education, quality of academic and administrative staff, institutional reputation, placement, and physical environment, accreditation status, individual preferences and abilities, placement of the academic unit to provide education, post-graduation facilities, general academic grade point average in high school were found to influence university preferences. Çatı et al. (2016) analysis on 1112 students across seven provinces in Turkey showed that factors affecting the university choice were: the reputation and image of the university, access to information, campus characteristics and location, sociality (sports facilities, student clubs, social facilities, the status of the university (state or private). Wilkins et al. (2018) showed that knowledge and skills play a vital role in decision-making in the UAE and China. Kalimullin and Dobrotvorskaya (2016) found that in Russia, dominant factors affecting the university choice were the high-quality faculties availability, the reputation of the university, the availability of a particular academic program, recommendations of friends or relatives, parents' requests, media coverage, infrastructure and facilities, education cost and low tuition fees.

One main factor that affects university choice is the university's information. Dao and Thorpe (2015) found several important factors when choosing a university in their research based on the views of students and graduates of Vietnamese universities. These factors include facilities (services and communications), university programs, and information about the university (offline and online).

Simões and Soares (2010), based on survey data conducted on 1641 students at a Portuguese university, explored the information sources and choice factors. The findings revealed that most respondents rated the university website among the three most used information sources, and geographical proximity is the most crucial choice factor among others. Sá et al. (2011) investigated the HEI choice type using individual-level data on first-year students in Portugal employing a bivariate probit model. Results revealed gender and proximity differences in the style of HEI choice. Also, income increase results in a willingness to get higher education (HE). Parental education also impacted student choices: parents holding a HE diploma were more likely to choose a university. Thus, a high cultural and socioeconomic background was associated with a higher probability of choosing a university education. Le et al. (2019) investigated the choice factors in Vietnam. The results indicated that future job prospects, teaching quality, staff expertise, and course content were important choice factors. Also, parents were the most influential information source for Vietnamese students.

Sianou-Kyrgiou and Tsiplakides (2011) examined the students' higher education choices with different socioeconomic backgrounds but similar performance levels in Greece. The findings prove that HE choice is a different experience for middle-class and working-class students: middle-class students tend to study in more prestigious university departments than working-class students. The authors argue that choice is a multifaceted process, the analysis of which needs to consider the general financial and societal context and the specific labour market characteristics in each country. Briggs (2006) found three main factors affecting Scottish students' decisions: academic reputation, proximity, and geographic location. In Veloutsou et al. (2004) research, information ranking was revealed as one of the factors influencing university selection. Based on the survey results conducted in the UK, Maringe (2006) emphasised that there was a consumerist approach to choosing a university. Thus, applicants pay more attention to career prospects rather than subject interest. Azzone and Soncin (2019) analysed students' choice factors from a survey of 27,504 students across 23 Italian institutions. They found multiple factors influencing students' choices: geographical proximity, regional career opportunities, reputation and ease of access.

Based on a survey of 518 students in Kurdistan-Iraq, Qasim et al. (2020) found that reputation/accreditation, quality of teaching, employability, and facility quality influenced student choices more than anything else.

A review showed that a few studies were conducted in the Central Asian region. For example, the survey by Jonbekova (2020) investigated the purpose of university education in Kazakhstan and Tajikistan from the student's point of view based on the responses of 172 undergraduate students. The author highlighted the socio-economic pressures; students' primary motivation was enhanced access to employment opportunities. Another study in Kyrgyzstan by Momunaliyeva et al. (2020) examined the perceived quality of education rather than the decision of the student's university choice. However, no comprehensive research on university marketing strategies was carried out. Thus, this study contributes to the current literature on university choice factors in three dimensions. Firstly, a considerable amount of literature has been published on the case of developed countries like the USA, Germany, Italy, the UK, Turkey, and Portugal. The current study will show research findings in the case of a lower middle-income country like Kyrgyzstan, Central Asia. Secondly, a significant part of the findings in related literature is based on data collected from students already enrolled in HE institutions, not applicants or enrollees who have not made the final decision. Thirdly, as the results of the current research show, there is a slight difference in the factors influencing decision-making in university choice. As there is an increase in student mobility, the study's results contribute to understanding the motives of youth in developing countries in the case of Kyrgyzstan. In addition, Kyrgyzstan is a country where most people are bilinguals (speaking both Kyrgyz and Russian). Thus, secondary schools also differ in the language of instruction (LoI). The problem of deficiency of textbooks in Kyrgyz affects the educational process crucially. In the study, the impact of the LoI and the type of secondary schools were also examined, contributing to the field.

3. Methodology

3.1. Research Questions

As the literature review showed, there are many factors affecting university choice. In the competitive market of HE, it is important to promote universities and define factors that may influence the decision of applicants to attract students. Therefore, the study aimed to determine information sources that help introduce HEI. In addition, it sought to define factors influencing applicants' decision to choose a particular university. During the decision-making process, applicants as consumers can turn to various resources to pick necessary information about the product or service, i.e., HEI under consideration. Information sources are found as influential factors in the choice process. Are there any significant differences between the most used information source and applicants' gender (Simões & Soares, 2010), region of residence (Obermeit, 2012), family characteristics (Constantinescu-Dobra & Coțiu, 2017) and income (Shumow et al., 1996), and secondary school type? Simões & Soares (2010) found that female and male applicants tended to refer to similar information sources when applying to an HEI.

Therefore, the following research questions are posed:

RQ1 Does a university information source affect applicants' choice?

RQ1a Does it depend on gender?

RQ1b Does it depend on the region of residence?

RQ1c Does it depend on family characteristics?

RQ1d Does it depend on secondary school types?

Another critical question is why applicants' choice fell on this particular university. Many types of research have been carried out to determine the difference between the choice of male and female applicants (López-Bonilla et al., 2012; Engin & McKeown, 2016; Mustafa et al., 2018) and its impact on the region (Aydın, 2015; Ghansah et al., 2016). Also, parents' involvement in students' choices was studied by David et al. (2003), showing that mothers are generally more involved. Therefore, the question arises of the difference in the choice of applicants with different family structures.

RQ2 Why did applicants choose this particular university?

RQ2a Does the choice of male and female applicants differ?

RQ2b Does the choice of applicants from different regions differ?

RQ2c Does the choice of applicants from families with different characteristics differ?

RQ2d Does the choice of applicants from different types of secondary schools differ?

3.2. Materials and Procedure

The target group of this study is university applicants. In four years, from 2015 to 2018, 7839 responses were collected. The survey was conducted in a paper-based form after an entrance examination and was entirely voluntarily. Collected responses were further converted into a machine-readable format. For this study, answers for these four years were filled into an SPSS file. The results showed that most university applicants are 17-18 age-old-85% of respondents belong to this age group. Traditionally, Kyrgyz families have many children; according to applicants' responses, 51.92% have 4 or more siblings, while 38% have 2 or 3 siblings. Almost one-third of all applicants-31.43%-are from the Bishkek and Chuy region, where the university is located³. 33.66% of respondents were from the northern areas of Kyrgyzstan that are geographically closer to Bishkek and, thus, to the university. Southern regions of the country that proximity is farther represented by 34.91% of respondents.

Applicants are represented mainly by graduates of general-education secondary schools -65% of all applicants. Besides, about 15% of applicants are from lyceums and gymnasium type of schools. Colleges and vocational schools are represented by less than 6% of applicants.

3.3. Factor Analysis

Questions on the effect of information sources and reasons for choosing this particular university in the questionnaire allowed multiple responses. Since there were many items in these questions, a principal component factor analysis was carried out.

How did you learn about the university?

On the question of what promotion activities carried out by the university had an impact on the choice of the university, there were 12 items. To reduce the dimension, the factor analysis was carried out. The construct resulted in eight distinct factors with factor loadings for all variables greater than 0.302. According to the results of the factor analysis, there are five main factors:

- Reference group: friends, family members and graduates,
- Secondary school teachers,
- Media: TV, newspapers, radio and social media,
- University marketing activities: vocational guidance activities, charity activities, visiting the campus,
- Advertisement: Billboards, advertisements, and occasionally.

³ Bishkek city and the Chuy region were combined since the capital city of Kyrgyzstan, Bishkek, is located in the Chuy region.

The cumulative percentage of variances explained by these five factors is 62.827.

Why did you choose this university?

On the 18 items asked to determine factors that influence the choice of this particular university, the factor analysis resulted in five distinct factors. Factor loadings for variables were in the range of .225 to .914. Based on the items, these factors were described as:

- Economic factors (includes variables: no tuition fee, learning a foreign language, scholarship, dormitory and nutrition, work opportunities abroad and career opportunities),
- Reputational factors (prestige, reputation, career expectations),
- Recommendations (of friends, family members, and other advisers),
- Quality of education and academic staff,
- The university's infrastructure (attractiveness, infrastructure, secure environment).

The cumulative percentage of variances explained by factors is 60.136.

4. Results

4.1. How Applicants Learned About the University

The first analysis of the effectiveness of university information sources showed that primarily young people learn about universities from friends, including those who are currently studying at the university or have already graduated: the mean of the "Reference group" variable was .4759, implying that almost the half of the applicants indicated peers as the primary source of information about the university. The second and the third most common ways to learn about the university were media (TV, radio and newspapers) and internet (including social media), and university marketing strategies such as vocational guidance activities, charity activities, and organisation of open days for visiting campus (Table 1).

Table: 1
Mean Differences Tests Results on How Applicants Were Informed About the University by Gender, Region and Family Structure

| Factors | Mean | Mean difference by gender | | Mean difference by region | | Mean difference by family structure | |
|---|-------|-----------------------------|------|---------------------------------------|------|---|------|
| | | $\mu_{male} - \mu_{female}$ | Sig. | I-J | Sig. | I-J | Sig. |
| The reference group (friend and family) | .4759 | -.03454 | .015 | $\mu_{South} - \mu_{Center} = .07355$ | .000 | $\mu_{both} - \mu_{no\ mother} = -.12772$ | .002 |
| Media | .1658 | -.02602 | .007 | $\mu_{South} - \mu_{North} = .07659$ | .000 | $\mu_{divorced} - \mu_{no\ mother} = -.13707$ | .006 |
| University marketing activities | .1150 | .01791 | .040 | | .070 | $\mu_{no\ father} - \mu_{no\ mother} = -.14448$ | .003 |
| Teachers | .0735 | .02511 | .000 | $\mu_{Center} - \mu_{South} = .07401$ | .000 | $\mu_{both} - \mu_{no\ mother} = -.07095$ | .029 |
| University adv. | .0349 | .00458 | .333 | $\mu_{North} - \mu_{South} = .05251$ | .000 | $\mu_{both} - \mu_{no\ mother} = -.07053$ | .006 |

Gender

The dependence of university promotion ways on the demographic characteristics of applicants showed that the male and female applicants pay attention to different sources of information. This difference was statistically significant except for the university advertisement activities. According to the test results, male applicants stated they had learned about the university from secondary school teachers and university marketing strategies. In contrast, female applicants gather information about the particular university mostly from family and friends, TV, Radio, and social media (Table 1).

Region of Residence

The university location plays a significant role in promotion activities since it is not always possible to reach applicants due to geographical location. Therefore, in this section, the ANOVA test was conducted to see if the university promotion means are effective in different regions. The division was only due to geographical distance to the university's location, and areas were symbolically encoded as southern, central, and northern parts of Kyrgyzstan.

According to the results, applicants from the south part of the country learned about the university mostly from family, friends, graduates, and teachers: the difference for the "reference group" was statistically significant between the responses of applicants from the south and central part, and south and north parts of the country (Table 1).

As for the "teachers", the difference was statistically significant between applicants who graduated from secondary schools in the south and central parts of the country. Besides, the university promotion activities are most effective for the applicants from central and north regions. Media and university advertisements reached all areas at the same level-no statistically significant difference at a 95% confidence interval was observed in the responses of applicants.

Family Background

To see the effectiveness of university promotion in families with different backgrounds, the ANOVA was carried out in three dimensions: the family structure, the number of siblings, and family income.

According to the results of the first analysis on how applicants were informed about the university, applicants with no mothers indicated a reference group as a source of information more often than others. In addition, a difference was observed in responses related to learning about the university from media: applicants from complete families indicated media, university marketing strategies, and advertisement less as a source of information about the university than those with no mother (Table 1).

The number of siblings played a role in cases where applicants had four and more siblings: they tend to indicate their reference group as the source where they had learned about the university, and the difference was statistically significant in responses of those who had two siblings and those who had four and more siblings. In addition, they paid less attention to university marketing activities and advertisements.

Family income was also indicated as one of the factors defining acquaintance with universities (Sedahmed & Noureldien, 2019); however, according to the current study, no difference was observed in this factor among representatives of different income groups.

Type of School

In Kyrgyzstan, several types of secondary schools can award a diploma of secondary school grade. These schools are the general-education secondary schools, gymnasiums, lyceum-type schools, and vocational secondary schools and colleges. ANOVA was carried out to see if the distribution of information about the university depends on the type of secondary school that students graduated from.

According to the analysis results, the source where applicants get information about the university differs depending on the type of school. Thus, applicants who graduated from vocational schools get information from the reference group more often than from other schools. Teachers in vocational schools and lyceum types of schools were also a source of information more often than in general-education secondary schools and gymnasiums. The same can be said about university marketing strategies (Table 2).

Table: 2
ANOVA on How Applicants Were Informed About the University by Type of Secondary Schools and Language on Instructions at Secondary Schools They Graduated From

| Factors | Type of secondary school | | Language on instructions at secondary school | |
|---------------------------------|---|------|--|------|
| | Mean Difference (I-J) | Sig. | Mean Difference (I-J) | Sig. |
| Reference group | $\mu_{vc.sch.} - \mu_{gen.sch.} = .105^*$ | .001 | $\mu_{kg} - \mu_{ru} = .078$ | .000 |
| | $\mu_{vc.sch.} - \mu_{gym.} = .125^*$ | .000 | $\mu_{kg} - \mu_{tr} = .205$ | .001 |
| | $\mu_{vc.sch.} - \mu_{lyc.} = .110^*$ | .003 | | |
| Media | $\mu_{gen.sch.} - \mu_{lyc.} = .039^*$ | .018 | $\mu_{kg} - \mu_{tr} = .105$ | .037 |
| | | | $\mu_{ru} - \mu_{tr} = .131$ | .005 |
| | | | $\mu_{kg} - \mu_{en} = .101$ | .023 |
| University marketing activities | $\mu_{lyc.} - \mu_{gen.sch.} = .085^*$ | .000 | $\mu_{ru} - \mu_{kg} = .025$ | .032 |
| | $\mu_{lyc.} - \mu_{gym.} = .071^*$ | .000 | $\mu_{tr} - \mu_{kg} = .150$ | .000 |
| | $\mu_{vc.sch.} - \mu_{gen.sch.} = .080^*$ | .000 | $\mu_{en} - \mu_{kg} = .179$ | .000 |
| | $\mu_{vc.sch.} - \mu_{gym.} = .065^*$ | .005 | $\mu_{tr} - \mu_{ru} = .125$ | .001 |
| | | | $\mu_{en} - \mu_{ru} = .154$ | .000 |
| Teachers | $\mu_{lyc.} - \mu_{gen.sch.} = .099^*$ | .000 | $\mu_{tr} - \mu_{kg} = .207$ | .000 |
| | $\mu_{lyc.} - \mu_{gym.} = .105^*$ | .000 | $\mu_{en} - \mu_{tr} = .222$ | .000 |
| | $\mu_{vc.sch.} - \mu_{gen.sch.} = .069^*$ | .000 | $\mu_{tr} - \mu_{ru} = .218$ | .000 |
| | $\mu_{vc.sch.} - \mu_{gym.} = .075^*$ | .000 | $\mu_{en} - \mu_{ru} = .233$ | .000 |
| University advertisements | | .355 | $\mu_{ru} - \mu_{kg} = .017$ | .006 |

Compared to graduates of other types of schools, students from general-education secondary schools indicated media more often as a source where they had learned about the

university. As a final point in this analysis, no statistically significant difference was found in applicants' responses concerning university advertisements.

Unlike many universities in Kyrgyzstan, where education is mainly carried out in the official language of the country-Russian, in the university where the current study was carried out, the languages of instruction are Kyrgyz and Turkish. As for the LoI in secondary schools, classes can be in either Kyrgyz or Russian. In addition, some schools provide education in foreign languages such as English, Turkish, French, Chinese, etc. Therefore, in the following analysis, the distribution of information about the university in schools with different languages of instruction was conducted (Table 2).

According to the analysis results, applicants who graduated from the schools with the Kyrgyz LoI referred to friends and family more often than those who graduated with Russian and Turkish LoI. Moreover, graduates of schools where education is in foreign languages indicated as an information source their teachers more often than others did. In addition, applicants from schools with local (Kyrgyz and Russian) language instruction indicated media as a source more often and university marketing strategies and advertisements in fewer cases than those who study in a foreign language at secondary school.

4.2. University Choice by Demographic Characteristics

Gender

In this section, the dependence of the decision-making while choosing a university was analysed on the demographic background of applicants (Table 3). The frequency count on the factors affecting applicants' choice showed that the two most important factors when choosing the university were economic factors and quality of education and academic staff: the mean of the "economic factors" variable was .6878, and of the "quality of education and academic staff" variable-.6152. These variables are followed by reputational factors ($\mu = .3143$), recommendations ($\mu = .2618$), and the least important infrastructure ($\mu = .1861$).

Table: 3
T-Test on the Reason of Choice by Gender

| Factors | Mean | Mean Difference | Sig. |
|---|-------|--------------------------------------|------|
| Economic factors | .6878 | | .725 |
| Quality of education and academic staff | .6152 | $\mu_{female} - \mu_{male} = .06698$ | .000 |
| Reputational factors | .3143 | $\mu_{male} - \mu_{female} = .04003$ | .006 |
| Recommendations | .2618 | $\mu_{male} - \mu_{female} = .02747$ | .022 |
| Infrastructure | .1861 | | .201 |

The test whether these factors affect the decision-making, independent samples t-test was conducted. According to the results, male applicants pay more attention to the university's reputation and recommendations than females. A statistically significant difference was also observed in the impact of the quality of education, and academic staff-female students indicated this factor more often than male applicants did. No difference was found in the effects of economic factors (i.e., no tuition fee, learning a foreign language,

scholarship, dormitory and nutrition, work opportunities abroad and career opportunities) were necessary for both male and female applicants; and infrastructure (attractiveness, infrastructure, environment) was the least important factor while choosing a university.

Region of Residence

The ANOVA on the dependence of decision-making factors on the region of residence showed that the quality of education had more impact on the decision of applicants from the northern part of the country. Applicants from central regions indicated the university reputational factors as a factor more often than applicants from southern and northern parts. Yet, the difference was also significant in applicants' responses from these two regions, with youth from the north being more concerned with the university's reputation. Recommendations and university infrastructure were more important for representatives of the southern regions.

Table: 4
ANOVA on Reasons of Choice by Region of Residence

| Factors | Mean | Mean Difference (I-J) | Sig. |
|---|-------|---------------------------------------|------|
| Economic factors | .6878 | | .059 |
| Quality of education and academic staff | .6152 | $\mu_{North} - \mu_{Center} = .04800$ | .004 |
| | | $\mu_{North} - \mu_{South} = .04632$ | .003 |
| Reputational factors | .3143 | $\mu_{Center} - \mu_{North} = .09010$ | .000 |
| | | $\mu_{Center} - \mu_{South} = .17730$ | .000 |
| Recommendations | .2618 | $\mu_{North} - \mu_{South} = .08720$ | .000 |
| | | $\mu_{North} - \mu_{Center} = .05089$ | .001 |
| Infrastructure | .1861 | $\mu_{South} - \mu_{Center} = .08755$ | .000 |
| | | $\mu_{South} - \mu_{North} = .03666$ | .022 |
| | | $\mu_{South} - \mu_{Center} = .05200$ | .000 |
| | | $\mu_{South} - \mu_{North} = .04436$ | .002 |

As for the economic factors, applicants from all regions indicated them as the most critical factor defining their choice. Table 4 shows the mean differences for the cases where they were statistically significant at a 95% confidence interval.

Family Background

Similar to the analysis of university promotion means, the impact of family background on the choice of applicants was tested in three dimensions: the family structure of applicants, the number of siblings, and family income.

According to the results of the ANOVA on how the family structure impacts applicants' decision to choose a particular university, the applicants who have no mothers indicated the university infrastructure, quality of education and academic staff as main factors more often than applicants from other groups. The difference was also statistically significant in responses of applicants without mothers and those from complete families on the economic factors- the formers indicated economic factors less often (Table 5).

Table: 5
ANOVA on Reasons of Choice by Family Structure and Number of Siblings

| Factors | Family structure | | Number of siblings | |
|---|---|------|--------------------------|------|
| | Mean Difference (I-J) | Sig. | Mean Difference (I-J) | Sig. |
| Economic factors | $\mu_{both} - \mu_{no\ mother} = -.192$ | .005 | | .058 |
| Quality of education and academic staff | $\mu_{both} - \mu_{no\ mother} = -.142$ | .000 | | |
| | $\mu_{divorced} - \mu_{no\ mother} = -.159$ | .000 | | .157 |
| | $\mu_{no\ father} - \mu_{no\ mother} = -.160$ | .000 | | |
| Reputational factors | | .185 | $\mu_1 - \mu_2 = .100^*$ | .006 |
| | | | $\mu_1 - \mu_3 = .171^*$ | .000 |
| | | | $\mu_2 - \mu_3 = .120^*$ | .000 |
| | | | $\mu_3 - \mu_4 = .072^*$ | .000 |
| Recommendations | | .318 | | .310 |
| Infrastructure | $\mu_{both} - \mu_{no\ mother} = -.133$ | .000 | | |
| | $\mu_{divorced} - \mu_{no\ mother} = -.112$ | .003 | | .067 |
| | $\mu_{no\ father} - \mu_{no\ mother} = -.138$ | .000 | | |

The differences in the impact of university reputation and recommendations were not statistically significant. On the other hand, the importance of the university was a less defining factor for the applicants who came from families with more children.

As for the difference in the impact of the factors on the university choice of applicants with different family incomes, the only statistically significant difference was found in responses of applicants whose income is less than 20000 KGS (about 280 US dollars). That is, applicants whose family income was less stated that the reputational factors were important for choosing this university less often than their peers from other groups. However, this difference was insignificant in the group with income lower than 20000 KGS and higher than 50000 KGS (approximately 700 US dollars).

The impact of economic factors, infrastructure, quality of education and academic staff, reputation and status of the university, and recommendations were similar in all groups of respondents.

Type of School

ANOVA was carried out to see if the choice of university depends on the type of secondary school students graduated from. According to the results, graduates of the general-education secondary schools pay less attention to the economic factors and infrastructure of the university when deciding on graduates of lyceums and vocational schools. In addition, they indicated the university's reputation less often as a factor in choosing the university than their peers who graduated from other types of schools. The difference in the role of infrastructure was also observed in the choice of applicants who graduated from gymnasiums, lyceums, and vocational schools (Table 6).

Table: 6
ANOVA on the Reason of Choice by Type of Secondary Schools and Language on Instructions at Secondary Schools, They Graduated From

| Factors | Type of secondary school | | Language on instructions at secondary school | |
|---|---------------------------------------|------|--|------|
| | Mean Difference (I-J) | Sig. | Mean Difference (I-J) | Sig. |
| Economic factors | $\mu_{tyc.} - \mu_{gensch.} = .117$ | .000 | $\mu_{ru} - \mu_{kg} = .097$ | .001 |
| | $\mu_{vcsch.} - \mu_{gensch.} = .175$ | .001 | | |
| Quality of education and academic staff | $\mu_{ordsch.} - \mu_{gym.} = .067$ | .000 | | .068 |
| | $\mu_{tyc.} - \mu_{gym.} = .080$ | .001 | | |
| | $\mu_{vcsch.} - \mu_{gym.} = .100$ | .003 | | |
| | $\mu_{gym.} - \mu_{gensch.} = .127$ | .000 | | |
| Reputational factors | $\mu_{tyc.} - \mu_{gensch.} = .134$ | .000 | $\mu_{ru} - \mu_{kg} = .149$ | .000 |
| | $\mu_{vcsch.} - \mu_{gensch.} = .138$ | .000 | $\mu_{tr} - \mu_{kg} = .186$ | .006 |
| | | | | |
| Recommendations | | .080 | $\mu_{kg} - \mu_{ru} = .058$ | .000 |
| Infrastructure | $\mu_{tyc.} - \mu_{gensch.} = .076$ | .000 | $\mu_{kg} - \mu_{ru} = .048$ | .000 |
| | $\mu_{vcsch.} - \mu_{gensch.} = .116$ | .000 | $\mu_{en} - \mu_{kg} = .129$ | .003 |
| | $\mu_{tyc.} - \mu_{gym.} = .108$ | .000 | $\mu_{tr} - \mu_{ru} = .123^*$ | .021 |
| | $\mu_{vcsch.} - \mu_{gym.} = .149$ | .000 | $\mu_{en} - \mu_{ru} = .176^*$ | .000 |

Applicants who came from gymnasiums indicated the quality of education and academic staff working for the university as an important factor less often than others; the differences between this group of applicants and other groups were statistically significant.

The test on the dependence of applicants' choice on the LoIs in the secondary schools showed that economic factors and recommendations for students who studied in Kyrgyz were less critical than those who graduated from secondary schools with the Russian LoIs. The same situation was observed on the “reputational factors” variable. Here, the difference in impact was also found between this group of students and students who attended schools with the Turkish LoI (Table 6).

Graduates of secondary schools with foreign LoIs (Turkish, English, and others) are more inclined to choose universities with better infrastructure. The difference was significant between these groups of applicants and applicants from schools with Kyrgyz and Russian LoIs.

5. Discussions

As Chapleo & O'Sullivan (2017) emphasised that disputes around the marketisation of HE are timely and considerable, and many topics like HE branding, corporate communication, the student voice, and corporate reputation appear at the top levels in universities across the world.

The study results showed five influential sources of information about universities in Kyrgyzstan. Almost half of the applicants learn about universities from their families, friends, and graduates. The second and the third most common ways to learn about the university were media and university marketing strategies such as vocational guidance activities, charity activities, and the organisation of open days for visiting campus. These results go in line with findings obtained in Portugal; both Kyrgyzstani and Portuguese applicants indicated students and graduates as the primary information source about

universities (Simões & Soares, 2010) and obtained from the USA, where American applicants precise their decision-making process after physically visiting a university (Pampaloni, 2010: 38).

In some earlier research, a prospectus was the most influential source of information (Briggs, 2006), followed by open days and websites. Yet, mass media always significantly promoted universities (Liu et al., 2019). Unlike these findings, according to the current study, digital sources and university marketing strategies (including open days and campus visits) served as a source of information to more applicants than advertisements and brochures. As Eger et al. (2020) state that nowadays, most universities are aware of the need for communication with applicants and current students through social networks, and it is no surprise that social network sites represent one of the most common forms of socio-cultural interaction, in particular for the young generation. In support of this, Bonilla et al. (2019) suggested that taking into consideration these trends in changing preferences by applicants, social media administrators must be diligent in communication management and take into account the habits of their target audience, i.e., future students.

As for the factors affecting university choice, the decision-making process among Kyrgyz university applicants was determined by five main factors. Economic factors (no tuition fee, learning a foreign language, scholarship, dormitory and nutrition, employment opportunities abroad and career opportunities), education quality, and academic staff were the most significant when choosing a university. Contradictory, for Kurdistan-Iraq applicants cost of the study, was not seen to be highly influential toward their choice (Qasim et al., 2020). In studies conducted among Italian youth, the economic factors were at the 5th position out of 8 factors. The quality of education was one of the main factors affecting choice in Scotland (Briggs, 2006) and Russia (Kalimullin & Dobrotvorskaya, 2016). The same results were obtained in Vietnam (Le et al., 2019); it is worth mentioning that Vietnam and Kyrgyzstan are at the same income level. Thus, given the middle-low-income level of Kyrgyzstan, the economic factor becomes one of the essential factors influencing applicants' choices. The difference was also in the reputational factors and recommendations, which affected the choice of about 30% of applicants. In contrast, this factor was the second most crucial factor in the Italian context (Azzone & Soncin, 2019). The universities' infrastructure was the least important factor in Kyrgyzstan, with less than 20% of applicants indicating it. According to a study in Vietnam, university facilities and infrastructure were also less critical factors (Le et al., 2019). However, in the case of Russia, this factor was middle-weighted (Kalimullin & Dobrotvorskaya, 2016).

When looking at the gender differences, in the study by Malaysian (Misran et al., 2012) and German (Obermeit, 2012) researchers, gender had to impact on the decision-making factors that affect university choice. On the other hand, in the study by Moogan and Baron (2003) in the UK, the difference was found in male applicants who were introduced to universities by parents more often than female applicants. The current study showed that in Kyrgyzstan, mostly male applicants have learned about the university from teachers and university marketing strategies (vocational guidance activities, charity activities, visiting

campus). In addition, male applicants' decision to choose a particular university was based generally on corporate reputation and recommendations. Although the study's results in Scotland also revealed a difference in university reputation and quality of faculty factors influencing the choice of university, with male applicants being more inclined to these factors, these differences were slightly significant (Briggs, 2006). Moreover, according to this study, female applicants tend to attribute equal importance to factors like male peers. It contradicts the findings by Qasim et al. (2020) obtained in Kurdistan-Iraq, where female students displayed less importance in most of the factors than male students.

Another dimension of the current research was on the residential differences of applicants in terms of information sources and decision-making. Results showed that university promotion was more effective in Kyrgyzstan's central and northern parts. Yet, in southern regions, applicants decide about university choice based on the recommendations; therefore, the marketing strategies in the south can differ from those in central and northern parts of the country by enlarging the reference group.

As for the family structure of applicants, both in the way of learning about the university and in factors that influenced applicants' choice of university, for applicants who had no mother, the impact of economic factors, quality of education and infrastructure was less important. The number of siblings was significant in the influence of reputational factors: there more siblings, the less reputation was important.

As mentioned above, secondary schools in Kyrgyzstan differ by the LoI, and by types. The languages of instruction are mostly Kyrgyz and Russian; however, in the last two decades, schools with foreign languages of instruction emerged. As for the school types, ordered by the difficulty of the programs, they are divided into general-education secondary schools, gymnasiums (that is, schools with some additional classes), lyceum-type schools (i.e., schools with a focus on some disciplines) and vocational secondary schools and colleges (Educational Standards, 2004). In getting information about the university, graduates of vocational schools mainly indicated the reference group (friends, current students, graduates, and family) and teachers. Similar results were presented by Constantinides & Stagno (2011: 21) in the case of the Netherlands; Al-Fattal and Ayoubi (2013: 214-5) in the case of Syria, and Engin and McKeown (2016: 10) in the case of the United Arab Emirates, where they expressed that advises from family (sometimes very insistent) and friends go on playing an essential role in student's choice of university.

In addition, results showed that those who study in schools with Kyrgyz LoI tend to discuss the university with a close reference group (mostly parents), while those who study in schools with foreign LoI indicate teachers more often as a source of information. This implies that youth who study in Kyrgyz schools are more traditional, as Kyrgyz culture is generally built on respect for elders. The same result was true in the case of Vietnamese youth (Le et al., 2019). Graduates of vocational schools and lyceums are more inclined to pay attention to all factors than graduates of public education schools. Thus, their choice is

more conscious. Results showed the same tendency exists in schools with the LoI other than local (Kyrgyz and Russian) languages.

Results of findings on the secondary school type and LoI imply that general-education secondary schools are less effective in further career guidance for their students. In addition, considering the evidence provided by the current study, administration in schools with the Kyrgyz LoI should review their teaching policy and approach, as it further affects the decision-making on the choice of the university among secondary school graduates as well.

6. Conclusion

The choice of university is a very complex and multifactorial process that significantly affects the future of applicants. In Kyrgyzstan, with a 6.4 million population (NSC KR, 2019), there are 62 universities. Thus, HEIs in the country are functioning in a very competitive environment. The current study presents evidence of the diversity of information sources about universities and factors that drive decision-making on the choice among various universities.

To address the issue of attracting students and making better marketing strategies, the results of the current study suggest focusing on shaping the so-called "Reference group" since most of the applicants' indicated peers as the primary source of information about the university. In addition, universities should focus on traditional and social media and other university marketing strategies such as vocational guidance activities, charity activities, and the organisation of open days for visiting campus.

As for the factors driving students' decision-making, HEIs should consider economic factors such as tuition fees and scholarships. These factors are important for all income class families. Universities should also pay attention to increasing the education quality and performance level of academic staff, affecting the number of university applicants. Besides, there were differences in the factors such as gender, region, family structure and secondary school background of the applicants.

Results suggest that the country's economic development level plays a more critical role in choosing a university than the shared historical background. Further studies focusing on the change of factors affecting applicants' choices over the years are expected. In addition, students' choice by academic achievements would also contribute to the fields. The research also highlights the importance of further studies addressing how to evaluate university reputation in some less developed countries. In addition, in the literature, the effect of the LoI, type of secondary schools, and the family background of applicants on their choice of university was rarely taken into account; thus, the study fills this gap.

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The Mediating Role of Organisational Cynicism on the Relationship Between Technostress and Job Performance: A Research on Teachers

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Teknostres ve İş Performansı İlişkisinde Örgütsel Sinizmin Aracılık Rolü: Öğretmenler Üzerinde Bir Çalışma

Abstract

This study's primary purpose is to examine organisational cynicism's mediating role in the relationship between technostress and job performance. Data are obtained from 234 teachers working in public and private schools in Turkey. In the study, correlation and regression analyses have been performed to determine the relationships and effects between variables, and the structural equation model has been used to verify the scales of the variables. In addition, the mediation role in the study has been examined with the bootstrap test in the Process module. Findings show that the validity and reliability of the scales are ensured by the results of commonly used validity and reliability analysis methods. Additionally, technostress and organisational cynicism decrease job performance and technostress significantly increase organisational cynicism. Further mediation analysis reveals that organisational cynicism partially mediates the relationship between technostress and job performance.

Keywords : Technostress, Job Performance, Organisational Cynicism.

JEL Classification Codes : M10, M12, M19.

Öz

Bu çalışmanın temel amacı, teknostres ve iş performansı arasındaki ilişkide örgütsel sinizmin aracılık rolünü incelemektir. Veriler Türkiye'de resmi ve özel okullarda görev yapan 234 öğretmenden elde edilmiştir. Çalışmada korelasyon ve regresyon analizleri ile değişkenler arası ilişkiler ve etkileri belirlenmiş, yapısal eşitlik modeli ile de ölçeklere doğrulayıcı faktör analizi uygulanmıştır. Ayrıca, çalışmada aracılık rolü Process modülünde önyükleme testi ile incelenmiştir. Bulgular, yaygın olarak kullanılan geçerlik ve güvenirlik analiz yöntemlerinin sonuçlarıyla ölçeklerin geçerlilik ve güvenirliğinin sağlandığını göstermektedir. Bulgular, teknostres ve örgütsel sinizmin iş performansını azalttığını ve teknostresin örgütsel sinizmi önemli ölçüde artırdığını göstermektedir. Daha ileri aracılık analizi, teknostres ve iş performansı arasındaki ilişkide örgütsel sinizmin kısmi aracılık rolü olduğunu ortaya koymaktadır.

Anahtar Sözcükler : Teknostres, İş Performansı, Örgütsel Sinizm.

1. Introduction

People are devoting more and more to jobs that provide a positive identity and position in the social hierarchy or stratification (Ashforth & Mael, 1989). Thus, the work gains importance not only in economic but also in psychological terms, and people can experience stress when they cannot cope with the demands of the workplace (Chandra et al., 2019). Job stress may engender some undesirable outcomes for the individual and ultimately lead to negative consequences for the organisation since stress usually results in loss of motivation, absenteeism, decrease in the quality of performance and efficiency (Devi & Rani, 2016). Though technology is generally assumed to increase efficiency, the effort to understand its complexity (Chandra et al., 2019), the additional workload (Ardiansyah et al., 2019) and the speed of technology and mismanaged change process (Türen et al., 2015; Stich et al., 2018) may cause technostress in organisations. The Transaction Theory of Stress (Lazarus & Folkman, 1984; Cooper et al., 2001) has provided the basis for the theoretical conceptualisation of technostress for several studies (Ragu-Nathan et al., 2008). According to the transactional approach, stress emerges as a structure that contains a relationship between stressor and strain (the individual's response to stressors) (Cooper et al., 2001). In this context, in workplace stress studies, stressors are events, demands, stimuli or conditions such as role overload and role conflict that an individual encounters in the work/organisational environment (Cartwright & Cooper, 1997; McGrath, 1976; Cooper et al., 2001); strain is individuals' response as job dissatisfaction, low commitment and job performance (Jackson & Schuler, 1985; Kahn & Bysosiere, 1992). Job control and social support systems that organisations can provide to protect employees from the adverse effects of workplace stress are expressed as situational factors (Karasek, 1979). More recently, technology in general and information and communication technologies, in particular, have emerged as a new stress-causing condition (Coover et al., 2005) and formed the focus of technostress studies which have revealed that high technostress in an organisation usually causes low job performance (Jena, 2015; Ragu-Nathan et al., 2008; Tarafdar et al., 2007; Tarafdar et al., 2011).

Though all organisations embody varying degrees of stress, teaching is among the most stressful professions (Greenglass & Burke, 2003; Kyriacou, 2001; Klassen et al., 2009). For teachers who experienced stress due to reasons such as reluctant students, discipline problems, work overload, and exposure to frequent changes (Kyriacou, 2001; Boyle et al., 1991) in the past; the use of technology as an integral part of the educational processes has become a new stressor (Al-Fudail & Mellor, 2008) due to its complex structure, (Miles & Perreault, 1976; Chandra et al., 2019) and additional workload (Weil & Rosen, 1999; Ardiansyah et al., 2019). On the other hand, in today's environment, where the scope of information, the speed and the way of access to information have all changed, the goal of schools, as an education organisation, is to train individuals equipped with the skills to reach and use technology effectively (Sert et al., 2012). In the process of integrating technology into education, several reasons, such as lack of individual competency, insufficiency of technical support and time and health problems (Al-Fudail & Mellor, 2008; Syvänen et al., 2016; Çoklar et al., 2016; Efilti & Çoklar, 2019; Effiyanti & Sagala, 2018) can trigger

technostress in teachers in some cases. Besides, technostress studies on teachers mostly seem to be limited to the matters such as the evaluation of the existing situation, the reasons for technostress and strategies to buffer or prevent it (Al-Fudail & Mellar, 2008; Syvänen et al., 2016; Çoklar et al., 2016; Efiltili & Çoklar, 2019; Effiyanti & Sagala, 2018).

The negative sequences of stress and unhappiness of the employees in the organisations are not limited to performance and can further lead to organisational cynicism, which causes employees to engage in several negative attitudes and behaviours toward their organisations (Dean et al., 1998; Nafei, 2013). The transactional theory of stress assumes that a significant amount of strain, such as being overloaded, may lead employees to feel their social exchange with the organisation they work for is inequitable or unfavourable and thus, they may think that they are being exploited by their organisation (Banks et al., 2012). Additionally, social exchange theory argues that implicit obligations and trust constitute the basis of social exchange and individuals who enjoy favourable benefits and treatments in their organisations tend to feel obligated to repay these favours with positive job outcomes, such as higher performance levels and lower levels of turnover intentions in the workplace (Karatepe & Ngeche, 2012; Abugre, 2017; Martin, 2011). Accordingly, caused by the strain and unfavourable circumstances in the work life of the employees, organisational cynicism deteriorates job performance (Andersson & Bateman, 1997; Dean et al., 1998; Johnson & O'Leary-Kelly, 2003; Chiaburu et al., 2013). Considering that the primary purpose of education is to carry the society forward through teaching and preparing individuals, who are the building blocks of society for the future, we think it is meaningful to explore the effect of teachers' technostress level on their cynic behaviours and job performances.

In the literature, there are several studies examining the relationship between technostress and job performance in different occupational groups (Ragu-Nathan & Ragu-Nathan, 2007; Jena, 2015; Tarafdar et al., 2011) and organisational cynicism and job performance (James, 2005; Candan, 2013; Andersson & Bateman, 1997; Dean et al., 1998; Johnson & O'Leary-Kelly, 2003; Chiaburu et al., 2013) and it has been revealed that both technostress and organisational cynicism can contribute to poor job performance. On the other hand, though there are studies indirectly dealing with the relationship between technostress and organisational cynicism (Chiaburu et al., 2013; Abraham, 2000; James, 2005; Cartwright & Holmes, 2006), limited research available in the literature directly examines the relationship of the variables in question (Çelik & Özdemir, 2016). In this sense, for example, Chiaburu et al. (2013) reveal that the strain experienced by employees at the workplace results in organisational cynicism (Chiaburu et al., 2013). In this context, since the strain is an individual's response to stressors, technostress, a new type of job stress, can be assumed to be an antecedent of organisational cynicism. Similarly, based on the thesis that job stress and workload are significant predecessors to organisational cynicism (Abraham, 2000; James, 2005; Cartwright & Holmes, 2006), the results of technostress such as job stress and work overload are thought to be able to cause organisational cynicism. On the other hand, the study available in the literature directly on the relationship between technostress and organisational cynicism, conducted on bank employees, concludes that technostress significantly increases organisational cynicism (Çelik & Özdemir, 2016). Since

a few studies explore this relation, we think it should be examined in different sectors and professions. Besides, the literature could not reach an integrated study of three variables for any occupational group.

In the light of the studies and approaches discussed above, the primary purpose of this study is to explore the mediating role of organisational cynicism on the relationship between technostress and job performance. In this respect, it is considered that our study's integrative approach can contribute significantly to the literature. Moreover, several recommendations, in the light of the findings, are presented for the policy and strategy makers of the educational institutions, human resources departments and researchers at the end of the study.

2. Conceptual Framework

2.1. Job Performance

The survival of organisations mostly depends on the performance of human resources (Onay, 2011). These actions and behaviours of employees may either have productive features bringing the organisation closer to its goals, or they may also have negative features estranging the organisation from its goals (Hunt, 1996). Job performance is employees' measurable behaviours and efforts contributing to organisational goals (Visweswaran & Ones, 2000). Job performance is often addressed using a two-dimensional concept as task performance and contextual performance (Motowidlo, 2003; Motowidlo & Van Scotter, 1994). Task performance traditionally refers to the duties and responsibilities in the formal job description (Griffin et al., 2007). Contextual performance, though not required to be included in the official job description, is the set of voluntary behaviours that can contribute to the organisation's overall success and positively impact the social and psychological environment (Motowidlo et al., 1997; Onay, 2011). While job experience can determine the task performance, the employee's personality type can influence the contextual performance (Motowidlo & Van Scotter, 1994). Many factors such as personality, motivation, organisational climate, workload and job stress affect job performance (Barrick et al., 2001; Barrick et al., 2002; Brown & Leigh, 1996; Johari et al., 2018; Devi & Rani, 2016). Along with the hegemony of new technologies in both private and work life, technostress has become one of the crucial factors determining job performance (Jena, 2015; Tarafdar et al., 2007). Technology that brought serious changes in different domains of life, especially in trade, communication and banking, and has also led to radical changes in individuals' behaviour and organisational structures and processes (Pamuk et al., 2012). These changes in different societal layers have also affected educational systems. In this context, teaching as a profession has social, cultural, economic, scientific and technological dimensions and requires professional training (Yalın, 2002). Although the teacher's technology knowledge is considered a necessary and important component among his professional competencies (Mishra & Kohler, 2006), the adaptation problem between teacher and technology that is expected to be integrated into the teaching process can lead to technostress for some teachers (Al-Fudail & Mellar, 2008; Lim, 2012; Çoklar et al., 2016). Besides, several studies revealed

that technostress might have a negative impact on job performance (e.g., Tarafdar et al., 2007; Tarafdar et al., 2015). At this point, it is thought that technostress which can lead to negative results for individuals and organisations (Gaudioso et al., 2017), should be examined further in the context of teachers.

2.2. Technostress and Job Performance

Providing the foundation for several studies, The Transaction-Based approach explains stress as a physical and psychological response to situations that the individual perceives as threatening (Lazarus & Folkman, 1984; Cooper et al., 2001). In other words, stress is an adaptive response to external influences to balance their physical, psychological and behavioural impacts (Luthans, 1995). It describes the phenomenon of stress with three main components: stressors, strain and situational factors. Stressors are events, demands, stimuli, or conditions that individuals encounter in the workplace and feel stressed (Cartwright & Cooper, 1997). These conditions refer to two broad types of role-related stressors, including role ambiguity and role conflict (Kahn et al., 1981; Rizzo et al., 1970) and task-related stressors referring to task characteristics that may result in stress such as task difficulty and ambiguity (McGrath, 1976). Referring to the behavioural, psychological and physiological consequences of stress experienced by individuals (Cooper et al., 2001), strain occurs when individuals are exposed to either role-related or task-related stressors and manifest itself as outcomes such as reduced productivity, job dissatisfaction (Jex & Beehr, 1991) and task performance (Cooper et al., 2001). Situational factors are organisational mechanisms that reduce stressors and mitigate their effects (Cooper et al., 2001). They include social support, role redesign, autonomy, control, and practices such as personnel policy changes (Jimmieson & Terry, 1998), social support, stress management training, counselling, and information sharing (Davis & Gibson, 1994). In the most general sense, stressors increase strain, and situational factors may reduce both strain and the adverse effects of stress (Cooper et al., 2001). Accordingly, technostress focuses on stress in the context of stress factors, situation variables and the use of information technology. As it has become an almost indispensable part of organisations, especially information technologies, have emerged as a new stressor due to its complex, ever-changing and technically skilled nature (Coover et al., 2005; Ragu-Nathan et al., 2008) and, therefore, the transactional stress approach has become the frequently used theoretical basis in technostress studies. It can be stated that the focal points of these technostress studies are strain in the context of stressors, situation variables and the use of information technologies.

Conversely, teaching has been defined as a particularly stressful occupation (Genoud et al., 2009; Greene et al., 1997; Greenglass & Burke, 2003; Kyriacou, 2001; Travers & Cooper, 1993). In this context, a wide variety of factors have been stated to lead to stress in teaching like excessive demands from administrators, colleagues and students, work overload, unsettled policies, misbehaviours of students, lack of discipline and time pressures (Greenglass & Burke, 2003; Klassen et al., 2009; Griffith et al., 1999; Boyle et al., 1995; Kyriacou, 2001). Stress is also associated with using technology at work or home, as information and communication technologies (ICT) have become an important component

of people's personal lives and organisational processes (Brod, 1984). In this process, for teachers, the new requirements brought by the ICT integrated into the educational institutions have led to a new source of stress, which is defined as technostress and experienced by different occupational groups (Al-Fudail & Mellar, 2008; Syvänen et al., 2016; Çoklar et al., 2016; Efilti & Çoklar, 2019). Initially expressed as technophobia, cyber phobia, computer phobia, and computer stress (Wang et al., 2008), technostress is a new type of stress that arises due to the adverse effect of technology (Boyer-Davis, 2019). Technostress was first defined as a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner (Brod, 1984). Later, the definition was expanded to include any negative impact on attitudes, thoughts, behaviours or psychology caused directly or indirectly by technology (Rosen & Weil, 1990).

Tarafdar et al. (2007) defined technostress as the stress caused by ICT and used the socio-technical systems theory to explain it. According to the socio-technical systems approach, organisations consist of two dimensions: social and technical systems (Trist & Bamforth, 1951). The first is the social dimension, associated with people's abilities, attitudes and values, roles, award systems and authority structures. The technical dimension refers to the technical or task-related side of work that necessitates process and technology-based skills. The roles in the organisation are determined in two ways consistent with these dimensions (Tarafdar et al., 2007). Firstly, roles are determined through the social systems in which individuals are located. Social systems regulate the organisation's hierarchy, reporting systems, division and authority structure. Secondly, the roles are formed by individuals' tasks and the technical method they interact with. They mostly regulate hierarchy, coordination mechanisms, reporting systems, division, control and authority structures, standardisation rules, and centralisation and decentralisation balances. New technologies, leading to the continuous evolution of tasks and skills, also change individuals' roles (Tarafdar et al., 2007). New forms of work and organisational structures enabled by ICT affect individuals' roles in two ways. First, these technologies affect the work environment and change the role of the individual at work. Second, as organisational tasks are interdependent, changes in the individual's task may lead to more extensive changes in formalisation, control span, communication mechanisms, and centralisation level. Therefore, ICT can affect organisational roles through transformations in tasks and social processes (Barley, 1990). Changing roles can lead to stress in individuals by causing role shifts, role overload and role conflicts (Türen et al., 2015). The negative emotions caused by technostress (Joo et al., 2016), which result from rapidly changing and developing technology (Stich et al., 2018), can also hinder the organisations' performance.

Amongst the reasons for technostress are many factors such as lack of experience (Brod, 1982) and performance anxiety caused by endless skill enhancement challenges due to fast-paced technological changes (Chandra et al., 2019). On the other hand, most researchers particularly agree that lack of formal and proper training about the technology used is a significant factor leading to technostress (e.g., Al-Qallaf, 2006; Efilti & Çoklar, 2019; Stich et al., 2018). In a study conducted on teachers, it has been evaluated that technological system failure, lack of technical and social training and support needed to use

technology, the extension of time for installation and course preparation and inadequate school culture are reported as potential causes of technostress (Al-Fudail & Mellar, 2008). Similarly, it has been revealed that teachers' fear of being unable to control the situation in case of a system error in the technology leads to increased technostress levels (Lim, 2012). Thus, teachers' lack of technology training is the most common cause of technostress.

Considering technostress as an adaptation problem resulting from an employee's insufficiency in getting used to and coping with ICT, five dimensions are proposed to explain the typical situations that technostress can create (Tarafdar et al., 2007). Out of five dimensions of technostress proposed by Tarafdar et al. (2007), we employ three of them (techno-overload, techno-complexity and techno-uncertainty) since they are more relevant to work-life dynamics and the particular industry under focus, similar to Alam (2015) and Türen et al. (2015). Shortly, *techno-overload* refers to the situation where ICT users are forced to work faster for longer periods; *techno-complexity* refers to the state when ICT users feel incompetent because of constantly developing technology and the strain they feel as a result of the time and effort required to understand the diverse features of it. Lastly, *techno-uncertainty* refers to discomfort and hesitation caused by the need to follow and adapt to ICT's continuous change and development.

Technostress affects individuals and organisations (Boyer-Davis, 2019; Weinert et al., 2019). Many studies about the effects of technostress on different fields such as librarianship, banking, aviation and education reveal that it has negative effects on several organisational variables such as absenteeism (Harper, 2000), organisational commitment (Jena, 2015), job satisfaction (Ragu-Nathan et al., 2008; La Torre et al., 2019), motivation (Jena, 2015) and productivity (Rafter, 1998).

In light of the theory and studies discussed above, the following hypothesis is developed:

H₁: *There is a significant negative relationship between TS (Technostress) and JP (Job Performance).*

2.3. Technostress and Organisational Cynicism

Cynicism can be defined as sacrificing principles such as honesty and sincerity for mundane and individual interests (James, 2005). Likewise, organisational cynicism is the negative attitude of individuals towards the organisation (Dean et al., 1998). It also refers to the individual's tendency to criticise the organisation because they believe it lacks integrity, honesty, justice and sincerity (Davis & Gardner, 2004; Nafei, 2013). These thoughts can also be accompanied by negative emotions such as anger and humiliation, abasement and critical organisational statements.

While the ancient Greek philosophers consider cynicism as a personality trait (Mirvis & Kanter, 1991), modern researchers often prefer to evaluate cynicism as a judgment through the experiences of individuals (Cole et al., 2006). Referring to learned behaviours,

organisational cynicism is not only about the feelings that negative people bring to the organisation, but it is an attitude about the organisation that is shaped by experiences in the workplace (Johnson & O'Leary-Kelly, 2003; Davis & Gardner, 2004). In this respect, focusing on the interaction between the person and the environment and suggesting that stress results from individuals' appraisals of the environment and attempts to cope with issues that arise, transactional stress theory may provide a way to understand the mechanism (Lazarus & Folkman, 1984). Arising from several stressors such as work overload or role ambiguity, the strain may lead the individuals to question organisational procedures. They also may be irritated by the excess and perceive the organisation does not care about his/her well-being. Based on the rationale above, we posit that experiencing strain as a result of stressors at work may result in negative emotions, attitudes and behaviours toward the organisation, namely organisational cynicism.

Organisational cynicism has three main dimensions as; the *cognitive dimension* refers to the thought regarding the absence of integrity in the organisation, the *affective dimension* refers to the negative emotions towards the organisation, and the *behavioural dimension* represents the tendency to display critical behaviours in parallel with those negative thoughts and feelings (Dean et al., 1998; Abraham, 2000). Firstly, according to the *cognitive dimension*, employees believe that some principles such as justice, sincerity and honesty do not exist in their organisation, and thus they feel betrayed (Kutanis & Dikili, 2010). Moreover, since the relationships within the organisation depend on personal interests, employees may lose values such as sincerity, honesty and righteousness and may display immoral behaviours (Brandes & Das, 2006). As a result, employees do not take the rules and relationships within the organisation serious (Dean et al., 1998). Secondly, the *affective dimension* deals not only with unfavourable thoughts but also the negative feelings and includes emotional responses such as disrespect, anger, shame, disappointment, hatred and moral distortion (Mishra & Spreitzer, 1998). Lastly, the *behavioural dimension* refers to the behaviours of cynical employees, such as using humiliating and cynical words about the organisation, constantly criticising it, and making pessimistic predictions about the organisation's future (Kutanis & Çetinel, 2010). In the literature, it is stated that many factors such as violations of the psychological contract, role conflict, long working hours, mobbing, ineffective leadership and management, inept organisational change efforts and especially lack of organisational justice may trigger organisational cynicism (Bernerth et al., 2007; James, 2005; Cartwright & Holmes, 2006: 201; Nafei, 2013). Though organisational cynicism may change over time with the new experiences of the employee (Dean et al., 1998), in danger of losing their jobs in an unstable economic environment or an uncomfortable workplace, employees can develop defence mechanisms, such as dis-identifying with and satirise the organisation and demoralise colleagues (Mirvis & Kanter, 1991; Abraham, 2000; Wanous et al., 1994; James, 2005). In this vein, organisational cynicism is a coping method against the hostile, evil and insecure environment or organisation.

Literature review at the time of writing provides us with a single study by Çelik and Özdemir (2016) directly investigating the relationship between technostress and

organisational cynicism. Based on the idea that technostress at work can cause negative attitudes towards work and organisation, this study reveals that techno-overload positively affects the three dimensions of organisational cynicism, and techno-uncertainty positively affects the affective dimension of organisational cynicism. Besides, other studies assert that the uncertainty factor created by the change processes in organisations may cause the employees to develop cynical behaviours against the organisation (Wanous et al., 2000; Abraham, 2000; James, 2005; Lemmergaard, 2009). In this respect, many organisations have been involved in the change process as ICT has become an indispensable part of organisational processes. In some cases, employees experience technostress since they cannot adapt to new technologies (Al-Fudail & Mellar, 2008; Marchiori et al., 2018). Considering that job stress is an important factor for organisational cynicism (Abraham, 2000; James, 2005: 45; Cartwright & Holmes, 2006) and especially the uncertainty and work overload brought by the process of change trigger organisational cynicism; technostress as a new type of job stress can lead to organisational cynicism. In other words, organisational factors such as work overload (Andersson, 1996; Avey et al., 2008), uncertainty, especially during organisational change (Andersson, 1996; Avey et al., 2008) and complexity, especially in structure and tasks (Lemmergaard, 2009) often lead to organisational cynicism. In this respect, technostress is due to the complex, ever-changing, uncertain and demanding (Andersson, 1996; Avey et al., 2008; Ragu-Nathan et al., 2008; Tarafdar et al., 2007; Raitoharju, 2005) nature of technology may result in organisational cynicism.

In light of the conceptual reasons discussed above, the following hypothesis is developed:

H₂: There is a significant positive relationship between TS and OC (Organisational Cynicism).

2.4. Organisational Cynicism and Job Performance

The social exchange theory (Blau, 1964) argues that individuals participate in relationships that involve the exchange of economic and socio-emotional resources. Additionally, these resources are exchanged over time in the cycle of reciprocity, and individuals feel comfortable only if the exchange occurs under balanced conditions (Wayne et al., 1997). According to the theory, mutual trust and implicit obligations are the basis of social exchange. If the individuals experience favourable benefits and treatments in the organisation they work for, they tend to feel obliged to repay these favours (Cropanzano & Mitchell, 2005; Martin, 2011). In other words, employees enjoying fair treatment and good human resources practices pay back their organisation by reporting positive job outcomes, such as higher performance levels and lower turnover intentions in the workplace (Karatepe & Ngeche, 2012; Abugre, 2017). Accordingly, several studies have revealed that organisational cynicism- ultimately meaning the employees' dissatisfaction with their organisations (Abraham, 2000) - embodies several negative consequences for the employees and their organisations (Nafei, 2015; Tuna et al., 2018). In the context of different occupations, organisational cynicism has been stated to be positively related to some

variables such as absenteeism and unethical behaviours (Andersson & Bateman, 1997), alienation (Abraham, 2000), resistance to organisational change (Reichers et al., 1997; Wanous et al., 2000) and job stress (James, 2005). On the other hand, organisational cynicism has presented a negative relationship with job satisfaction (Abraham, 2000; Reichers et al., 1997), corporate citizenship behaviours (Andersson & Bateman, 1997; Dean et al., 1998) and job performance (Andersson & Bateman, 1997; Dean et al., 1998; Chiaburu et al., 2013; Arslan, 2018; Scott & Zweig, 2021).

Thus, organisational cynicism should be studied in depth in terms of organisations and executives (Andersson, 1996) since it is considered an attitude that can lead to negative consequences for both the employees individually and the organisation as a whole (Davis & Gardner, 2004). Based on the acceptance that "cynicism is everywhere" in organisations (Dean et al., 1998), it is likely that cynicism may also negatively affect teachers' performance, who are the building blocks of education and training. In the literature conducted on the effects of organisational cynicism on teachers, several studies have reported significant relationships between organisational cynicism and demographic variables (Chudzicka-Czupala et al., 2014; Kalağan & Güzeller, 2010; Kaygısız & Dogan, 2012), school culture (Şirin, 2011), organisational commitment (Mousa, 2017; Kılıç, 2011) and organisational citizenship behaviour (Yetim & Ceylan, 2011). However, it is considered that organisational cynicism is crucial, especially for the teachers, when it is thought that performance comes to life on students. Due to the possibility that teachers can reflect any negative attitudes against their institutions on their students, it is considered that organisational cynicism in teachers may be more destructive than in other occupational groups. Despite the study concluding that organisational cynicism does not significantly affect individual performance in teachers (James, 2005), the common approach recognises that employee's performance decreases due to perceptions such as disappointment, distrust against the organisation and lack of perceived organisational justice; all of which are the results of organisational cynicism (Candan, 2013).

In the light of the conceptual reasons discussed above, the following hypothesis is developed.

H3: There is a significant and negative relationship between OC and JP.

2.5. Mediating Role of Organisational Cynicism

On the theoretical basis of the transactional stress approach, factors such as the required skills, complexity and workload of information technologies are considered new stressors that lead to technostress (Coovet et al., 2005; Ragu-Nathan et al., 2008). As a new type of work stress, technostress negatively affects work performance (Jena, 2015; Tarafdar et al., 2011). Similarly, within the same theoretical context, organisational cynicism is the evaluation of employees expressing their negative attitudes due to stressors in the workplace (Johnson & O'Leary-Kelly, 2003; Davis & Gardner, 2004). Technostress emerges as a new stressor that causes organisational cynicism. On the other hand, based on the social exchange theory of Blau (1964), employees make an effort to repay only when they experience

favourable benefits in their organisations; otherwise, if they develop cynical attitudes towards their organisations, for example, they report negative results such as low job performance (Dean et al., 1998; Chiaburu et al., 2013; Arslan, 2018; Scott & Zweig, 2021). Therefore, technostress and organisational cynicism in a workplace seem to be important factors reducing job performance. Chiaburu et al. (2013) report that psychological strain is moderately related to organisational cynicism, and organisational cynicism negatively affects job performance. The psychological strain emerges as a result of individuals' response to stressors, threatens the well-being of the individuals and leads to stress (Lazarus & Folkman, 1984; Beehr & Franz, 1987; Beehr, 1998). Besides, it has been revealed that strain, a consequence of job stress, can cause organisational cynicism (Reichers et al., 1997). Since technostress at work is a type of technology-related job stress (Türen et al., 2015; Gaudioso et al., 2017), it will cause strain, as assumed in the model of Chiaburu et al. (2013). In the model, it is also stated that organisational cynicism is negatively related to job performance. Likewise, several studies report the negative effect of technostress on job performance (e.g., Tarafdar et al., 2007; Tarafdar et al., 2015; Cahapay & Bangoc, 2021; Li & Wang, 2021). In short, despite several studies revealing the effect of technostress and organisational cynicism on job performance, the studies on the mediating role of organisational cynicism on the relationship between technostress and job performance seem inadequate. In this respect, to fill the gap in the literature, we develop the following hypothesis:

***H4:** Organisational cynicism level significantly mediates the relationship between technostress level and job performance.*

3. Methodology

3.1. Sample

Today information and communication technologies (ICT) develop exponentially, and newer products emerge daily. Integrating these technological products into the education industry is essential and is considered one of the most effective force multipliers for national development. Teaching is inherently considered among the most stressful professions due to reluctant students, discipline problems, work overload, and is subject to changes (Boyle et al., 1995; Kyriacou, 2001; Greenglass & Burke, 2003; Klassen et al., 2009) now has a relatively new stressor namely the use of technology, which has become an integral part of the educational processes (Al-Fudail & Mellar, 2008). However, technostress research on teachers mostly seems limited to the matters such as the evaluation of the existing situation, the reasons for technostress and how to prevent it (e.g., Al-Fudail & Mellar, 2008; Syvänen et al., 2016; Efiltili & Çoklar, 2019). As the key human capital of the industry, teachers use various educational materials to increase the effectiveness of education. The auxiliary materials used in education have developed over time in line with technological developments. Today, integrated use of various educational technologies (interactive whiteboards, computers, tablets, online educational material, online teaching, web-based homework and assessment systems) accelerates and becomes commonplace for most schools. Invading new technologies into the education industry has some side effects of

organisational change. In a study conducted on teachers, new technology-related issues such as technological system failure, lack of technical and social training and support, long installation times and wearing course preparation requirements, inadequate school culture and diffidence are reported as potential causes of technostress (Al-Fudail & Mellar, 2008; Lim, 2012).

Organisational cynicism among teachers is also considered a problem for a while. In the literature, a myriad of studies confirms that teachers' organisational cynicism level significantly affects their job performance in a negative way (Andersson & Bateman, 1997; Dean et al., 1998; Johnson & O'Leary-Kelly, 2003; Chiaburu et al., 2013). However, we cannot find any research so far addressing those three variables, namely technostress, organisational cynicism and job performance of teachers. Thus, we decided to conduct this research based on the data from teachers.

We approached and collected data using random sampling from primary and secondary education teachers (n=237) in Malatya province in the 2018-2019 school year to examine the possible mediating effect of organisational cynicism on the relationship between technostress and job performance. Located in the Eastern Anatolian Region of Turkey, Malatya has a very similar student enrolment rate to the average of Turkey both in primary and secondary levels of education (for example, the average enrolment rate in primary education is 93,23% for Turkey and 93,69% for Malatya) (National Education Statistics, 2020). Additionally, in terms of socio-economic development ranking Malatya is among the most developed provinces in the region (SEGE, 2017). It has been evaluated those teachers working in Malatya, which is similar to the country in terms of enrolment rates and stands out in the region in terms of socioeconomic development, can be a suitable sample for our study. The summary of the demographics of the participants is presented in Table 1.

Table: 1
Demographics

| Sample | Age average | Gender | Education | Experience |
|-------------------|---------------------|--|--|---------------------------------|
| Teachers N=237 | 30.54 (SD= 6.65) | %48 Male (n=114) %52 Female (n=123) | %5 Undergraduate %73 Graduate %22 Postgraduate | Mean.:11,63 years (SD= 8.15) |

The demographic statistics expressed that 48% of the participants are male, 52% are women, 5% have undergraduate degrees, 73% have graduate degrees, and 22% have postgraduate degrees. The participants have an average of 30.54 age with a standard deviation (SD) of 6.65 and a mean of 11.63 years of work experience with an SD of 8.15.

3.2. Data Collection Instruments

Three scales are employed in this study. Each of their items is answered via a five-point Likert scale (1=Strongly Disagree, 5=Strongly Agree). Technostress is measured using the technostress scale developed by Tarafdar et al. (2007), shortened by Alam (2015) to 14 items and adapted to Turkish by Türen et al. (2015). It has three dimensions, namely, techno-

overload, techno-complexity, and techno-uncertainty. For example, "I am forced to change my work habits to adapt to new technologies". The organisational cynicism level of employees is measured through the scale developed by Brandes (1997) and translated into Turkish by Arslan (2012). The scale has 14 items in total and three dimensions, namely, affective, cognitive, and behavioural. For example, "I believe that my company (my organisation) says one thing and does another". And job performance is measured using the scale developed by Sigler and Pearson (2000) and translated into Turkish by Çöl (2008). The unidimensional scale consists of four items. For example, "I complete my tasks on time".

3.3. Analyses

While Explanatory Factor Analysis (EFA) is performed to secure the structural validity of the data for all three scales, Confirmatory Factor Analysis (CFA) is performed to investigate the factor structures of the scales. Then, reliability analysis is made to test the internal consistency of the scales. Besides, several tests are employed to check if measures are affected by common method bias. Correlation and regression analyses are used to examine the relationships between variables. Finally, the "bootstrap test" is conducted to analyse the mediating effects.

4. Findings

4.1. Reliability and Validity Analysis

Cronbach's Alfa Test is used to examine the reliability (internal consistency). Composite reliability (CR) is utilised as a measure of the internal consistency of the factors. On the other side, to evaluate Convergent Validity, the Average Variance Extracted (AVE) is employed, and to investigate Discriminant Validity, Maximum Shared Variance (MSV) and the Average Shared Squared Variance (ASV) are computed. The test results are illustrated in Table 2.

Table: 2
Reliability Analysis

| Scale | Factor | Item | (α) | Total (α) | CR | AVE | MSV | ASV |
|-------|--------|---------|--------------|--------------------|-------|-------|-------|-------|
| TS | TSO | 1-5 | 0.953 | 0.947 | 0.955 | 0.809 | 0.762 | 0.456 |
| | TSC | 6-10* | 0.917 | | 0.947 | 0.817 | 0.762 | 0.450 |
| | TSU | 11-14 | 0.922 | | 0.924 | 0.752 | 0.299 | 0.218 |
| OC | OCA | 1-5 | 0.933 | 0.960 | 0.954 | 0.804 | 0.774 | 0.560 |
| | OCC | 6-10 | 0.958 | | 0.957 | 0.817 | 0.728 | 0.537 |
| | OCB | 11-13** | 0.858 | | 0.919 | 0.792 | 0.774 | 0.569 |
| JP*** | JP | 1-4 | 0.923 | 0.923 | 0.924 | 0.753 | - | - |

(*): Item 9 is excluded from the analysis, (**): Item 14 is not included in the analysis, (α)= Cronbach's Alfa.

(***): Since the scale of JP has one factor, the values of MSV and ASV are not computed.

According to the test results in Table 2, Cronbach's Alfa of the factors are between 0.923 and 0.960 and are higher than the limit value of 0.7 (Bülbül & Demirel, 2008). Additionally, the corrected item-total correlations of the scales are higher than the threshold value (0.2) (Büyüköztürk, 2007). Furthermore, the overall Cronbach's Alfa score (0.95) on the TS scale (*these scores in the original [Alarm, 2015] and adapted [Türen et al., 2015]*

TS scale are 0.85 and 0.85 respectively), the overall Cronbach's Alfa score (0.96) of OC scale (*these scores in original [Brandes, 1997] and adapted [Arslan, 2012] OC scale are 0.81 and 0.92 successively*) and the overall Cronbach's Alfa score (0.92) of JP scale (*these scores in original [Sigler & Pearson, 2000] and adapted [Çöl, 2008] JP scale are 0.83 and 0.83 respectively*) are also greater limited value (0.7). Additionally, Because, CR scores are greater than the verge value (0.7) and AVE scores are higher than the limit value (0.5), it can be deduced that there are internal consistency and sufficient convergent validity of the factors successively (Hair et al., 2014). On the other hand, as MSV and ASV are both lower than AVE for all the constructs, it can be deduced that discriminant validity is established (Fornell & Larcker, 1981).

4.2. Structure Validity Analysis

4.2.1. Explanatory Factor Analysis

Explanatory Factor Analysis (EFA) is performed to secure the structural validity of the data belonging to all three scales. Beforehand, the sample is tested to be appropriate for factor analysis by using KMO and Bartlett's tests. The test results ($KMO > 0.85$; $p < 0.001$) indicate that the sample is appropriate for EFA at a "fine" level (Alpar, 2013). Then, correlation analysis is employed to understand whether the factors are uncorrelated. Thus, for those three scales, the Component Matrix has been rotated by utilising the Varimax method, commonly used in the literature to obtain interpretive and significant factors. Examining the factor loadings for each scale, it is found that the majority of factor loadings are greater than 0.60 and the subtraction of factor loadings appearing in any two factors are greater than 0.1. Thus, it can also be stated that the sample is proper at a "fine" level for EFA.

Question 9 is removed from the model for the Technostress scale since its commonalities score is smaller than 0.5 (Hair et al., 2014). Factor loadings contributed to three factors have ranged between 0.66 and 0.89. The factors obtained show that 82.812% of the total variance is accounted for, and the scale supports the structural validity. Due to multiple factor loadings, question 14 is removed from the model in the Organisational Cynicism scale items are gathered under three factors again, ranging between 0.56 and 0.90; as expected, 83.044% of the total variance is explained, and the scale supports the structural validity of this model. For the Job Performance scale, factor analysis shows that items are located in only one factor. The factor loadings range between 0.91 and 0.92, 81.354% of the total variance is accounted for, and the scale endorses the structural validity. Factor loadings are presented in Table 3.

Table: 3
Factor Loadings

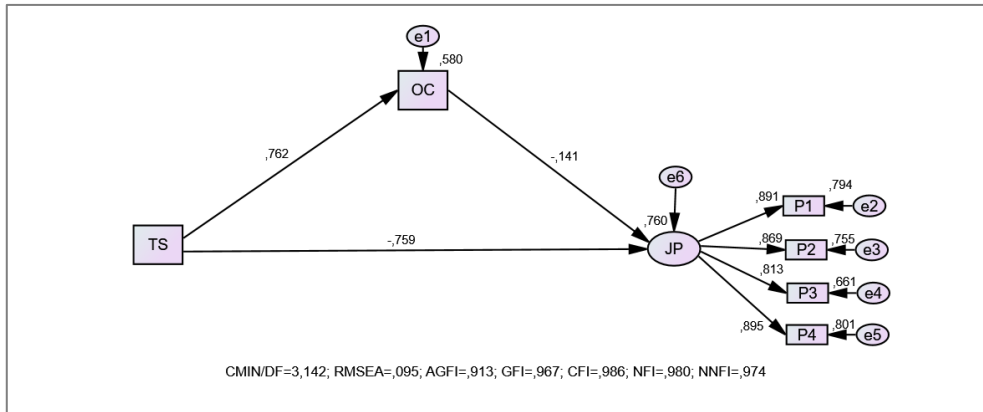
| Scale | Factor | Item | Factor Loadings | KMO Test | Bartlett's Test(p) |
|-------|--------|---------|-----------------|----------|--------------------|
| TS | TSO | 1-5 | 0.761-0.867 | 0.928 | 0.000 |
| | TSC | 6-10* | 0.659-0.825 | | |
| | TSU | 11-14 | 0.817-0.891 | | |
| OC | OCA | 1-5 | 0.653-0.849 | 0.940 | 0.000 |
| | OCC | 6-10 | 0.736-0.894 | | |
| | OCB | 11-13** | 0.564-0.902 | | |
| JP | JP | 1-4 | 0.906-0.923 | 0.850 | 0.000 |

(*): Item 9 is excluded from the analysis, (**): Item 14 is not included in the analysis.

4.2.2. Confirmatory Factor Analysis

Confirmatory Factor Analysis is performed to investigate the factor structures of the scales through the findings of the Explanatory Factor Analysis. The maximum likelihood estimation method has been applied in the analysis. According to the results gained from CFA, all CMIN/df values ($CMIN_1/df_1=1.832$ for TS scale, $CMIN_2/df_2=2.229$ for OC scale, and $CMIN_3/df_3=2.762$ for JP scale) are smaller than the threshold level (3). Besides, all of the fit index values ($GFI_1=0.941$, $GFI_2=0.927$, $GFI_3=0.988$; $AGFI_1=0.905$, $AGFI_2=0.872$, $AGFI_3=0.941$; $NFI_1=0.967$, $NFI_2=0.964$, $NFI_3=0.992$; $NNFI_1=0.979$, $NNFI_2=0.969$, $NNFI_3=0.985$; $CFI_1=0.984$, $CFI_2=0.974$, $CFI_3=0.995$ and $RMSEA_1=0.060$, $RMSEA_2=0.074$, $RMSEA_3=0.086$) are higher/lower than the good fit ranges recommended by Schermelleh-Engel et al. (2003). Consequently, it can be expressed that all scales promote structural validity. The details of the DFA measurement model are indicated in Figure 1.

Figure: 1
The DFA Measurement Model



Note.: Since TS and OC has three factors, they are shown as observed variables.

Consequently, according to the result of the analysis, as stated above, it can be expressed that all of the scales used in the research are valid and reliable.

4.3. Common Method Bias

Since the data collection design of this study is cross-sectional, to investigate whether there is a common method bias in the data, *Harman's Single-Factor Test*, *Common Latent Factor*, and *Common Marker Variable* techniques (Podsakoff et al., 2003), are employed. In Harman's Single-Factor Test, the unrotated factor solution is examined to define the number of factors required to clarify the variables' variance. A single/one general factor, representing the generality of the covariance (36.78%), does not release. Besides, in Common Latent Factor and Common Marker Variable techniques, the common heuristic values (1.74% and 7.57% successively) are lower than the threshold value (50%). It can be said that the data of this research is not subject to common method bias.

4.4. The Analysis of the Independent Variables' Effects on the Dependent Variable

A correlation analysis has been employed to determine the variables' associations with each other. The summary of the correlation analysis is presented in Table 4.

Table: 4
Correlations

| Scale | TS | OC | JP |
|-------|---------|---------|----|
| TS | 1 | | |
| OC | 0.762* | 1 | |
| JP | -0.834* | -0.692* | 1 |

(*): Correlation is significant at the 0.01 level (2-tailed).

A regression analysis has been performed to detect associations between dependent and independent variables. Factor scores yielded by EFA, which motivate us to be utilised as variables in the regression model (Johnson & Wichern, 2002) have been used in further analyses.

Before employing the simple linear regression analysis, it is necessary to test the normality as the basic assumption of this analysis. The normality of the variables has been examined using the One-Sample Kolmogorov-Smirnov Test to see whether they are distributed normally, and it has been found that the distribution of all variables is normal at 95% confidence interval since $p > \alpha = 0.05$ for all variables. The summary results of the regression analyses for all the hypotheses are shown in Table 5.

Table: 5
The Regression Analyses Summary

| Hypothesis | R | R ² | Adj. R ² | Std. Err. | F | p | Independent Variable | Dependent Variable | Supported/Rejected |
|----------------|-------|----------------|---------------------|-----------|---------|-------|----------------------|--------------------|--------------------|
| H ₁ | 0.834 | 0.695 | 0.694 | 0.553 | 535.023 | 0.000 | TS | JP | Supported |
| H ₂ | 0.762 | 0.580 | 0.578 | 0.388 | 324.807 | 0.000 | TS | OC | Supported |
| H ₃ | 0.692 | 0.478 | 0.476 | 0.723 | 215.436 | 0.000 | OC | JP | Supported |

4.5. The Analysis of the Mediating Effect

Zhao et al. (2010) express that the test proposed by Preacher and Hayes (2004) is generally more robust than Sobel's by representing SAS and SPSS syntax for an alternate "bootstrap". They also suggest that the indirect effect's bootstrap test should be employed to scrutinise the mediation effect instead of the Baron- Kenny (1986) "three tests + Sobel" steps.

We employ the "bootstrap test" recommended by Preacher and Hayes (2004; 2008) to investigate the mediating effect. The test result is expressed in Table 6.

Table: 6
SPSS Output of Bootstrap Script Testing Indirect Effect*

| Hyp. | N | a ₁ x b ₁ | | | | c ₁ | | | a ₁ x b ₁ x c ₁ | R ² ** | ΔR ² | Supported/Rejected |
|----------------|-----|---------------------------------|-----------|-----------|-------|----------------|---------|-------|--|-------------------|-----------------|--------------------|
| | | β _i | Boot LLCI | Boot ULCI | p | β _i | t | p | | | | |
| H ₄ | 237 | -0.1761 | -0.3657 | -0.0244 | 0.015 | -1.252 | -13.278 | 0.000 | 0.220 | 0.703 | 0.122 | Supported |

(*): TS: Technostress, OC: Organisational Cynicism, JP: Job Performance. Model: TS → OC → JP.

In the model, a: Independent Variable (TS) Mediator (OC) path, b: Mediator (OC) → Dependent Variable (JP) path,

c: Independent Variable (TS) → Dependent Variable (JP) path.

(**) Model: F=276.2223, MSE=0.3001, p:0.000.

Scrutinising the results of the test in Table 6, it can be interpreted that the mean indirect effect from the bootstrap analysis is negative ($a_1 \times b_1 = -0.1761$) and significant ($p=0.0153$), with a 95% confidence interval excluding zero (-0.3657 to -0.0244). The direct effect of independent variable (TS) on dependent variable (JP) is c_1 (-1.2518) and significant ($p=0.000$). As Zhao et al. (2010) specified, if $a_1 \times b_1 \times c_1$ (0.2204) is positive, it expresses that complementary mediation exists. This shows that the mediator identified complies with the underlying theoretical framework. Thus, it can be concluded that H₄ is supported.

5. Conclusion

This study aims to reveal whether organisational cynicism plays a mediating role in the relationship between technostress and job performance. Our findings support the causal chain theorised in this study based on the data collected from teachers. Primarily, it can be deduced that the validity and reliability of the scales are ensured by the results of commonly used validity and reliability analysis techniques. Dealing with the first hypothesis, we have found that technostress reduces job performance, and many other studies in the literature support this finding (e.g., Tarafdar et al., 2007, 2011; Al-Fudail & Mellar, 2008; Jena, 2015; Stich et al., 2018; Penado Abilleira et al., 2021). Besides, the results have revealed that technostress significantly and negatively affects organisational cynicism referring to the second hypothesis that is in line with the only previously published study conducted by Çelik and Özdemir (2016). Similarly, it supports the results of studies examining the relationship between job stress and organisational cynicism (e.g., Abraham, 2000; James, 2005; Cartwright & Holmes, 2006). Considering that technostress is a type of job stress and an important determiner for organisational cynicism, and the factors such as uncertainty and work overload caused by new technologies often escalate organisational cynicism, we think that as a new type of job stress, technostress can aggravate organisational cynicism. In

addition, the findings supported the third hypothesis and demonstrated that organisational cynicism decreases job performance. This finding also seems to be by the results of other studies in the literature (Andersson & Bateman, 1997; Dean et al., 1998; Chiaburu et al., 2013; Arslan, 2018; Scott & Zweig, 2021). Expectedly, teachers' negative emotions, attitudes and behaviours or organisational cynicism towards the education system or school administration curtail their job performance (Bayram et al., 2017; Sağır & Oğuz, 2012). Last but not least, our most original finding filling the gap in the literature is the significant partial mediating role of organisational cynicism in the relationship between technostress and job performance. Based on this finding, we can infer that teachers' technostress, often caused by the invasion of new technologies into the educational domain without enough facilitation and support, may lead teachers to feel negative emotions towards the school administration or education system and, subsequently, this also may reduce job performance as a result.

5.1. Implications

Today, the education industry experiences an intensely competitive environment in Turkey as everywhere in the world. Both public and private schools' efforts to enhance the quality of education have been observed. Parents are often ready to spend their savings generously to get an exemplary education for their children. Especially the private schools have begun to mobilise all the technology opportunities to attract parents and students. In the meantime, to stay competitive, public schools have also implemented new applications by integrating new technologies into the educational processes. Along with technological investments such as the Fatih Project (MEB, 2019), initiated by the government in 2010 with the aim of the effective and common use of cutting-edge technologies and the Internet in primary and secondary education and conquering the digital divide in society beginning from primary schools, technology has intensely accelerated to be used in the education system. Consequently, technological skills have become necessary beyond a preference for teachers in public and private schools. These developments may increase the teachers' job stress, particularly for those who already feel under a certain amount of pressure.

The intense ICT use in educational processes and the complexity and uncertainty caused by frequent hard and software updates can cause teachers to feel technostress. Furthermore, the requirement of more time to adapt to new technologies can also increase the perceived workload, and workload merged with uncertainty about upcoming new technologies can increase the level of stress. To reduce stress levels and ease the adaptation process, the need for "on-the-job training" on these technologies should not be ignored. Proper change management can be advised to support the transition periods to make teachers feel more comfortable and enhance their learning process. Supporting the learning process decreases the time required to catch up and adds value to the educational use of ICT earlier. Supported and encouraged teachers in the change period often will not develop cynic thoughts, attitudes and behaviours toward school administrations or higher-level authorities of education in the country.

Organisational cynicism does not have its roots only in technostress; it has many other determinants which stimulate negative attitudes towards organisations. Apart from controlling the level of technostress, the other factors such as hostile, evil and insecure environment at schools should be addressed by various levels of authorities. As our findings support it, the interaction between technostress and organisational cynicism worsens job performance apart from their impacts. Shortly, these two variables are harmful factors hampering teachers' performance and, thereupon, the education system's overall performance from the level of an individual student to national education as a whole.

5.2. Limitations and Future Research

This study undoubtedly has some limitations. The cross-sectional experimental design can be considered a limitation of this study. However, widely advised and encouraged methods to detect the common method variance are conducted, and it is found that the data is not subject to common method bias. The fact that this study has been conducted only on teachers in a province of Turkey is another limitation to the generalizability of the theory. The association among the variables addressed in this study may be tested with sub-dimensions on a more significant teacher sample for producing inferences for the profession. These associations between the variables should be tested in other sectors and cultures to support the generalizability of the theory. ICT-intensive sectors, such as banking, informatics, aviation and space, can be advised for future research exploring the relations among technostress, organisational cynicism and job performance.

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The Effect of Managers' Overconfidence who have Made Mergers and Acquisitions on the Firm Value¹

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Birleşme ve Satın Alma Gerçekleştiren Firma Yöneticilerinin Aşırı Güven Davranışlarının Firma Değeri Üzerine Etkisi²

Abstract

This study aims to examine the effect of overconfidence behaviours of the managers of the companies whose stocks are traded in Borsa İstanbul on the firm value. In the study, a model was created for Tobin q (Model 1), stock market value (Model 2) and enterprise value (Model 3). As a result of the study, a negative relationship was determined between the change in firm value and the overconfidence variable. According to this result, if the managers performing mergers and acquisitions are overconfident, the incorrect decision may be made while determining the firm value. This leads to a decrease in the wealth of the shareholders. In this respect, managers' overconfidence should also be considered while performing mergers and acquisitions in firms.

Keywords : Behavioural Finance, Manager's Overconfidence, Merger and Acquisition, Firm Value.

JEL Classification Codes : G40, L2, G34, G32.

Öz

Bu çalışmanın amacı, Borsa İstanbul'da hisse senetleri işlem gören firmalarda birleşme ve satın alma gerçekleştiren firma yöneticilerinin aşırı güven davranışlarının firma değeri üzerine etkisini incelemektir. Çalışmada, Tobin q (Model 1), borsa değeri (Model 2) ve girişim değeri (Model 3) için model oluşturulmuştur. Çalışmanın sonucunda firma değerindeki değişim ile aşırı güven değişkeni arasında negatif yönlü ilişki tespit edilmiştir. Bu sonuca göre birleşme ve satın alma gerçekleştiren yöneticilerde aşırı güvenin varlığı söz konusu ise firma değeri belirlenirken hatalı karar verilebilir. Bu durum, hissedarların servetinde azalmaya yol açar. Bu açıdan şirketlerin birleşme ve satın alma kararları yöneticilerin aşırı güvenleri de dikkate alınarak değerlendirilmelidir.

Anahtar Sözcükler : Davranışsal Finans, Yönetici Aşırı Güveni, Birleşme ve Satın Alma, Firma Değeri.

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1. Introduction

One of the methods used by companies to achieve goals such as increasing the value of the company, growing, maintaining their lives and providing competitive advantage is company mergers or acquisitions (Ercan & Üreten, 2000: 32). On the other hand, managers may tend to make merger and acquisition decisions for reasons such as increasing their power, proving themselves or getting a bonus from their success in the company. Malmendier and Tate (2004: 3) examined the reasons that led managers to the merger and acquisition decision regarding behavioural finance and suggested that the managers' overconfidence was effective in making this decision.

Researchers on overconfidence defined overconfidence as a high level of confidence. Researchers have suggested that overconfidence behaviour causes individuals to see themselves as above average even when they are not above average (Liu et al., 2009: 6). In addition, researchers have determined that an individual's overconfidence can have positive consequences, as well as cause the individual to stick to wrong decisions (Beckhaus, 2013: 183).

The overconfidence of the managers, who have an important role in the firms, causes incorrect financial decisions. An incorrect merger or acquisition decision causes a decrease in the company's cash flows, sales and profits. This negatively affects the firm value, reduces the shareholders' wealth, and may even lead to the risk of bankruptcy. In order not to encounter negative financial results, it should be known whether the overconfidence behaviour of the manager is effective in the company merger and acquisition decisions. By examining the managers' overconfidence, it may be possible to explain the merger and acquisition decisions that were unsuccessful or did not create the desired synergy.

Traditional finance has assumed that people make rational decisions, are stable, and try to maximise utility. Behavioural finance, on the other hand, has revealed that anomalies that affect people's preferences and decisions may arise from human psychology (Özen & Ersoy, 2022: 34). Behavioural finance deals with the dimension of irrational human psychology and behaviour that traditional finance neglects and is not in the efficient market hypothesis. Behavioural finance researches the illusions in financial decisions and argues that these illusions can be caused by irrational human behaviour (Tekin, 2019: 294). It is accepted that the main factor in merger and acquisition decisions, which are among the financial decisions, is to increase the firm's value by creating synergy (Gürsoy, 2007: 757). While implementing merger and acquisition decisions, rational managers should determine the firm's actual value. However, recent developments in behavioural finance show that this may not be true due to the irrational behaviour of managers (Asaoka, 2019: 9). As Roll (1986) and Hayward & Hambrick (1997) revealed, in some cases, managers may perform mergers and acquisitions due to irrational factors such as arrogance and overconfidence in managers (Chijuka & Momoh, 2018: 54). In this study, it has been researched whether the overconfidence of the company managers who have made mergers and acquisitions in the companies listed on Borsa Istanbul affects the company value. This study consists of three

parts. In the first part of the study, the literature on the effect of managers' overconfidence on merger and acquisition decisions was investigated. The second part of the study gives information about the research and the data used. The third part of the study discussed the research findings on managers' overconfidence in firm value in mergers and acquisitions.

2. The Effect of Managers' Overconfidence on Merger and Acquisition Decision

Firms frequently make mergers and acquisitions for reasons such as increasing their market share, gaining tax advantages and providing synergy. Despite this, the desired target could not be achieved due to most companies' acquisitions and mergers. In the literature, the complexity and uncertainty of company mergers or acquisition decision-making mechanisms have been cited as the reason for this situation (Beckhaus, 2013: 183). Overconfidence is one of the behaviours that cause the manager to decide to acquire the firm to make wrong decisions by turning to irrational behaviour. Therefore, merger and acquisition decisions are an ideal environment to test the effects of managerial overconfidence. The reasons for this situation can be listed below (Malmendier & Tate, 2004: 2-3).

- Mergers and acquisitions are among the most important corporate decisions and require the direct supervision of the manager.
- Although there is not only the effect of overconfidence in the company merger and acquisition decision, psychologists also state that merger and acquisition decisions are related to overconfidence. Since the managers implement the acquisition decisions, it is claimed that there is overconfidence in the results that the managers believe to be under their control and stand firm.
- A manager who manages mergers and acquisitions takes over, ostensibly taking over the current management of the target firm. Therefore, the manager may underestimate the possibility of failure, which can create the illusion of control in the manager. In addition, a successful acquisition increases the manager's professional status and future employment prospects.
- A manager's earnings from a compensation contract depend on the market price of the firm's stock and hence the results of the manager's acquisition decisions.
- Overconfidence can affect the firm's market values and the wealth of other market participants due to a merger or acquisition.

In addition, the manager's decisions in a company acquisition or merger negotiations may cause significant losses for the bidder and the synergies expected to be obtained as a result of the acquisition (El-Khatip et al., 2012: 4).

Another motivating factor for acquisition is the hubris hypothesis put forward by Richard Roll (Gürsoy, 2007: 757). The relationship between the merger and acquisition event and hubris was first revealed in an article by Roll in 1986. Roll formed the hubris hypothesis based on the assumption that financial markets are in strong, efficient form and

that all information is reflected in financial markets. Roll (1986) also assumed that there is no problem in product markets and that managers are employed in the best positions. In his study, Roll suggested that the manager's hubris behaviour that leads to overconfidence will cause the wrong determination of the target firm's value in acquisitions. According to Roll, if the acquiring firm bids higher than it should be for the target firm, it cannot make a profit. Also, due to the high bid, the wealth of the target firm's shareholders will increase. Roll stated that despite this situation, overconfident managers made the purchase. Therefore, if overconfident managers make purchases, they may earn lower returns than expected. On the other hand, according to Roll, it is less costly to motivate overconfident managers who take risks than managers who are not overconfident (Barberies & Thaler, 2003: 1110; Berlo, 2014: 12; Croci et al., 2010: 368-373; Deo & Shah, 2012: 48; Gervais, 2009: 13).

Baker et al. (2012) stated that research on manager overconfidence based on managers' firm M&A decisions has shown that the market reacts negatively to the purchasing decision. Baker et al. (2012) researched the market reaction to the merger announcements of firms listed on the Toronto Stock Exchange during 1993-2003. As a result of the study, they determined that the company's good performance in the past drives the merger and acquisition motivation. They also showed that long-term operating performance declines significantly for acquirers with superior firm performance in the past. Finally, they showed that the presence of insider managers helps alleviate the negative perception of acquisitions by firms with better operating performance or empire-building CEOs.

De Bodt et al. (2014) examined 977 companies that made purchases in the USA and stated that 95% of them were successful. It has been revealed that acquiring firms bid more than the amount that maximises the shareholder value of the target firm.

Malmendier and Tate (2004) investigated the effects of manager overconfidence in their research for Forbes 500 companies. The study results provided evidence that the managers of firms with high internal financing resources are more likely to engage in mergers and acquisitions that are unlikely to create value.

Billett and Qian (2005) found that managers tend to be overconfident after a successful acquisition. As a result, they are more likely to make another acquisition that negatively affects the firm's stock price.

Doukas and Petmezas (2007) examined whether overconfident managers acted in the interests of company shareholders in mergers and acquisitions. As a result of the research, they found evidence that overconfident managers do not get abnormal returns as much as the abnormal returns obtained by rational managers and that self-attribution triggers managerial overconfidence.

Malmendier and Tate (2008), in their study using data from 394 large companies in the USA for the period 1980-1994, concluded that overconfident managers overestimated

post-acquisition earnings, overpaid to target firms, and made value-destroying mergers and acquisitions.

Lin et al. (2008) examined hubris behaviour, which is considered an overconfidence behaviour, using the merger and acquisition data made in Japan between 1989 and 2003. In their studies, where companies use excessive returns as a variable, negative returns are obtained in the merger and acquisition event realised by the overconfident managers (managers with hubris). At the same time, there are positive returns in the merger and acquisition event recognised by the overconfident managers (managers with non-hubris). Researchers have determined that overconfident managers (hubris managers) can make mergers and acquisitions that lose value. They stated that this result is largely consistent with the overconfidence hypothesis.

Liu et al. (2009) investigated the effect of manager overconfidence on firm performance in large and small companies that make the acquisition. Their study found that overconfident managers were more likely to undertake mergers and acquisitions than non-overconfident managers. Manager overconfidence negatively impacted post-acquisition returns in the short and long term.

Shah et al. (2018) researched the effect of investor and manager overconfidence on the firm value of 432 companies traded on the Pakistan Stock Exchange between 2013 and 2017. Dynamic panel analysis was used in the study. The findings obtained as a result of the research are consistent with the literature that firms with overconfident investors and managers are characterised by high profitability and cash flows and prefer to use debt financing. However, it was concluded that the manager's overconfidence could not directly explain the firm's value.

Hwang et al. (2020) researched the source of CEO overconfidence that leads to failed M&As. They also examined whether CEO power could be a source of overconfidence and how power-led CEO overconfidence influences M&A decision-making. They used a sample of 13,754 U.S. firm-year observations for the 1996-2014 period. A result of research found that CEO power increases the probability of a CEO being overconfident. The study determined that power-led overconfident CEOs tend to complete more deals regardless of economic circumstances, make stock acquisitions, and make acquisitions relative to non-overconfident CEOs.

Tang et al. (2020) researched the effect of CEO overconfidence on firm value after mergers and acquisitions. The study used annual data of 193 firms in the China Stock Market and Accounting Research Database during the 2008-2015 period. The study showed that firm value is positively related to CEOs' overconfidence.

3. Data, Model and Methodology

This study investigates whether the overconfidence of M&A managers affects the firm's value. The study examined 62 companies whose stocks were traded in BIST between

2010 and 2017. These companies have at least two years passed between each merger and acquisition and have full knowledge of the managers performing mergers and acquisitions. Information on managers and companies was obtained from the information published on the KAP (Kamuyu Aydınlatma Platformu-Public Disclosure Platform), the company's financial statements, annual reports, and company websites. A multiple linear regression model was used in the research.

3.1. Data

The research's dependent, independent, and control variables are given below.

3.1.1. Dependent Variables

The firm value will be used as the dependent variable in the study. While calculating the firm's value, the merger and acquisition announcement date has been determined by considering the date of approval of the merger and acquisition decision, which was published on the KAP by the board of directors. After the merger and acquisition announcement date was determined, firm value calculations were made in three different ways. Each firm value calculation was used as a separate model study.

In Model 1, the Tobin q model is used as the firm value. The Tobin q model is a model that provides information about a firm's future investment opportunities. If a firm's Tobin q ratio is greater than 1, the firm has investment and growth opportunities. The Tobin q ratio was calculated as follows. This model was also used in Kasiani et al. (2015)'s study, which researched the relationship between manager overconfidence and firm value.

$$\text{Tobin } q = (\text{Market Value} - \text{Book Value of Debts}) / \text{Book Value of Total Assets}$$

Tobin q calculation was made separately before and after the merger and acquisition, considering the 12-month data. The market value is obtained by multiplying the monthly average closing prices of the stocks with the number of stocks. Then, the pre-and post-merger Tobin q values were obtained by taking the average of the 12-month Tobin q calculations made before and after the merger and acquisition. The pre-merger Tobin q value change to the post-merger Tobin q value is taken as the firm value variable.

The dependent variable to be used as the firm value for Model 2 is the market price of the firms' stocks. Likewise, the stock market values of the companies were obtained by multiplying the monthly average closing prices of the stocks with the number of stocks. The reason the stock market value is used as the company value is the rapid reflection of the merger and acquisition decisions on the company's stock market value. To determine the change of the pre-merger stock market value to the post-merger value as the company value, the monthly stock market value of the companies for 12 months was calculated as follows.

$$R_{it} = P_{it} - P_{it-1} / P_{t-1}$$

R_{it} = Change in the firm's stock market value

P_{it} = Stock market value of the firm in period t

P_{it-1} = Stock market value of the firm for the t-1 period

Then, the average stock market values were 12 months before and after the merger and acquisition announcement date. The firm value variable was obtained by calculating the difference between these averages.

In Model 3, enterprise value is used for firm value. The enterprise value of each firm was calculated as follows, taking into account the calculation used in the Taner and Akkaya (2003) study.

Firm Value = Market Value + Net Cash

Net Cash = (Cash + Securities) - Total Financial Liabilities

To calculate the enterprise value of companies, Net cash is added to the market value found by multiplying the monthly average closing prices of the stocks by the number of stocks. This transaction was made separately for the 12 months before the merger and acquisition transaction and the 12 months after the merger and acquisition transaction.

3.1.2. Independent Variable

The overconfidence variable was used as the independent variable in the study. In the literature, the personal characteristics of the manager, the stocks held by the managers in their portfolios, the earnings of the managers and the premiums paid to the managers are generally used as the overconfidence variable. The idea that personal characteristics are institutionally important is based on the work of Hambrick and Mason in 1984 (Malmendier et al., 2020: 1). The literature in corporate finance indicates that the individual characteristics and overconfidence of managers have a central role in explaining financing decisions such as investment and merger (Malmendier & Zheng, 2012: 1). Based on this information, the overconfidence variable was determined by considering the characteristics of the manager.

Demographic features used as overconfidence variables in the literature include the manager's gender, marital status, age, education, managerial experience, purchasing transactions made by managers, and how the manager finances the purchase and takes place on the board of directors. In this study, the overconfidence variable was created based on these characteristics of the manager.

Manager's Gender: Studies have found that men and women managers have overconfidence behaviour. However, men are generally more overconfident than women (Barber & Odean, 2005; Nofsinger, 2001; Mishra & Metilda, 2015). In the study of Huang and Kisgen (2013), it was stated that male managers purchase and borrow more than female managers. In our research, it was requested that the gender of the administrators be taken into account in the overconfidence variable. However, the gender of the managers could not

be included in the overconfidence variable since it was determined that the gender of all managers whose data were fully accessed was male.

Manager's Marital Status: Barber and Odean (2001) found in their research that male investors are more overconfident than female investors. In addition, the study determined that the differences in sales turnover and return (yield) performance were more apparent between single men and single women. In this respect, we wanted to consider the manager's marital status in the overconfidence variable in our study. However, we found that all of the managers included in the study were married, except for one. Therefore, the marital status of the manager was not included in the overconfidence variable.

Manager's Age: Studies focusing on the impact of manager characteristics on firm acquisition indicate that young managers are more likely to engage in purchasing activities due to stronger premiums (compensation incentives). Supporting these findings, Ferris et al. (2013) emphasised in their study that overconfidence negatively correlates with the person's age, as prudence increases with age. For this reason, younger managers take more risks and achieve higher acquisition power than older managers who exhibit more conservative decision-making (Kilian & Schindler, 2014: 46; cited from Ferris et al., 2003).

According to the World Health Organization, when the ages of the managers included in our study are examined, it is seen that the managers are in the young group. Accordingly, the average age of the managers was taken to determine the youngest managers. Managers under the age of 41 who are below the average are evaluated as young managers, and 1 point is given. Managers aged 42 or more were given 0 points and included in the overconfidence variable.

Manager's Education Level: Bertrand and Schoar (2003) found that systematic differences in managers' behaviours are partly due to observable managerial characteristics in their study examining the systematic behaviour differences of managers in corporate decision-making processes. The study found that managers with MBA degrees followed more aggressive strategies, while older managers were, on average, more conservative. In the studies of Mohamed et al. (2012), it was concluded that managers who have been educated in financial matters have more optimism or overconfidence when making corporate decisions (Baccar et al., 2013: 293; cited from Mohamed et al., 2012).

In our study, three different scorings were made regarding the education levels of the managers. Each scoring is included as a separate variable in the overconfidence variable. In the first scoring, it was taken into account whether the manager had undergraduate and postgraduate education. This scoring is based on the illusion of knowledge approach in the literature and the finding that managers with postgraduate education follow more aggressive strategies. Accordingly, 1 point is given if the manager has a postgraduate education, and 0 points if not. In the second scoring, it is taken into account whether the manager has done his education on financial issues. If the manager has completed any of his undergraduate or postgraduate education in financial matters, he is given 1 point; if he has not, 0 points are

given. The third scoring is based on whether the manager's education is in the country or abroad. Although there is no such distinction in the literature, country and abroad, education is included in the variable because it is assumed that the overconfidence level of the person is effective.

Managerial Experience: Malmendier and Tate (2008) and Yim (2013) found that as the time spent by a manager in a managerial position increases, the merger and acquisition activities of the firm also increase. In addition, the authors stated that the cumulative abnormal returns of the stocks of these firms decreased due to the merger and acquisition activities. Moreover, the research results showed that the overconfidence levels of the managers increase as the duration of the managerial increases.

Based on the studies of Malmendier and Tate (2008) and Yim (2013), in this study, the experiences of the managers were evaluated in two different ways and included in the overconfidence variable. It was assumed that if the manager had managerial experience in another firm before M&A, overconfidence would be effective. For this reason, in the research, 1 point was given if the manager had administrative experience in another company, and 0 point was given if he did not have managerial experience. In the second evaluation, the manager's years of management experience in the company where he made the merger and acquisition were taken into account. Accordingly, the average of the years of experience of the managers was taken, and managers who worked in the same company for 14 years or more were given 1 point, and other managers were given 0 points.

Merger and Acquisition Activities of Managers: Billet and Qian (2005) found that if the managers made more than one merger and acquisition, the cumulative abnormal returns (CAR) of the company's stocks were negative if the manager made a second merger and acquisition. The authors stated that the study's results were consistent with managerial overconfidence.

Based on the study of Billet and Qian (2005), it is assumed that overconfidence levels will increase if managers perform two or more mergers and acquisitions. In this study, managers who made mergers and acquisitions of two or more companies were given 1 point, and managers who made only one merger and acquisition were given 0 points.

How the Manager Financed the Acquisition: Firm acquisition performance may be affected by the payment method of the acquisition. In the studies conducted on this subject, it has been found that cash acquisitions are more than stock acquisitions, that cash acquisitions can accelerate mergers and acquisitions compared to stock acquisitions and reduce the likelihood of competing offers (Walter et al., 2007: 334). Managers prefer to pay cash for M&A because the market perceives acquisitions made through stocks as a negative signal. The market interprets the acquisition of a company through stocks as an overvaluation of the stocks of the acquiring company and reacts negatively. In addition, investors in the market assume that the equity of the acquiring firm is overvalued relative to the acquired firm's assets (Borghraef, 2014: 8).

Based on this information, 1 point is given if the manager finances the merger and acquisition in cash, and 0 point is given if he finances it on credit or in stock.

Involvement of the Manager in the Board of Directors: Important decisions are made only by the manager in some companies and by the members of the board of directors in others. If different managers have different opinions about the decisions to be made in the firm, the distribution of decision-making authority may affect the decision-making (Adams et al., 2005: 1404).

In the study of Baccar et al. (2013), it was stated that the probability of CEOs displaying optimism and overconfident behaviour might decrease in companies with strong corporate governance mechanisms. Li and Tang (2010) found that if a manager also chairs the firm's board of directors, the relationship between manager overconfidence and risk-taking behaviour will become stronger, and the manager will have more discretion. In the study of Brown and Sarma (2007), it was stated that having a higher rate of independent directors on the board of directors will reduce the effect of senior executive overconfidence and dominance and the probability of the firm making a wrong acquisition decision.

Accordingly, if the manager is on the board of directors, 1 point is given. If he is not on the board of directors, 0 points are given and included in the overconfidence variable.

Thus, an overconfidence variable was obtained based on managerial characteristics that cause overconfidence in managers. The overconfidence variable was created by considering nine categories based on six managerial characteristics, and the values that the overconfidence variable can take are between 0 and 9.

3.1.3. Control Variables

The purpose of adding a control variable to the research is to add variables that affect the overconfidence behaviour and the variables that affect the firm value, considering the overconfidence literature. While determining the control variables, the literature was assessed and calculated by considering the data of the year before the merger and acquisition, as in the study of Baker et al. (2012). The control variables included in the research are the manager's cash flow sensitivity, firm size, profitability, leverage, P/E ratio, and MV/BV ratio.

Manager's Cash Flow Sensitivity: According to the relationship established between institutional investment decisions and managerial characteristics in the study of Malmendier and Tate (2004), it is stated that overconfident managers can stop the investment decision if there are not too many internal funds in the firm. Based on this information, cash flows were added to the research as a control variable. In the study, cash flows were calculated as follows, taking into account the year data before the merger and acquisition, and based on the analysis of Ali and Anis (2012).

$$\text{Cash Flows} = (\text{Net Profit} + \text{Depreciation}) - \text{Dividends}$$

Firm Size: Managers may take more risks in large firms than in small firms (Goel & Thakor, 2002). Because borrowing in large firms is less costly than in small firms and causes less bankruptcy probability, this may cause managers to accept riskier investments in their decisions. According to Ferris et al. (2013), firm size positively affects the manager's bid behaviour in mergers and acquisitions (Kilian & Schindler, 2014: 28; cited from Ferris et al., 2013).

Firm size was included in the study as a control variable. Firm size is calculated by taking the logarithm of the year-end data of total assets before the merger and acquisition.

Profitability: Internal resources created from profitability can lead managers to invest. For this reason, managers who make merger and acquisition decisions may be affected by firm profitability. Since the merger and acquisition decision is an asset acquisition, examining the return on assets is important.

Return on assets is used when evaluating business management, as it shows how effectively all assets acquired by companies (including tangible and financial investments) are used (Gökbulut, 2009: 60) and how efficiently the assets are used to generate excess cash (Kepez, 2006: 94). In our study, the return on assets ratio, which is mainly related to investment decisions, was used as the profitability ratio. The asset return was calculated using the data for the year before the merger and acquisition.

$$\text{Return on Assets (ROA)} = \text{Net Profit} / \text{Total Assets}$$

Leverage: Kilian and Schinder (2014) stated in their study that the leverage ratio could play an important role in preventing mergers and acquisitions that may cause a decrease in the value of the firm. The leverage ratio variable is obtained by dividing the total liabilities for the year before the merger and acquisition by the total assets.

$$\text{Leverage Ratio} = \text{Total Liabilities} / \text{Total Assets}$$

Price/Earnings Ratio (P/E Ratio): Firm performance is effective in the decisions to be taken by the managers and affects the firm value. Since M&A is an investment decision, managers consider the firm's performance while making this decision. Managers of well-performing companies may be more optimistic and/or confident in making investment decisions. For this reason, the Price/Earnings (P/E) ratio, one of the company performance indicators, was added to the research as a control variable. The P/E ratio was calculated as follows (Taner & Akkaya: 2003):

$$\text{P/E} = \text{Market Value} / \text{Net Profit}$$

Market Value / Book Value (MV/BV Ratio): Another ratio that provides information about firm performance is the market value book value (MV/BV) ratio. Like the P/E ratio, this ratio gives information about the firm's performance. Therefore, changes in this ratio may cause companies with good performance managers to behave optimistically

and/or overconfidently. The MV/BV ratio was calculated as follows (Taner & Akkaya: 2003):

$$MV/BV = \text{Market Value} / \text{Equity}$$

Information on the variables and calculations used in the research to determine the overconfidence of the managers performing mergers and acquisitions and their effect on the firm value is given in Table 1 below.

Table: 1
Variables Used in Multiple Linear Regression Analysis

| Symbol of Variables | Variable Definitions | Formula |
|---------------------|----------------------------------|---|
| EV | Enterprise Value | (number of shares issued x stock price) + net cash net cash = cash + securities -total financial liabilities |
| TQ | Tobin q | $\frac{(\text{market value} + \text{book value of debts})}{\text{book value of total assets}}$ |
| MV | Stock Market Value | number of shares issued x stock price |
| OC | Overconfidence Variable | It was created taking into account the demographic characteristics of the managers. |
| FS | Firm Size | The logarithm of total assets |
| ROA | Return on Assets (ROA) | net profit / total assets |
| CF | Cash Flow | (net profit + depreciation) - dividends |
| LE | Leverage | total debt / total assets |
| MVBV | Market Value to Book Value Ratio | market value / book value of equity |
| PE | Price to Earnings Ratio | market value / net profit |

4. Findings

Multiple linear regression analysis was used in the study. The mathematical model of this study can be written as follows;

$$\text{Firm Value} = \alpha + \beta \text{OC} + \beta \text{CF} + \beta \text{FS} + \beta \text{ROA} + \beta \text{LE} + \beta \text{MVBV} + \beta \text{PE} + \varepsilon_i$$

Model: 1 Multiple Linear Regression Results Using Tobin q Value as Firm Value

Significant results for MV/BV and firm size variables in Model1. The result of the model is given in Table 2.

$$\text{Tobin q} = \alpha + \beta \text{MVBV} + \beta \text{FS} + \varepsilon_i$$

Table: 2
Multiple Linear Regression Results Using Tobin q Value as Firm Value

| Constant (C) | FS | MVBV | R ² | F |
|-----------------|-----------------|-----------------|----------------|------------------|
| ,309 (0,007) | -,025 (,064) | -,119 (,000) | ,297 | 13,528 (,000) |

Values in parentheses indicate p-values.

As a result of the analysis, it was found as $R^2 = 0,297$. The model is statistically significant at 1%. A 1% increase in the MV/BV ratio, the control variable, will result in a 0.119% decrease in firm value. According to the analysis results, the firm value decreases when there is an increase in the MV/BV ratio of the firm. This result is not similar to the

results of Birgili and Düzer (2010) and Ayriçay and Türk (2014). They studied BIST100 (ISE 100) production companies and found a significant positive relationship between stock market value and MV/BV ratio. The reason for this may be that the price was used as data in the study of Ayriçay and Türk (2014) (Küçükkaplan, 2013: 163). In addition, in our study, the firm value variable was used in the research as the change in firm value before and after the merger and acquisition. In our study, the companies that have realised mergers and acquisitions were taken into account, and the Tobin q value was used as the firm value.

An increase in the MV/BV ratio means that the value of the firm's stocks has increased. If this ratio is less than 1, the company cannot create value for its shareholders (Küçükkaplan, 2013: 165). When we consider it in terms of the manager's overconfidence, we can explain the negative relationship between the MV/BV ratio of the firm and the firm value as follows. Managers chose the target firm because of its high value. However, the expected increase in the firm's value did not occur because the firm found its actual value after the merger or acquisition.

A 1% increase in firm size, a control variable, will decrease the firm value by 0.025%. A negative relationship was found between firm size and firm value. The change in firm value in large firms is generally smaller than in smaller firms. The high credibility of large companies, their easy availability of funds and low cost of funds may lead the managers of large companies to take more risky decisions. This situation triggers managers to make investment decisions by acting overconfidence and causes them to make erroneous decisions that reduce the firm's value. This result is similar to the study of Ferris, Jayaram and Sabherwal (2013, cited by Kilian & Schindler, 2014).

As a result of the research, it was concluded that the overconfidence variable did not affect the firm value statistically significantly. However, the sign of the effect of the overconfidence variable on the firm value was negative. The negative sign supports studies that state that manager overconfidence reduces firm value (Malmendier & Tate, 2004; Liu et al., 2009; Lin et al., 2008; Baker et al., 2012; Liu & Xie, 2011).

Model 2: Multiple Linear Regression Results Using Stock Market Value as Firm Value

As a result of the variable selection, it was determined that only the leverage ratio had a significant effect on the firm value. The model with a significant result is as follows, and the results of the model are given in Table 3.

$$\text{Stock Market Value} = \alpha + \beta \text{LE} + \varepsilon_i$$

Table: 3
Multiple Linear Regression Results Using Stock Market Value as Firm Value

| Constant (C) | LE | R ² | F |
|----------------|-----------------|----------------|------------------|
| ,049 (,000) | -,001 (,000) | ,174 | 14,712 (,000) |

Values in parentheses indicate p-values.

$R^2 = 0,174$ obtained as a result of the analysis. The result is statistically significant and negative. A 1% increase in leverage reduces the firm's value by 0.001%. Excessive use of debt in firms increases the firm's bankruptcy risk. This leads to a rise in both the cost of the firm's equity and the cost of debt. This results in a decrease in the value of the stocks. This result is similar to Birgili and Düzer's (2010) study.

In addition, the high leverage ratio in the firm plays a vital role in preventing the merger and acquisition decisions taken by the managers, which may cause a decrease in the firm's value (Kilian & Schinder, 2014: 29). As a result of the research, it was concluded that the overconfidence variable did not affect the firm value statistically significantly. However, the sign of the effect of the overconfidence variable on the firm value was negative. This result is similar to Kilian and Schinder's (2014) study and Yalçın's (2014) study, which found a negative relationship between firm debt level and the overconfidence variable.

Model 3: Multiple Linear Regression Results Using Enterprise Value as Firm Value

Enterprise value is the firm's value when it is acquired with all its debts and receivables at the time of its acquisition (Taner & Akkaya, 2003: 3). As a result of the analysis we made by considering the enterprise value, it was determined that the variable of overconfidence, the P/E ratio and the MV/BV ratio had a significant effect on the firm value. The model with significant results is as follows. The results of the model are given in Table 4.

$$\text{Enterprise value} = \alpha + \beta \text{OC} + \beta \text{PE} + \beta \text{MVBV} + \varepsilon_i$$

Table: 4
Multiple Linear Regression Results Using Enterprise Value as Firm Value

| Constant (C) | OC | MVBV | PE | R^2 | F |
|-----------------|-----------------|-----------------|----------------|-------|-----------------|
| 2,016 (,008) | -,360 (,023) | -,812 (,025) | ,074 (,002) | ,281 | 7,154 (,000) |

Values in parentheses indicate p-values.

As a result of the analysis, it was found that $R^2 = 0,281$. The effect of the overconfidence variable on the firm value is at the 1% significance level, and there is a negative effect. A 1% increase in manager overconfidence reduces the firm value by 0.36%. This shows that managers underestimate the risk of acting overconfidence and the risk of investment decisions taken with overconfidence. Thus, managers are overconfidently optimistic and make the wrong investment decision. This result is similar to the study of Malmendier and Tate (2004), Liu et al. (2009), Lin et al. (2008), Baker et al. (2012) and Liu and Xie (2011).

The effect of the price-earnings ratio on firm value is statistically significant and positive. A 1% increase in the price-earnings ratio increases firm value by 0.074%. A firm with a high P/E ratio can merge with a firm with a low P/E ratio, thereby increasing the market value of its stocks and thus achieving the purpose of the merger. In addition, investors

pay high prices for the firm's stocks, assuming that the firm will grow in the coming years by not distributing dividends and directing its profits to investors. This result is similar to Birgili and Düzer's (2010) study.

According to the significance values of the variables, the increase in the MV/BV ratio, which is the control variable, causes a decrease in the firm value. A 1% increase in the firm's market value to book value ratio reduces the firm value by 0.812%. It is seen that the MV/BV ratio affects the firm value negatively. This result differs from the literature. This is due to the data used in the research and the mergers and acquisitions of the companies included in the study, as stated in Model 1.

5. Conclusion

The ability of companies to adapt to the globalising world and to survive in a competitive market depends on making the right financial decisions. The role of the manager is vital in the financial decisions taken in the company. Financial decisions affect the value of the firm. The firm's high value is also a factor that leads investors to invest in the stocks of this firm. Considering that maximising the value of the stock is important for all stakeholders associated with the firm, the financial decisions taken by the firm and the managers who directly or indirectly influence these decisions are obvious.

Although studies examining managers' irrational behaviours are increasing daily, there is no consensus. One of the irrational behaviours of managers accepted in the literature is overconfidence. Research on managerial overconfidence suggests that managers are optimistic about the firm's financial decisions, underestimate the investment's risk, and miscalculate the investment's net present value. Overconfident managers may cause a decrease in the value of the firm by making an investment that should not be made.

This study aims to research whether the overconfidence behaviours of managers who have made mergers and acquisitions affect the firm value. The contribution of this study to the literature is that the overconfidence behaviours of managers who have performed mergers and acquisitions on firm value are researched. Although the effect of manager overconfidence on firm value has been investigated in the sources, no study has been found that examines the impact of manager overconfidence on firm value in mergers and acquisitions.

In this research, the effect of executive overconfidence on firm value in companies that perform mergers and acquisitions was investigated with the help of three models. Although no statistically significant result was obtained regarding the effect of manager overconfidence on firm value in Model 1 and Model 2, it was determined that the direction of the effect was negative in both models. In Model 3, it has been concluded that overconfidence in managers who carry out mergers and acquisitions negatively affects the firm's value. This result is similar to the studies of Malmendier and Tate (2004), Liu et al. (2009), Lin et al. (2008), Baker et al. (2012) and Liu and Xie (2011) show.

Wang (2017) researched the effect of manager overconfidence on M&A decisions for firms listed on the Shanghai and Shenzhen Stock Exchanges from 2013-2015. As a result of the research, Wang found that overconfident managers were more likely to implement mergers and acquisitions. What is desired is the increase in the firm’s value due to merger and acquisition decisions. In our study, a decrease in the firm value was observed after the M&A was implemented by the managers who performed M&A and had overconfidence. The reduction in the firm's value indicates that the manager made a miscalculation and made an erroneous decision due to overconfidence while making the merger and acquisition decision. This leads to a decrease in the wealth of the shareholders. For this reason, it is expected that the detection of manager overconfidence in the merger and acquisition decision will contribute to the effective merger and acquisition of the firms and the evaluation of the managers’ decisions by considering the overconfidence.

Malmendier and Tate (2008) and Baker et al. (2012) stated that managers of firms with past superior operating performance might have overconfidence behaviour. On the other hand, Malmendier and Tate (2004) drew attention to the fact that managers of firms with high internal financing may be more overconfident. In this respect, firms with past superior operating and high internal financing should also consider the effect of manager overconfidence when making mergers and acquisitions. On the other hand, Wang (2017) stated that independent directors make independent decisions about the decisions taken by the firm management. According to the results of our study, there is a negative relationship between the overconfidence levels of managers who performed mergers and acquisitions and the change in firm value. For this reason, it may be better for independent valuation institutions to manage their merger and acquisition decisions. Since these institutions are outside the company, there is no conflict of benefit with the company. These companies make decisions to maximise firm value. In addition, the company may decide on mergers and acquisitions through the board of directors’ meetings with broader participation. Thus, it may be possible for rational and irrational managers and employees to make better financial decisions together.

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On Optimal Toll Design for Bosphorus Crossings

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Boğaziçi Geçişleri için Optimal Geçiş Ücreti Tasarımı Üzerine

Abstract

For many years, two toll bridges served commuter demand to cross the strait called Bosphorus in Istanbul, Turkey. An underground connection called the Eurasian tunnel had been recently launched to relieve the strait's traffic. We study a simple transportation model that incorporates the forces that have come into play after the opening of the Eurasian tunnel. We find that for welfare maximisation, the premium paid for using the tunnel should be fixed in the two directions and not excessive. The current toll regime violates these features, and we recommend its amendment in light of our findings.

Keywords : Congestion, Toll Bridges, Mixed Duopoly, Regulation, Bosphorus.

JEL Classification Codes : C72, L13, L32, L38, L51, R40, R48.

Öz

Uzun yıllar boyunca, İstanbul Boğazı'nı geçmek isteyen taşıtlara iki ücretli köprü hizmet verdi. Yakın bir zaman önce ise, Boğaz'da oluşan trafiği rahatlatmak amacı ile Avrasya tüneli adı verilen bir yeraltı bağlantısı hizmete açıldı. Bu çalışmada, Avrasya tünelinin açılmasından sonra devreye giren güçleri bünyesinde barındıran basit bir ulaşım modelini ele aldık. Yaptığımız analizler, refahın maksimizasyonu için, tünel kullanımı için ödenen primin iki yönde aynı olması ve aşırı olmaması gerektiğini ortaya koyuyor. Mevcut geçiş ücret rejimi bu özellikleri ihlal etmekte. Bulgularımızın ışığında mevcut geçiş ücret rejiminde iyileştirme yapılmasını öneriyoruz.

Anahtar Sözcükler : Trafik Sıkışıklığı, Ücretli Köprü, Yarı Kamusal Düopol, Regülasyon, Boğaziçi.

1. Introduction

Traffic congestion is a big problem in Istanbul, Turkey. According to TomTom's annually released Traffic Index, Istanbul was the 5th most congested city in the world in 2020 and the most congested one in 2015 (among over 400 cities). In a recent survey study by Aydın et al. (2019), Istanbulites ranked traffic congestion as the gravest problem of the town, above unemployment, urban transformation, and the shortcomings in education and urban infrastructure. The city's annual traffic congestion cost is around £2 billion.

The city's most congested traffic is probably over the Bosporus, a narrow strait that divides the city into its Asian and European sides. Of the city's 15 million residents, about one-third live on the Asian and two-thirds on the European side. As many residents live and work on two different sides, there is a high daily commuter demand to cross the strait. Until 2016, this demand had been served by two bridges. To relieve the strait's traffic, an underground connection was launched in December 2016, called the Eurasian tunnel, located in the densely populated south of the city¹. But the strait's traffic problem is far from over, especially in rush hours. As a reference for comparison, the average daily number of vehicles using the two bridges in both directions was 386,400 in 2015 and 319,710 in 2018; for details, see (Kara Yolları Genel Müdürlüğü, 2019; 2016).

In this paper, we study optimal toll design for Bosporus crossings. Tolling vehicles on congested roads is a common practice around the world. It makes economic sense since a vehicle's use of a congested highway leads to negative externalities: for other commuters, such as longer waiting hours, mental distress, and more fuel costs, and the rest of the society, as air pollution. Therefore, a toll on a congested road is a corrective tax, preventing overuse beyond the efficient level. As might be expected, in Istanbul, too, vehicles are tolled on the strait since the first bridge's inception.

Our research study is spurred by the changes brought in by the opening of the Eurasian tunnel. Before then, the commuter demand to cross the strait was served by the two bridges, which the government owns and operates via its agency, Turkey's General Directorate of Highways (GDH). The Eurasian tunnel, however, was funded by private enterprise under the build-operate-transfer model, and it now has a private operator. This does not mean that its private operator has complete control over the tunnel's toll scheme. It has "guaranteed minimum revenue" and "profit-sharing for parts exceeding guaranteed revenue" arrangements with the government. Therefore, the tunnel's terms of operation are settled in negotiations between the government and the private operator.

¹ In 2016, a third bridge across the strait has become operational, too. But in the rest of this paper, we focus our attention on the two bridges and the Eurasian tunnel. We assume away the third bridge for two reasons: First, the third bridge is located in the sparsely populated north of the city, and it is primarily used for transit traffic by buses and long vehicles rather than by Istanbulites. Second, assuming the third bridge helps simplify our analysis without losing the main insights.

For many years, the government has used a unidirectional toll regime on the two bridges, meaning that vehicles are tolled only when they cross Europe to Asia. Indeed, tolling vehicles only in one direction made much sense until 2016: When alternative crossings were absent, a car crossing the two bridges in one direction had to come back also by using the two bridges. Therefore, tolling a vehicle T Liras in each direction was equivalent in revenue to tolling the vehicle $2T$ Liras only from Europe to Asia. But the unidirectional toll regime had its advantages: It helped eliminate the need to install and operate tolling equipment from Asia to Europe. In this direction, the traffic flow was not impeded by tolling.

But the opening of the Eurasian tunnel now casts doubt on the effectiveness of a unidirectional toll regime on the two bridges. Since its inception, in the tunnel, vehicles are tolled at a fixed rate in both directions. Furthermore, the tunnel's toll rate is much higher than the toll rate on the two bridges. To put our discussion in perspective, Table 1 below presents the toll rates in 2021 for standard automobiles in the tunnel and on the two bridges.

Table: 1
Toll Rates for A Standard Automobile on the Two Bridges and in the Tunnel

| | Europe → Asia | Asia → Europe | Roundtrip |
|--------------------------------------|---------------|---------------|-------------|
| Two bridges | 13.25 Liras | toll-free | 13.25 Liras |
| The Eurasian tunnel | 46.00 Liras | 46.00 Liras | 92.00 Liras |
| Premium paid for the Eurasian tunnel | 32.75 Liras | 46.00 Liras | |

As seen in Table 1, commuters face asymmetric incentives under the effective toll schemes when they cross from Europe to Asia and from Asia to Europe: The premium paid for the tunnel is 32.75 Liras from Europe to Asia and 46.00 Liras from Asia to Europe. Public criticism is also that the tunnel's toll rate is too high. The opening of the Eurasian tunnel raises several public policy questions: One question is about the fair distribution of toll revenue. Note that under the effective toll schemes, a commuter who crosses from Europe to Asia via the tunnel may divert to the two bridges in the opposite direction since from Asia to Europe, the bridges are toll-free. But this commuter does not pay a toll to the government, although in her roundtrip, she uses both the tunnel and one of the two bridges. But the more important question is about the efficiency of the distribution of the strait's traffic load. The premium paid for the tunnel is too high, even in the direction from Europe to Asia. Arguably, this situation causes too many vehicles to divert to the bridges, leading to overcongestion (congestion beyond the efficient level) and loss in social welfare.

This paper aims to study the above issues and offer guidance on public policy. To this end, we introduce a transportation model. Our model is simple, yet it captures the problem's main ingredients.

We assume that there are two crossings connecting the two sides of a city, A and E —as per Asia and Europe. Crossing 1 is privately operated, as per the Eurasian tunnel, and

crossing 2 is publicly operated, as per the two bridges². The two crossings may have different capacities. For instance, in Istanbul, in one direction, there are seven lanes on the two bridges and two lanes in the tunnel, meaning that the capacity to carry the traffic load is higher on the two bridges.

We assume a continuum of commuters who wish to transport from side A to E. We also assume that the model is symmetrically applicable in the opposite direction. Our model captures the heterogeneity in commuter preferences by assuming that commuters are of two types: type 1 commuters, whose favourite crossing is 1, and type 2 commuters, whose favourite crossing is 2. We assume that crossing 1 is "overpreferred" because if each type uses its favourite crossing, its traffic density (the mass of commuters divided by capacity) becomes higher. In the Bosphorus, arguably, the Eurasian tunnel is the preferred crossing because its capacity is smaller, and it is located in the densely populated southern part of the city.

In our model, the incentives faced by a commuter are captured through three cost items: the rates of toll, the cost of diversion, and the cost of congestion. A commuter using crossing i pays its rate of toll T_i . If i is not her favourite crossing, she also incurs a diversion cost since she is diverting from her optimal route. Finally, the commuter incurs a congestion cost. We assume that the rate of congestion cost is a convex function of traffic density. This assumption is in line with the triangular traffic flow-density curve, commonly used in the transportation literature. In our model, each commuter uses the crossing that minimises her aggregate cost. For simplicity, we assume that the demand to cross the strait is inelastic (i.e., every commuter crosses the strait).

The focus of our analysis is (social) welfare maximisation. Since tolls are transferred payments, welfare is maximised when the sum of the diversion and congestion costs is minimised. Let μ^w denote the welfare-maximizing allocation. Let T_1 and T_2 be the rates of tolls for crossings 1 and 2. Thus, $T_1 - T_2$ is the premium paid for using the overpreferred crossing. Among our findings, the two results that are of greatest practical value are as follows: In Proposition 1, we show that under μ^w , the traffic density is higher at the overpreferred crossing (crossing 1). In Proposition 2, we show that there is an optimum premium level that induces the allocation μ^w .

Simple as they may seem, Propositions 1 and 2 have important implications regarding the design of the Bosphorus toll schemes. They show that for welfare maximisation, the premium paid for the Eurasian tunnel should be the same in the two directions and not be set at an excessive rate. The current practice, however, is diametrically opposed to this finding. Under the existing toll schemes, the tunnel's premium rate is very high and is not

² We do not introduce a separate crossing for each bridge in our model since doing so will complicate our analysis without changing the main insights.

the same in the two directions. In light of our findings, we recommend lowering the premium paid for the tunnel and setting the same in the two directions³.

In current practice, as explained above, the government tolls vehicles only on the bridges when they cross Europe to Asia. It is worth mentioning that the government need not abandon this historical practice. The strait's traffic flow can optimally be distributed across the tunnel and the two bridges while continuing with the historical practice of tolling vehicles only when they cross Europe to Asia. As an illustration of this point, for the tunnel, suppose that the optimum premium rate is 20 Liras. Also, as in Table 1, suppose that the government wants to toll vehicles 13.25 Liras for a roundtrip on the bridges. Then, the optimal traffic distribution can be achieved in both directions under the following toll regime: On the bridges, vehicles are tolled 13.25 Liras from Europe to Asia and not tolled from Asia to Europe. In the tunnel, vehicles are tolled 33.25 Liras from Europe to Asia ($=13.25+20$) and 20 Liras from Asia to Europe ($=0+20$).

The rest of the paper is organised as follows: Section 2 presents the relevant literature. Section 3 introduces our model. Section 4 presents our results: In Section 4.1, we identify the welfare-maximizing allocation. Section 4.2 studies the implementation of the welfare-maximizing allocation as an equilibrium outcome. In Section 4.3, we obtain closed-form solutions in our model under the simplifying assumption that the rate of the congestion cost function is linear. In Section 5, we conclude with a summary of our findings. In Appendix A, we present the triangular traffic flow-density curve and justify our assumption that the rate of congestion function is convex. In Appendix B, we present two proofs omitted from the main text.

2. Related Literature

In the analysis of our model, we consider two equilibrium notions: In a "regulated equilibrium," we assume that the government controls the toll rates for both crossings. In an "unregulated equilibrium," crossing 1's toll rate is set by its private operator under the profit-maximization motive. Our analysis based on the unregulated equilibrium notion relates our study to the literature on mixed-oligopoly markets. In a mixed-oligopoly market, several profit-maximising firms compete against a welfare-maximizing public enterprise, as assumed in our model under the unregulated equilibrium notion.

Mixed-oligopoly markets are prevalent worldwide in various sectors such as healthcare, insurance, banking, energy, steel, postal service, and telecommunications. The studies in this literature considered the impact on the welfare of the presence of the public enterprise (Anderson et al., 1997; de Fraja & Delbono, 1989; Ishibashi & Matsumura, 2006),

³ The first draft of this article was submitted in late 2021. After the submission, in January 2022, the tolling regime for Bosphorus crossings in Istanbul was amended. In addition to the usual annual inflation adjustments in toll rates, just as for the Eurasian tunnel, on the bridges too, vehicles began to be tolled in both directions at a fixed rate. Consequently, the premium paid for using the tunnel was fixed in the two directions, which is in line with one of the main conclusions of our analysis in this paper.

of the partial privatisation of the public enterprise (Fujiwara, 2007; Matsumura & Kanda, 2005), of the absence of the entry barriers (Anderson et al., 1997; Matsumura & Kanda, 2005), and collective bargaining by public employees (Ishibashi & Matsumura, 2006). For a survey on mixed-oligopoly games, see Bös (2015). For older surveys, see Condon (1994), Nett (1993), and De Fraja and Delbono (1989)⁴.

The transportation model in our paper is customised and tailored to study optimal toll design for Istanbul's Bosphorus crossings. Therefore, in specific dimensions, it differs from earlier mixed-oligopoly studies: In our setting, firms (operators of crossings) have zero-cost functions, the number of firms is fixed, and the goods are heterogeneous (i.e., commuters have varying preferences over the two crossings). Furthermore, in our setting, firms engage in a two-way pricing scheme (i.e., they toll vehicles in both directions). However, the most characteristic feature in our setting is that the level of demand influences a consumer's payoff: a commuter's derived utility from using a crossing decrease when its congestion level (i.e., its demand level) is higher.

We should also note that there is a line of research in the game theory literature that studies the congestion of resources. Like our model, self-interested agents route traffic through a congested network in routing games. The congestion level on the network's edge increases with the number of agents travelling through that edge. For studies on routing games, see Chapter 18 in Nisan et al. (2007) and the references therein. Yet, in these studies, resources are free for the users, as opposed to in our setting where commuters pay to use the resources (i.e., the two crossings).

3. Model

Let A and E be the two sides of a city, as per Asia and Europe in Istanbul. We assume that there is a continuum of commuters $[0,1]$, each with an infinitesimal mass, who wish to travel from side A to E . Our model is equally applicable when commuters are to travel in the opposite direction.

Let 1 and 2 be the two crossings that connect the two sides. Crossing 1 is intended to stand for the Eurasian tunnel in Istanbul. Crossing 2 is intended to stand for the two bridges.

For commuters, crossings 1 and 2 are imperfect substitutes: Under *ceteris paribus* conditions (i.e., under similar toll rates and congestion levels), some commuters prefer crossing 1 over 2, and others prefer crossing 2 over 1. For instance, a commuter will find it more convenient to use crossing 1 if her home and workplace on sides A and E are closely

⁴ For other mixed-oligopoly studies, see Merrill and Schneider (1966), Harris and Wiens (1980), Estrin and De Meza (1995), Cremer et al. (1989), Matsushima and Matsumura (2003), and Casadesus-Masanell and Ghemawat (2006). For mixed-oligopoly studies in the transportation literature, see Qin et al. (2017), Czerny et al. (2014), Mantin (2012) and Yang and Zhang (2012).

located to the endpoints of crossing 1. A route via crossing 2 then takes longer, leading to increased travel time and fuel expenses.

The heterogeneity in commuter preferences is embodied in our model: We call the commuters in the intervals $[0, x)$ and $[x, 1)$, in order, *type 1* and *type 2* commuters. A type i commuter's favourite crossing is crossing i , and she incurs a *diversion cost* if forced to "divert" to her non-favourite crossing. We assume that the rate of diversion cost, $c > 0$, is constant. Thus, a commuter who diverts to her non-favourite crossing incurs a diversion cost equal to her "infinitesimal mass" multiplied by c . This commuter incurs no diversion cost if she uses her favourite crossing.

A crossing's *capacity* helps determine the traffic load it can carry without causing much traffic congestion. One way to interpret the capacity of a crossing is as being proportional to its number of lanes. Nevertheless, other factors may also play a role in determining a crossing's capacity, such as the road quality and the capacities of the road networks connected to the crossing's entry and exit points. We normalise the sum of capacities of the two crossings to be 1. Let $k \in (0, 1)$ and $1 - k$ be, in order, the capacities of crossings 1 and 2.

The *traffic density* at a crossing is the ratio of the total mass of commuters using that crossing to its capacity.

We assume that crossing 1 is *overpreferred*, and crossing 2 is *underpreferred*, in the sense that $x > k$. In other words, we assume that if every commuter uses her favourite crossing, crossing 1's traffic density, $\frac{x}{k}$, will be greater than crossing 2's traffic density, $\frac{1-x}{1-k}$.

Notice that the assumption that crossing 1 is overpreferred is in line with the presumption that under *ceteris paribus* conditions (i.e., if toll rates were similar), the Eurasian tunnel would be in high demand by Istanbulites. But the analysis in our paper is applicable even if this supposition is wrong: If the Eurasian tunnel is the underpreferred crossing, we can interpret crossing 2 as the Eurasian tunnel and crossing 1 as standing for the two bridges.

Congestion means the traffic density is too high. In congested traffic, travel times and fuel expenses are higher, and commuters suffer mental distress. We group such expenses incurred due to congested traffic under the heading *congestion cost*. The congestion cost at a crossing depends on the crossing's traffic density. We assume that the rate of congestion cost is a function φ of the traffic density t . Thus, a commuter incurs a congestion cost equal to her "infinitesimal mass" multiplied by $\varphi(t)$ when the traffic density is t .

Our analysis builds on certain assumptions about model parameters and commuter behaviour. For expositional ease, we will introduce these assumptions as they are needed. Our first assumption is about the rate of congestion function φ . As given below, we assume that φ is convex.

Assumption 1: (convexity) $\varphi'(t) > 0$ and $\varphi''(t) \geq 0$ for all t .

Assumption 1 can be justified by the "triangular view" commonly held in the transportation literature. The triangular view pertains to the traffic flow, defined as the number of vehicles per minute crossing a reference point on the road. The traffic flow is a function of the traffic density. According to the triangular view, the traffic flow increases at a linear rate up to some critical level of traffic density, t^* , and then it decreases at a linear rate above the critical level t^* . When the traffic density is below t^* , it is called the "free-flow phase," and when it is above t^* , it is called the "congestion phase." For the interested reader, in Appendix A, we show that in the congestion phase, the time spent on a journey increases convex as traffic density increases. This justifies Assumption 1 in the congestion phase. In the free-flow phase, however, Assumption 1 would not hold, and the results in our paper are not applicable. Nevertheless, Istanbul's Bosphorus traffic is most congested, so our analysis is suitable for most of the day (except for the overnight traffic from, say, from 2:00 am until 6:00 am)⁵.

Our second assumption pertains to commuter behaviour. As given below, we carry out our analysis under a "covered market" assumption, which states that commuters always use one or the other crossing.

Assumption 2: (covered market) Each commuter uses the crossing for which the aggregate cost that she incurs is smaller. In the case of equality, she uses crossing 2⁶.

Put differently; the covered market assumption assumes that the commuter demand to cross the strait is *inelastic*. It presumes that for each commuter, the willingness to travel is sufficiently high, or the aggregate cost rate is low enough so that she never opts out of a journey. In the Bosphorus setting, Assumption 2 can be justified on two grounds. First, for the most part, Istanbulites cross the strait regularly for business purposes rather than for pleasure. This type of journey can be seen as a "necessity," not very sensitive to the costs of toll and congestion. Second, for various reasons, the government does not set a prohibitively high toll rate on the two bridges-one that would lead to a meaningful fall in demand. Therefore, our covered market assumption is arguably a good approximation of the real-life situation in Bosphorus traffic. We should also note that Assumption 2 helps simplify our analysis and obtain closed-form solutions from a modelling perspective.

The two crossings have separate operators. Let operator i be the operator of crossing i . We assume that crossing 1's operator is private (as per the Eurasian tunnel) and crossing 2's operator is public (as per the two bridges).

⁵ For studies on the triangular view, see Saberi and Mahmassani (2012), Geroliminis and Sun (2011), Cassidy et al. (2011), and Geroliminis and Daganzo (2008).

⁶ In Assumption 2, the presumption that a commuter uses crossing 2 when the aggregate cost is the same is an innocuous one, one that brings expositional ease in our analysis.

Let T_i be the rate of the toll that operator i charges a commuter using crossing i . Thus, if a commuter uses crossing i , she incurs a toll equal to her “infinitesimal mass” multiplied by T_i . The amount $T_1 - T_2$ is the *premium* that the commuter pays for using the overpreferred crossing (crossing 1).

The rate of the aggregate cost incurred by a commuter is equal to the sum of the rates of diversion cost, congestion cost, and the toll that she incurs. For instance, if d and $1 - d$ are, respectively, the total masses of commuters using crossings 1 and 2, then the rate of the aggregate cost incurred by a commuter of type j using crossing i is:

- $T_1 + \varphi\left(\frac{d}{k}\right)$, for $j = 1$ and $i = 1$
- $T_1 + c + \varphi\left(\frac{d}{k}\right)$, for $j = 2$ and $i = 1$
- $T_2 + c + \varphi\left(\frac{1-d}{1-k}\right)$, for $j = 1$ and $i = 2$
- $T_2 + \varphi\left(\frac{1-d}{1-k}\right)$, for $j = 2$ and $i = 2$

The aggregate cost incurred by a commuter is equal to her “infinitesimal mass” multiplied by the rate of aggregate cost that she incurs.

An allocation specifies the crossing used by each commuter. Under optimal commuter behaviour (Assumption 2), all type 1 commuters use crossing 1, or all type 2 commuters use crossing 2. Therefore, we can define an allocation simply as follows: An *allocation* is a number $\mu \in [0,1]$, with the interpretation that under μ , the commuters in the interval $[0, \mu)$ use crossing 1, and the commuters in the interval $[\mu, 1)$ use crossing 2. Notice that if $\mu = 0$, every commuter uses crossing 2, and for $\mu = 1$, every commuter uses crossing 1.

Let $\mu(T_1, T_2)$ be the allocation induced under optimal commuter behavior when the rates of tolls are T_1 and T_2 ⁷. Then, operator 1’s toll revenue is $T_1\mu(T_1, T_2)$, and operator 2’s toll revenue is $T_2(1 - \mu(T_1, T_2))$. We assume that operating costs are negligible, and hence, an operator’s profit is equal to its toll revenue. But the results in our paper remain unchanged if operating costs were non-negligible but fixed. Because in that case, too, operators would be maximising their profits by maximising their revenues.

4. Results

4.1. Welfare Maximisation

In this subsection, we identify the allocation that maximises social welfare.

⁷ The allocation $\mu(T_1, T_2)$ is unique. We leave the easy proof to the interested reader.

Welfare maximisation necessitates minimising the costs to society. Note that tolls are transferred payments from commuters to the operators of the two crossings. Therefore, the social costs include only the total congestion and diversion costs.

Let $TDC(\mu)$, $TCC(\mu)$, and $SC(\mu)$ denote, respectively, the total diversion cost, the total congestion cost, and the social cost under the allocation μ . Then:

$$TDC(\mu) = c |\mu - x|$$

$$TCC(\mu) = \mu \varphi\left(\frac{\mu}{k}\right) + (1 - \mu) \varphi\left(\frac{1-\mu}{1-k}\right)$$

$$SC(\mu) = TDC(\mu) + TCC(\mu)$$

With some algebra, one can show that the first two derivatives of the function $TCC(\mu)$ are as follows:

$$TCC'(\mu) = \left[\varphi\left(\frac{\mu}{k}\right) - \varphi\left(\frac{1-\mu}{1-k}\right) \right] + \left[\frac{\mu}{k} \varphi'\left(\frac{\mu}{k}\right) - \frac{1-\mu}{1-k} \varphi'\left(\frac{1-\mu}{1-k}\right) \right]$$

$$TCC''(\mu) = \left[\frac{2}{k} \varphi'\left(\frac{\mu}{k}\right) + \frac{2}{1-k} \varphi'\left(\frac{1-\mu}{1-k}\right) \right] + \left[\frac{\mu}{k^2} \varphi''\left(\frac{\mu}{k}\right) + \frac{1-\mu}{(1-k)^2} \varphi''\left(\frac{1-\mu}{1-k}\right) \right]$$

By Assumption 1, we have $\varphi' > 0$ and $\varphi'' \geq 0$. Therefore, we obtain that $TCC'' > 0$. Furthermore, when we plug in $\mu = k$, we get $TCC'(k) = 0$. We present these findings in Lemma 1.

Lemma 1: Under Assumptions 1 and 2, $TCC'' > 0$ and $TCC'(k) = 0$.

Let μ^w denote the welfare-maximizing allocation: i.e., $SC(\mu)$ is minimized for $\mu = \mu^w$. Also, let μ^d and μ^c denote, in order, the allocations that minimise the total diversion cost and the total congestion cost. Proposition 1 characterises these allocations.

Proposition 1: Under Assumptions 1 and 2, we have:

$$\mu^d = x, \mu^c = k$$

$$\mu^w = x \text{ if } TCC'(x) \leq c$$

$$\mu^w \in (k, x) \text{ and } \mu \text{ solves } TCC'(\mu^w) = c \text{ if } TCC'(x) > c$$

Proof

The total diversion cost is zero and minimised when each commuter uses her favourite crossing. Thus, $\mu^d = x$. Also, by Lemma 1, we get $\mu^c = k$.

Let $\mu > x$. Then, $TDC'(\mu) = c > 0$. Also, since $\mu > k$, by Lemma 1, $TCC'(\mu) > 0$. Then, $SC'(\mu) = TDC'(\mu) + TCC'(\mu) > 0$. But then the allocation μ cannot be welfare-maximizing. Thus, $\mu^w \notin (x, 1]$.

Suppose that $TTC'(x) \leq c$. Let $\mu < x$. Then, $TDC'(\mu) = -c$. Note that, by Lemma 1, $TCC'' > 0$. Since $TTC'(x) \leq c$ and $\mu < x$, the fact that $TCC'' > 0$ implies that $TTC'(\mu) < c$. Then, $SC'(\mu) = TDC'(\mu) + TCC'(\mu) < 0$. But then the allocation μ cannot be welfare-maximizing. Thus, we get $\mu^w = x$.

Suppose that $TCC'(x) > c$. By Lemma 1, we have $TCC'(k) = 0$ and $TCC'' > 0$. These facts imply that there exists an allocation $\mu^* \in (k, x)$ such that $TCC'(\mu^*) = c$. Since $\mu^* < x$, we also get $TDC'(\mu^*) = -c$. Thus, we get $SC'(\mu^*) = TDC'(\mu^*) + TCC'(\mu^*) = 0$. Thus, $SC(\mu)$ is minimized for $\mu = \mu^*$. Thus, we have $\mu^w = \mu^*$. This completes our proof.

Proposition 1 states that the total diversion cost is minimised when each type uses its favourite crossing. It also says that the total congestion cost is minimised when the traffic distribution is balanced (i.e., when the two crossings have the same traffic density).

We say that the traffic distribution is *balanced* if the two crossings have the same traffic density (i.e., when they are equally congested). Note that the traffic density is balanced for $\mu = k$. As given in Proposition 1, the total congestion cost is minimised when the traffic distribution is balanced (i.e., $\mu^c = k$).

Finally, note that Proposition 1 states that $\mu^w \in (k, x]$, meaning that the welfare-maximizing allocation leads to unbalanced traffic distribution. Proposition 1 says that the traffic density should be higher at the overpreferred crossing (i.e., crossing 1) for welfare maximisation. Suppose the Eurasian tunnel is the overpreferred crossing. In that case, the policy implication is as follows: For social welfare maximisation, the traffic density in the Eurasian tunnel should not be less than that on the two bridges. Therefore, it is not optimal to set too high a toll rate on the Eurasian tunnel that would divert away too many commuters to the two bridges.

For $\mu = x$, each commuter type uses its favourite crossing. Therefore, we call $\mu = x$ a *separating allocation*. In our model, welfare can indeed be maximised under a separating allocation (i.e., $\mu^w = x$). This situation occurs if the rate of diversion cost is so excessive that the diversion cost needs to be eliminated for welfare maximisation. But this situation is not in line with the spirit of our analysis since we aim to capture the tradeoff that the social planner faces in balancing out the costs of diversion and congestion. Therefore, in the rest of the paper, we will proceed under Assumption 3, which guarantees that welfare is not maximised under a separating allocation.

Assumption 3: (**c is not excessive**) $c < TCC'(x)$.

4.2. Implementation of the Welfare-Maximizing Allocation

This section studies how the welfare-maximizing allocation μ^w can be implemented. In other words, we study how the social planner can induce μ^w as an equilibrium outcome. We consider two notions of equilibrium notions, which we introduce next.

Let $br(T_2) = \arg \max T_1 \mu(T_1, T_2)$ be operator 1's best response function (possibly multi-valued). That is, given T_2 , operator 1 maximizes its profit by setting $T_1 \in br(T_2)$. The two equilibrium notions that we consider are as follows.

Definition: A triplet $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is called a “regulated equilibrium.” A triplet $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is called an “unregulated equilibrium” if $T_1 \in br(T_2)$.

A few words are in place to give insight into our above definitions. Crossing 2 is publicly operated, so we presume that the social planner sets its rate. But the social planner may or may not have the power to regulate the toll rate for crossing 1, which is privately operated. Above, our regulated equilibrium notion presumes this prerogative for the social planner, and our unregulated equilibrium notion does not. Under our unregulated equilibrium notion, we assume that crossing 1's toll rate is set by its private operator under the profit-maximization motive.

The above two equilibrium notions correspond to two different perspectives regarding the operation of the Bosporus crossings in Istanbul. Since the bridges are under public operation (as per crossing 2 in our model), the government directly sets their toll rate. The Eurasian tunnel, however, is privately operated (as per crossing 1 in our model). The tunnel's terms of operation are negotiated between the government and its private operator. While the government has some influence regarding the tunnel's toll scheme, the extent of this influence is contestable. Therefore, in our analysis, we consider both scenarios.

The following two propositions identify what toll schemes induce the welfare-maximizing allocation as the outcome of a regulated and an unregulated equilibrium. The proofs are easy and left to the reader.

Proposition 2: Under Assumptions 1-3, $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is a regulated equilibrium such that $\mu(T_1, T_2) = \mu^w$ if:

$$T_1 - T_2 = c - \left[\varphi \left(\frac{\mu^w}{k} \right) - \varphi \left(\frac{1-\mu^w}{1-k} \right) \right]$$

Since $\mu^w \in (k, x)$, we also get $T_1 - T_2 < c$.

Proposition 3: Under Assumptions 1-3, $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is an unregulated equilibrium such that $\mu(T_1, T_2) = \mu^w$ if:

$$T_1 - T_2 = c - \left[\varphi \left(\frac{\mu^w}{k} \right) - \varphi \left(\frac{1-\mu^w}{1-k} \right) \right] \text{ and } T_1 \in br(T_2).$$

Since $\mu^w \in (k, x)$, we also get $T_1 - T_2 < c$.

Simple as they may be, Propositions 2 and 3 have important implications for our Bosporus setting. To emphasise these implications, we present below Corollaries 1 and 2. But before that, we need to introduce some new terminology and present Assumption 4.

One question pursued in our analysis is how the toll schemes should be set in two directions in our Bosphorus setting: i.e., when crossing from Asia to Europe and from Europe to Asia. In current practice, in the Eurasian tunnel, vehicles are tolled in both directions and at the same rate, and on the two bridges, only when they cross from Europe to Asia. For two-directional toll schemes, we introduce below the term "toll regime" and its special cases.

Definition: A "toll regime" is a four-tuple $\langle T_1, T_2, T'_1, T'_2 \rangle$, with the interpretation that the rates of tolls for crossings 1 and 2 are, in order, T_1 and T_2 from side A to E , and T'_1 and T'_2 from side E to A . We call $\langle T_1, T_2, T'_1, T'_2 \rangle$ a "unidirectional toll regime" if $T_2 = 0$. We call $\langle T_1, T_2, T'_1, T'_2 \rangle$ a "simple unidirectional toll regime" if $T_2 = 0$ and $T_1 = T'_1$.

Note that under a "unidirectional toll regime," at crossing 2, vehicles are tolled only in one direction (from side E to A). Under a "simple unidirectional toll regime," additionally, crossing 1's toll rate is set the same in both directions. In current practice, a simple unidirectional toll regime is used for Bosphorus crossings.

We are concerned with the "implementation" of the welfare-maximizing allocation. In other words, we inquire when the welfare-maximizing allocation is obtained as an equilibrium outcome. Below, we introduce these notions formally.

Definition: A toll regime $\langle T_1, T_2, T'_1, T'_2 \rangle$:

- implements the welfare-maximizing allocation in regulated equilibria if $\langle T_1, T_2, \mu^w \rangle$ and $\langle T'_1, T'_2, \mu^w \rangle$ are regulated equilibria
- implements the welfare-maximizing allocation in unregulated equilibria if $\langle T_1, T_2, \mu^w \rangle$ and $\langle T'_1, T'_2, \mu^w \rangle$ are unregulated equilibria

Note that we introduced our transportation model assuming that commuters wish to travel from side A to E . Our following assumption thinks that our transportation model is symmetrically applicable in the opposite direction-i.e., when commuters travel from side E to A .

Assumption 4: (**symmetry**) The same transportation model is applicable in the two directions: i.e., when commuters are to travel from side A to E and from side E to A .

Assumption 4 is not unrealistic when considered in our Bosphorus setting. In Istanbul, absent alternative means, each commuter who crosses from Asia to Europe (or from Europe to Asia) eventually crosses back in the reverse direction. And most often, in their reverse journeys, commuters use the exact opposite route, such as when they travel between home and workplace on the two sides. Therefore, our symmetry assumption arguably holds in our Bosphorus setting. But we should caution that while the commuters' transportation needs in the two directions may be the same in the aggregate, they may not be the same at a given point in time. For instance, in Istanbul, there are more workplaces on the European side. Consequently, the traffic flow is heavier from Asia to Europe in the morning and from

Europe to Asia in the evening. Arguably, a dynamic toll regime can more effectively distribute the traffic flow over time, under which toll rates increase with traffic density. But the authorities prefer to use a static toll regime in Istanbul, where toll rates are the same throughout the day. Therefore, in this paper, we abstract from dynamic considerations. And when attention is restricted to static toll regimes, our assumption that the city's transportation needs are symmetric in the two directions is realistic.

Corollaries 1 and 2 below follow Propositions 2 and 3 in order. They present the limitations regarding welfare maximisation if attention is restricted to unidirectional or simple unidirectional toll regimes.

Corollary 1: Under Assumption 1-4, there exists no simple unidirectional toll regime that implements μ^w in regulated equilibria. A unidirectional toll regime $(T_1, T_2 = 0, T'_1, T'_2)$ implements μ^w in regulated equilibria if

$$T_1 = T'_1 - T'_2 = c - \left[\varphi\left(\frac{\mu^w}{k}\right) - \varphi\left(\frac{1-\mu^w}{1-k}\right) \right].$$

Corollary 2: Under Assumption 1-4, there exists a unidirectional toll regime that implements μ^w in unregulated equilibria only if

$$c - \left[\varphi\left(\frac{\mu^w}{k}\right) - \varphi\left(\frac{1-\mu^w}{1-k}\right) \right] \in br(0).$$

The current toll regime for Bosporus crossings is a simple unidirectional one. Corollary 1 states that this toll regime cannot be welfare-maximizing. Under the current toll regime, commuters pay different premiums for the Eurasian tunnel in the two directions. But Corollary 1 states that there is a unique optimal premium, meaning that the current toll regime does not implement the welfare-maximizing allocation at least in one direction.

According to Corollary 1, the authorities must give up using a simple unidirectional toll regime for welfare maximisation. But note that they do not need to give up using a unidirectional toll regime. According to Corollary 1, on the bridges, vehicles can be tolled only from Europe to Asia, as in current practice, as long as the premium paid for the Eurasian tunnel is set the same and equal to its optimal level in both directions. For instance, if the optimal level of the premium is ₺20, and if the authorities want a toll rate of ₺10 for a roundtrip on the two bridges, this can be achieved under the following unidirectional toll regime as follows:

$$T_1 = 20, T_2 = 0, T'_1 = 30, T'_2 = 10$$

Corollary 1, studying regulated equilibria, identifies the optimal toll regime under the assumption that the authorities control all toll rates. However, if the Eurasian tunnel's toll rate is set by its private operator under the profit-maximization motive, we need to turn our attention to unregulated equilibria. Unfortunately, in an unregulated equilibrium, welfare is unlikely to be maximised under a unidirectional toll regime. Given the bridge's toll rate, its

private operator sets the Eurasian tunnel's toll rate at its profit-maximising level in an unregulated equilibrium. This premium level need not be welfare-maximizing. The government can finetune the toll rate for the bridges so that the induced premium level becomes optimal. But this "finetuned" toll rate is unlikely to be zero, as emphasised in Corollary 2. Therefore, if the tunnel's operator acts under the profit-maximization motive for welfare maximisation, the authorities may have to abandon using a unidirectional toll scheme and begin to toll vehicles in both directions.

4.3. Reduced Model

In this section, to get closed-form solutions, we simplify the assumption that the rate of congestion cost function φ is linear.

Assumption 5: (φ is linear) $\varphi(t) = \pi t$, $\pi > 0$.

Under Assumption 5, note that:

$$TDC(\mu) = c |\mu - x|$$

$$TCC(\mu) = \frac{\pi}{k} \mu^2 + \frac{\pi}{1-k} (1 - \mu)^2$$

$$SC(\mu) = TDC(\mu) + TCC(\mu)$$

First, we solve for the allocation that maximizes welfare.

Proposition 4: Under Assumptions 1-3 and 5, we have

$$\mu^w = k + \frac{c}{2k} k(1 - k)$$

Therefore, under μ^w , the traffic densities at crossings 1 and 2 are, respectively, $1 + \frac{c}{2k}(1 - k)$ and $1 - \frac{c}{2\pi}k$.

Proof

By Proposition 1, we should solve for $TCC'(\mu) = c$ to find $\mu = \mu^w$. Then:

$$2\frac{\pi}{k}\mu^w - 2\frac{\pi}{1-k}(1 - \mu^w) = c$$

$$\Rightarrow \mu^w = k + \frac{c}{2\pi}k(1 - k)$$

Note that the welfare-maximizing allocation induces an unbalanced traffic distribution. According to Proposition 4, under μ^w , the overpreferred crossing's traffic density is higher, and the unbalance grows as the ratio c/k increases. This result is expected: Under $\mu^c = k$, the total congestion cost is minimised. Under $\mu^d = x$, the total diversion cost is minimized. As the ratio c/k increases, the diversion cost's weight in the social cost

increases, bringing μ^w closer to μ^d . Therefore, as the ratio c/k increases, the overpreferred crossing's traffic density increases under the welfare-maximizing allocation.

In our next result, we identify the regulated equilibria.

Proposition 5: Under Assumptions 1-3 and 5, in a regulated equilibrium $\langle T_1, T_2, \mu(T_1, T_2) \rangle$, we have

$$\mu(T_1, T_2) = \begin{cases} 1 & \text{for } T_1 \leq B_1 \\ k - (T_1 - T_2 + c) \frac{k(1-k)}{\pi} & \text{for } B_1 < T_1 < B_2 \\ x & \text{for } B_2 \leq T_1 \leq B_3 \\ k - (T_1 - T_2 - c) \frac{k(1-k)}{\pi} & \text{for } B_3 < T_1 < B_4 \\ 0 & \text{for } B_4 \leq T_1 \end{cases}$$

where:

$$B_1 = T_2 - c - \pi \frac{1}{k}, B_2 = T_2 - c - \pi \frac{x-k}{k(1-k)}$$

$$B_3 = T_2 + c - \pi \frac{x-k}{k(1-k)}, B_4 = T_2 + c + \pi \frac{1}{1-k}$$

Proof

See Appendix B.

Note that for fixed T_2 , the function $\mu(T_1, T_2)$, given in Proposition 5, is continuous in T_1 . (The reader may verify this by checking the value of the function at corner points.)

Our following two results show how the social planner can induce the welfare-maximizing allocation as the outcome of a regulated and an unregulated equilibrium.

Proposition 6: Under Assumptions 1-3 and 5, $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is a regulated equilibrium such that $\mu(T_1, T_2) = \mu^w$ if the premium $T_1 - T_2$ is equal to $\frac{c}{2}$.

Proof

Using Proposition 2 and Assumption 5, we get:

$$T_1 - T_2 = c - \left[\pi \frac{\mu^w}{k} - \pi \frac{1-\mu^w}{1-k} \right]$$

$$\Rightarrow \mu^w = k - \frac{1}{\pi} (T_1 - T_2 - c) k (1 - k)$$

When we substitute for μ^w using Proposition 4, we get $T_1 - T_2 = \frac{c}{2}$.

Proposition 7: Under Assumptions 1-3 and 5, $\langle T_1, T_2, \mu(T_1, T_2) \rangle$ is an unregulated equilibrium such that $\mu(T_1, T_2) = \mu^w$ if:

$$T_2 = \frac{\pi}{1-k} \text{ and } T_1 = \frac{c}{2} + T_2$$

Proof

See Appendix B.

Corollaries 3 and 4 below follow Propositions 6 and 7. Under Assumption 5, they present the limitations regarding welfare maximisation if attention is restricted to unidirectional or simple unidirectional toll regimes.

Corollary 3: Under Assumptions 1-5, a unidirectional toll regime implements μ^w in regulated equilibria if $T_1 - T_2 = T'_1 - T'_2 = \frac{c}{2}$.

Corollary 4: Under Assumptions 1-5, the following toll regime implements μ^w in unregulated equilibria: $\langle T_1, T_2, T'_1, T'_2 \rangle$ such that $T_2 = T'_2 = \frac{\pi}{1-k}$ and $T_1 = T'_1 = \frac{c}{2} + T_2$.

Above, thanks to our simplifying assumption, we obtained closed-form solutions for optimal toll regimes. But otherwise, our findings are similar to the one in the preceding subsection: Corollary 3 states that a multiplicity of unidirectional toll regimes implement μ^w in regulated equilibria. But note that no simple unidirectional toll regime implements μ^w in a regulated equilibrium. Corollary 4 states that this conclusion is foregone if crossing 1's toll scheme is set by its private operator under the profit-maximization motive. Because there is a unique toll regime that implements μ^w in an unregulated equilibrium, which is not a unidirectional toll regime.

5. Summary

Divided by a narrow strait called the Bosphorus, Turkey's megacity Istanbul is located half in Asia and half in Europe. Commuter demand to cross the strait is naturally high, which has recently been served by two toll bridges. To relieve the traffic on the strait, an underground connection has been recently launched, the so-called Eurasian tunnel, which has a private operator. In current practice, on the bridges, vehicles are tolled at a low rate and only from Europe to Asia, and in the tunnel, at a much higher rate and in both directions. Arguably, the high premium paid for using the tunnel leads to its underutilisation. And the fact that the premium paid for the tunnel is not the same in the two directions leads to commuters facing asymmetric incentives when they cross from Asia to Europe and Europe to Asia. For instance, a commuter crossing Europe to Asia using the tunnel may opt for using a toll-free bridge in the opposite direction. The tunnel's opening raises several questions on public policy: It may be that the toll revenue sharing may not be fair. But more importantly, the strait's traffic load may not be distributed efficiently under the current toll schemes.

In this paper, we introduced a simple transportation model to explore these issues and offer guidance on public policy. Our model embeds in it the forces that have come into play after the opening of the Eurasian tunnel in Istanbul. In our model, two crossings connect the two sides of a city, one crossing standing for the Eurasian tunnel and the other for the two bridges. Commuters choose the crossings they use by minimising the total costs they incur, including the rate of toll, the cost of congestion, and the cost of diversion. The costs of congestion and diversion comprise such cost items as the excess time and fuel expended and the mental distress endured for waiting in congested traffic or taking a longer route.

The results of our analysis have several important implications for optimal toll design for Bosphorus crossings. We find that an optimal premium rate for the tunnel induces the welfare-maximizing allocation. Therefore, the tunnel's premium rate, not its toll rate, should be fixed in the two directions for welfare maximisation. Under a fixed premium rate, commuters will have no systematic motive to change the crossings they use when travelling in the two directions. This will also help eliminate suspicions about the fairness of the distribution of toll revenue. We also point out the premium rate can be fixed without compromising the government's historical practice of tolling vehicles on the bridges only from Europe to Asia. The bridges can remain toll-free from Asia to Europe if the tunnel's toll rate is reduced proportionately in this direction.

Our theoretical analysis cannot provide a numerical answer to the empirical question of the magnitude of the tunnel's optimal premium rate. Yet, our results shed some light on this question. We call a crossing "overpreferred" if it would be relatively in high demand under ceteris paribus conditions (i.e., under similar toll rates and congestion levels). We find that under the welfare-maximizing allocation, the congestion level cannot be lower in the overpreferred crossing. This result hints that in our Bosphorus setting, the Eurasian tunnel's toll rate should not be set so high as to divert away too many commuters leading to overcongestion on the two bridges. This is, however, in contradiction with the current practice. Therefore, in light of our findings, we recommend an amendment to the current toll schemes. In a nutshell, we recommend lowering the Eurasian tunnel's premium rate and setting the same in the two directions.

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Appendix A: The Triangular Flow-Density Curve

In Assumption 1, we assume that the rate of congestion function φ is convex. Since Assumption 1 is critical for our results, we devote this part to its justification. First, we need to recall a few concepts from the transportation literature.

Take a reference point on the road. The *velocity* is the speed at which vehicles pass through this reference point. Velocity is a function of the traffic density, t . Let $velocity(t)$ be the velocity function.

Let $time(t)$ be the function that shows how much time it takes to traverse a given road segment. Obviously, $time(t)$ is inversely proportional to the velocity of vehicles. Thus, we can write

$$time(t) = A \cdot \frac{1}{velocity(t)}$$

where A is a constant.

In the transportation literature, *flow* is defined as the number of vehicles passing a reference point in one unit of time. The flow is proportional to the multiplication of traffic density and velocity. Thus, we can write

$$flow(t) = B \cdot t \cdot velocity(t),$$

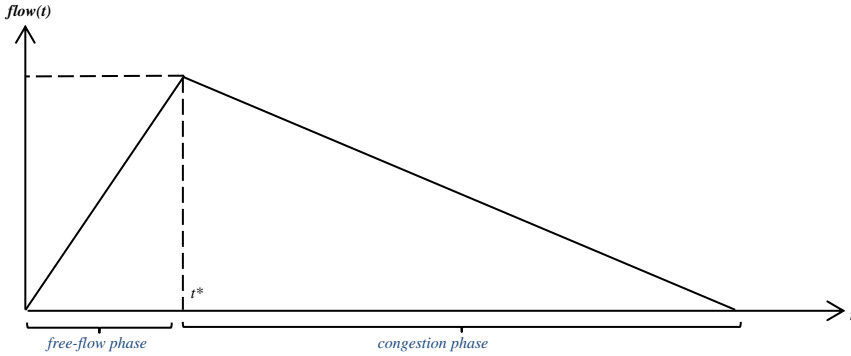
where B is a constant.

Using the above two equations, we get

$$time(t) = A \cdot B \cdot \frac{t}{flow(t)}$$

There is no direct relationship between flow and traffic density. On the one hand, the high traffic density means more vehicles are on the road, increasing the flow. On the other hand, when the traffic density is high, there is congestion, and the velocity is low, which tends to decrease the flow. The most common view of transportation literature about the relationship between flow and traffic density is that a triangular flow-density curve is the most accurate representation of real-world events. The triangular view is illustrated below in Figure 1.

Figure: 1
Triangular Flow-Density Curve



According to the triangular view, as shown in Figure 1, the flow increases linearly in traffic density t up to some level t^* . This interval is called the *free-flow phase*. Arguably, there is little traffic congestion in the free-flow phase; therefore, the flow increases linearly in traffic density.

It is called the *congestion phase* when traffic density exceeds the critical level t^* . According to the triangular view, in the congestion phase, as traffic density increases, the velocity declines fast. Consequently, the flow decreases at a constant rate, as shown in Figure 1. We can write this relationship as

$$flow(t) = D - \lambda t,$$

where $D, \lambda > 0$ are constants.

Therefore, in the congestion phase, we obtain:

$$time(t) = A \cdot B \cdot \frac{t}{flow(t)} = \frac{ABt}{D - \lambda t}$$

The first two derivatives of the function $time(t)$ are as follows:

$$\frac{dtime(t)}{dt} = \frac{ABD}{(D - \lambda t)^2} > 0, \quad \frac{d^2time(t)}{dt^2} = \frac{2\lambda ABD}{(D - \lambda t)^3} > 0$$

Therefore, according to the widely-held triangular view, in the congestion phase, a commuter's travel time increases convexly as traffic density increases. Consequently, if congestion cost is proportional to the travel time, the triangular view justifies our Assumption 1, that the rate of the congestion cost function is convex. Indeed, certain cost items will increase in time even faster than the linear rate, such as the costs of tardiness and commuter discomfort, which lends additional support to our Assumption 1.

Appendix B: Omitted Proofs

Proof of Proposition 5

- If $\mu(T_1, T_2) = 1$, it must be that under $\mu(T_1, T_2)$, type 2 commuters find it optimal to use crossing 1. (Type 1 commuters' choice is non-binding.) Then, we get:

$$T_1 + c + \pi \frac{1}{k} \leq T_2 \Rightarrow T_1 \leq T_2 - c - \pi \frac{1}{k}$$

- If $\mu(T_1, T_2) \in (x, 1)$, it must be that under $\mu(T_1, T_2)$, type 2 commuters face the same rate of aggregate cost at crossings 1 and 2. (Type 1 commuters' choice is non-binding.) Then, we get:

$$T_1 + c + \pi \frac{\mu(T_1, T_2)}{k} = T_2 + \pi \frac{1 - \mu(T_1, T_2)}{1 - k}$$

$$\Rightarrow \mu(T_1, T_2) = k - (T_1 - T_2 + c) \frac{k(1-k)}{\pi}$$

Also, for consistency, we must have:

$$\mu(T_1, T_2) \in (x, 1) \Rightarrow x < k - (T_1 - T_2 + c) \frac{k(1-k)}{\pi} < 1$$

$$\Rightarrow T_2 - c - \pi \frac{1}{k} < T_1 < T_2 - c - \pi \frac{x-k}{k(1-k)}$$

- If $\mu(T_1, T_2) = x$, it must be that under $\mu(T_1, T_2)$, type 1 commuters find it optimal to use crossing 1, and type 2 commuters find it optimal to use crossing 2. Then, we get:

$$T_1 + \pi \frac{x}{k} \leq T_2 + c + \pi \frac{1-x}{1-k} \text{ and } T_2 + \pi \frac{1-x}{1-k} \leq T_1 + c + \pi \frac{x}{k}$$

$$\Rightarrow T_2 - c - \pi \frac{x-k}{k(1-k)} \leq T_1 \leq T_2 + c - \pi \frac{x-k}{k(1-k)}$$

- If $\mu(T_1, T_2) \in (0, x)$, it must be that under $\mu(T_1, T_2)$, type 1 commuters face the same rate of aggregate cost at crossings 1 and 2. Then, we get:

$$T_1 + \pi \frac{\mu(T_1, T_2)}{k} = T_2 + c + \pi \frac{1 - \mu(T_1, T_2)}{1 - k}$$

$$\Rightarrow \mu(T_1, T_2) = k - (T_1 - T_2 - c) \frac{k(1-k)}{\pi}$$

Also, for consistency, we must have:

$$\mu(T_1, T_2) \in (0, x) \Rightarrow 0 < k - (T_1 - T_2 - c) \frac{k(1-k)}{\pi} < x$$

$$\Rightarrow T_2 + c - \pi \frac{x-k}{k(1-k)} < T_1 < T_2 + c + \pi \frac{1}{1-k}$$

- If $\mu(T_1, T_2) = 0$, it must be that under $\mu(T_1, T_2)$, type 1 commuters find it optimal to use crossing 1. (Type 2 commuters' choice is non-binding.) Then, we get:

$$T_2 + c + \pi \frac{1}{1-k} \leq T_1$$

This concludes our proof.

Proof of Proposition 7

Let $\Pi(T_1, T_2) = T_1 \mu(T_1, T_2)$, where Π is operator 1's profit function. Note that for fixed T_2 , the function $\mu(T_1, T_2)$ is continuous in T_1 . Therefore, for fixed T_2 , the function $\Pi(T_1, T_2)$ is also continuous in T_1 .

Excluding the corner points of T_1 from our analysis, note that:

$$\frac{d\Pi(T_1, T_2)}{dT_1} = \mu(T_1, T_2) + T_1 \frac{d\mu(T_1, T_2)}{dT_1}$$

Hence, by Proposition 5, we get:

$$\frac{d\Pi(T_1, T_2)}{dT_1} = \begin{cases} 1 & \text{for } T_1 < B_1 \\ k - (2T_1 - T_2 + c) \frac{k(1-k)}{\pi} & \text{for } B_1 < T_1 < B_2 \\ x & \text{for } B_2 < T_1 < B_3 \\ k - (2T_1 - T_2 - c) \frac{k(1-k)}{\pi} & \text{for } B_3 < T_1 < B_4 \\ 0 & \text{for } B_4 < T_1 \end{cases}$$

Above, the values of B_1, B_2, B_3, B_4 are as specified in Proposition 5. If we set $T_2 = \frac{\pi}{1-k}$, we find the following:

- For $T_1 \in (B_1, B_2)$, we get:

$$\left. \frac{d\Pi(T_1, T_2)}{dT_1} \right|_{T_2 = \frac{\pi}{1-k}} = k - \left(2T_1 - \frac{\pi}{1-k} + c \right) \frac{k(1-k)}{\pi} > 2(x - k) + c \frac{k(1-k)}{\pi}$$

Note that in the derivation of the above inequality, we used the fact that $T_1 < B_2 = -c + \pi \frac{2k-x}{k(1-k)}$.

- For $T_1 \in (B_3, B_4)$, note that:

$$\left. \frac{d\Pi(T_1, T_2)}{dT_1} \right|_{T_2 = \frac{\pi}{1-k}} = 0 \Rightarrow T_1 = \frac{c}{2} + \frac{\pi}{1-k}$$

$$\left. \frac{d^2\Pi(T_1, T_2)}{dT_1^2} \right|_{T_2 = \frac{\pi}{1-k}} = -2 \frac{k(1-k)}{\pi} < 0$$

One can verify that $T_1 = \frac{c}{2} + \frac{\pi}{1-k} \in (B_3, B_4)$ by using Assumptions 3 and 5. (We leave this to the interested reader.)

Therefore, we obtain that for $T_2 = \frac{\pi}{1-k}$, as T_1 increases, the function $\Pi(T_1, T_2)$, which is continuous, increases up to $T_1 = \frac{c}{2} + \frac{\pi}{1-k}$, and then it first declines and then remains constant. Therefore, we obtain that for $T_2 = \frac{\pi}{1-k}$, operator 1 maximizes its profit by setting $T_1 = \frac{c}{2} + \frac{\pi}{1-k}$. Since the premium $T_1 - T_2$ is equal to $\frac{c}{2}$, by Proposition 6, we also get $\mu(T_1, T_2) = \mu^w$. This concludes our proof.

An Investigation of The Effect of Social Media Marketing and Innovation on Firm Performance with The Technology Acceptance Model

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İşletme Performansı Üzerinde Sosyal Medya Pazarlaması ve İnovasyonun Etkisinin Teknoloji Kabul Modeli ile Birlikte İncelenmesi

Abstract

This study examines the effect of social media marketing and innovation on the performance of food and beverage firms with the technology acceptance model. Within the scope of the study, a survey was conducted as a field application. Data were collected from 163 food and beverage firms in Erzurum. Structural equation analysis was used in the AMOS program to test the hypotheses. As a result of the study, it was seen that facilitating conditions, compatibility, perceived usefulness, and perceived ease of use affected social media marketing, while cost had no effect. In addition, it has been concluded that social media marketing and innovation affect firm performance.

Keywords : Technology Acceptance Model, Social Media Marketing, Innovation, Firm Performance.

JEL Classification Codes : D31, D61, D73.

Öz

Bu çalışmanın amacı, yiyecek ve içecek işletmelerinin performansı üzerinde sosyal medya pazarlaması ve inovasyonun etkisinin teknoloji kabul modeli ile birlikte incelemektir. Çalışma kapsamında saha uygulaması olarak anket yapılmıştır. Toplamda 163 yiyecek-içecek işletmesinden veri toplanmıştır. Hipotezlerin test edilmesinde AMOS programında yapısal eşitlik analizinden faydalanılmıştır. Analiz sonucunda, sosyal medya pazarlaması üzerinde, kolaylaştırıcı koşullar, uygunluk, algılanan kullanışlılık ve algılanan kullanım kolaylığının etkisinin olduğu maliyetin ise etkisinin olmadığı görülmüştür. Ayrıca işletme performansını sosyal medya pazarlaması ve inovasyonun etkilediği sonuçlarına ulaşılmıştır.

Anahtar Sözcükler : Teknoloji Kabul Modeli, Sosyal Medya Pazarlaması, İnovasyon, İşletme Performansı.

1. Introduction

Firms try to add technology, system or innovative applications in the spirit of time to their workflow processes to improve their performance, get better results, and reach their goals. Innovative applications can establish a system or process of adaptation to technology. Requests and needs can force firms to some innovative processes regardless of time, especially when situations relate to consumers or stakeholders. In particular, after the 2000s, social media channels that emerged with technology development have also imposed new adaptation processes on firms. The fact that consumers are involved in these channels has caused firms not to ignore this situation. Thus, firms have started professionally managing their social media marketing activities by creating accounts on social networks. It has also prepared an environment for evaluation regarding issues within technology and innovation, acceptance, adoption, and cost.

Consumers' spending more time on social media has enabled companies to create their accounts on these social networks (Barnes, 2008). Firms that easily reach their current and potential customers through social media have started to develop strategies to use these channels effectively. Firms interact more with their internal and external customers thanks social networks. This process is less costly than traditional channels (Mukherjee, 2011).

Advantages such as the ability of firms to offer their products and services to customers quickly and to reach customers instantly have also increased the importance of social media. Firms that use social media more actively than their competitors can respond to consumer requests more quickly. In addition, customer feedback contributes to the development of products or services of enterprises.

In this context, we investigated the processes of using social media marketing in terms of the effect of social media marketing on workflows within the framework of the technology acceptance model. We examined the impact of these processes on innovation and firm performance. In addition, we investigated social media marketing as technology in terms of cost, compatibility and facilitating conditions, considering the impact on firms. In the conceptual framework of this study, the concepts of perceived ease of use, perceived usefulness, compatibility, cost, facilitating conditions, social media marketing, innovation and firm performance are explained. After, a survey was applied to small and medium-sized firms, and the data obtained were analysed and interpreted.

2. Conceptual Framework

2.1. Perceived Ease of Use

Davis et al. (1989) developed the concept of perceived ease of use. It is a variable in the Technology Acceptance Model. It is a concept that emphasises the ease of use of a technology or system. Technologies that the user adapts to use comfortably and does not experience difficulty yield results at the expected level (Lin, 2011). Suppose users see themselves as the stakeholder of an easy-to-learn process rather than a complex technology

when they use a system. In that case, they accept that technology much faster and include it in their lives (Nasri & Charfeddine, 2012). The ease of use that firms will encounter when they use any technology or system positively affects their adaptation and adaptation abilities for social media marketing (Kuo & Yen, 2009).

2.2. Perceived Usefulness

Perceived usefulness is another variable in the Technology Acceptance Model, such as perceived ease of use (Davis et al., 1989). Perceived usefulness is a user's belief about what benefit he/she will receive using technology or a system. Before the consumers or users adopt a technology, they evaluate all the benefits they will get from that technology (Shankar & Datta, 2018). For example, when firms know that they will get a positive result about their performance when they use technology or system, they do not back down from using that technology or system (Park, 2009). There is a direct effect of perceived usefulness on the attitude towards using any innovation (Revels et al., 2010).

2.3. Compatibility

Compatibility is the comparison of the old and the new structures when firms use any technology in terms of the effect current business process and the application process (Rogers, 1983). When there is a technology-based change related to the work done, if the new situation is significantly advantageous and efficient, suitability comes to the fore as one of the primary evaluation criteria (Brown & Russell, 2007). The firm is concerned with choosing the technology or system that will best adapt to its business process, not disrupt the workflow, and ensure adaptation within the business. Similarly, the concept of compatibility also affects consumers in their purchasing processes. Consumers act by testing the suitability of the technology offered to them to save time and compare their purchasing processes (Hung et al., 2014). In addition, the suitability of the service by firms affects loyalty positively (Kaura et al., 2015).

2.4. Cost

Cost is one of the most critical issues in selecting a technology that can contribute to the growth of a business (Ernst & Young, 2011). For example, firms use this technology because the barrier to entry is low, the cost is low, and it does not require very high technological competencies (Derham et al., 2011). In other words, cost effects are decisive in using and adapting a technology (Hassani et al., 2018).

2.5. Facilitating Conditions

Facilitating conditions are the degree to which an individual believes that the appropriate technical infrastructure and senior management support are available to use a new system (Venkatesh et al., 2003). If the conditions for using and adopting new technology are designed to support the process, that innovative technology is adopted much more quickly. The higher consumers' perception that the facilitating conditions offered for

technology are increased, the higher their intention to use that technology will be similarly (Hew et al., 2015). For example, when the facilitating conditions perceived by users regarding mobile payment with QR codes are increased, users are more willing to use it (Eren, 2021).

2.6. Social Media Marketing

Social media are online channels that allow firms or individuals to share at any time via computers and smart devices by making use of the opportunities of technology in the digital environment (Mangold & Faulds, 2009; Kotler & Keller, 2018). Digital areas that come to the fore as social media networks are Facebook, Youtube, Twitter, Instagram, Pinterest, and LinkedIn. Most firms consider creating accounts in social networks that will benefit their fields of activity as a marketing mix process (Kotler & Armstrong, 2018).

Social media marketing is applying marketing strategies in internet-based applications to increase the performance of firms, promote their products and services, and gain new customers (Todua & Jashi, 2015). Social media marketing is the commercial marketing activities of firms that want to sell their products or services to positively affect the purchasing behaviour of consumers (Chen & Lin, 2019).

Most firms have started to strengthen themselves and make innovations in social media marketing because it is possible to interact with followers on social networks, increase their satisfaction and loyalty, and reach new customers on social media (Neti, 2011). In addition, firms use social media marketing to increase brand awareness, increase sales, create a strong brand image, provide user interaction with the content, and reach more audiences (Gedik, 2020).

2.7. Innovation

Innovation is a tool firms notice to gain and maintain an advantage in the competitive market (Standing & Kiniti, 2011). Innovation is actions that incorporate new processes and technologies as a way and method of doing business and provide a competitive advantage (Porter, 1990). Trott (1998) explained the concept of innovation as the transformation of new ideas into technology by considering them in a product's production and marketing process. Another researcher, based on the definition of innovation in the declaration published by the European Commission, defined innovation as testing new production methods, expanding, renewing markets, and improving and changing conditions within the firm (Akın & Reyhanoğlu, 2014). Innovation is a concept that has a vital role in many areas, such as increasing profits, responding quickly to changes in the market, increasing product and service quality, developing new products and services, testing new models, and increasing market shares (Çiçek & Onat, 2012). Innovation also creates an advantage in creating innovation and social value, managing processes more efficiently, and being ahead of the competition (Damanpour & Wischnevsky, 2006). In this respect, firms enable their employees to find new ideas regarding processes, procedures, products, or services, apply

them to the workflow, and provide opportunities to achieve better performance results (West & Wallace, 1991).

2.8. Firm Performance

Firm performance is the evaluation process of an organisation's success in line with its goals and objectives and to what extent it achieves its goals (Atan & Tuncer, 2019). Evaluation processes can be qualitative (organisational culture, loyalty, etc.) or quantitative (profitability, sales amount, etc.) (Pohl & Forstl, 2011). Processes such as supporting innovation in an institution, working in harmony with technology, cultural management based on shared values, and supporting intellectual capital affect firm performance positively (Wu et al., 2008). In addition, production capabilities, production and competitive strategy also affect firm performance (Amoako-Gyampah & Acquah, 2008).

The studies of Lööf and Heshmati (2006) and Bigliardi (2013) show that the innovations of small and medium-sized firms positively affect financial performance and productivity. Similarly, Rhee et al. (2010) also showed that innovation significantly affects firm performance. The research conducted by Çiçek (2019) indicates that innovative activities positively affect firm performance.

The research conducted by Ethem et al. (2020) show that the active involvement of firms in social media and the promotion of their products and services positively impact their financial performance. Establishing and activating social media centred on customer relationship management enables firms to get positive results in terms of their customer relations performance (Chang et al., 2010; Tuleu, 2015).

3. Literature

3.1. Technology Acceptance Model and Social Media Marketing

Pentina et al. (2012) examined the effect of perceived usefulness on social media marketing through SMEs. Survey data were obtained from 110 managers in total. As a result of the analysis, it was seen that perceived usefulness had a positive effect on social media marketing. In the study of Rauniar et al. (2014), which examines the relationship between the technology acceptance model and social media use, an online survey on 398 Facebook users has conducted. The result of the study shows that both perceived ease of use and perceived usefulness affect social media use. Ainin et al. (2015) examined the effect of compatibility and cost variables on SMEs' use of social media through the example of Facebook. They collected data from 259 business managers through questionnaires. As a result of the study, it was concluded that compatibility and cost-effectiveness were effective in the use of social media. Chatterjee and Kar (2020) examined influencers for the use of social media marketing by small and medium-sized businesses in India. As a result of the data collected from 310 companies, perceived usefulness and perceived ease of use and compatibility positively affected social media marketing, while the cost effect was not. Biswas (2016) found that perceived ease of use and usefulness, among the variables of the

technology acceptance model, positively affect social media. Arı et al. (2016) examined the behaviours related to social network use and the technology acceptance model. Data collected from 354 students through questionnaires were analysed. As a result of the study, they concluded that the perceived usefulness and perceived ease of use affect the attitude towards the behaviour positively. In the study by Lee et al. (2016), the adaptation process of institutions to social media was examined within the framework of the technology acceptance model, based on the data collected from 648 hotel employees in Korea. As a result of the study, it has been seen that the perceived ease of use and perceived usefulness of companies in using social media have a significant effect. Odoom et al. (2017) examined the impact of compatibility and cost on SMEs' use of social media. Data were collected from 2010 business managers based on a questionnaire. As a result of the analysis, it was concluded that cost and compatibility affect the use of social media positively.

Karabulut and Bulut (2017) examined the perspective of small and medium-sized businesses on social media marketing. Data were collected from 400 business managers. SMEs participating in the research generally think that social media marketing is effective in the promotion of their businesses, provides their businesses with a competitive advantage, increases the number of customers, is a low-cost and interactive communication tool in communicating with customers, increases their profitability, expands their market areas, and reduces marketing costs. Alkaya and Şahin (2018) examined information sharing over the Facebook social network through the technology acceptance model. Within the scope of the research, data were collected from 420 people. As a result of the analysis, perceived ease of use and perceived usefulness affect the attitude towards the social media network. Sugandini et al. (2019) examined the effects of some variables on the adaptation of SMEs operating in the tourism sector to social media within the framework of the technology acceptance model. In this context, they collected data based on questionnaires from 200 managers. As a result of the analysis, it has been seen that perceived usefulness and perceived ease of use influence social media marketing. Orel and Arık (2020) examined the effect of social media marketing on purchase intention within the framework of the technology acceptance model. Within the scope of the research, data were collected from 510 users. The analysis showed that while perceived usefulness mediated the effect of social media marketing on purchase intention, perceived ease of use did not. Pramuki and Ayu (2020) examined social media marketing within the framework of the technology acceptance model. A questionnaire was applied to 390 managers; the collected data were analysed. As a result of the study, it was concluded that the perceived ease of use affects social media marketing positively. Taşdelen and Aydın (2021) examined the purchasing behaviour of social media advertisements with the technology acceptance model. As a result of the study, it was seen that the perceived ease of use positively affects the attitude towards social media advertisements.

3.2. Social Media Marketing and Performance

In his study examining the effect of social media marketing on the performance of companies in Kenya, Nyambu (2013) found that social media marketing improves company performance, increases the company's competitive power, and contributes to increasing

customer loyalty. In the study by Musa et al. (2016), in which they examined the effect of social media marketing practices on business performance over SMEs, they concluded that social media marketing positively affects business performance. In their study, Wang and Kim (2017) analysed the data of 232 companies between 2004 and 2014 using Facebook, COMPUSTAT North America and Global Fundamentals annual databases. As a result of the study, it was seen that the use of social media positively strengthened the effect of customer relations on firm performance. In the study by Kamboj et al. (2017), they found that social media marketing positively affects businesses' financial and market performance. Güzel et al. (2018) showed that social media and innovation positively affect firm performance. Tarsakoo and Charoensukmongkol (2019) examined the effect of social media marketing on the business performance of firms in Thailand. They concluded that social media marketing's product development, planning, and implementation ability positively affect financial performance. Özdemir et al. (2020) found a positive relationship between firms' use of social media and their market values and sales or income. In the study of Syaifullah et al. (2021), in which they examined the performance of social media marketing on micro, small and medium-sized businesses, they collected data from 254 companies using Facebook, Instagram and Whatsapp. According to the findings obtained from the study, it was seen that the use of social media increased business sales, customer relations, productivity, and creativity. In other words, it has been found to affect business performance positively. In addition, it has been found that marketing works on branding and innovation play a mediating role in this relationship. Tajvidi and Karami (2021) surveyed 384 hotels in England to examine how social media use affects hotel performance. As a result of the study, it was concluded that social media use positively affects the firm's performance.

3.3. Innovation and Performance

In their study, in which they examined the relationship between innovation and performance in small and medium-sized enterprises, Rosenbusch et al. (2011) stated that the type of innovation, age and culture of the firm played a role in the effect of innovation on firm performance. As a result of the survey conducted by Murat et al. (2011) with the senior managers of 113 companies operating in the automotive supply industry, which is one of the most innovative sectors in Turkey, they found that technological innovation (product and process innovation) has a significant and positive effect on firm performance. Magnier-Watanabe and Benton (2016) examined the impact of management innovation on firm performance in Japanese firms. As a result of the research, management innovation did not directly impact firm performance but aligning management innovation programs with knowledge management initiatives improved performance. Atalay et al. (2017) examined the relationship between innovation and firm performance in a sample of 143 yacht building firms in Turkey. As a result of the study, a positive and significant relationship was found between innovation and firm performance. Serkan et al. (2018) examined the relationship between innovation, firm performance, and exports based on the data they collected from 310 manufacturers from 5 different cities in Turkey. As a result of the study, they concluded that innovation does not affect firm performance and exports. Durmuş-Özdemir and Abdukhoshimov (2018) examined the mediating role of innovation in the effect of

knowledge management on firm performance. As a result of the surveys conducted with the senior managers of the companies operating in the Turkish telecommunications sector, it has been found that marketing, product, and process innovation have a mediating role in the effect of the information management process on the company performance. Kiveu et al. (2019) examined the impact of innovation on the firm's competitiveness through the data they collected from 284 firms. As a result of the study, it was seen that process, marketing, and organisational innovations have a positive and significant effect on competitiveness. Ismanu and Kusmintarti (2019) emphasised that innovation is a very important tool for high performance and superior competition in their study examining innovation's effect on SMEs' performance in Indonesia. In his research, Gupta (2021) collected data from the middle and senior managers of 250 companies in India operating in different categories through questionnaires. The results showed that product and marketing innovation significantly and positively impact firm performance.

In general, when the literature above is examined, it is seen that the studies on the use of social media marketing by SMEs in Turkey are limited. No survey in Turkey examines the relationship between SMEs' social media marketing process and innovation and business performance within the framework of the Technology Acceptance Model. In addition, the effects of cost and facilitating conditions variables were also examined in the study. In the literature, these variables have been studied individually or together in different studies. However, in terms of developing countries (for example, a country like Turkey), there is no study examining all the variables together. In this context, it is thought that the study will contribute to both national and international literature.

4. Methodology

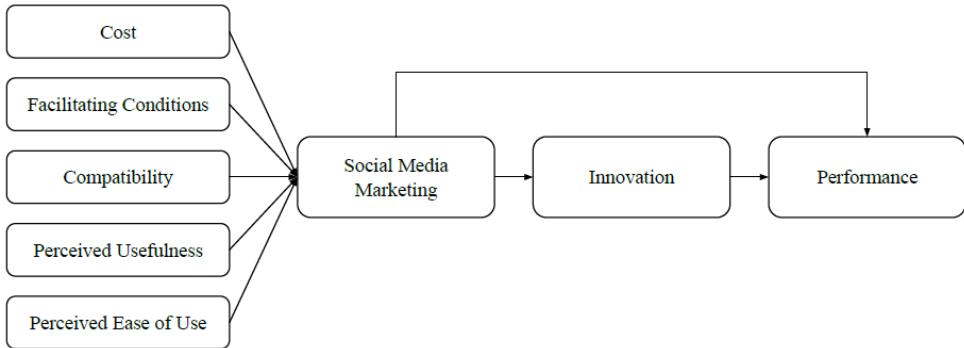
4.1. Purpose of the Study

This study aims to examine the effect of social media marketing and innovation on the performance of food and beverage firms with the Technology Acceptance Model. In this context, the impact of cost, facilitating conditions, compatibility, perceived usefulness, and perceived ease of use on social media marketing were investigated. In addition, the impact of social media marketing on innovation and firm performance and the effect of innovation on firm performance were also examined.

4.2. The Proposed Model and Hypotheses

The studies of Chatterjee and Kar (2020) and Nguyen et al. (2015) were used in determining the research model. Figure 1 shows the conceptual model of our study.

Figure: 1
Research Model



In terms of the above research model, the following hypotheses are postulated:

- H1: Cost has a negative impact on the firms to use social media marketing.
- H2: Facilitating conditions have a positive impact on the firms to use social media marketing.
- H3: Compatibility positively impacts the firms using social media marketing.
- H4: Perceived usefulness positively impacts the firms to use social media marketing.
- H5: Perceived ease of use positively impacts the firms using social media marketing.
- H6: Social media marketing has a positive impact on innovation.
- H7: Social media marketing has a positive impact on firm performance.
- H8: Innovation has a positive impact on firm performance.

4.3. Data Collection

In structural equation analysis studies, one of the most frequently used methods for determining the sample size is to reach a sample size between 4 and 10 times the number of items for the scales in the questionnaire (Deb & David, 2014). There are 36 items in the questionnaire of this study. In this context, it is suitable for the sample size to be between 144 and 360. The survey was applied to food and beverage firms in Erzurum. Data were collected from a total of 171 firms using the total population sampling method. After eliminating the erroneous and unsuitable questionnaires, a total of 163 questionnaires remained.

We measured cost using four items based on the research of Kaplan and Haenlein (2010), facilitating conditions six items based on the analysis of Venkatesh et al. (2003), compatibility four items based on the analysis of Dwivedi et al. (2015), perceived usefulness five items based on the research of Chung et al. (2017), perceived ease of using five items

based on the analysis of Ware (2018), social media marketing three items based on the research of Shareef et al. (2019), innovation four items based on the study of Cheng and Shiu (2008), performance five items based on the research of Aral et al. (2019).

5. Data Analysis and Findings

The data from the survey were analysed in the AMOS program. Structural equation analysis was used to test the hypotheses. The firm characteristics, factor loadings for the measurement model, reliability analysis results, CR and AVE values, discriminant analysis results, model fit values and hypothesis results are shown below, respectively.

5.1. Firm Characteristics

The firm characteristics are shown in Table 1.

Table: 1
Firm Characteristics

| | Frequency | % |
|---------------------------------|-----------|------|
| Firm Type | | |
| Restaurant | 42 | 0,26 |
| Eating House | 54 | 0,33 |
| Cafe | 67 | 0,41 |
| Number of Employees | | |
| 1-9 | 115 | 0,71 |
| 10-49 | 48 | 0,29 |
| Annual Sales | | |
| 120.000 TL and below | 2 | 0,01 |
| 120.000-240.000 TL | 5 | 0,03 |
| 240.000-400.000 TL | 9 | 0,06 |
| 400.000-750.000 TL | 17 | 0,10 |
| 750.000-1.000.000 TL | 49 | 0,30 |
| 1.000.000 TL and above | 81 | 0,50 |
| Customer Type | | |
| Individual customers | 121 | 0,74 |
| Commercial firms | 0 | 0,00 |
| Both | 42 | 0,26 |
| Operating Period of Firm | | |
| 1-5 years | 64 | 0,39 |
| 6-10 years | 54 | 0,33 |
| 11 years and above | 45 | 0,28 |
| Position | | |
| Founder-Partner | 62 | 0,38 |
| Manager | 76 | 0,47 |
| Employees | 25 | 0,15 |

When the characteristics of the firms which participated in the survey were examined, it was observed that 14% were in the cafe category, 33% were in the restaurant category, and 26% were in the eating house category. The number of employees of 71% is between 1-9 and 29% is between 10-49. Half of the firms have an annual turnover of 1 million TL or more. The customer type of most of the firms (74%) is individual customers. Regarding the operational period, 39% are 1-5 years, 33% are 6-10 years, and 28% are 11 years or more. Of the people who participated in the survey, 47% are managers, 38% are founders or partners, and 15% are employees.

5.2. Reliability and Validity

In this study, we measured eight variables in total. We analysed the data using AMOS and SPSS. The results of factor analysis and reliability analysis are shown in Table 2.

Table: 2
Factor Analysis and Reliability

| Variable | Code | Factor Loadings | α | CR | AVE |
|-------------------------|------|-----------------|----------|-------|-------|
| Cost | C1 | 0.742 | 0.878 | 0.926 | 0.759 |
| | C2 | 0.911 | | | |
| | C3 | 0.922 | | | |
| | C4 | 0.898 | | | |
| Facilitating Conditions | FC1 | 0.803 | 0.943 | 0.957 | 0.787 |
| | FC2 | 0.904 | | | |
| | FC3 | 0.911 | | | |
| | FC4 | 0.877 | | | |
| | FC5 | 0.891 | | | |
| | FC6 | 0.931 | | | |
| Compatibility | COM1 | 0.862 | 0.873 | 0.907 | 0.709 |
| | COM2 | 0.876 | | | |
| | COM3 | 0.833 | | | |
| | COM4 | 0.795 | | | |
| Perceived Usefulness | PU1 | 0.767 | 0.952 | 0.923 | 0.707 |
| | PU2 | 0.857 | | | |
| | PU3 | 0.895 | | | |
| | PU4 | 0.873 | | | |
| | PU5 | 0.806 | | | |
| Perceived Ease of Use | PEU1 | 0.885 | 0.903 | 0.955 | 0.811 |
| | PEU2 | 0.913 | | | |
| | PEU3 | 0.898 | | | |
| | PEU4 | 0.906 | | | |
| | PEU5 | 0.900 | | | |
| Social Media Marketing | SMM1 | 0.923 | 0.867 | 0.933 | 0.824 |
| | SMM2 | 0.924 | | | |
| | SMM3 | 0.875 | | | |
| Innovation | I1 | 0.857 | 0.906 | 0.938 | 0.791 |
| | I2 | 0.939 | | | |
| | I3 | 0.845 | | | |
| | I4 | 0.913 | | | |
| Performance | P1 | 0.924 | 0.875 | 0.955 | 0.808 |
| | P2 | 0.913 | | | |
| | P3 | 0.857 | | | |
| | P4 | 0.906 | | | |
| | P5 | 0.893 | | | |

In determining the reliability of the scales, Cronbach's alpha value is expected to be 0.6 and above (Hair et al., 2010). In our study, Cronbach's alpha values of the scales are suitable. The CR value should be 0.6, and the AVE value should be above 0.5 (Urbach & Ahlemann, 2010; Hair et al., 2010). In our study, CR and AVE values are above these. In this respect, it is possible to say that the scales that we used in this study are reliable and valid.

5.3. Discriminant Validity

The discriminant validity results for determining the scales' distinctiveness within their groups are shown in Table 3.

Table: 3
Discriminant Validity

| | C | FC | COM | PU | PEU | SMM | I | P |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| C | 0.83 | | | | | | | 0.759 |
| FC | 0.46 | 0.90 | | | | | | 0.787 |
| COM | 0.43 | 0.44 | 0.85 | | | | | 0.709 |
| PU | 0.42 | 0.42 | 0.43 | 0.92 | | | | 0.707 |
| PEU | 0.45 | 0.45 | 0.44 | 0.41 | 0.86 | | | 0.811 |
| SMM | 0.43 | 0.45 | 0.41 | 0.42 | 0.42 | 0.85 | | 0.824 |
| I | 0.48 | 0.43 | 0.47 | 0.46 | 0.45 | 0.43 | 0.87 | 0.791 |
| P | 0.44 | 0.48 | 0.45 | 0.43 | 0.43 | 0.42 | 0.44 | 0.808 |

The scales' discrimination is verified if the AVE value is higher than the scales' correlation coefficient. As shown in Table 3, the AVE values of the scales are higher than the relevant correlation coefficients. These results confirmed the validity of discrimination.

5.4. Structural Equation Modelling

For testing the hypotheses, structural equation analysis was performed. Model fit values were obtained after three modifications in total. Model fit summary and hypotheses results are shown in Table 4 and Table 5.

Table: 4
Model Fit Summary

| Fit Index | Recommended Value | Measurement Model Result |
|-----------|------------------------------------|--------------------------|
| CMIN/DF | $3 \leq \text{CMIN/DF} \leq 5$ | 4,312 |
| RMR | $0,05 \leq \text{RMR} \leq 0,10$ | 0,082 |
| GFI | $\geq 0,80$ | 0,912 |
| AGFI | $0,80 \leq \text{AGFI} \leq 0,95$ | 0,901 |
| NFI | $\geq 0,80$ | 0,875 |
| CFI | $0,80 \leq \text{CFI} \leq 0,90$ | 0,908 |
| RMSEA | $0,05 \leq \text{RMSEA} \leq 0,08$ | 0,076 |

Source: Simon et al., 2010.

As a result of the structural equation analysis, it was seen that the model fit values are acceptable. The path coefficients and p values for the hypothesis results are shown in Table 5.

Table: 5
Structural Equation Modelling Results

| Path | Hypothesis | Path Coefficient | p-Value | Remarks |
|---------|----------------|------------------|---------------|---------------|
| C→SMM | H ₁ | 0.029 | ns (p>0.05) | Not Supported |
| FC→SMM | H ₂ | 0.457 | *** (p<0.001) | Supported |
| COM→SMM | H ₃ | 0.422 | *** (p<0.001) | Supported |
| PU→SMM | H ₄ | 0.557 | *** (p<0.001) | Supported |
| PEU→SMM | H ₅ | 0.535 | *** (p<0.001) | Supported |
| SMM→I | H ₆ | 0.642 | *** (p<0.001) | Supported |
| SMM→P | H ₇ | 0.543 | *** (p<0.001) | Supported |
| I→P | H ₈ | 0.675 | *** (p<0.001) | Supported |

Structural equation analysis results show that the effect of perceived ease of use (β : 0.535; $p<0.001$), facilitating conditions (β : 0.457; $p<0.001$), convenience (β : 0.422; $p<0.001$), perceived usefulness (β : 0.557; $p<0.001$) have a positive and significant effect on

social media marketing, while for the cost (β : 0.029; $p > 0.05$) has no significant impact. According to these results, when the perceptions of participants about perceived ease of use, facilitating conditions, convenience, and perceived usefulness increase, the perceptions of participants towards social media marketing increase. The effect of social media marketing has a positive impact on innovation (β : 0.642; $p < 0.001$) and firm performance (β : 0.543; $p < 0.001$). In this case, when participants' perceptions about social media marketing increase positively, the perceptions of participants towards innovation and firm performance increase. In addition, the results of the analysis show that innovation has a positive effect on firm performance (β : 0.675; $p < 0.001$). It means that when participants' perceptions about innovation increase, the perceptions of participants toward firm performance also increase.

6. Results and Implications

This study examined the effect of social media marketing on innovation and firm performance with the technology acceptance model. The survey was applied to food and beverage firms in Erzurum. Structural equation analysis was conducted to test the hypotheses on the total data collected from 163 firms. The results show that seven of the eight hypotheses were accepted, and one was rejected.

The results show that facilitating conditions, compatibility, usefulness, and ease of use positively affect social media marketing. In addition, it has been seen that social media marketing positively affects firm performance. These results support research by Chatterjee and Kar (2020) and Syaifullah et al. (2021). The results also show that social media marketing positively affects innovation. The results support research conducted by Nguyen et al. (2015).

Generally, these study results are consistent with the studies conducted in different contexts. Past studies have shown compatibility (Hsu et al., 2007; Wang et al., 2010; Ainin et al., 2015; Chatterjee & Kar, 2020) and facilitating conditions (Chatterjee & Kar, 2020) affect the use of social media marketing. In addition, many studies show that perceived usefulness and ease of use affect social media marketing (Pentina et al., 2012; Rauniar et al., 2014; Biswas, 2016; Lee et al., 2016; Sugandini et al., 2019; Pramuki & Ayu, 2020). In this context, the results obtained in this study support the literature.

In this study, the results that social media marketing (Nyambu, 2013; Wang & Kim, 2017; Tarsakoo & Charoensukmongkol, 2019; Tajvidi & Karami, 2021) and innovation (Rosenbusch et al., 2011; Murat et al., 2011; Magnier-Watanabe & Benton, 2016; Durmuş-Özdemir & Abdukhoshimov, 2018; Gupta, 2021) effects on business performance are like the results of previous studies in the literature.

Since the variables examined in this study examine social media marketing and innovation and business performance within the scope of the technology acceptance model, it is thought to contribute to the marketing literature. Especially in developing countries, the study's results will fill the gap in the field. On the other hand, examining the effects of

compatibility and cost concepts in the study also increased the originality of the study. The role of social media marketing and innovation, which are among the determinants of performance in enterprises, in Erzurum will contribute to the national literature.

As a result of this study, it has been seen that there is an increase in productivity, firm performance, and customer satisfaction when they use social media marketing effectively. It has been determined that the firm works on brand innovation in social media and differentiates them according to competitors. Primarily, it has been seen that customer needs are easily determined, and customer awareness is increased through social media marketing.

Most firms have stated that social media is a valuable and helpful tool, adding benefits to business management. They emphasised that it is easy to use and learn from social media, acquire new customers, predict demand for new customers, get information about customers, to promote products and services.

Based on the results of this study, it has been observed that the social media infrastructures of the firms are at a reasonable level. Still, they are not at the desired levels in creative work, and the social media channels are managed by people who are in the position of manager or co-founder-partner within the enterprise rather than a specially trained person. It has been determined that they make announcements about events and discounts on social media, follow their competitors on social media, and try to differentiate strategically from time to time.

Firms should use social media frequently for many reasons, such as the ease of use of social media, cost advantage in contributing positively to company performance, usefulness in acquiring new customers and increasing customer awareness, and desired level of performance with innovation-oriented works. When firms frequently use social media, they will get more effective results.

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Do Trade Agreements and Economic Unions Create Clusters in Global International Trade?

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Ticaret Anlaşmaları ve Gümrük Birlikleri Uluslararası Ticarete Kümeleşmeye Neden Oluyor Mu?

Abstract

This paper employs a gravity model to assess the role of ex-post regional trade agreements and customs unions on trade patterns. The primary contribution of this paper to the conventional gravity modal is to embed trade agreements and determine whether they have significantly affected bilateral trade. The secondary contribution is to reveal intra and inter-union/agreement trade patterns among trade agreements and economic unions. Three dummy variables were also introduced to the conventional gravity model. Results showed a slight clustering in trade partners (a) depending on the distance and (b) depending on being a member of a trade agreement and/or economic union.

Keywords : Trade, Customs Union, Gravity Model.

JEL Classification Codes : F10, F13, F14, F15.

Öz

Bu makale, ticaret kalıpları üzerindeki ex-post bölgesel ticaret anlaşmalarının ve gümrük birliklerinin rolünü değerlendirmek için bir çekim modeli kullanmaktadır. Bu makalenin geleneksel çekim modeline birincil katkısı, ticaret anlaşmalarının ikili ticaret hacimlerini önemli ölçüde etkileyip etkilemediğini belirlemektir. İkincil katkı, ticaret anlaşmaları ve ekonomik birlikler arasındaki içi ve dış ticaret gruplaşmalarını ortaya çıkarmaktır. Bu amaçla geleneksel çekim modeline üç kukla değişken eklendi. Sonuçlar, ticaret ortakları açısından (a) mesafeye bağlı olarak ve (b) bir ticaret anlaşmasına ve/veya ekonomik birliğe üye olmaya bağlı olarak hafif bir kümelenme göstermiştir.

Anahtar Sözcükler : Ticaret, Gümrük Birliği, Çekim Modeli.

1. Introduction

This paper investigates whether trade (customs) unions have a significant role in global trade clusters. The problem with setting a clear-cut definition of a union is somewhat problematic. Numerous agreements exist between countries aiming for freer trade, yet no two unions have the same characteristics. Therefore, trade unions and agreements are transferred into customs unions. Limiting the definition of the union to customs union enables us to determine the clusters and member countries quickly. The unions considered in this paper are European Union (EU), North American Free Trade Agreement (NAFTA), Latin American Integration Association (LAIA), South African Customs Union (SACU), Southern Cone Common Market (MERCOSUR), Caribbean Community (CARICOM), Eurasian Customs Union (EACU), West African Economic and Monetary Union (UEMOA).

The magnitude and direction of trade between economies under investigation are carried through the conventional model of international trade. In addition to the variables employed in the traditional gravity model, such as GDP and exports, several control variables are included in the model, which are assumed to have a significant role in explaining the international trade flows. These variables are population, real exchange rates, and the distances between capitals of countries to represent transaction costs. In addition to these variables, which are intensively used in the trade literature, each union was introduced into the model with the help of a dummy variable. More specifically, bilateral exports between 142 countries and whether customs unions create clusters or not are being investigated by employing a modified gravity model.

The gravity model was first introduced by Tinbergen (1962). The model is important in the international trade literature. Many trade economists have used it to explain interactions between economies. Not only trade but other flows between countries, such as immigration, and Foreign Direct Investment (FDI), are topics investigated by using the gravity model. The idea is that two factors can describe geographical patterns in economic activities. One factor is economic growth, approximated by per-capita income, and the other is the distance between economic activities. The farther the country, the less bilateral trade; the more significant the country, the more it trades. In other words, the similarity in size of an economy (measured by GDP) has a positive, and the distance between trading economies has a negative effect on international trade.

The distances between capitals serve as a proxy for the ease of transportation. Although we know that absolute distance between capitals has several drawbacks in measuring the ease in transportation costs, we still believe that this is the best in hand given the scope of the data set covering 142 countries.

The negative effect of distance on trade is one of the best-known facts in international trade studies (Leamer & Medberry, 1993; Disdier & Head, 2008). In addition to distance barriers, trade is also subject to border barriers. Even though these two are highly correlated,

they have different effects on trade. It is a well-known fact that neighbouring economies tend to trade more, leading to a phenomenon known as the adjacency or contingency effect (McCallum, 1995; Nitsch, 2000; Anderson & Van Wincoop, 2003). These empirical studies show that because of adjacency, intra-national trade exceeds international trade, and intra-continental trade exceeds inter-continental trade.

The importance of distance in determining bilateral trade volume may be explained by several obstacles that distance places against smooth trade. In other words, by distance effect, is not only the increase in the cost of transportation but also different costs that traders may face when transporting a good to a customer in the partner economy. Distance could account for consumers' tastes, and tastes can lower the magnitude of trade even in online products that are assumed to have zero transaction costs.

The distance effect on trade is assumed to be equal to one. Empirical evidence also verifies this theoretical conclusion. According to Disdier and Head (2008) which the authors investigated the distance effect based on 1467 estimates from 103 different papers, the distance effect is close to 0.9. Yet, this "average" value agrees with theoretical predictions. The analysis of sub-groups, (i.e., different scaled economies, different geographical regions, different periods) may show a variation from this average value. On the other hand, the world is no longer as large as in former decades due to technological advances, namely communication and transportation. Thus, it is fair to expect a shrinking distance coefficient effect over time. Yet, empirical studies measuring the progress of trade elasticities concerning distance do not strictly verify this assumption. Some authors find a minimal change in trade elasticity (Leamer & Medberry, 1993). A similar result was found by (Disdier & Head, 2008). Authors argue that the distance effect rises during the mid-1900s then remains constant afterwards. Besides these studies that mainly propose that the distance effect is somewhat stable over time, some studies find an increasing distance effect on one side and a decreasing distance effect on the other. For instance, Soloaga and Winters (2001) and Brei and Goetz (2018) have concluded that the distance effects are increasing throughout time and are now getting closer to 2. On the contrary, Eichengreen and Irwin (1998), Brun et al. (2005), Felbermayr and Kohler (2006), and Lin and Sim (2012) found a decreasing trend in the distance effect over time.

One may think about several reasonable explanations for these contradictory results. From a methodological point of view, we can argue that the variables considered in the model may have created these results. For instance, Brun et al. (2005) intercalate infrastructure into the conventional gravity model and argue that the infrastructure causes a reduction in the distance effect. Felbermayr and Kohler (2006) say that omitting the impact of extensive margin of trade is the main reason for the questionable results of the non-decreasing distance effect in previous studies. The final explanation comes from Berthelon and Freund (2008). The authors argue that changes in distance coefficients across industries increase the overall distance coefficient. Two possible reasons for these changes arise. First, in some sectors, goods have become more substitutable. Second, trade costs have changed too. Lin and Sim (2012) argue that initial evidence of the distance effect gathered from

regressions employing annual data may be a misleading indicator of the true impact of distance on trade.

The novelty of this paper is the introduction of trade agreements from almost all continents into the gravity model. There are a couple of attempts to introduce trade unions to the conventional gravity model; however, primarily due to lack of data and secondarily, due to the scope of the study, most of the trade unions and/or agreements were left outside the analysis. This paper aims to introduce trade unions/agreements as much as possible into the model. By doing so, we can distinguish the difference in trade volumes between unions formed by developing countries and unions formed by developed countries.

2. Customs Unions

Trade unions and agreements have complex structures. Such agreements aim to increase economic efficiency, affecting member countries' trade volumes. It may be argued that such agreements aim to establish a customs union. Thus, to bypass the possible struggle while classifying numerous types of trade agreements, only customs unions are considered in this paper. As mentioned above, 7 of these trade unions were taken into consideration. As of 2016, these unions constituted 59% of the world's GDP. Not surprisingly, NAFTA and the EU constitute most of this volume; thus, one may regard these unions as established by developed countries. Developing countries formed other trade unions.

The oldest customs union is the South Africa Customs Union, established in 1910, and the most recent one is the Eurasian Economic Union established in 2015. Although the first customs union dates to the early 1900s, one may argue that it gained momentum during 1990 with the establishment of the EU and NAFTA. The unique property of each customs union is that member countries are of the same geographical region (continents in most cases).

Table: 1
Customs Unions, Their Shares in World GDP and Year of Establishment

| UNION | % of World GDP | Established |
|----------|----------------|-------------|
| NAFTA | 27.97% | 1994 |
| EU | 19.61% | 1993 |
| LAIA | 5.74% | 1980 |
| MERCOSUR | 3.20% | 1991 |
| EAEU | 1.96% | 2015 |
| SACU | 0.43% | 1910 |
| UEMOA | 0.13% | 1975 |
| CARICOM | 0.10% | 1973 |
| | 59.14% | |

Source: World Bank Data, Customs Unions' websites.

At this point, we should put a remark concerning the causality between a customs union and trade volumes. The question to be answered is: Are these customs unions established to increase inter-country trade of the members, or were the members of these customs unions already large trade partners of each other? The answer is "both". It is almost impossible to classify the gain in terms of trade from being a customs union member. It is

evident that, unsurprisingly, by the goal of establishing a customs union, a customs union tends to increase trade between member countries. However, it has also been argued that the trade volume between members and non-members will decrease.

3. Methodology

The gravity model for trade was employed in this paper. Tinbergen (1962) and Pöyhönen (1963) are the first authors who introduced the gravity model to the literature. Since then, the model has gained increasing popularity in testing empirical trade analysis. Trade literature and topics concerning international flows, migration, Foreign Direct Investment, Banking sector have benefited from the gravity model's logic. The main assertion of the gravity model is that exports from country "i" to country "j" are determined by the economic sizes of the trade partners measured in terms of GDP or GNP, populations, and geographical distances between these partners. In addition to these fundamental variables, most scholars tend to include additional control variables to the model like infrastructure endowments, social and economic variables, and dummy variables to assess the importance of different institutional characteristics of the countries.

Initially, the model was not theoretically improved; however, after the second half of the 1970s, several authors contributed, and the model started to be more complex and able to explain the trade flows between different countries of the same kind. Anderson (1979) made the first significant contribution to the model. The author used properties of expenditure systems with identical homothetic preferences across regions. The products are differentiated by place of origin. Bergstrand (1985) made another significant contribution to the model. Instead of perfectly substitutable international goods, the author introduced monopolistic competition and product differentiation to the model. Helpman and Krugman (1985) used a differentiated product with increasing returns to scale and presented a concrete theory of international trade where there is a lack of perfect competition. Anderson and Van Wincoop (2003) also agreed that each region's product differentiation specialised in a particular good. Further authors derived a model based on manipulating the CES expenditure system. These different approaches and contributions to the conventional gravity model enabled us to explain other specifications and some diversity in the outcomes of the empirical analysis.

When we turn our attention to the empirical studies, we see numerous of them in the international trade literature, which at the same time contributed to the improvement of the gravity model. Among those studies, some are like our work. These studies may be classified into two: (a) improvements in the model specification (i.e., Matyas, 1997; Cheng & Wall, 2005; Breuss & Egger, 1999; Egger, 2000) and (b) restating the existing variables and addition of new control variables (i.e., Bergstrand, 1985; Helpman, 1987; Wei, 1996; Soloaga & Winters, 2001; Limao & Venables, 2001; Bougheas et al., 1999).

The conventional gravity model asserts that the volume of exports between trading partners, X_{ij} , is a function of their incomes, populations, geographical distance between countries and a set of dummies to capture the institutional differences.

$$X_{ij} = \beta_0 Y_i^{\beta_1} Y_j^{\beta_2} N_i^{\beta_3} N_j^{\beta_4} D_{ij}^{\beta_5} A_{ij}^{\beta_6} u_{ij} \quad (1)$$

where the subscript "i" denotes exporter country, subscript "j" denotes importer country, "Y" is the GDP, "N" is the population, "D" is the distance between exporter and importer, and "A" is the set of dummy variables and "u" is the random error term.

Alternately, one can also write the above equation by using Per-Capita GDPs rather than GDP itself. This approach leads us to re-state the equation as

$$X_{ij} = \gamma_0 Y_i^{\gamma_1} Y_j^{\gamma_2} YH_i^{\gamma_3} YH_j^{\gamma_4} D_{ij}^{\gamma_5} A_{ij}^{\gamma_6} u_{ij} \quad (2)$$

where YH_i and YH_j are Per-Capita GDPs of exporter and importer countries respectively. Equation (1) and (2) are identical given that $\beta_1 = \gamma_1 + \gamma_3$, $\beta_2 = \gamma_2 + \gamma_4$, $\beta_3 = -\gamma_3$ and $\beta_4 = -\gamma_4$. The choice between two specifications depends on the scope of the study. If the model is employed to study bilateral trade of a specific product, then the second specification is used (see Bergstrand, 1985). If the model is employed to study aggregated exports, then the first specification is generally used (see Endoh, 1999). For estimation purposes, the first specification is expressed as,

$$\ln X_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln N_i + \beta_4 \ln N_j + \beta_5 \ln D_{ij} + \sum_h \delta_h P_{ijh} + u_{ij} \quad (3)$$

where \ln denotes the natural logs, $\sum_h \delta_h P_{ijh}$ is the set of dummies and P_{ijh} takes on value one when a country satisfies a certain criterion (i.e., belonging to a customs union), and zero otherwise. Our model includes a distinct set of dummies that captures whether a country is a member of a customs union or not. Each customs union has its own dummy; therefore, there are 7 dummies in our model. The theory suggests that being a member of the same customs union and sharing a common border are characteristics that should increase the bilateral trade between these two countries: thus, all the coefficients on dummy variables (δ_h) to be positive.

When β coefficients are considered, β_1 and β_2 are expected to be positive. The signs of β_3 and β_4 are ambiguous. Finally, the coefficient on distance, β_5 is expected to be negative. A high GDP of the exporter country implies that the production in that country is also high; thus, it has a higher potential to export, implying that β_1 is expected to be positive. On the other hand, high GDP for the importing country implies that the income level in this country is also high, implying that they have the financial sufficiency to import. The coefficient on the population of the exporting and importing country, β_3 and β_4 , may be positive or negative depending on the export and import figures and their population. More specifically, relatively small countries in terms of population may be exporting (importing) more than populated countries. If that is the case, we expect β_3 (β_4) to be negative. It may

also be that in terms of population, are exporting (importing) more than small countries, leading to a positive expected β_3 (β_4).

The coefficient over distance is expected to be negative since it closely approximates any cost associated with trade, yet there is more to say. Bougheas et al. (1999) argue that public infrastructure is another determinant of transportation costs. Using a simple index, the authors introduced differences in countries' infrastructures to the gravity model. Using data from European countries, the authors conclude a positive relationship between trade volume and infrastructure level. Unfortunately, this is not an option for us since our data covers 142 countries and creating an index that proxy's infrastructure is merely impossible. Thus, even though we know the importance of public infrastructure in the volume of trade, it is not even an option to introduce it in our model.

Finally, we also introduced the exchange rate since it is one of the most important determinants of international trade.

4. Findings

Our data contains 142 countries and 12 years between 2009 and 2020. 66¹ of these countries are members of a customs union; however, due to lack of data, not every member country of customs unions under consideration was taken into the data set². There are 20.022 possible trading pairs per year, yet not all countries in the sample export to the entire countries in the sample set; thus, this number fluctuates between 14.212 (2018) and 11.964 (2013) per year.

Following the common practice in literature, we have estimated the gravity model in a panel data framework. This estimation has some advantages over cross-section analysis. First, panel data makes it possible to capture the relationships among variables over time. Second, the panel data set can capture and reflect the possible unobservable trading partner pair's personal effects. When these effects are omitted, OLS estimates will be biased if individual results are correlated with regressors.

The estimated gravity models for each trading pair are as follows,

$$lX_{ij} = \alpha_{ij} + \beta_1 lY_{it} + \beta_2 lY_{jt} + \beta_3 lN_{it} + \beta_4 lN_{jt} + \beta_5 lD_{ij} + \sum_h \delta_h P_{ijh} + u_{ijt} \quad (4)$$

$$lX_{ij} = \alpha_{ij} + \beta_1 lY_{it} + \beta_2 lY_{jt} + \beta_3 lN_{it} + \beta_4 lN_{jt} + \beta_5 lD_{ij} + \beta_6 lER_{ijt} \sum_h \delta_h P_{ijh} + u_{ijt} \quad (5)$$

where the coefficient α_{ij} is the individual effects. Equation 4 corresponds to the conventional gravity model and equation 5 corresponds to the augmented gravity model.

¹ Since Turkey and Andorra are members of the customs union, they are considered as EU members.

² Cuba from LAIA, Lesotho and Swaziland from SACU, Antigua and Barbuda, Grenada, Haiti, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines from CARICOM, Guinea-Bissau from UEMOA are excluded from the data set due to lack of data.

$\ln ER_{ijt}$ is the natural log of exchange rate between trading partners' currencies and takes on the value of 1 if both countries use the same currency?

From the basics of panel data estimation, we should decide whether these effects are fixed or random as we introduce the personal impact. The random effects model would be suitable when trade flows are estimated using a sample randomly drawn from a large population. On the contrary, the fixed effects model would produce better estimates than the random effects model if the question estimates typical trade flows between pre-determined selections of nations (Egger, 2000). Our sample includes almost all members of customs unions but not whole countries in the world; we intended to use fixed effect estimation. Yet, we still conducted the Housman test to check whether the random effect model was more suitable than the fixed effect model.

We estimated equations 4 and 5 using four different methodologies (OLS, OLS Cross-Section Means, Fixed Effects and Random Effects). First, to compare estimation results, data were pooled, and the OLS method was used ($\alpha_{ij} = \alpha$) and the results are presented in the second and third columns of Table 2. Secondly, regression is also applied to the cross-section means. The fourth and fifth columns of Table 2 are devoted to the results of OLS (cross-section means).

OLS and OLS (Cross-Section Means)

Both estimation techniques and model specifications Importer Income, Exporter Income and Distance variables have the anticipated signs, and the coefficients are significant. When the Customs Union dummies are considered, it is evident that being a member of NAFTA, EU, LAIA, EACU, and UEMOA positively contributes to exports; however, coefficients on LAIA, EACU and UEMOA are not significant. An interesting result from the OLS estimation was obtained for the SACU members. The coefficient on the SACU dummy is negative and statistically significant, indicating that being a SACU member reduces the exports from the country. From both estimations, except for NAFTA and the EU, we see no positive and significant relationship between customs union membership and exports. Furthermore, for SACU and CARICOM, the coefficient has a negative sign.

The OLS on estimates with cross-section means reveal the differences between individuals; yet ignore any information within individuals. As one can easily see from Table 2, the coefficient estimates for the standard gravity model are close to those of the pooled data. The only difference between the two estimations is the significance of the dummy coefficient on SACU. The sign of the coefficient did not change; however, in the second model, the coefficient lost its relevance.

Table: 2
OLS Results for the Basic and Augmented Gravity Equations

| Independent Variables | OLS Estimates | | OLS (Cross-Section Means) Estimates | |
|-------------------------|------------------------|-------------------------|-------------------------------------|-------------------------|
| | Standard Gravity Model | Augmented Gravity Model | Standard Gravity Model | Augmented Gravity Model |
| Constant | 0.28 (0.89) | 0.81 (1.61)* | | |
| Exporter Income | 1.21 (18.36)* | 1.42 (18.24)* | 1.22 (11.36)* | 1.29 (18.42)* |
| Importer Income | 1.26 (13.45)* | 1.40 (23.60)* | 1.20 (14.52)* | 1.44 (28.60)* |
| Exporter Population | -0.46 (0.26) | -0.40 (0.196) | -0.44 (0.18) | -0.38 (0.196) |
| Importer Population | 0.25 (3.18) | 0.32 (3.59) | 0.32 (3.63) | 0.37 (3.78) |
| Distance | -1.02 (23.16)* | -0.99 (26.15)* | -1.09 (24.18)* | -0.94 (24.15)* |
| Exchange Rate | --- | 0.028 (4.65) | --- | 0.028 (4.66) |
| NAFTA Dummy | 0.09 (1.98)** | 0.11 (1.99)** | 0.11 (2.34)* | 0.13 (2.09)* |
| EU Dummy | 0.52 (6.42)* | 0.54 (6.55)* | 0.55 (5.39)* | 0.50 (5.55)* |
| LAIA Dummy | 0.42 (0.026) | 0.41 (0.036) | 0.41 (0.038) | 0.55 (0.07) |
| SACU Dummy | -0.15 (2.16)* | -0.16 (2.32)* | -0.12 (0.48) | -0.19 (0.56) |
| EACU Dummy | 0.32 (1.18) | 0.35 (1.22) | 0.30 (1.19) | 0.33 (1.16) |
| UEMOA Dummy | 0.53 (0.61) | 0.53 (0.96) | 0.65 (0.65) | 0.56 (0.80) |
| CARICOM | -0.13 (0.06) | -0.14 (0.06) | -0.23 (0.16) | -0.31 (0.12) |
| Adjusted R ² | 0.69 | 0.67 | 0.70 | 0.73 |
| F-Test | 43.26 | 43.18 | --- | --- |
| SSR | 3.882 | 3.458 | 3.916 | 3.614 |
| n | 116.412 | 116.412 | 116.412 | 116.412 |

Notes: Time dummies are not reported; all variables except dummies are expressed in natural logarithms; estimations use White's heteroscedasticity consistent covariance matrix estimator, t-statistics are in parenthesis, *, **, *** denote significance at 1%, 5% and 10% levels respectively.

After this brief look at the OLS estimations, we should focus on the last two estimation techniques since the OLS results in the panel data may be biased. To solve the problem, the model with personal effects should be estimated.

Fixed Effects Random Effects Model

Table 3 monitors the estimation results of the primary and augmented specifications of the Fixed and Random Effects Models. After estimating the Fixed Effects Model, using a Housman test, we test for the null hypothesis where explanatory variables and the individual effects are uncorrelated to discriminate between the two models (Fixed Effects vs Random Effects). Under both the null and alternative hypotheses, the fixed effects estimates are consistent. On the other hand, the random effects models are consistent under the null hypothesis. Therefore, if the null hypothesis holds, the Random Effects Model will be used; otherwise, the Fixed Effects Model will be preferred.

Table: 3
Regression Results for the Fixed Effects and Random Effects Models

| Independent Variables | Fixed Effects Model | | Random Effects Model | |
|-------------------------|------------------------|-------------------------|------------------------|-------------------------|
| | Standard Gravity Model | Augmented Gravity Model | Standard Gravity Model | Augmented Gravity Model |
| Constant | --- | --- | 0.42 (1.01) | 0.83 (1.56) |
| Exporter Income | 1.27 (12.18)* | 1.65 (17.42)* | 1.28 (11.04)* | 1.28 (19.62)* |
| Importer Income | 1.44 (14.66)* | 1.65 (24.60) | 1.35 (13.27)* | 1.52 (25.15)* |
| Exporter Population | - 3.42 (3.26)* | - 3.45 (3.36) | -3.14 (5.22)* | -3.14 (3.26)* |
| Importer Population | 3.86 (3.47) | 3.48 (4.22) | 3.12 (3.57)* | 2.28 (3.65) |
| Distance | --- | --- | -1.34 (23.18)* | -1.32 (27.19)* |
| Exchange Rate | --- | 0.22 (3.68)* | --- | 0.26 (2.66)* |
| NAFTA Dummy | 0.16 (3.52)* | 0.18 (3.28)* | 0.19 (3.68)* | 0.26 (4.42)* |
| EU Dummy | 0.43 (4.65) * | 0.72 (7.48)* | 0.51 (5.75)* | 0.18 (4.25)* |
| LAIA Dummy | 0.52 (0.45) | 0.44 (0.68) | 0.48 (0.48) | 0.46 (0.62) |
| SACU Dummy | -0.17 (2.34)* | -0.26 (2.65)* | -0.25 (3.42)* | -0.36 (2.85)* |
| UEMOA Dummy | 0.78 (0.44) | 0.77 (0.62) | 0.61 (0.42) | 0.76 (0.43) |
| CARICOM | -0.35 (0.63) | -0.33 (0.54) | -0.76 (0.64) | -0.42 (0.65) |
| Adjusted R ² | 0.86 | 0.89 | 0.92 | 0.93 |
| SSR | 322.16 | 345.92 | 336.16 | 326.26 |
| Hausman Test | 742.6 | 775.7 | --- | --- |
| n | 116.412 | 116.412 | 116.412 | 116.412 |

Notes: Time dummies are not reported; all variables except dummies are expressed in natural logarithms; estimations use White's heteroscedasticity consistent covariance matrix estimator, t-statistics are in parenthesis, *, **, *** denote significance at 1%, 5% and 10% levels respectively, The Housman test follows a χ^2 with 10 and 11 degrees of freedom in models respectively.

Table 3 presents the results of the Fixed and Random Effects estimations. The Housman test rejects the null hypothesis. We selected fixed effects estimations since selecting random effects will lead to inconsistent estimates. Yet, results are still presented for the sake of information. If the pooled estimates are compared with Fixed Effects estimations, we see that some variables have increased in value while some have decreased. The signs of non-dummy variables are as expected. We see that the incomes of both exporters and importers significantly affect the trade volume. Thus, we can argue that highly producing countries export more, and again highly producing countries have enough financial sources to import. The signs of exporter and importer countries' populations exhibit an interesting result. In all estimations, the sign of the coefficient on the importer population is positive, whereas the sign turns out to be negative for the exporter country. This result may infer that highly exporting countries have higher productivity; therefore, even with a relatively lower population, they can produce exportable goods. On the importer side, however, the story is different. Apparently, at the global level, the domestic demand is satisfied with imports; thus, a higher population leads to higher import levels.

Unsurprisingly, the sign of the coefficient on distance is negative, which is no different from than expectations and results of the previous studies cited above; as the distance between countries increases, bilateral trade decreases.

5. Discussion

Typical trade union actions include providing know-how and services to their members and collectively bargaining for better trade contracts. The main question is whether customs unions tend to increase exports and whether these unions create trade clusters. The results are complicated. The results of all four estimations show that the EU and NAFTA members are highly exporting countries. This may be due to the proximity between the member countries' cultures and social and economic structures. Looking at the EU, we see that member countries share the same history, jurisdiction, administration and culture to some degree. Thus, it is no surprise that intra-trade among the EU countries shows evidence of severe clustering. EU policymakers see the promotion of international trade with the rest of the world as one of the most important deriving factors that enhance economic growth and welfare. Except for the length of historical background, one can easily argue that the same factors also determine the clustering at NAFTA. On the contrary, other customs unions have no significant effect on member countries' exports. Except for SACU, all the dummies for other trade unions in all four regression results are insignificant, indicating no evidence that member countries benefit from being a member of these trade/customs unions. An interesting result is the sign of the coefficient on the SACU dummy. The coefficient is negative, indicating that being a SACU member negatively affects the exports.

Typical trade union actions include providing know-how and services to their members and collectively bargaining for better trade contracts.

6. Conclusion

This paper investigates whether trade (customs) unions have a significant role in global trade clusters. The unions considered in this paper are the European Union (EU), North American Free Trade Agreement (NAFTA), Latin American Integration Association (LAIA), South African Customs Union (SACU), Southern Cone Common Market (MERCOSUR), Caribbean Community (CARICOM), Eurasian Customs Union (EACU), West African Economic and Monetary Union (UEMOA). The data covers 142 countries and eight years between 2009 and 2016. The gravity trade model was used to investigate the relationship between the volume and direction of exports and the formation of regional trade blocs. The conventional gravity model asserts that the volume of exports between trading partners, X_{ij} , is a function of their incomes, GDP_{ij} , their populations, geographical distance between countries and a set of dummies to capture the institutional differences. Our model includes incomes of exporter and importer countries, populations of exporter and importer countries, and distance and customs union dummies. Even though we admit that the infrastructure of both exporting and importing countries is an important determinant in explaining the trade between countries, due to the high number of countries included in the sample and the lack of data, we omitted the infrastructure dummy from the analysis.

The model was estimated using four different techniques, yet they estimated similar results. The methods used were OLS, OLS (cross-section means), Fixed Effects Model, and

Random Effects Model. The first two techniques were estimated for comparison since the OLS estimations in panel data would lead to biased results. The Housman test statistics indicated that a Fixed Effects Model is appropriate for the dataset.

Results indicate similar results to those of the literature. The GDP of exporter and importer countries positively affects the trade between nations. Another variable estimated by the other empirical analyses is the distance variable. The coefficient is negative, verifying the argument that the distance negatively affects the trade between countries. Population variables have interesting results. The variable on exporter and importer population has negative and positive signs, indicating that the labour productivity of highly importing countries is higher than those with a low export volume. The dummies on customs unions dummies exhibit interesting results. Three of the seven dummies are statistically significant, and two of these three dummies (EU and NAFTA) have a positive sign indicating that members of these customs unions are highly exporting countries. The third customs union dummy with a statistically significant dummy is the SACU. However, interestingly, the coefficient is negative, indicating that SACU members have a disadvantage in exports.

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Financial Failure Risk - Firm Value Nexus: Evidence from The European Lodging Companies

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Finansal Başarısızlık Riski Firma Değeri Örüntüsü: Avrupa Konaklama İşletmelerinden Kanıtlar

Abstract

This research study aims to determine the relationship between the financial failure risk and firm value in lodging companies operating in the European lodging industry. The impact of financial failure risks on firm value in lodging companies is tested with the Generalized Method of Moments (GMM) on several econometric models established for the research study. As a result of the analysis, according to the Fulmer H Score, Ohlson Score, and Springate Score models, it is determined that the firm values increase as the financial failure risks of lodging companies decrease. There is a limited number of studies in the finance literature examining the effect of the financial failure of lodging companies on financial performance. In this context, the study tries to reveal the relationship between the risk of financial failure and firm value in lodging companies by contributing to the tourism and finance literature.

Keywords : Financial Failure Risk, Bankruptcy, Firm Value, Lodging Companies, Europe.

JEL Classification Codes : C33, G33, L83.

Öz

Bu araştırmanın amacı, Avrupa konaklama sektöründe faaliyet gösteren konaklama işletmelerinin finansal başarısızlık riski ile firma değeri arasındaki ilişkiyi belirlemektir. Konaklama işletmelerine ait finansal başarısızlık risklerinin firma değeri üzerindeki etkisi, araştırma doğrultusunda oluşturulan Genelleştirilmiş Momentler Yöntemi (GMM) ile test edilmiştir. Yapılan analizler sonucunda Fulmer H Skoru, Ohlson Skoru ve Springate Skoru modellerine göre konaklama işletmelerinin finansal başarısızlık riskleri azaldıkça firma değerlerinin arttığı belirlenmiştir. Finans literatüründe konaklama işletmelerinin finansal başarısızlığının finansal performans üzerindeki etkisini inceleyen sınırlı sayıda araştırma bulunmaktadır. Bu bağlamda çalışma, turizm ve finans literatürüne katkı sağlayarak konaklama işletmelerinde finansal başarısızlık riski ile firma değeri arasındaki ilişkiyi ortaya koymaya çalışmaktadır.

Anahtar Sözcükler : Finansal Başarısızlık Riski, İflas, Firma Değeri, Konaklama İşletmeleri, Avrupa.

1. Introduction

Along with the rapid growth in economies, globalisation has caused the removal of commercial, economic, and political borders, a rapid change in technology and trade in the international sense, and the intensification of economic relations; hence, this situation has affected all enterprises. With the rapidly developing economy in recent years, global financial crises and pandemics are seen as worldwide issues and negatively affect the countries' economies, as well as the real and financial markets (Peric et al., 2021: 2; Salehi & Pour, 2016: 546; Türksoy, 2007: 101). Problems experienced in national economies on a global or local scale may adversely affect the financial performance of enterprises and aggravate financial failure or bankruptcy risks.

The tourism sector, as one of the largest sectors of the world economy, is highly crucial to the economies of both developed and developing countries in terms of generating new employment opportunities, contributing positively to the foreign trade balance, eliminating the differences among regions and countries in terms of economic development, and boosting other sectors in the economy by creating investment and income (Bahar & Kozak, 2006: 159; Sacco & Cassar, 2019: 87). One of the basic elements of the service chain offered in the tourism sector is the lodging service. Lodging companies offering this service are enterprises that need capital-intensive investments for which the demand is highly flexible and in which both economic and political risks are high (Karadeniz, 2017: 168; Karadeniz et al., 2009: 595; Song & Kang, 2019: 1489). Lodging companies are adversely affected by developments such as natural disasters, internal conflicts, epidemics, terrorist attacks, economic and political instability, and national and international economic and financial crises occurring in different parts of the world (Köşker, 2017: 217; Tse, 2006: 20), and ultimately, they are likely to encounter financial failure and bankruptcy. In this context, making effective investment and funding decisions and proactively managing the risk of financial failure by continuously measuring the financial failure risk are of great importance for maximising firm value and maintaining sustainable financial performance in lodging companies in which operational risks are quite high (Gemar et al., 2019: 1547; Karadeniz & Öcek, 2020: 395).

The primary purpose of this research study is to examine the relationship between financial failure risk and firm value in lodging companies operating in European countries. On the other hand, it is determined whether or not the models that predict the financial failure risk probability of enterprises in finance theory successfully predict the impact of financial failure on the firm value of lodging companies. Upon examining the literature on the subject, it is seen that there are studies examining the impact of financial failure risk on the financial performance of enterprises. However, the number of research studies on lodging companies is limited. From this point of view, this research study is intended to help to predict the relationship between financial failure risk in lodging companies and firm value, provide investors and managers with the helpful information in the context of lodging companies in Europe, and contribute to the literature.

The research study consists of five sections in compliance with the specified purposes. In the introduction section, the importance of the subject is explained by presenting general information regarding the issue. In the second section, similar studies conducted in the financial literature are reviewed by mentioning financial failure and bankruptcy concepts. The third section presents the data and methodology used in the research study. The fourth section includes the findings of the research study. In the last section, analysis results are discussed, and related suggestions are made.

2. Literature Review

2.1. Prediction of Financial Failure

Financial failure and legal bankruptcy at the end of this process are two significant risks for enterprises. In the event of financial failure and bankruptcy, many groups, such as business owners, shareholders, employees, investors, government bodies, external auditors, and public institutions, are affected by this process. In this regard, it is crucial to anticipate enterprises' financial failure risk and make economic and managerial decisions. Investigation of the financial failure risk has enabled the development of prediction models in research studies (Buzgurescu & Elena, 2020: 21). Upon examining the literature on the subject; it is seen that studies are using different methodologies to predict and measure either financial failure or bankruptcy risk (Altman, 1968; Dewi & Hadri, 2017; Edmister, 1972; Fulmer et al., 1984; Meyer & Pifer, 1970; Wilcox, 1971). In most of these studies, models have been developed with the help of financial ratios, and the financial failure risk was tried to be predicted in advance (Altman, 1968; Beaver, 1966; Fulmer et al., 1984; Legault, 1987; Ohlson, 1980; Springate, 1978; Weibel, 1973). In general, it is seen that the studies that develop the theory concentrate on issues such as the extent to which companies incur the financial failure risk, the level of applicability of the model, the accessibility of the financial information used in the model, and the extent to which the model predicts financial failure.

Studies conducted on the financial failure of enterprises were first encountered in the finance literature throughout the 1930s. In the first studies ever performed, financial ratios were calculated by evaluating the financial statements of the enterprises classified as successful and unsuccessful. It was observed that the financial ratios of the unsuccessful enterprises in previous years have deteriorated. Among the financial ratios examined in the first studies; net working capital, current ratio, leverage ratio, and equity/total equity and liabilities ratio are found to be more important than other ratios under examination (Merwin, 1942: 14; Pereira et al., 2017: 277; Smith & Winakor, 1935: 51). With the oil crisis in 1973, the concept of financial failure first started to be discussed sophisticatedly. In this process, along with comprehending the importance of predicting financial failure, prediction models began to be developed. Studies conducted on financial failure prediction have been initiated with one-dimensional methods. Towards the 1980s, the most preferred methods were multivariate statistical methods, multiple discriminant models, logistic regression models, and probit regression models (Özdemir, 2011: 56). It is possible to observe the signs of financial failure experienced by enterprises in financial statements. In this context, it is seen

that financial ratios yield the most successful results regarding the estimation of financial failure or bankruptcy risk (Kiyak & Labanauskaite, 2012: 897).

One of the pioneering research studies in the finance literature to estimate the financial failure risk with the help of financial ratios was conducted by Beaver (1966). Beaver (1966) analysed 158 enterprises to assess the financial failure risk of enterprises and found that it was possible to predict financial failure five years in advance courtesy of the predetermined financial ratios. Beaver (1966) suggested that the ratios under examination did not indicate a normal distribution, multivariate models could be realised under the assumption of normal distribution, and it was more advantageous to utilise a one-dimensional model in that respect. Nonetheless, the matched sampling technique used in the research study is mainly criticised because keeping variables such as year and total assets under control may adversely predict financial failure. In the following years, multidimensional models began to be used in research studies due to the disadvantages of one-dimensional models, such as the presentation of contradictory results, the inability to measure all the features of enterprises as well as the relationship among components, and poor predictive power compared to multidimensional models. Achievement of results that differ from the multidimensional models (Outecheva, 2007: 87). Altman (1968), who performed the most basic analysis on the financial failure risk, utilised a multivariate discriminant analysis to estimate the financial failure risk of 66 companies. As a result of the analysis, financial failure was correctly predicted at 94% two years before the financial failure. Altman (1968) was criticised because the study was not based on a theoretical framework, the model's predictive power was sufficient for only 1 and 2 years before the failure, and the basic assumptions were not checked for multidimensional analysis. Nevertheless, it is one of the most referenced studies in the literature (Wilcox, 1971: 390). Weibel (1973) performed the univariate statistical analysis method for small-scale enterprises operating in Switzerland. In the study, it was stated that the cash flow rate of successful enterprises was higher compared to unsuccessful ones. In that context, the cash flow rate significantly predicted financial failure. Springate (1978) tried to measure the financial failure risks of enterprises in Canada, performing multivariate discriminant analysis and determined the predictive power of the model, which was established based on Altman (1968), as 88%.

In the 1980s, it was seen that a transition existed from multivariate discriminant methods to the logit method in predicting the financial failure of enterprises. Ohlson (1980) indicated that financial failure could be expected five years in advance with the model developed using the logit method, one of the statistical methods, on 2,163 enterprises. Fulmer et al. (1984) determined that the established model was successful at 81% in predicting the financial failure risk of 60 companies operating in the USA. Legault (1987) found that the CA-Score model, which they developed by utilising the Altman Z score model, was successful at 83% in predicting the financial failures of enterprises. Since the 2000s, new models have been developed in the financial failure prediction methods in compliance with the development of technology and statistical analysis methods and the needs of enterprises. These methods consist of multinomial logistic regression analysis,

multiple linear regression analysis, probit models, multidimensional statistical models, artificial neural networks, support vector machines, genetic algorithms, and fuzzy logic models (Gritta et al., 2008: 194).

It is seen that the number of models which have been developed to predict financial failures in the tourism sector is quite limited in the literature. Firstly, Gu and Gao (2000) determined 14 ratios to measure the financial failure risk in the tourism sector, using previous studies and considering the sector's characteristics. In the multivariate discriminant analysis they developed, it was determined that 28 enterprises in the tourism sector of the USA were successful with 93% accuracy in predicting the financial failure risks over the period 1986-1987, one year before the failure. It was stated that this study was more suitable for restaurant businesses. Hence its small sample size was criticised. Upon these criticisms, Gu (2002) expanded the sample from 1986-1998 to 36 restaurant businesses in the USA. Upon conducting the multivariate discriminant analysis that was developed with 12 ratios using previous studies (Gu & Gao, 2000), the accuracy rate in predicting financial failure one year before was determined as 92%. Although the performances of predicting financial failure in both of the studies above are found to be successful, the time frame of predicting failure was relatively short for businesses to take appropriate measures. Kim and Gu (2006) generated a logit model to predict the financial failure risks of 32 accommodation businesses in the USA over the period 1999-2004 to eliminate the such deficiency. As a result of the analysis, the accuracy percentage of the logit model in predicting financial failure ranged between 84% and 91%. Youn and Gu (2010) developed a logistic regression model and an artificial neural network model to predict financial failure for 66 hospitality businesses in Korea from 2000 to 2005. The study concluded that both models successfully predicted financial failure; artificial neural networks reliably assessed the future financial situation of hospitality businesses, and the logistic regression model successfully described the measures to prevent failure. According to the results of the research study, it was seen that the success power of the models generated in predicting financial failure in hospitality businesses was relatively high. However, the prediction time frame was short.

2.2. Financial Failure and Financial Performance

Upon examining the literature chronologically, it is seen that besides the pioneering literature on financial failure prediction, there are studies that examined the financial performance characteristics of enterprises with financial failure risks and the relationship between financial failure risk and financial performance. It is observed that these studies used accounting and market-based financial performance criteria.

Tan (2012) examined the relationship between financial failure and firm performance of 277 companies in 8 East Asian countries from 1993 to 2002. The research study measured financial performance by the asset profitability ratio and Tobin's Q, while the financial leverage ratio expressed financial failure. As a result of the research study, it was determined that companies with low financial leverage, similar to previous studies (Asgharian, 2002; Opler & Titman, 1994), performed better than those with higher financial leverage ratios.

Moreover, it was observed in the research study that companies with high leverage ratios exhibited lower financial performance during the crisis period. In a study conducted in Japan, Shean (2019) investigated internal and external factors affecting the firm value of Honda Motor Company from 2013-2017. While firm value was expressed with Tobin's Q, factors affecting firm value were categorised into two groups. The corporate governance index, return on assets, return on equity, and the Altman Z score were the internal factors. In contrast, the external factors were the gross domestic product, unemployment, and exchange rate. As a result of the research study, it was concluded that the firm value of the company (Tobin's Q) was affected mainly by the Altman Z score.

Shaukat and Affandi (2015) examined the impact of financial failure on the financial performance of 15 Pakistani fuel and energy enterprises over the period 2007-2012. In the study, the financial failure risks of the companies were measured with the Altman Z Score model, and earnings per share measured their financial performance. As a result of the research study, a significant and inverse relationship was found between financial failure risk and financial performance. Al Kassar and Soileau (2014) examined the relationship between the financial performance and financial failure of companies operating in different sectors in Jordan from 1998 to 2011. As a result of the research study, it was determined that a strong relationship existed between financial performance and financial failure risks of the companies.

In Shahwan's (2015) study, the relationship between the financial performances (Tobin's Q) and financial failure risks (Altman Z Score) of 86 enterprises in Egypt for the year 2008 was examined. According to the results of the regression analysis, it was revealed that a significant negative relationship exists between the performance of the enterprises and their financial failure risks. In other words, similar to the literature in general, it was determined that the financial performances of the enterprises without the financial failure risk were high. Delavar et al. (2015) examined the relationship between the financial performances and failures of 71 enterprises listed on the Tehran Stock Exchange from 2004-2012. The financial performances of the enterprises were measured with Tobin's Q, whereas the financial failure risks were measured with the Altman Z Score model. According to the results of the research study, it was determined that no relationship existed between the firm values and the financial failure risks of the enterprises, contrary to the general studies conducted in the literature.

Aina (2019) investigated the impact of the financial failure on the operating performance of five sub-companies of the International Mondelez operating in the USA from 2012-2016. In the study, while the financial failure risk was expressed with the Altman Z score, the firm performance was categorised into two groups: firm-specific and macroeconomic factors. While defining the corporate governance index, return on assets, return on equity, and Tobin's Q ratio as firm-specific factors, the gross domestic product, exchange rate, and unemployment rate were determined as macroeconomic factors. As a result of the research study, it was concluded that business performance affected financial

success, macroeconomic factors had a more significant impact than firm-specific factors, and the exchange rate mostly affected financial failure.

In the literature, it is seen that there are studies conducted on financial failure risk estimation of lodging companies. Still, there are a limited number of studies investigating the relationship between financial failure risk and financial performance or firm value. Aggarwal and Padhan (2017) concluded that significant relationships of the leverage ratio, liquidity ratio, firm size, economic growth, and Altman Z score with the firm value (market value, book value ratio, business value) existed in lodging companies in India. In a study conducted on Turkey's BIST tourism index, Karaca and Özen (2017) examined the impacts of financial failure risks on stock prices of lodging companies over the period 2009-2016. As a result of the analysis, it was determined that companies, in general, had financial failure risks. Still, the financial failure risk did not affect the companies' stock prices. Using different methods from other studies, Kim (2018) investigated the factors of financial failure risks of 7,011 accommodation enterprises operating in the USA over the period 1988-2010. In the research study where machine learning, artificial neural networks, and decision tree analyses are performed, it is determined that stock prices, debt/equity ratio, and turnover ratio affect financial failure.

3. Methodology

3.1. Sample and Data

In line with the purposes of the study, the sample of the study is constituted of lodging companies operating in 19 European countries (Turkey, Bulgaria, Croatia, Cyprus, France, Germany, Greece, Jersey, Macedonia, Malta, the Netherlands, Poland, Portugal, Republic of Montenegro, Romania, Slovakia, Slovenia, Spain, the United Kingdom) and listed on the stock markets of the relevant countries. Accordingly, the annual financial data of 70 lodging companies trading in the European stock markets over the period 2012-2019 are utilised in the analyses. The data are obtained from the Thomson Reuters Eikon database and the corporate websites of the lodging companies.

3.2. Models and Variables

First, the financial failure risks of the lodging companies included in the analysis are calculated annually from 2012-2019. In this context, the Altman Z Score, Altman Z' Score, Altman Z'' Score, Springate, Ohlson Score, Fulmer, and CA-Score models are the most accepted ones in the financial literature. Tobin's Q ratio measures financial performance. The dependent variables used in the analysis and the calculation methods of the independent variables are presented in Table 1.

Table: 1
Variables Used in the Analysis

| Variables | Calculation Method |
|------------------------------|---|
| Dependent Variable | |
| Tobin's Q Ratio | (Total Assets + Equity Market Value - Equity Book Value) / Total Assets |
| Independent Variables | |
| The Altman Z Score | $X_1 = \text{Net Working Capital/Total Assets}$ |
| | $X_2 = \text{Unpaid Dividends/Total Assets}$ |
| | $X_3 = \text{Earnings before Interest and Tax/Total Assets}$ |
| | $X_4 = \text{Equity (Current Value)/Total Debts}$ |
| | $X_5 = \text{Sales/Total Assets}$ |
| | $Z = (0,012 X_1) + (0,014 X_2) + (0,033 X_3) + (0,006 X_4) + (0,999 X_5)$ |
| The Altman Z' Score | $X_1 = \text{Net Working Capital/Total Assets}$ |
| | $X_2 = \text{Unpaid Dividends/Total Assets}$ |
| | $X_3 = \text{Earnings before Interest and Tax/Total Assets}$ |
| | $X_4 = \text{Equity (Book Value)/Total Debts}$ |
| | $X_5 = \text{Sales/Total Assets}$ |
| | $Z' = (0,717 X_1) + (0,847 X_2) + (3,107 X_3) + (0,420 X_4) + (0,998 X_5)$ |
| The Altman Z'' Score | $Y_1 = \text{Net Working Capital/Total Assets}$ |
| | $Y_2 = \text{Retained Earnings/Total Assets}$ |
| | $Y_3 = \text{Earnings before Interest and Tax/Total Assets}$ |
| | $Y_4 = \text{Total Equity/Total Debt}$ |
| | $Z'' = (0,0656 Y_1) + (0,0326 Y_2) + (0,0675 Y_3) + (0,0105 Y_4)$ |
| The Springate Score | $A = \text{Working Capital/Total Assets}$ |
| | $B = \text{Earnings before Interest and Tax/Total Assets}$ |
| | $C = \text{Income Before Taxes/Short-term Debts}$ |
| | $D = \text{Sales / Total Assets}$ |
| | $Z = 1,03A + 3,07B + 0,66C + 0,4D$ |
| The Ohlson Score | $WC = \text{Working Capital}$ |
| | $SIZE = \text{Log (Total Assets)}$ |
| | $TA = \text{Total Assets}$ |
| | $TL = \text{Total Liabilities}$ |
| | $CA = \text{Current Assets}$ |
| | $CL = \text{Current Liabilities}$ |
| | $NI = \text{Net Income}$ |
| | $EBITDA = \text{Earnings Before Interests, Taxes, Depreciation, and Amortization}$ |
| | $INTWO = \text{Net Income in the past two years (1, if negative; 0 if positive)}$ |
| | $OENEG = \text{Whether or not total liabilities exceed total assets (1, if exceed; 0, if do not exceed)}$ |
| | $O-SKOR = -1,32 - 0,407(SIZE) + 6,03(TL/TA) - 1,43(WC/TA) + 0,08(CL/CA) - 2,37(NI/TA) - 1,83(EBITDA/TL) + 0,285(INTWO) - 1,72(OENEG) - 0,52[(NI_t - NI_{t-1}) / ((NI_t + NI_{t-1}))]$ |
| The Fulmer H Score | $V1 = \text{Unpaid Dividends/Total Assets}$ |
| | $V2 = \text{Sales/Total Assets}$ |
| | $V3 = \text{Earnings before Tax/Total Equity}$ |
| | $V4 = \text{Cash/Total Liabilities}$ |
| | $V5 = \text{Total Debts / Total Assets}$ |
| | $V6 = \text{Short-term Debts/Total Assets}$ |
| | $V7 = \text{Logarithm of Tangible Fixed Assets}$ |
| | $V8 = \text{Working Capital/Total Debts}$ |
| | $V9 = (\text{Log Earnings before Interest and Tax})/\text{Interest Rate}$ |
| | $H = 5,528(V1) + 0,212(V2) + 0,073(V3) + 1,270(V4) - 0,120(V5) + 2,335(V6) + 0,575(V7) + 1,083(V8) + 0,894(V9) - 6,075$ |
| CA-Score | $CA\text{-Score} = 4,5913(\text{Shareholders' investments/Total Assets (1)}) + 4,5080(\text{Ordinary Operating Profit or Loss + Financial Expenses(1)/Total Assets(1)}) + 0,3936(\text{Sales(2)/Total Assets (2)}) - 2,76716$ |
| | In model, |
| | 1 = One year ago, 2 = Two years ago |
| ROA | Net Profits/Total Assets |
| Log(Sales) | Natural Logarithm of Total Sales |

Upon considering the studies in which the variables presented in Table 1 are included, the following models are developed to measure the impact of financial failure on the financial performance of lodging companies.

Model 1:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 ALTZ_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (1)$$

Model 2:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 ALTZ'_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (2)$$

Model 3:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 ALTZ''_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (3)$$

Model 4:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 FUL_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (4)$$

Model 5:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 CA_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (5)$$

Model 6:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 OHL_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (6)$$

Model 7:

$$TQ_{it} = \alpha_i + \beta_1 TQ_{t-1} + \beta_2 SPR_{it} + \beta_3 ROA_{it} + \beta_4 FS_{it} + \varepsilon_{i,t} \quad (7)$$

In the models;

TQ_{it} = the Tobin's Q ratio of the i^{th} company in year t ,

TQ_{it-1} = the one-period lagged value of the Tobin's Q ratio, as a dependent variable, which is included in the model as required by the GMM method,

ROA_{it} = the return on assets of the i^{th} company in year t ,

FS_{it} = the logarithms of the sale of the i^{th} company in year t ,

$ALTZ_{it}$ = the Altman Z score of the i^{th} company in year t ,

$ALTZ'_{it}$ = the Altman Z' score of the i^{th} company in year t ,

$ALTZ''_{it}$ = the Altman Z'' score of the i^{th} company in year t ,

FUL_{it} = the Fulmer H score of the i^{th} company in year t ,

CA_{it} = the CA-score of the i^{th} company in year t ,

OHL_{it} = the Ohlson score of the i^{th} company in year t ,

SPR_{it} = the Springate score of the i^{th} company in year t ,

β_1 = estimation coefficients,

$\varepsilon_{i,t}$ = the error term.

Panel data analysis, which provides the opportunity of combining the time-series and cross-sectional data, is conducted in the study. Since the panel data analysis allows for analysis with an extensive data set, short time series can be expanded through included cross-sections and provide the opportunity to study the data with short time dimensions (İskenderoğlu et al., 2012: 301). Dynamic panel data analyses are mostly preferred in the studies since they allow for stronger predictions in situations such as endogeneity problems encountered during the analyses, heteroscedasticity, and autocorrelation. One of the most widely used methods of dynamic panel data analysis is the Generalized Moments Method (GMM), which was first coined by Balestra and Nerlove (1966) and later developed by Arellano and Bond (1991) (Topal & Hayaloğlu, 2017: 198; Yerdelen-Tatoğlu, 2018: 136). In this study, the analysis was performed using the Difference Generalized Moments Method. In the GMM method, the first difference model is transformed by using the instrumental variable matrix. Following the transformation, the model is estimated using the Generalized Least Squares method. Therefore, the Generalized Moments Method can also be expressed as a Two-Stage Instrumental Variables Estimator (Yerdelen-Tatoğlu, 2018: 136). The prediction results' validity from the GMM method can be analysed with different post-prediction tests, such as the Sargan and autocorrelation tests. The Sargan test is performed to determine whether or not the instrumental variables used in the models are valid and whether or not the main variables are fully reflected (Gujarati, 2014: 442). The AR1 and AR2 autocorrelation tests are performed to determine whether or not an autocorrelation problem exists in the dynamic panel data prediction model results. It is expected to be statistically significant and negative in the AR1 test result, whereas statistically insignificant in the AR2 test result (Arellano & Bond, 1991: 288). In GMM studies, the Wald test determines whether the model estimation is correct (Roodman, 2006: 123).

3.3. Hypotheses

The hypotheses tested in compliance with the research study's main objectives and the subject's theoretical framework are listed below.

- H1. There is a positive relationship between the Altman Z Score and Tobin's Q.
- H2. There is a positive relationship between the Altman Z' Score and Tobin's Q.
- H3. There is a positive relationship between the Altman Z'' Score and Tobin's Q.
- H4. There is a positive relationship between the Fulmer H-Score and Tobin's Q.
- H5. There is a positive relationship between the CA-Score and Tobin's Q.

H6. There is a negative relationship between the Ohlson O Score and Tobin's Q.

H7. There is a positive relationship between the Springate Score and Tobin's Q.

4. Results

4.1. Descriptive Statistics

In this section, the descriptive statistical findings of the variables in the models, which are established within the scope of the analysis over the period 2012-2019, are presented in Table 2.

Table: 2
Descriptive Statistics

| Variables | Mean | Minimum | Maximum | Std. Dev. | Total Observation |
|------------------|--------|---------|---------|-----------|-------------------|
| Tobin's Q | 1,012 | 0 | 10 | 1,515 | 539 |
| Altman Z | 3,100 | -8,225 | 20 | 4,251 | |
| Altman Z' | 2,517 | -4,987 | 20 | 3,858 | |
| Altman Z'' | 0,075 | -0,436 | 2,1 | 0,198 | |
| Springate | 0,536 | -6,940 | 8,037 | 1,204 | |
| Fulmer | -0,467 | -12,76 | 20 | 5,433 | |
| CA-Score | 0,248 | -10 | 10 | 1,692 | |
| O-Score | 0,365 | 0 | 1 | 0,357 | |
| Return on Assets | 0,024 | -10 | 10 | 1,814 | |
| Log(Sales) | 7,067 | 0 | 16,68 | 2,347 | |

The mean Tobin's Q value of the lodging companies included in the analysis is 1,01. Tobin's Q value exceeding 1 indicates that enterprises use their assets and resources effectively and have growth opportunities. They are highly competitive (Canbaş et al., 2005: 25). Nevertheless, it is also noteworthy that the mean Tobin's Q values of the lodging companies within the scope of the analysis are well above the limit.

In the Altman Z score model, if the Z value is equal to or lower than 1,81, the enterprise has a financial failure risk; if the Z value ranges between 1,81-2,99, the financial failure risk cannot be fully interpreted since the enterprises are in the grey zone, and if the Z value is higher than 2,99, the enterprise does not have any financial failure risk. It is considered financially successful in the coming years (Altman, 1968: 602). Upon examining Table 2, it is seen that the mean Altman Z value of the lodging companies included in the analysis is 3,10. It is noticed that the lodging companies included in the study are, in general, financially successful according to the mean Altman Z score and do not have any financial failure risks.

In the Altman Z' score model, if the Z' value is equal to or lower than 1,23, the company has a financial failure risk; if the Z' value ranges between 1,23 and 2,99, it cannot be interpreted since the company is in the grey zone, and if the Z' value is higher than 2,99, it indicates that the company does not incur any financial failure risk (Altman & Hotchkiss, 2006: 43). In Table 2, it can be asserted that the mean Altman Z' value of the companies is 2,51, and the lodging companies are generally in the grey zone according to the Altman Z' model, and no comments can be made regarding their financial status.

In the Altman Z'' model, the Z'' score being equal to or lower than 1,1 indicates that the company has a financial failure risk; if the Z'' score ranges between 1,1 and 2,6, it means that the enterprise is in the grey zone and no comment can be made; if the Z'' score is higher than 2,6, it means that the financial situation of the company is good (Altman, 2013: 437). It is seen that the mean Altman Z'' value in Table 2 is 0,07, and the companies included in the analysis, in general, have financial failure risk according to the Altman Z'' value.

In the Springate model, enterprises with a Z value lower than 0,862 are considered to be financially unsuccessful (Vickers, 2006: 6). The mean Springate value in Table 2 is 0,53, and it is seen that the companies included in the analysis are, in general, have financial failure risks according to the Springate model.

According to the Fulmer model, if the H value is lower than zero, the company is considered to have financial failure risk, whereas if the H value is higher than zero, the company is considered successful (Sevil et al., 2014: 192). The mean value of the Fulmer H score in Table 2 is -0,46. Therefore, it is observed that lodging companies, in general, have financial failure risks according to the Fulmer H model.

In the CA-score model, if the CA Score is lower than -0,3, the company is considered to have a financial failure risk (Aydın et al., 2010: 503). It can be claimed that the mean value of the CA-score in Table 2 is 0,24 and that the companies generally do not have financial failure risks according to the CA model.

According to the Ohlson model, the company incurs the financial failure risk if the O-Score value is higher than 0,50. On the other hand, if the O-Score value is lower than 0,50, it is accepted that the company does not incur any financial failure risk. The mean O-Score value in Table 2 is 0,36. In this context, it can be claimed that the companies included in the analysis generally do not have any financial failure risks; hence, they are financially sound enterprises.

The mean value of ROA, one of the control variables, is determined as 0,02, and the mean value of sales is 7,06. Upon examining the standard deviation values of the variables included in the analysis in the sample of lodging companies presented in Table 2, it is seen that the Altman Z, Altman Z' and Fulmer score variables are higher than the mean values. Accordingly, it can be said that the values of these three variables contain high differences. Furthermore, upon examining the smallest and largest values of the variables, it can be asserted that there are lodging companies with extreme values.

4.2. Correlation Analysis Results

The obtained findings of the correlation analysis of the variables included in the analysis over 2012-2019 for the study are presented in the table below. The obtained correlation analysis results in the study reveal bilateral relationships among the variables.

Table: 3
Correlation Analysis Results

| | Altman Z | Altman Z' | AltmanZ'' | Springate | Fulmer | CA-S | O-Score | ROA- Log (Sales) |
|------------------|----------|-----------|-----------|-----------|--------|--------|---------|------------------|
| Return on Assets | 0,137 | 0,076 | 0,074 | 0,182 | 0,067 | 0,064 | -0,245 | |
| Log Sales | -0,118 | -0,123 | -0,095 | 0,065 | -0,014 | -0,105 | -0,161 | -0,014 |

Upon examining Table 3, it is seen that there is a weak and positive correlation between the rates of return of lodging companies and the models such as the Altman Z, Altman Z', Altman Z'', Springate, Fulmer, and CA-score that measure the financial risks of the enterprises. Also, it is found that a negative correlation exists between the return on assets and the Ohlson model. There is a weak and positive correlation between sales, one of the variables presented in Table 3, and the Springate model. It is determined that a weak and negative correlation exists between sales and the models such as Altman Z, Altman Z', Altman Z'', Fulmer, CA-score, and Ohlson.

4.3. GMM Analysis Results

Table 4 presents the estimation results of seven models tested with the GMM on lodging companies. Upon examining Table 4, the level of explanation of dependent variables by independent variables is examined within the scope of control tests. The Wald test determines the power of independent variables in explaining the established models. According to the Wald test results, a 1% significance level indicates that the explanation levels of the models are statistically sufficient. In this context, the independent variables discussed in the analysis have the power and competence to explain the dependent variable. The Sargan test is performed to reveal whether or not the independent variables used in the models are valid, in other words, whether or not the overidentification restrictions apply. The Sargan test results reveal that overidentification restrictions apply. According to the GMM method, the absence of the second-order autocorrelation is required for the significance of the model for parameter estimators to be effective in dynamic panel data analysis. According to the AR2 test results, it is concluded that no second-order autocorrelation exists.

Table: 4
GMM Results

| | Model I | Model II | Model III | Model IV | Model V | Model VI | Model VII |
|------------------------|----------|----------|-----------|-----------|---------|----------|-----------|
| Constant | 0,343* | 0,354* | 0,335* | 0,528* | 0,318* | 0,399* | 0,058 |
| Tobin's $Q_{(t-1)}$ | 0,217* | 0,217* | 0,221* | 0,220* | 0,225* | 0,215* | 0,228* |
| Financial Failure Risk | -0,004 | -0,009 | -0,148 | 0,129* | 0,005* | -0,003 | -0,588* |
| | Altman Z | Alt. Z' | Alt. Z'' | Springate | Fulmer | CA-S | O-Score |
| Return on Assets | -0,003 | -0,004 | -0,004 | 0,011 | 0,004 | -0,001 | 0,014 |
| Log (Sales) | 0,039** | 0,038** | 0,039** | 0,021 | 0,039** | 0,027** | 0,048** |
| Post-GMM test results | | | | | | | |
| Wald (prob.) | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| AR2 (prob.) | 0,519 | 0,519 | 0,523 | 0,474 | 0,522 | 0,521 | 0,453 |
| Sargan (prob.) | 0,320 | 0,313 | 0,280 | 0,159 | 0,283 | 0,346 | 0,178 |

* denotes %99 significance level, ** denotes %95 significance level.

As a result of the performed analyses, it is observed that the financial failure models such as the Springate, Fulmer, and Ohlson scores affect Tobin's Q ratio. It is determined that

a positive and significant relationship exists between the Z value in the Fulmer H and Springate model and Tobin's Q ratio; however, a negative and significant relationship exists between the Ohlson O-Score value and Tobin's Q ratio. There is no statistically significant relationship between the financial failure risks calculated with the Altman Z, Altman Z', Altman Z'' and CA-score models and Tobin's Q ratio. It is determined that no relationship exists between the ROA and Tobin's Q ratio for all models presented in Table 4. Table 4 shows that Tobin's Q ratio is statistically significantly and positively affected by the firm size in all models except for Model IV. Therefore, hypotheses 4, 6 and 7 established within the scope of the research study are accepted, whereas hypotheses 1, 2, 3 and 5 are rejected.

5. Discussion and Conclusion

5.1. Conclusions

The study examined the relationship between financial failure risks and the firm value of 70 lodging companies listed on 19 European countries' stock markets from 2012-2019. In the analysis, financial failure is represented by the Altman Z Score, Altman Z' Score, Altman Z'' Score, Springate Score, Ohlson Score, Fulmer Score, and CA- Score. In contrast, the firm value is represented by Tobin's Q. Besides, the return on assets and sales (logarithmic), which are thought to affect financial performance, are included in the analysis as control variables. The models established for the study are analysed by the GMM, one of the dynamic panel data analysis methods. During the analysis process, the analysis is conducted with seven different GMM models in which the dependent variable is Tobin's Q.

According to the analysis results, a relationship is determined between the financial failure models such as the Fulmer H, Springate, and Ohlson O-Scores and Tobin's Q ratio. A positive and significant relationship exists between the models, such as the Fulmer H-Score and Springate Z score value and Tobin's Q ratio. In this context, the decline in the financial failure risk based on the increase in the H score obtained from the Fulmer model, and the Springate Z score increases the firm value of the lodging companies. This finding is consistent with the previously conducted studies, which stated that companies did not have a financial failure risk, positively affecting the firm value (Shean, 2019). Again, according to these models, the decline in the financial failure risk positively affects the firm value of the enterprise and increases the willingness of investors to invest. As a result of the analysis, it is determined that a negative relationship exists between the Ohlson O-Score value and Tobin's Q ratio. In this context, as the O-Score value obtained from the Ohlson model increases, the firm value declines as the financial failure risk of the enterprise increases. These obtained results are similar to the studies conducted by Shahwan (2015) and Shaukat and Affandi (2015). On the other hand, it can be claimed that the Altman Z, Altman Z', Altman Z'' and CA-Score models are not in a statistically significant relationship with the firm values of the companies. In this context, these models are ineffective in determining the lodging companies' firm values.

5.2. Theoretical Implications

Theoretically, the most significant contribution of this research study involves revealing the relationship between financial failure risks and financial performances using financial failure prediction models in lodging companies. As a result of the research study, it is determined that the financial failure risks of lodging companies do not yield the same results in all prediction models. Still, some models yield approximately the same results. According to all three of the financial failure prediction models (the Altman Z', Springate, and Fulmer) included in the analysis, it is determined that lodging companies will have financial failure risks in the coming years (Table 2). On the other hand, in all three models (the Altman Z, CA-Score, and Ohlson O-Score), it is determined that lodging companies do not have financial failure risks in terms of the mean values for the coming years. According to the Altman Z' model, no comment can be made regarding the financial failure of the lodging companies. It can be asserted that these differences arise from the differences in financial data considered in each model and the cut points in the financial failure criteria.

The study determined that financial failure risks measured according to the Fulmer H, O-Score, and Springate models significantly affect the firm value in lodging companies (Table 4). According to the models above, as the financial failure risk increases, the firm value decreases, and vice versa. Therefore, theoretically, it can be claimed that the Fulmer H-score, Ohlson O-Score, and Springate models are effective and successful in estimating the firm values of lodging companies.

Upon examining the literature, various studies on prediction models are used to determine the financial failures of lodging companies (Altman, 1968; Edmister, 1972; Fulmer et al., 1984; Meyer & Pifer, 1970; Wilcox, 1971). In the literature, financial failure is generally considered in the estimation dimension (Altman, 1968; Fulmer et al., 1984; Legault, 1987; Ohlson, 1980; Springate, 1978). Therefore, only a limited number of studies have been conducted on the relationship between financial failure and financial performance in the international literature (Aggarwal & Padhan, 2017; Aina, 2019; Asgharian, 2002; Al Kassar & Soileau, 2014; Kangarluei & Motavassel, 2015; Karaca & Özen, 2017; Kim, 2018; Shahwan, 2015; Shean, 2019; Shaukat & Affandi, 2015; Tan, 2012; Opler & Titman, 1994). This research study is thought to contribute to both the theory and literature in terms of determining the relationship between financial performance and financial failure, as well as obtaining findings about which financial failure prediction model would effectively predict financial performance rather than determining the financial failure risk in lodging companies merely with estimation methods.

5.3. Practical Implications

Lodging companies, among the most critical actors in the tourism sector, are enterprises with many fixed assets and, therefore, need a significant amount of fixed assets throughout the investment phase. On the other hand, lodging companies need renovation, expansion and modernisation investments during their activities; they are enterprises in

which energy, personnel, and raw material expenses are increasing daily. Hence, risk and uncertainty are always present. Since most of the assets of lodging companies consist of fixed assets, there is a possibility of problems in terms of liquidity and profitability. Long-term liabilities and equities are of great importance in funding these assets. Moreover, lodging companies are also affected by the constant change in consumer behaviour. As a result of this fact, to follow modern and technological improvements during the activity phase, it may be encountered to venture into renewal, merger, and acquisition investments for financial purposes. The sensitivity of lodging companies toward systematic risks beyond their control also aggravates the financial risk of these enterprises. Measuring and managing lodging companies' financial failure and bankruptcy risks is crucial. It is of great importance for the financial sustainability of these enterprises to determine the possible impacts of such factors on lodging companies with a proactive approach and to develop appropriate financial strategies.

As a result of the research study, it is determined that financial failure risk affects the firm value of lodging companies according to the Fulmer H, O-Score, and Springate models. Again, according to the Fulmer H and Springate models, the lodging companies' financial failure risks existed for the consequent years. In contrast, according to the Ohlson O-Score model, it is determined that lodging companies do not have financial failure risks in terms of average values for the coming years. In this context, the managers of the lodging companies operating in Europe may be advised to pay attention to the financial ratios (Unpaid Dividends/Total Assets Ratio, Sales/Total Assets Ratio, Earnings before Tax/Equity Ratio, Cash/Total Debt Ratio, Debts/Total Assets Ratio, Short-Term Debt/Total Assets Ratio, Tangible Asset Size, Working Capital/Total Debt Ratio, Earnings Before Interest and Tax/Interest Ratio, Working Capital/Total Assets Ratio, Earnings Before Interest and Tax/Total Assets Ratio, Earnings Before Interest and Tax/Short Term Debt Ratio, Working Capital, Total Asset Size, Total Debt Amount, Current Assets, Short Term Foreign Resources Level, Net Income and EBITDA) that are included in 3 of these models. It is considered that keeping financial data such as asset turnover rate, financial leverage, working capital, short-term borrowing, and operating profit under constant control, mainly used in all three models, would be necessary for terms of mitigating the financial failure risk. In this context, it is thought that lodging companies operating in Europe should pay attention to liquidity, profitability, financial structure, and activity efficiency and effectively manage their liquid assets, composition, and funding of tangible fixed assets.

5.4. Limitations and Future Research

Some limitations should be taken into account upon interpreting the findings of the research study. Firstly, considering the difficulties in obtaining financial data, an analysis is conducted on the data of public lodging companies trading in the European countries' stock markets over the period 2012-2019 and whose financial data can be accessed. Therefore, the study covers a certain analysis period and 19 countries. In future studies, annual and quarterly analyses including different variables may be conducted more broadly throughout the longer term. Secondly, the enterprises included in the analysis consist of companies

entirely in the lodging activities. Hence the companies that are also engaged in other activities such as casinos, real estate investment partnerships, etc. are excluded from the study. Therefore, it would be beneficial to include lodging companies with ancillary activities in future studies to make a comparison. Furthermore, it is thought that research studies involving other sub-sectors of tourism, as well as the impact of the COVID-19 pandemic on the financial failure risks and financial performances of lodging companies, would contribute to the tourism literature.

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An Empirical Study on the Determinants of the Capital Structure in Turkish Textile and Apparel Firms

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Tekstil ve Hazır Giyim Firmalarında Sermaye Yapısının Belirleyicileri Üzerine Ampirik Bir Çalışma

Abstract

This study aims to analyse the factors that influence the capital structure decisions of Turkish listed textile and apparel firms over the period from 2010 to 2019. The results of Driscoll and Kraay's (1998) panel regression model show that the leverage ratio is significantly and negatively affected by firm size, profitability, liquidity, asset tangibility, and is positively affected by non-debt tax shields, growth opportunities, earnings volatility, and GDP growth. The pecking order theory seems to be the most successful in explaining the determinants of the capital structure of Turkish textile and apparel firms.

Keywords : Capital Structure, Trade-off Theory, Pecking Order Theory, Leverage.

JEL Classification Codes : G30, G32, L67.

Öz

Bu çalışmanın amacı Borsa İstanbul'a kote olan tekstil ve hazır giyim firmalarında sermaye yapısı kararlarını etkileyen faktörleri araştırmaktır. 2010-2019 dönemini kapsayana çalışmada Driscoll ve Kraay (1998) panel regresyon yöntemi kullanılmıştır. Çalışmadan elde edilen bulgular, kaldıraç oranı ile firma büyüklüğü, karlılık, likidite ve varlık yapısı arasında negatif ilişki, borç dışı vergi kalkanı, büyüme fırsatları, kazanç volatilitesi ve ekonomik büyüme arasında ise pozitif bir ilişki olduğunu göstermektedir. Sonuçlar, tekstil ve hazır giyim firmalarında sermaye yapısı kararlarını açıklamada finansman hiyerarşisi teorisinin daha başarılı olduğunu göstermektedir.

Anahtar Sözcükler : Sermaye Yapısı, Dengeleme Teorisi, Ödünleşme Teorisi, Kaldıraç.

1. Introduction

Firms are valued based on their past and future investments. Firms must choose an appropriate financial mix to finance these investments. The financial resources of firms generally include equity and debts. The capital structure is a combination of debt, and equity, which firms employ in their investment. In the modern economy, the decisions taken regarding the optimal capital structure significantly contribute to the firms' survival, growth, and competitive advantage. Moreover, capital structure decisions majorly affect firms' financial success (profitability, performance, and value) (Kumar et al., 2017; Hossain, 2021).

The optimal capital structure is the best debt-equity combination that maximises a firm's market value while minimising its cost of capital. Many theorems have been developed in the literature related to achieve of optimal capital structure for firms (Haron et al., 2012). The starting point of empirical and theoretical studies on capital structure is based on Modigliani and Miller's (1958) "Irrelevance Theory". This theory states that there is no significant relationship between a firm's capital structure decisions and market value. However, this theory is valid in a market without taxes, intermediary costs, asymmetric information, and bankruptcy costs (Yıldız et al., 2009). Although these assumptions are unrealistic, the results of Modigliani and Miller's indifference theory contributed significantly to developing theories on capital structure. In this context, two main opposing theories, capital structure-Trade-Off Theory (TOT) and Pecking Order Theory (POT) are frequently discussed in the corporate finance literature.

According to the TOT, it is argued that firms seek debt levels that balance the tax advantages of additional debt against the costs of possible financial distress. From the POT perspective, it is argued that firms follow a financial hierarchy. Firms will borrow rather than issue equity when internal cash flow is insufficient to fund capital expenditures. Thus, firms' debt level will reflect their cumulative need for external funds. As a result, the TOT suggests an optimal capital structure, while the POT theory does not suggest an optimal capital structure (Myers, 2001).

The optimal capital structure has been a highly debated issue in the finance literature. The validity of capital structure theories has been tested in many studies using firm-specific factors and macroeconomic factors. This study aims to analyse the factors that influence the capital structure decisions of Turkish textile and apparel firms. In the Turkish literature, most of the research has commonly focused on the manufacturing industry in Turkey, on this topic. Why the Turkish textile and apparel industry has a high share in GDP and employment, high value-added and high export potential, it is important to examine the textile industry specifically in terms of finance. Even though capital structure theory is one of the most controversial topics of finance literature, there is only one study on the capital structure of firms operating in the textile and apparel industry in Turkey, which is an emerging market. In addition, when the literature is examined, most of the research has commonly focused on countries, country groups, manufacturing industries or banking industries, and it is seen that different results are obtained in these studies. Therefore, this

article contributes to the literature by explicitly investigating the factors influencing the capital structure decision of Turkish textile and apparel firms. The findings of this paper imply that firms mostly follow the POT.

After this introduction, this paper has the following structure. The theoretical underpinnings of the study are discussed, followed by a review of related studies in Section 2. Section 3 deals with the Turkish textiles and apparel industry. Section 4 describes the methodology. Section 5 presents the empirical results, and Section 6 concludes.

2. Literature Review

In this study, the influences of variables on firms' capital structures are briefly discussed below within the framework of TOT and POT. According to the TOT, large firms should be more highly leveraged. Because large firms are less prone to bankruptcy and tend to be more diversified and less volatile, the firm's cash flows will be due to diversification effects (Titman & Wessels, 1988; Yildirim et al., 2018). The POT generally predicts an inverse link between size and leverage. Large firms are better known because they have been around longer (Frank & Goyal, 2009). Also, the POT stipulates that larger firms face lower information asymmetry in financial markets and may issue more equity than smaller firms (Yildirim et al., 2018). Marsh (1982), Titman and Wessels (1988), Chakraborty (2010), and Haron and Ibrahim (2012) found negative relation, while Krishnan and Moyer (1996), De Jong et al. (2008), Topaloglu (2018) and Işık and Ersoy (2021) found positive relation.

From the TOT, older firms are less likely to go bankrupt due to their reputation and credibility in the market, which can help them access external financing opportunities faster. So, the influence of the age of firms on leverage is expected to be positive. Conversely, the POT says that older firms are more probably to accumulate funds than younger ones, which may reduce their need for external financing (Noulas & Genimakis, 2011; D'Amato, 2019). Consequently, a negative linkage between age and debt level is expected. Nevertheless, in empirical studies investigating this relationship, negative (D'Amato, 2019; Chakrabarti & Chakrabarti, 2019), positive (Khémiri & Noubbigh, 2018) and even insignificant (Handoo & Sharma, 2014) findings have been reported.

The TOT suggests that more profitable firms tend to employ more debt because of tax benefits associated with using debt tax shields and having a lower expected cost of financial distress (Yildirim et al., 2018). The POT supposes managers prefer to fund the projects internally due to the informational asymmetry between outside investors and managers. Moreover, profitable firms choose not to enhance external equity to abstain from potential dilution of ownership (Deesomsak et al., 2004). Also, according to POT, firms will primarily prefer internal finance. Therefore, when profitability is high, firms' need for financing from external funds will decrease. Thus, an inverse linkage is expected between profitability and debt level. Nunkoo and Boateng (2010) and Sayilgan and Uysal (2011) have found positive relation, Delcours (2007), Chakraborty (2010), Dizgil (2019), and Çıtak

and Ersoy (2012) have found negative relation, while Topaloglu (2018) have not found significant relation.

Firms from the TOT should ensure sufficient liquidity by receiving debt to meet their obligations. Therefore, there must be a positive relationship between leverage and liquidity. On the other hand, POT says there must be an inverse association between leverage and liquidity, owing to the firms with enough liquidity having less requirement for external financing and borrowing (Alipour et al., 2015). In addition, firms with more excellent liquid assets may use less debt to protect the interest of shareholders against debtholders (Danso et al., 2020). Liquidity may have a mixed effect on the capital structure. In the literature, Topaloglu (2018), Chakrabarti and Chakrabarti (2019), Dizgil (2019) and Işık and Ersoy (2021) have found a negative linkage. Whereas, Dakua (2019) has found a positive linkage.

A giant non-debt tax shield should lead to a reduction in the amount of taxable income. TOT and POT suggest a negative link between leverage and non-debt tax shield (Danso et al., 2020). Many studies also support this prediction (Deesomsak et al., 2004; Sayilgan & Uysal, 2011; Proença et al., 2014; M'ng et al., 2017) in the empirical literature.

The TOT predicts that tangible assets act as collateral and lower the risk for creditors, which causes firms to operate with higher leverage (Yildirim et al., 2018). On the contrary, the POT postulates a negative relationship. Low information asymmetry associated with tangible assets makes equity issuances less costly, so debt levels should be lower for firms with higher tangibility (Frank & Goyal, 2009). Some studies have estimated a negative association (Alipour et al., 2015; Karacaer et al., 2016), while others (Nunkoo & Boateng, 2010; Sayilgan & Uysal, 2011; Panda & Nanda, 2020) have reported a positive relationship between the two variables.

The TOT suggest that growth opportunity is negatively correlated with leverage. Because the cost of financial distress rises with growth opportunities, and more significant financial distress forces managers to reduce debt (Moosa & Li, 2012). According to the POT, high-growth firms have a greater need for financing and thus can be expected to borrow more (Krishnan & Moyer, 1996). The empirical literature on the link between growth opportunities and leverage does not report consistent evidence. For example, the findings of Deesomsak et al. (2004), Antoniou et al. (2008), Aksoy et al. (2010), and Guner (2016) have given strong support for the negative association. On the other hand, Krishnan and Moyer (1996), Sayilgan and Uysal (2011), Serrasqueiro and Nunes (2014) and Topaloglu (2018) provide evidence of the positive connection between growth opportunities and leverage.

The TOT assumes that higher earnings volatility enhances the probability of financial distress. When bankruptcy costs are higher, increased earnings volatility lowers firms' debt ratio (Delcours, 2007). According to POT, firms having more volatile cash flows need more external capital. Therefore, a positive linkage between earnings volatility and leverage is expected (Basti & Bayburt, 2019). There exist contradictory findings on the connection between these variables. De Jong et al. (2008) and Serrasqueiro and Nunes (2014) found a

negative association. Moosa and Li (2012) found a positive association. Delcours (2007) and Karacaer et al. (2016) display no significant link.

According to the TOT, during periods of economic expansion, firms are likely to enhance their profitability by increasing their new investments. Therefore, profitable firms' willingness to benefit from more debt tax shields may cause them to resort to more external financing. Conversely, in terms of POT, economic growth is related to higher profitability and using more internal capital instead of debt financing (De Jong et al., 2008; Yildirim et al., 2018). On the other hand, empirical studies have mostly found a negative association (Yildirim et al., 2018; Tekin, 2019; Panda & Nanda, 2020). However, Mirza et al. (2017) have reported that the GDP growth rate positively links with leverage.

3. Turkish Textiles and Apparel Industry

With the export-based growth policy implemented in Turkey since 1980, the textile and apparel industry has started to grow and develop rapidly, which has resulted in increased investments in this industry. The textile and apparel industry is critical to the Turkish economy due to its share in the manufacturing industry, exports, GDP, and employment (Ticaret Bakanlığı, 2020).

Production in the textile and apparel industry is mainly carried out for export, and the leading trading partner is the European Union countries (Alkan et al., 2018). The sector with a total number of 50,395 enterprises has a share of 18.7% in the total number of enterprises in the manufacturing industry while 2.7% in the total number of enterprises in Turkey in 2018. Approximately one million people are employed in the sector, constituting 25.8% of the manufacturing industry and 6.6% of the total employment. The industry has played an essential role in providing the socio-economic balance in Turkey owing to the created high job. According to 2017 data, the added value created in the textile and apparel industry has 15.6% of the added value created in the manufacturing industry (Sanayi ve Teknoloji Bakanlığı, 2019).

Table: 1
The Share in the General Trade System of Manufacture Textiles and Apparel*
(Billion US \$)

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Total Export | 161.5 | 166.5 | 151.0 | 149.2 | 164.5 | 177.2 | 180.8 |
| Manufacturing | 151.5 | 156.5 | 142.3 | 140.3 | 154.7 | 167.1 | 171.2 |
| Manufacture of Textiles | 12.1 | 12.6 | 11.1 | 11.1 | 11.5 | 11.6 | 11.5 |
| Manufacture of Apparel | 15.8 | 17.1 | 15.5 | 15.5 | 15.6 | 16.2 | 16.4 |
| Manufacture Textiles and Apparel | 28.0 | 29.7 | 26.7 | 26.6 | 27.1 | 27.8 | 27.9 |
| - The Share of Total Export | 17 | 18 | 18 | 18 | 16 | 16 | 15 |
| - The Share of Manufacturing | 18 | 19 | 19 | 19 | 18 | 17 | 16 |

*Exports by ISIC, Rev.4, (General Trade System).

Table 1 shows the share of the Turkish textile and apparel industry in total exports and manufacturing industry exports in 2013-2019 according to the Turkey Statistical Institute International Standard Industrial Classification (ISIC, REV.4). The share of the

textile and apparel industries in total exports is 6.4% and 9.1%, respectively. Their shares in the manufacturing industry are 6.7% and 9.6%, respectively, in 2019. The share of the textile and apparel industry in total exports is 15.4%, and its share in the manufacturing industry is 16.3%.

Production and manufacturing countries in the global economy have entered a transformation process substantially with developments in world trade. Following the Agreement on Textile and Clothing signed in 1995 by the World Trade Organization, which envisages the exact liberalisation of textile and ready-made garment trade, China has been a party to signing the agreement, a new era in the world textile industry.

China has become a global production centre (İSO, 2014), and international competition conditions have seriously influenced the Turkish textile and apparel industry. Particularly Turkey has high production costs (energy, labour cost, finance, tax, construction etc.) in comparison to competitors (China, India, Pakistan, Bangladesh, Vietnam, Indonesia etc.) (Atılğan et al., 2014). In addition, the global crisis experienced in 2008, the negative impact of the worldwide crisis on the purchasing behaviour of consumers for textile and apparel products in the European Union countries, our primary market, the change in the Euro-Dollar parity, and the political instability in neighbouring countries in recent years have negatively affected exports (Ticaret Bakanlığı, 2020). However, in the textile and apparel industry, one of the industries with the highest international competition, Turkey should have continued to have an important position in the European and world textile and apparel market. Turkey has a 3.6% share of world textile exports, ranking sixth among textile exporting countries in 2018; it ranks seventh with its 3.2% share in world apparel exports (Sanayi ve Teknoloji Bakanlığı, 2019). The share of Turkey in the European Union's apparel products market is 11.4%, and its share in the market of textile products is 17% in 2019. It ranks third after China and Bangladesh in apparel products exports to the European Union and second after China in textile products exports (ITKIB, 2020).

4. Data and Methodology

Panel data analysis examines a sample of 22 Turkish *textile and apparel firms* listed in BIST from 2010-2019. While financial data for firms is obtained from the Finnet database and the firms' websites, the data on GDP growth in the study is provided by the Central Bank of the Republic of Turkey. The following empirical specification is used to examine the capital structure determinants of Turkish *textile and apparel firms*:

$$FL_{it} = \alpha + \beta X_{it-1} + \xi_t + \mu_i + \epsilon_{it} \quad (1)$$

In Equation (1): i indexes the firm and t indexes the year; the independent variable is financial leverage denoted by FL_{it} and this variable is measured by three alternative indicators such as the ratio of total debts to total assets (TL), the ratio of short-term debts to total assets (STL) and the ratio of long-term debts to total assets (LTL); α is an intercept term; X_{it-1} is the matrix of one year lagged firm-specific and macroeconomic variables; β

is a vector of coefficients on independent variables; ξ_t is time dummies; μ_i is the unobserved firm-specific effect and finally ϵ_{it} is an i.i.d. random error term with $E(\epsilon_{it}) = 0$ and $Var(\epsilon_{it}) = \sigma^2$. Detailed explanations for the definitions of the variables in the financial leverage regression equation are given in Table 2.

Table: 2
Definitions of Dependent and Independent Variables

| Variable | Measure | Notation |
|------------------------------|---|-----------|
| Dependent variables | | |
| Total leverage | The ratio between total debt and total assets | TL |
| Short term leverage | The ratio between short-term debt and total assets | STL |
| Long term leverage | The ratio between long-term debt and total assets | LTL |
| Independent variables | | |
| Firm size | Logarithm of sales | Ln(sales) |
| The logarithm | The logarithm of the number of years in activity | Ln(age) |
| Profitability | The ratio between earnings before interest, taxes, depreciation, and amortisation and total assets | EBITDA |
| Liquidity | The ratio between total current assets and short-term debt | LIQ |
| Non-debt tax shields | The ratio between total depreciation expenses and total assets | NDTS |
| Asset tangibility | The ratio between tangible assets and total assets | TANG |
| Growth Opportunities | The ratio between the market value of equity plus short- and long-term liabilities to total assets. | TQ |
| Earnings Volatility | The absolute value of percentage variations of earnings before interest and tax | RISK |
| GDP growth | The annual percentage growth rate of GDP | GDP |

As mentioned above, the sample of this study is an unbalanced panel, and its cross-sectional dimension, N, is larger than the time dimension, T. Therefore, taking into account these two conditions related to the sample, the coefficients of the model specified in Equation (1) will be estimated. The econometric analysis of the financial leverage model comprises the following steps: First, Spearman correlation analysis and variance inflation factor (VIF) test are applied to determine whether multicollinearity among the independent variables is a severe concern. According to the results reported in Table 4, collinearity does not seem to be a significant problem for the model specification. Second, to choose between RE and FE estimators, I conduct the Hausman specification test under the null hypothesis that the random-effects estimator is consistent (Baum, 2006).

As reported in Table 5, the results of the Hausman specification test for the TL model, where the dependent variable is TL, imply that the null hypotheses cannot be accepted at any conventional level. Thus, this result allows us to conclude that the fixed effects estimation technique outperforms the random-effects GLS estimation technique for the TL model. However, for STL and LTL models, the Hausman specification test's results, as shown in Table 5, show that the null hypothesis cannot be rejected, which leads to the conclusion that it is necessary to use a random-effects GLS estimator.

However, both RE and FE estimators yield inconsistent coefficient estimates when autocorrelation, heteroscedasticity, or cross-sectional dependence are found in the error terms of model specification. Therefore, it is checked these assumptions use various tests, namely the Wooldridge test (for autocorrelation), the modified Wald statistic test and Brown and Forsythe test (for heteroscedasticity), and the Pesaran CD test (for cross-sectional dependence). According to the test results in Table 5, both autocorrelation and heteroscedasticity exist in all three models. In addition, the null hypothesis of no cross-

sectional dependence at the 0.05 significance level for TL and LTL models is rejected, implying that these models have a cross-sectional dependence. In this case, Driscoll and Kraay (1998) propose an estimator that yields autocorrelation and heteroscedasticity consistent standard errors for panels with $N > T$. This estimator, which can be employed for both balanced and unbalanced panels, also produces standard errors that are robust to general forms of cross-sectional and temporal dependence (Hoechle, 2007). Because of the reasons mentioned above, it is appropriate to use the Driscoll and Kraay (1998) estimator to estimate the financial leverage model parameters specified in Eq. (1).

5. Results and Discussion

The summary statistics for all the variables used in the empirical estimation are provided in Table 3. As indicated in Table 3, the average value of TL is about 52%. This ratio varies between a minimum of 3.61% and a maximum of 105.9%. The mean STL is approximately 36%, ranging between 87.72% and 3%. Table 3 depicts that, on average, the LTL of all sampled firms is about 16%. Table 3 also indicates that the minimum value for this variable is 0.07%, while the maximum value is 67.55%. The summary statistics findings reveal that firms in the textile and apparel industry tend to finance roughly half of their assets by using debt. Moreover, considering the maturity of the debt, firms in this sector mostly prefer employing short-term debt to long-term debt in financing their investments. This result may be explained by the lack of a sufficiently developed capital market, and the volatile economic environment makes it difficult for these firms to access long-term finance.

Table: 3
Summary Statistics

| Variable | Mean | Median | Std. Dev. | Min | Max | N |
|-----------|---------|---------|-----------|---------|---------|-----|
| TL | .5190 | .5062 | .2127 | .0361 | 1.0594 | 219 |
| STL | .3612 | .3468 | .1827 | .0302 | .8772 | 219 |
| LTL | .1578 | .1302 | .1271 | .0007 | .6755 | 219 |
| Ln(sales) | 18.3345 | 18.7396 | 1.7721 | 11.1100 | 22.3600 | 219 |
| Ln(age) | 3.5865 | 3.7136 | .4747 | 2.3026 | 4.2000 | 219 |
| EBITDA | .0551 | .0528 | .0643 | -.2045 | .2303 | 219 |
| LIQ | 1.7058 | 1.3556 | 1.6242 | .0317 | 10.7585 | 219 |
| NDTS | .0241 | .0240 | .0156 | -.0804 | .0728 | 219 |
| TANG | .3569 | .3204 | .2162 | .0018 | .9941 | 219 |
| TQ | .9849 | .9113 | .4172 | .3198 | 4.1905 | 219 |
| RISK | .0364 | .0138 | .1828 | 0 | 2.6568 | 219 |
| GDP | .0587 | .0609 | .0294 | .0090 | .1111 | 219 |

Spearman pairwise correlation matrix for independent variables employed in the regression analysis is presented in Table 4. When the correlation matrix is examined, it is seen that the maximum significant correlation value among independent variables is approximately 48%, which is between Growth and EBITDA variables. Gujarati and Porter (Gujarati & Porter, 2009) suggest that unless correlation values calculated among independent variables exceed 80%, multicollinearity is not a severe concern for regression analysis. Furthermore, in additional research, a VIF analysis is conducted to investigate the presence of multicollinearity. The unreported results indicate that the VIF coefficients range between 1.02 and 1.32, far lower than the acceptable upper limit of 10. Therefore, the results

of the VIF analysis supporting those of the correlation analysis indicate no multicollinearity concern in the model specifications.

Table: 4
Correlation Coefficients

| Variables | I | II | III | IV | V | VI | VII | VIII | IX |
|---------------|-----------|-----------|----------|----------|----------|----------|---------|--------|----|
| (I) Ln(sales) | 1 | | | | | | | | |
| (II) Ln(age) | 0.2964* | 1 | | | | | | | |
| (III) EBITDA | 0.5435* | 0.0994 | 1 | | | | | | |
| (IV) LIQ | -0.0882 | -0.1339** | 0.1568** | 1 | | | | | |
| (V) NDTs | 0.3642* | -0.0729 | 0.3258* | -0.1833* | 1 | | | | |
| (VI)TANG | -0.0677 | 0.1971* | -0.2088* | -0.3499* | 0.2534* | 1 | | | |
| (VII) TQ | 0.1628** | -0.2103* | 0.2746* | 0.0148 | 0.1616** | -0.2293* | 1 | | |
| (VIII) RISK | 0.1781* | -0.1102 | 0.0977 | 0.1864* | 0.0414 | -0.1313 | 0.0676 | 1 | |
| (IX) GDP | -0.1627** | -0.2321* | 0.0048 | 0.1961* | 0.0864 | 0.0080 | -0.0696 | 0.0490 | 1 |

Notes: Definitions of variables are outlined in Table 2. * p-value<0.01 and ** p-value<0.05.

Table: 5
Regression Results

| | Dependent variables | | | | | |
|--------------------------------------|---------------------|------------|-------------------|------------|-------------------|------------|
| | TL model | | STL model | | LTL model | |
| Independent variables | Coefficients | Robust SEs | Coefficients | Robust SEs | Coefficients | Robust SEs |
| Ln(sales) _{t-1} | -.0105** | .0034 | .0113 | .0149 | -.0079 | .0136 |
| Ln(age) _{t-1} | -.2265 | .2101 | -.0325 | .0485 | .0382 | .0620 |
| EBITDA _{t-1} | -.9415*** | .1072 | -.7785*** | .1013 | -.0482 | .1869 |
| LIQ _{t-1} | -.0257*** | .0072 | -.0327*** | .0030 | -.0027 | .0047 |
| NDTS _{t-1} | 1.9628*** | .5505 | 1.3024* | .5691 | .9177 | .6389 |
| TANG _{t-1} | -.1161* | .0518 | -.3353*** | .0711 | .2261*** | .0279 |
| TQ _{t-1} | .0283** | .0109 | -.0029 | .0055 | .0221 | .0181 |
| RISK _{t-1} | .0003 | .0002 | .0004*** | .0001 | -.00002 | .0002 |
| GDP _{t-1} | 4.1730*** | .8082 | 3.0266*** | .1936 | .1493 | .4341 |
| Intercept | 1.3826* | .7313 | .2958 | .0701 | .3349 | .2872 |
| Estimator selection test | | | | | | |
| Hausman test | 24.59*** | | 11.68 | | 14.20 | |
| Autocorrelation test | | | | | | |
| Wooldridge | 19.073*** | | 34.614*** | | 7.305** | |
| Heteroskedasticity test | | | | | | |
| Modified Wald | 1006.60*** | | | | | |
| Brown and Forsythe W ₍₅₀₎ | | | 2.9113*** | | 2.8221*** | |
| Cross-sectional dependence test | | | | | | |
| Pesaran CD | 2.126** | | 0.455 | | 5.013*** | |
| R-squared | .4367 | | 0.3247 | | 0.2685 | |
| F-statistic | 2432.09*** | | | | | |
| Wald chi2(17) | | | 26675.38*** | | 17145.95*** | |
| Panel Estimator | Driscoll-Kraay FE | | Driscoll-Kraay RE | | Driscoll-Kraay RE | |
| Number of Obs. | 197 | | 197 | | 197 | |
| Number of firms | 22 | | 22 | | 22 | |

Table 5 indicates regression results corresponding to Eq. (1), where the dependent variable is one of the three measures of leverage (TL, STL and LTL). From Table 5, the estimated coefficients of the firm size variable (sales) are statistically significant and negative only in the total leverage model. This finding suggests that, in line with the POT, textile and apparel firms' total leverage is negatively affected by firm size. A possible reason for the negative impact of firm size is that the complex structures of larger firms lead to more significant information asymmetry between firms and creditors. This finding is also similar to the result of previous studies (Titman & Wessels, 1988; Marsh, 1982; Chakraborty, 2010; Haron & Ibrahim, 2012). Regarding firm age, the effect of the age variable on the financing strategy of the firms is not statistically significant, regardless of how leverage is measured.

The influence of profitability on leverage indicators is negative in all models, as predicted by the POT. However, the estimated coefficients of profitability are significant in the TL and STL models. This finding indicates that the leverage ratio decreases *as firm profitability increases*. One possible explanation is that companies with high profits prefer to use less debt of their abilities to generate funds internally. This is in line with other empirical studies (Delcoure, 2007; Proença et al., 2014; Abdioğlu & Deniz, 2015; Dizgil, 2019; Tekin, 2019; Söylemez, 2019; Işık & Ersoy, 2021) and supports the logic of both the TOT and POT.

The impact of the liquidity variable on the leverage is negative and significant in the TL and STL models. These results, which support the POT, show that firms with more liquid assets tend to use these assets rather than use debt in financing their investments. This finding is also supported by other studies (Demirhan, 2009; Proença et al., 2014; Mirza et al., 2017; Topaloglu, 2018; Chakrabarti & Chakrabarti, 2019; Dizgil, 2019).

The results show that non-debt tax shields and leverage measures are positively related in all leverage models. However, this relationship is statistically significant in models of TL and STL. These findings, which are similar to the results of Delcoure (2007), Mirza et al. (2017), Söylemez (2019) and D'Amato (2019), contrast sharply with both theoretical expectations. Hence, the positive impact might be explained by the fact that NDTs, an indicator of firms' asset security, is associated with high leverage.

For the asset tangibility variable, the results show that this variable has a significantly negative effect on TL and STL during a very positive impact on LTL. The significant negative association of tangibility and total and short-term leverage measures confirms the hypothesis of POT and indicates that firms with more tangible assets could choose to operate with lower leverage ratios because of the lower cost of issuing equity. This finding is consistent with many empirical studies (D'Amato, 2019; Demirhan, 2009; Abdioğlu & Deniz, 2015; Işık & Ersoy, 2021). At the same time, the significant positive linkage between tangibility and long-term leverage supports the hypothesis of TOT. It shows that firms with high tangible assets quickly obtain external finance due to the tangibility collateral characteristic. This confirms previous empirical findings (D'Amato, 2019; Işık & Ersoy, 2021).

For the TQ variable as a proxy for the future growth opportunity of firms, the coefficient of this variable in the TL model is statistically significant and positive. This finding is similar to the finding of previous studies (Vo, 2017; Topaloglu, 2018). This finding, which validates the POT, also shows that higher market value is associated with higher total leverage. However, this variable does seem to be related to neither STL nor LTL.

As predicted by the POT, earnings volatility has a positive and highly significant influence on STL only. However, this powerful effect does not hold for the other models. This result, consistent with Mirza et al. (2017), demonstrates that firms operating in the textile and apparel sector increase their debt due to the higher cost of issuing equity.

The effect of GDP growth on firm leverage is positive in all models but statistically significant in TL and STL models. This means that debt in the textile and apparel sector usually increases in prosperous economic times. This finding, in line with the notion of the TOT, differs from the findings of Ahsan et al. (2016) and Yildirim et al. (2018). However, Mirza et al. (2017) provide evidence of the positive relationship between GDP growth and firm leverage.

6. Conclusion

This study examines whether firms' financing decisions are consistent with capital structure theories. For this purpose, it has been used a yearly data set of an unbalanced panel of Turkish textile and apparel firms traded in Borsa Istanbul for the period 2010-2019. In line with the aim of the study, the empirical validity of these theories has been questioned using some selected variables such as firm size, age, profitability, liquidity, non-debt tax shields, asset tangibility, growth opportunities, earnings volatility, and GDP growth.

Empirical findings from this study allow us to conclude that: (i) the total leverage ratio is significantly and negatively affected by firm size, profitability, liquidity, and asset tangibility, and is positively affected by non-debt tax shields, growth opportunities and GDP growth. Nevertheless, firm age and earnings volatility does not have a statistically significant influence on the total leverage; (ii) the short-term leverage ratio is significantly and negatively affected by profitability, liquidity and asset tangibility and is positively affected by non-debt tax shields, earnings volatility, and GDP growth. In addition to these results, firm size, firm age, and growth opportunities do not have a statistically significant influence on the short-term leverage ratio and (iii) The only statistically significant variable in the long-term leverage regression model is the tangibility of the assets. There is no statistically significant association between other variables with different signs and long-term leverage ratio. As a consequence, POT seems to be the most successful theory in explaining the determinants of the capital structure of Turkish textile and apparel firms. In other words, textile and apparel firms mostly follow the POT.

One of the areas where textile and apparel firms operating in a fiercely competitive environment can create a competitive advantage compared to their competitors is that they can reduce capital costs by reaching an optimal capital structure. For this to happen, it is necessary to know what factors determine firms' capital structure. Therefore, it is thought that the findings obtained from this study will guide both managers and owners of textile and apparel companies and policymakers.

This study has some limitations. First, this study has tested whether the TOT and POT are valid for textile and apparel firms. The use of static panel estimators in this study can be considered another study limitation. However, the models are less likely to suffer from endogeneity problems. This is because it is employed one-year lagged values of independent variables to mitigate endogeneity problems. In future studies, the validity of other capital structure theories, such as signalling, agency, and free cash flow theories, can

be explicitly tested in different sectors. Dynamic panel data estimators that consider the endogeneity problem may also be suggested.

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Validity of Okun Law in Agricultural Sector in Turkey: ARDL Bounds Test Approach

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Türkiye’de Tarım Sektöründe Okun Kanununun Geçerliliği: ARDL Sınır Testi Yaklaşımı

Abstract

Okun's Law asserts an inverse relationship between unemployment and economic growth in the economy. The study examines the relationship between the growth rate and unemployment rate for Turkey's agricultural sector from 2014Q1 - 2021Q3. The stationarity test is carried out with the Generalized Dickey-Fuller Unit Root Test. Then, the relationship between growth and unemployment rates in the agricultural sector is analysed with the ARDL bounds test. According to the study results, the growth rate of the agricultural sector and the unemployment rate in the agricultural sector are cointegrated in the long run, and the relationship between them is statistically significant and positive. The result reached in the study; Okun's Law is valid in the agricultural sector of the Turkish economy.

Keywords : Okun Law, Agriculture Sector, ARDL Bounds Test.

JEL Classification Codes : E24, J43, O47.

Öz

Okun Kanunu, ekonomide işsizlik ile ekonomik büyüme arasında ters orantı olduğunu ileri sürmektedir. Çalışmada Türkiye'nin tarım sektörüne yönelik, büyüme oranı ile işsizlik oranı arasındaki ilişki 2014Ç1 - 2021Ç3 dönemi için incelenmiştir. Değişkenler Genelleştirilmiş Dickey-Fuller Birim Kök Testi ile durağanlık sınaması yapılmıştır. Ardından, ARDL sınır testi ile tarım sektöründeki büyüme ve işsizlik oranları arasındaki ilişki analiz edilmiştir. Çalışmanın sonucuna göre; tarım sektörünün büyüme oranı ve tarım sektöründeki işsizlik oranı uzun dönemde eşbütünleşik ve arasındaki ilişki istatistiksel olarak anlamlı ve pozitifdir. Çalışmada ulaşılan sonuç; Türkiye ekonomisi içerisinde tarım sektöründe Okun Kanunu geçerlidir.

Anahtar Sözcükler : Okun Kanunu, Tarım Sektörü, ARDL Sınır Testi.

1. Introduction

The effects of unemployment can be divided into economic and non-economic effects. The economic effects can be explained as the production volume is lower than it should be. Non-economic effects can be explained as the psychological problems experienced by the unemployed (Abel et al. 2008: 458). Examples of non-economic effects are situations that are related to unemployment. Some of them are psychological disorders, suicide, substance abuse, divorce and criminal habits.

The economic effects of unemployment are a decrease in the amount of production. Arthur Okun made one of the most important studies in the literature on this subject in 1962. A. Okun investigated the possible effects of unemployment on the gross domestic product deficit and found that unemployment causes a deficiency in the GDP. The fact that unemployment causes the gross domestic product deficit, that is, the economy to grow less than its potential, is called "Okun's Law".

The equation shows the Okun coefficient numbered 1 (Barışık et al. 2010: 91).

$$U = U^* - \beta \left(\frac{Y - Y^*}{Y^*} \right) \quad (1)$$

In this equation, β is Okun Coefficient, U^* is the natural unemployment rate, U is the unemployment rate, Y^* represents potential GDP, and Y is actual GDP.

The coefficient β in the equation numbered 1 is called the "Okun Coefficient". In A. Okun's study, this coefficient was calculated as 0.3. That is, for every 1% increase in unemployment rates, the gross domestic product gap increases by 0.3%. From a different perspective, the unemployment rate decreases by 0.3% for every 1% increase in the actual product.

The study aims to examine the correlation between the growth rate of the agricultural sector in the Turkish economy and the unemployment rate in the agricultural sector. In the study, first of all, a literature review will be done on the studies in the field of Okun's Law. Followingly, methodological information will be given about the tests in that the relationship between the two variables will be examined. After the method information, the relationship between the variables will be discussed with econometric analysis. In this context, agricultural sector growth data and unemployment rates in the agricultural sector will be used between the 2014Q1 and 2021Q3 periods. The relationship between the mentioned variables will be analysed with the ARDL bounds test approach after the stationarity test of the variables is done with the Augmented Dickey-Fuller Unit Root Test.

2. Literature Review

The literature review focuses on selected studies about Okun Law related to the Turkish economy since no analysis has been found regarding the validity of Okun's Law in the agriculture sector.

Evaluation of the studies according to the scanned literature is given in Table 1.

Table: 1
Literature Review on Okun's Law

| Author | Year | Country | Data Period | Result |
|--------------------------------|------|------------------------------------|-------------|--|
| Okun | 1962 | United States | 1947-1960 | Every increase in the unemployment rate creates a greater GDP gap than the rate of increase. |
| Yılmaz | 2005 | Turkey | 1978-2004 | For the Turkish economy, there is unidirectional causality from the growth rate to the unemployment rate. |
| Uysal & Alptekin | 2009 | Turkey | 1980-2007 | For the Turkish economy, one-way causality from growth to unemployment has been determined. Okun's Law is invalid. |
| Takım | 2010 | Turkey | 1975-2008 | There is bidirectional causality between unemployment and growth in the Turkish economy. |
| Ceylan & Şahin | 2010 | Turkey | 1950-2007 | Okun's law is valid for the Turkish economy in the long run. |
| Barışık, Çevik & Çevik | 2010 | Turkey | 1988-2008 | Although growth does not create employment for the Turkish economy, Okun's Law is not valid either. |
| Tiryaki & Özkan | 2011 | Turkey | 1998-2010 | The Turkish economy has unidirectional causality from output gap to unemployment. Okun's Law is not valid. |
| Kanca | 2012 | Turkey | 1970-2010 | Although growth affects unemployment in the Turkish economy, Okun's Law is not valid. |
| Özdemir & Yıldırım | 2013 | Turkey | 2005-2013 | Although there is a causal relationship between growth to employment for the Turkish economy, Okun's Law is invalid in the long run. |
| Şentürk & Akbaş | 2014 | Turkey | 2005-2012 | Okun's Law is valid for the Turkish economy. |
| Eser | 2014 | Turkey | 1970-2010 | Okun's Law is valid for the Turkish economy. |
| Işık, Şahbaz & Şahbaz | 2015 | OECD Countries | 1990-2014 | Okun's Law is valid for OECD country economies. |
| Göçer | 2015 | Turkey | 2001-2015 | For the Turkish economy, economic growth is the cause of unemployment and Okun's Law is valid. |
| Demirbaş & Kaya | 2015 | Turkey | 1980-2009 | Okun's law is valid for the Turkish economy in the long run. |
| Altunöz | 2015 | Turkey | 2000-2015 | Although unemployment growth affects the Turkish economy, Okun's Law is invalid. |
| Akay, Aklan & Çınar | 2016 | Turkey | 1969-2014 | Okun's Law is more effective for the Turkish economy than in periods of economic growth. |
| Erkuş, Gemrik & Aytemiz | 2016 | Turkey | 2000-2015 | Okun's law is valid for the Turkish economy. |
| Uras | 2016 | Turkey | 2000-2014 | Okun's law is valid for the Turkish economy. |
| Köse | 2016 | Turkey | 2003-2014 | Okun's law is valid for the Turkish economy. |
| Arı | 2016 | Turkey | 1980-2014 | There is growth in the Turkish economy that does not create employment. Okun's Law is invalid. |
| Economou & Psarianos | 2016 | EU Countries | 1993-2014 | The Okun Law applies to the economies of European Union countries. |
| Hooper | 2017 | Developing Countries | 2011-2015 | Okun's Law is valid in 85 different countries' economies. |
| Grant | 2017 | United States | 1948-2016 | Okun's Law applies to the American economy. |
| Yüksel & Oktar | 2017 | Developed and Developing Countries | 1993-2015 | Okun's Law is valid in developed and developing countries. |
| Mucuk, Edirneligil & Gerçekler | 2017 | Turkey | 2002-2014 | Okun's law is valid for the Turkish economy. |
| Eğri | 2018 | Egypt | 1970-2016 | Okun's Law does not apply to the Egyptian economy. |
| Güçlü | 2018 | Turkey | 2004-2014 | Okun's law is valid for the Turkish economy. |
| Özçelik & Erdem | 2020 | Turkey | 1990-2019 | Okun's law is valid for the Turkish economy. |
| Yayar & Öztas | 2020 | D-8 Countries | 1998-2017 | Okun's Law is not valid |
| Karadağ-Ak | 2021 | Turkey | 2005-2020 | Okun's law is valid for the Turkish economy. |
| Koçak | 2021 | Turkey | 2005-2020 | Okun's law is valid for the Turkish economy. |

3. Methodology

In the study, total production data of the agricultural sector between 2014Q1-2021Q3 and unemployment rates in the agricultural sector are used. The data are taken from the data repository of the Turkish Statistical Institute (TURKSTAT). To start the evaluations, the

unit root inclusion status of the data above is analysed. The Augmented Dickey-Fuller Unit Root Test, developed by D. David and W. Fuller in 1979 and revised and finalised two years later, is employed to conduct the analysis. This test analyses the model over three equations: the plain version, the constant term version, and the trend and constant term version. In the study, the equations of the model, which are used for both constant term and trend models, are used. The equation in which the model contains a constant term is shown with the number 2, and the equation containing both the constant term and the trend with the number 3 (Taş et al., 2017: 270-271).

$$\Delta Y_t = \alpha_0 + \lambda Y_{t-1} + \mu_t \quad (2)$$

$$\Delta Y_t = \alpha_0 + \alpha_1 t + \lambda Y_{t-1} + \mu_t \quad (3)$$

By using these equations, it is aimed to find the estimated value of the coefficient $\hat{\rho}$ and its standard error. The estimated $\hat{\rho}$ value from these equations is compared with the corresponding value in the DF table created by Dickey and Fuller. Table values consist of 0 and "-." negative values. As a result of the mentioned comparison, the following hypotheses are tested, and it is concluded whether it contains a unit root or not.

$H_0 = \lambda = 0$ There is a unit root in the series; it is not stationary,

$H_1 = \lambda < 0$ There is no unit root in the series, it is concluded that the series is stationary.

The ARDL bounds test developed by M.H. Pesaran, Y. Shin, and R.J. Smith in 2001 has also been used. ARDL bounds test enables the analysis of the cointegration relationship between the series used in the model, regardless of their stationarity of the same order. In addition, determining the short- and long-term relationships with the help of the error correction model by keeping long-term information available in the model is one of the advantageous aspects of the ARDL bounds test.

Equation 4 is the one used in ARDL bounds test (Pesaran et al., 2001).

$$\Delta Y = \alpha_0 + \sum_{i=1}^k \alpha_{1i} \Delta Y_{t-i} + \sum_{i=1}^m \alpha_{2i} \Delta X_{t-i} + \alpha_1 Y_{t-1} + \alpha_2 X_{t-1} + \epsilon_t \quad (4)$$

Within the ARDL bounds test scope, "0" and "1" bounds are determined for the model in question. 1%, 2.5%, 5% and 10% error probability are determined separately with the bound's calculated F statistical value. If the calculated F statistic has a value above the "1" springs, the result is that the model is cointegrated. If the F statistic under the "0" boundary is calculated, it is determined that the model is not cointegrated. Finally, suppose the F statistical value is between the bounds of "0" and "1". In that case, it is concluded that the model is undecided whether it is cointegrated and does not reach a conclusion.

Also, in this study, agricultural growth rate (AGR) and agricultural unemployment rate (AUR) variables were supplied from the Turkish Statistical Institute data bank.

The model used in the analysis is presented in equation number 5.

$$AUR = \beta_0 + \beta_1 AGR + \epsilon \quad (5)$$

The ARDL Bounds Test values applied within the framework of this model and the Augmented Dickey-Fuller Unit Root Test, in which the stability of the variables is analysed, are reported in the valuable empirical findings section.

4. Empirical Findings

The results of the Augmented Dickey-Fuller (ADF) Unit Root Test are reported in Table 2.

Table: 2
ADF Test Results

| Variable | Intercept % 1 Value % 5 Value % 10 Value (Test Statistics) [Probability Value] | Trend and Intercept % 1 Value % 5 Value % 10 Value (Test Statistics) [Probability Value] |
|----------|---|---|
| AGR | -3,67170 -2,963972 -2,621007 (-3,107947) [0,0367] | -4,296729 -3,568379 -3,218382 (-2,990424) [0,1512] |
| D AGR | -3,679322 -2,967767 -2,622989 (-5,909805) [0,0000] | -4,309824 -3,574244 -3,221728 (-5,994783) [0,0002] |
| AUR | -3,711457 -2,981038 -2,629906 (-1,847560) [0,3504] | -4,356068 -3,595026 -3,233456 (-2,585570) [0,2890] |
| D AUR | -3,699871 -2,976263 -2,627420 (-8,741133) [0,0000] | -4,146345 -3,622033 -3,248592 (-4,191345) [0,0160] |

First, the statistical test and the confidence value are compared to interpret the Augmented Dickey-Fuller Unit Root Test table. This study has been shaped on a 95% confidence value, that is, a 5% margin of error. Therefore, comparing the test statistic value with the 5% error value is necessary. As a result of this comparison, if the test statistic value is greater than the error value, it is concluded that the series contains a unit root. Otherwise, if the test statistic value is less than the error value, it is concluded that the series is stationary.

According to the results in the model with constant term and model with both constant term and trend, it has been determined that the variables of the growth of the agricultural sector and the unemployment rate in the agricultural sector contain unit root in their level values, that is, they are not stationary. Surprisingly, the agricultural sector growth rate is found to be stable in the level value in the fixed term model; even stability in the level value in both the fixed term and trend model is not the case. Yet, after taking the difference, the growth rate is detected to be stationary in both cases.

Table: 3
ARDL Test Values

| The ARDL Model = > AGR = f (AUR) | | |
|-----------------------------------|-----------------|------------|
| F Statistics | 10,31989 | |
| Model | (4, 0) | |
| Significance Levels | Critical Values | |
| | 0 Boundary | I Boundary |
| %1 | 6,84 | 7,84 |
| %2,5 | 5,77 | 6,68 |
| %5 | 4,49 | 5,73 |
| %10 | 4,04 | 4,78 |
| Diagnostic Tests | Statistics | |
| R ² | 0,501292 | |
| Durbin-Watson Statistic | 2,241748 | |
| F Statistic | 4,221769 | |
| Breusch-Godfrey LM | 0,1417 | |
| Jargue-Bera Normality Test | 0,748687 | |
| Ramsey Test | 0,9407 | |

According to Table 3, the cointegration status of the stationary variables is analysed by the ARDL bounds test; the F statistic has been calculated as 10.31. As a result of comparing this test with the "0" and "1" bounds, it can be concluded that the model established is cointegrated even at the 99% confidence interval. However, since the study is continued at the 95% confidence interval - as stated in the paragraph below Table 2-we keep comparing the F statistical value calculated with the 5% significance level. In the 95% confidence interval, the “0” bounds are calculated as 4.94 and the “1” bounds as 5.73. Since the F statistical value is greater than the “1” bounds, it is concluded that the model is cointegrated at the 95% confidence interval.

Considering the diagnostic values calculated by the ARDL bounds test, there is no autocorrelation problem when the Breusch-Godfrey LM test is considered. Moreover, based on the Jargue-Bera Normality Test, it is figured that the error term has a normal distribution. According to the Ramsey Test, it is understood that there is no model building error. In light of this information, the long-term relationship between the variables is analysed in Table 4.

Table: 4
ARDL Bounds Test Cointegration Values

| Cointegration Form | | | | |
|--|-------------|----------------|----------------|-------------------|
| Variable | Coefficient | Standard Error | Test Statistic | Probability Value |
| D(TB(-1)) | -10,412752 | 0,229698 | -45,332301 | 0,0000 |
| D(TB(-2)) | -5,964518 | 0,20795 | -28,687246 | 0,0000 |
| D(TB(-3)) | -2,433677 | 0,186299 | -13,063300 | 0,0000 |
| D(TIO) | 1,938127 | 1,390673 | 1,393661 | 0,1780 |
| CointEq(-1) | -0,422510 | 0,289080 | -1,839320 | 0,0000 |
| Cointegration Equation = AGR = - 0.0365 - 0.5663 x AUR | | | | |
| Long Rotation Coefficients | | | | |
| Variable | Coefficient | Standard Error | Test Statistic | Probability Value |
| AUR | -0,017518 | 0,007806 | -2,244253 | 0,0307 |
| C | 0,036548 | 0,004528 | 8,070811 | 0,0000 |

It can be seen that the F statistical value calculated in the established model is greater than the 1 bound, and it is understood that there is a cointegrated relationship between the variables. When the model’s coefficients, which are found to have a cointegration

relationship, are examined, it was concluded that the agricultural sector's unemployment rate negatively affected the agricultural sector's growth, which is statistically significant. Therefore, it has been concluded that the Okun Law is valid in the agricultural sector.

5. Conclusion

In this study, the validity of Okun's Law in the Turkish agricultural market has been analysed. Between 2014Q1 and 2021Q3, the unemployment rate in the agricultural market and the value of real production in the agricultural market are used. For the analysis of the relationship between the mentioned variables, firstly, the stability of the variables is tested with the Augmented Dickey-Fuller unit root test. Then the relationship is evaluated with the ARDL bounds test.

It can be stated that the statistical value of F, calculated according to the result of the ARDL bounds test, is greater than the upper value of the bounds and the established model contains a cointegration relationship when the long-term relationship of the model in which the cointegration relationship is determined, a negative relationship is detected between the variables and it is concluded that there was no statistical error in the established model and there was a statistically significant relationship. Therefore, it has been completed as Okun's Law is valid for the agricultural sector in the Turkish economy.

As a result, the result reached in the study is similar to the literature. In the literature review, no study analysed Okun's Law's validity for the agricultural sector. In this respect, the study is thought to contribute to the literature. With this situation, as a result of the study, it can be concluded that Okun's Law is valid in the agriculture sector by finding similar results to the results of the studies carried out to analyse the validity of Okun's Law in the Turkish economy.

The main conclusion drawn from the study is that the policies applied to reduce unemployment in the agricultural sector will increase agricultural production and, thus, economic growth. However, the effect of agricultural unemployment on economic growth is limited. This situation is thought to be caused by the structural situation of the agricultural sector. Due to the study's limitations, only the data belonging to the agricultural sector are examined.

The economy mainly consists of agriculture, industry and services sectors. Among these sectors, the sector that contributes the least to economic growth is the agricultural sector. Analysing the validity of Okun's Law for sectors other than agriculture is important for the development of the study. After calculating the coefficients of the Sectoral Okun coefficient, making employment policy recommendations for the sector in which unemployment reduction will affect economic growth more will make the study more meaningful.

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The Impact of Bank-Specific and Macroeconomic Factors on the Capital Structure of Banks

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Bankaya Özgü ve Makroekonomik Faktörlerin Bankaların Sermaye Yapısı Üzerine Etkisi

Abstract

This study aims to investigate the bank-specific and macroeconomic factors that affect the capital structure of banks. The study used panel data from 42 banks operating in Turkey from year 2003 to 2017. In the analysis, total, long-term and short-term debt ratios are used as a proxy for capital structure. The findings show that bank size, growth opportunity, interest rate and exchange rate positively affect the three leverages, while profitability has a negative effect. Most of this study findings are related to the expectations of pecking order theory.

Keywords : Bank, Capital Structure, Leverage, Panel Data Analysis.

JEL Classification Codes : C23, G21, G32.

Öz

Bu çalışma, bankaların sermaye yapısını etkileyen bankaya özgü ve makroekonomik faktörleri incelemeyi amaçlamaktadır. Çalışmada, Türkiye'de 2003-2017 yılları arasında faaliyet gösteren 42 bankanın panel verileri kullanılmıştır. Analizde, toplam borç, uzun vadeli ve kısa vadeli borç oranları sermaye yapısının göstergesi olarak kullanılmıştır. Araştırma bulguları, banka büyüklüğü, büyüme fırsatı, faiz oranı ve döviz kurunun kaldıraç oranlarını olumlu yönde etkilediğini, kârlılığın ise olumsuz yönde etkilediğini göstermektedir. Bu çalışmanın bulgularının çoğunluğu finansman hiyerarşisi teorisinin beklentileriyle uyumludur.

Anahtar Sözcükler : Banka, Sermaye Yapısı, Kaldıraç, Panel Veri Analizi.

1. Introduction

Capital structure combines debt and equity to fund real investments. It shows the financing strategy of firms and their financing tactics (Myers, 2000: 2). There have been a lot of capital structure theories and models established following Modigliani and Miller (1958: 261-297), and efforts have been exerted to determine factors that affect the capital structure. However, many empirical studies concentrated on industrialised countries and non-financial firms. Additionally, studies on the capital structure of financial institutions, especially banks, are minimal. The unique nature of banks, such as the degree of leverage in banking, the type of deposit contract and the regulatory requirements imposed on financial institutions, make studies on banks' capital structure under-explored than non-financial firms.

Even though regulatory requirements are indicated as a significant factor in banks' capital structure, recent studies proved that banks' optimal capital structure is realised by reacting to the influences of bondholders and shareholders in the same way as non-financial institutions. Flannery and Rangan (2008: 2) analysed the capital build-up in the U.S. They concluded that the regulatory requirements will not always be necessary for the capital determination of banks. Instead, investors and market disciplinary pressures significantly impact banks' capital ratios. Moreover, recently many researchers tended to conclude the similarities of factors affecting financial and non-financial companies' capital structures. Gropp and Heider (2010: 9) attempted to investigate the determinant bank capital structure in 16 different countries. They showed that regulatory requirement is not the foremost important factor of banks' equity, and it may only be the second-order important to determine the capital structure of banks. They also uncovered similarities among the factors affecting the banks' and non-financial corporates' capital structures. In other words, the same drivers ultimately determine banks' and corporations' capital structures.

In the case of Turkey, there are very few empirical studies about the capital structure of banks. In these studies, the determinants of banks' leverage were investigated by selecting firm-specific and macroeconomic factors like GDP and inflation rate by making total debt ratio and equity ratio as measures of leverage. Even though these studies attempt to examine the firm-specific and macroeconomic factors, they did not study the impact of macroeconomic factors on the three debt ratios of banks. Additionally, in the previous works conducted in Turkey, the effect of net interest margin and macroeconomic factors like the unemployment rate, interest rate, and the exchange rate has not been observed. Therefore, in addition to following the existing literature, this study tries to fill the gaps in the previous studies. Furthermore, the entire time is separated into two sub-periods to determine whether the 2008 global financial crisis influenced the capital structure of banks or not. The first sub-period spans 2003-2008, while the second spans 2009-2017.

2. Theoretical Framework and Hypothesis Development

In this part, hypotheses are developed based on the literature and theories about the nature of the relationship between capital structure and different types of determinants.

Profitability: The effect of profit on firms' leverage is a controversial issue by previous capital structure theories. According to the trade-off theory, a high profitability level increases firms' borrowing capacity if corporate taxes are considered. Generally, profitable firms are required to pay more taxes than non-profitable firms. To deduct the tax payment amount, they prefer issuing more debt to benefit from a tax shield on the interest payment. This strategy makes firms have more debt than equity. Furthermore, agency costs theory recommends that profitable firms increase the amount of debt in their capital structure to control the manager's actions. All of these suggestions indicate the existence of a positive correlation between debt and profitability (Güngöraydinoğlu & Öztekin, 2011: 1471). Instead, the pecking order theory suggests that firms have an order of preference to finance their operation and prioritise using retained earnings first over debt. Highly profitable firms are considered as they have more retained earnings and are less dependent on borrowed funds, which demonstrate a negative association between profitability and debt (Rajan & Zingales, 1995: 1422; Chakraborty, 2013: 117; Drobetz & Fix, 2003: 24).

Hypothesis 1. Leverage is negatively affected by profitability.

Asset tangibility According to the literature, the asset structure of firms positively affects their capital structure. If the more significant percentage of firms' assets is tangible, it increases the capacity of getting debt with a collateral agreement. According to the trade-off assumption, asset tangibility and leverage have a positive relationship. The reason is that in the case of bankruptcy, the loss on tangible assets is lower than the loss on other assets. Other empirical works support this prediction. Drobetz and Fix's (2003: 32) findings revealed that asset tangibility positively impacts leverage. Furthermore, (Hanousek & Shamshur, 2011: 1364; Gropp & Heider, 2010: 45; Titman & Wessels, 1988: 17) indicated a significant correlation between tangibility and total debt. On the contrary, the pecking order assumptions suggest that more tangible-intensive firms tend to depend on domestic capital and estimate a negative association between asset tangibility and leverage. The negative association between tangibility and short-term debt is also proved by (Bas et al., 2009: 14; Degryse et al., 2012: 440).

Hypothesis 2. Leverage is positively affected by the tangibility of assets.

Firm size: One of the most significant factors of capital structure is firm size. According to trade-off assumptions, firm size is positively correlated to leverage. Large firms are generally more diversified with stable cash flows than small firms. As a result, the probability of bankruptcy will be less, and they will be able to borrow more than small firms. Chakraborty (2013: 17) and Tekin (2019: 156) proved the positive correlation between company size and capital structure. The contradictory justification comes from a problem of

asymmetry of information. By pecking order assumptions, large firms must provide additional public information and offer market securities, including sensitive information like equities. Thus, firms preferring equity financing over debt leads to a negative correlation between leverage and firm size.

Hypothesis 3. Leverage is positively affected by the size of the bank.

Net interest margin: Banks' net interest margin is the difference between what lenders eventually receive and what the borrowers have to pay for their debt (Busch & Memmel, 2016: 1). Net interest margin indicates profitability. In other words, the greater the net interest margin, the more the profit created by the bank, which means stability and the effectiveness of the bank (Hailu, 2015: 5). Even though the theories on capital structure did not demonstrate the impact of net interest margin on the capital structure, almost all studies conducted on the net interest margin indicated that it is the primary measure of banks' profitability. Khalil (2017: 33) and Hailu (2015: 8) found a negative association between net interest margin with leverage.

Hypothesis 4. Net interest margin has a negative effect on leverage.

Growth opportunity: Capital assets that enhance the company's worth are known as growth opportunities. These assets do not produce taxable income and cannot be collateralised (Titman & Wessels, 1988: 4). According to the trade-off assumptions, corporations with higher growth opportunities choose to maintain debt financing since they may need additional resources in the future. Hence, they reduce their debt level in their capital structure. Thus, the anticipated growth opportunities in the future should have a negative impact on the debt. Some of the empirical researchers who suggest a negative association between growth and leverage are Chakraborty (2013: 117), Gaud et al. (2005: 1) and Goyal et al. (2002: 57). Instead, the pecking order predicts the leverage and growth opportunity to have a positive relationship. Firms with higher growth opportunities need external funds in the form of debt because of insufficient internal funding sources. This effect is proved in Drobetz & Fix (2003) and Frank & Goyal (2009).

Hypothesis 5. Leverage is positively affected by growth opportunities.

Liquidity: The liquidity of an asset indicates the degree to which an asset can be easily traded in the market. The liquidity ratio demonstrates that the firm can meet its financial commitments in the short term. Sibilkov (2009: 1173) proved a significantly positive association of asset liquidity with leverage. Similarly, Shleifer and Vishny (1992: 21) described how illiquid assets poorly affect debt financing, and liquid assets serve as a better increase in the firm's debt capacity. Williamson (1988: 567) states that firms with more liquid assets undertake higher liabilities because of lower financing costs of such assets. These findings are compatible with trade-off assumptions.

Šarlija and Harc (2012: 34) suggest that short-term debt correlates more to liquidity than long-term debt. But generally, firms that have more liquid assets undertake less

leverage. Similarly, Akdal (2011: 12) presented a significantly negative impact of liquidity on leverage. Anderson (2002: 13) examined whether asset liquidity affects the long-term and short-term liabilities of the sample of the U.K. and Belgian firms. He found that firms that relied on more long-term debts tend to hold more liquid assets. However, when the test is made on Belgian companies, he found a positive correlation between short-term liabilities and liquid assets. The pecking order hypothesis suggests a negative association between leverage and liquidity.

Hypothesis 6. Leverage is negatively affected by liquidity.

The real GDP growth rate: Köksal and Orman (2015: 18) stated that in a highly growing environment, firms have a shortage of tangible assets regarding the availability of investment opportunities which leads to losing their value at the time of distress. They also indicated that GDP negatively affects total and long-term debts but not short-term ones. The trade-off theory assumes that a higher growth environment negatively affects the leverage ratio. The theory suggests that firms in a growth environment are likely to face financial distress and a debt overhang problem since the new investment opportunities in a growing economy make the cost of debt higher than equity (Myer, 1977: 147). Similarly, Muthama et al. (2013: 56) indicated that the GDP growth rate negatively correlates with the total and short-term liabilities, while the correlation with long-term liabilities is positive. Instead, pecking order assumptions suggest a positive correlation between GDP growth and leverage. Firms in high-growth environments prefer external financing through debt over equity. This positive relationship is found by Magwai (2014: 71).

Hypothesis 7. Leverage is negatively affected by the real GDP growth rate.

Inflation rate: The relation between leverage and inflation is interpreted differently in different capital structure theories. The assumptions of the trade-off theory suggest a positive effect of the inflation rate on leverage. Taggart (1985) indicated that in the U.S., the characteristics of the tax law make the real value of interest tax discounts to be low during the high expected inflation rate. Hortlund (2005: 23) proved that a high inflation rate increases the debt ratio, especially for banks. The positive effect of the inflation rate on leverage is also concluded by Frank and Goyal (2009), Mokhova and Zinecker (2014), and Noguera (2001). These studies revealed that high inflation creates a high demand for corporate bonds. However, the expectation of pecking order regarding the association between inflation rate and leverage is not explicit. Dammon (1988) indicated that a higher inflation rate increases the demand for stocks than bonds. Thus, the leverage of the firms tends to decrease. Booth et al. (2001: 98) noted that firms' total and long-term liabilities decrease with the inflation rate increase.

Hypothesis 8. Leverage is negatively affected by inflation.

Interest rate: The interest rate is the borrowed resource charge for a given period. Frank and Goyal (2009: 47) suggested that the tax benefit of debt makes firms hold more

debt by the trade-off. Therefore, considering the bankruptcy risk, the high cost of debt is a key reason for firms to adjust their capital structure, leading to the positive association of interest rate and leverage. While Bokpin (2009: 129) proved a positive effect of interest rate on leverage, Mokhova and Zinecker (2014: 534) came to an opposite conclusion. Dell'Ariccia et al. (2014: 24) noted that when banks are poorly capitalised, and the leverage of banks cannot easily be adjusted in response to change in the risk-free rate, the relation between leverage and real interest rate need no longer be negative. However, if the capital structure of banks is not fixed and can be easily adjusted, a decrease in real interest rates increases the leverage. Unexpected interest rate changes significantly affect the firm's leverage value. For instance, an unexpected increase in interest rates reduces the market value of long-term loans while not affecting short-term debts or the book value of long-term debts (Gordon & Shoven, 1982: 477).

Hypothesis 9. Leverage is negatively affected by interest rates.

Unemployment rate: Mogwai (2014: 26) stated that in countries with a high unemployment rate, it is possible to expect firms to be labour incentives and make them hold a lower level of leverage. Generally, employees need to be safe in the working environment, get incentives and feel confident in the firm they are working in. Customers and shareholders are reluctant to work in highly leveraged likely to fail firms. Thus, highly leveraged firms spend more to pay employees' wages, and it could be difficult to hire workers at a low-cost relative to the labour market (Maksimovic & Titman, 1991: 176).

Despite the limited research on the linkage between unemployment and capital structure, some empirical data shows the structure of unemployment-leverage correlation. At the same time, Mokhova and Zinecker (2014: 535) and Akyol and Verwijmeren (2013: 480) state that the unemployment rate has a positive effect on capital structure, and Kalaleh et al. (2015: 432) proved a negative correlation.

Hypothesis 10. Leverage is negatively affected by the unemployment rate.

Exchange rate: The exchange rate is the currency value of one country regarding another country's currency. Francis and Hunter (2012: 5) demonstrated that volatility in the exchange rate has an economic effect on firms' debt costs and may lead to an increase in interest conflict between debtholders and shareholders. To investigate whether the banks' leverage is procyclical or not, Pedrono and Aurelien (2017) found that the leverage of commercial banks is less procyclical than the leverage of investment banks and this difference is captured by currency diversification (Baglioni et al., 2013: 10; Kalemli-Ozcan et al., 2012: 3). The empirical literature that tried to examine the relationship between exchange rate and capital structure found mixed results. Zare et al. (2013) indicated no significant relationship between the leverage of listed companies on The Tehran Stock Exchange and exchange rate changes. On the other hand, Mohsin (2016) found a significant positive effect of the exchange rate on leverage. Whereas M. Zein and Ångström (2016: 33) found a negative association.

Hypothesis 11. Leverage is negatively affected by the exchange rate.

3. Model Development

In this study linear panel regression model is used. Because of having three dependent variables, three models are developed (Weisberg, 2005: 20-21).

$$LEV1_{it} = \beta_0 + \beta_1PROFIT_{it} + \beta_2TANG_{it} + \beta_3SIZE_{it} + \beta_4NIM_{it} + \beta_5GROW_{it} + \beta_6LIQU_{it} + \beta_7LNGDP_{it} + \beta_8INF_{it} + \beta_9INT_{it} + \beta_{10}LNUNEMP_{it} + \beta_{11}EXCH_{it} + e_{it} \quad (1)$$

$$LEV2_{it} = \beta_0 + \beta_1PROFIT_{it} + \beta_2TANG_{it} + \beta_3SIZE_{it} + \beta_4NIM_{it} + \beta_5GROW_{it} + \beta_6LIQU_{it} + \beta_7LNGDP_{it} + \beta_8INF_{it} + \beta_9INT_{it} + \beta_{10}LNUNEMP_{it} + \beta_{11}EXCH_{it} + e_{it} \quad (2)$$

$$LEV3_{it} = \beta_0 + \beta_1PROFIT_{it} + \beta_2TANG_{it} + \beta_3SIZE_{it} + \beta_4NIM_{it} + \beta_5GROW_{it} + \beta_6LIQU_{it} + \beta_7LNGDP_{it} + \beta_8INF_{it} + \beta_9INT_{it} + \beta_{10}LNUNEMP_{it} + \beta_{11}EXCH_{it} + e_{it} \quad (3)$$

In the model, the β_0 indicates the coefficient of regression, β_1 , β_2 and β_3 indicate the coefficient of explanatory variables, e_i shows the error, i implies the bank in the same cross-section and the period is characterised by t .

3.1. Data and Methodology

The study covers 42 sample banks with yearly data from 2003 to 2017. The data of all bank-specific factors used in this study are collected from statistical reports of The Banks Association of Turkey (BAT). The macroeconomic data, namely, the inflation rate, real GDP growth rate, interest rate, unemployment rate, and exchange rate, are collected from the statistical reports of the World Bank.

For the objective of our study, capital structure is used as the dependent variable. Several studies used a firm's debt or leverage ratio to measure the capital structure. It is recommended that besides using total liability, dividing it into short-term and long-term liability is appropriate to measure the financial leverage, which helps to show whether the firm is at default risk or not and it gives complete information on past financing choices (Hanousek & Shamshur, 2011: 1363; Michaelas et al., 1999: 113; Rajan & Zingales, 1995: 9; Titman & Wessels, 1988: 7).

In addition, pecking order and trade-off have different approaches for different liabilities. Firms with high total and long-term liabilities prefer the pecking order theory's predictions, whereas firms with lower long-term and total liabilities prefer the trade-off theory's predictions (Pontoh 2017: 138). As a result, in this research, three measures of leverage are total used liabilities (LEV1), long-term liabilities (LEV2), and short-term liabilities (LEV3). The independent variables include bank-specific and macroeconomic factors: Tables 1 and 2 below present the variables' definitions and descriptive statistics results.

Table: 1
The Description of Variables

| Variables | Model Name | Description |
|------------------------------|----------------------|---|
| Dependent Variables | | |
| Total Liabilities Ratio | LEV1 _{it} | Total Debt over Total Assets |
| Long Term Liabilities Ratio | LEV2 _{it} | Long Term Debt over Total Assets |
| Short Term Liabilities Ratio | LEV3 _{it} | Short Term Debt over Total Assets |
| Independent Variables | | |
| Profitability | PROFIT _{it} | Operating Income/Total Asset |
| Asset Tangibility | TANG _{it} | Fixed Assets/Total Assets |
| Bank Size | SIZE _{it} | The Natural Logarithm of Total Asset |
| Net Interest Margin | NIM _{it} | (Interest Income-Interest Expense)/Total Assets |
| Liquidity | LIQU _{it} | Current Assets/Current Liabilities |
| Growth Opportunity | GROW _{it} | The Annual Growth Rate in Total Asset |
| The Real GDP Growth Rate | GDP _{it} | The Natural Logarithm of the Percentage Change in Yearly GDP Growth Rate |
| Inflation Rate | INF _{it} | The Percentage Change in the Annual Consumer Price Index (CPI) |
| Interest Rate | INT _{it} | Real Interest Rate |
| Exchange Rate | EXCH _{it} | Exchange Rate (Turkish Lira to American Dollar) |
| Unemployment Rate | UNEMP _{it} | The Natural Logarithm of the Percentage Change in the Total Labour Force. |

Table: 2
Results of Descriptive Statistics

| | Mean | Maximum | Minimum | Std. Dev. | Observations |
|---------|-------|---------|---------|-----------|--------------|
| LEV 1 | 0,714 | 0,969 | 0,009 | 0,255 | 629 |
| LEV 2 | 0,305 | 0,917 | 0,001 | 0,217 | 629 |
| LEV 3 | 0,455 | 1,000 | 0,002 | 0,243 | 629 |
| PROFIT | 0,023 | 0,895 | -0,632 | 0,071 | 629 |
| TANG | 0,563 | 0,999 | 0,002 | 0,255 | 629 |
| SIZE | 3,182 | 5,060 | 0,401 | 1,072 | 629 |
| NIM | 0,049 | 0,361 | -0,232 | 0,046 | 629 |
| GROW | 0,211 | 10,872 | -0,878 | 0,693 | 629 |
| LIQU | 7,173 | 463,7 | 0,018 | 32,6 | 629 |
| LNGDP | 0,054 | 0,105 | -0,048 | 0,037 | 629 |
| INF | 0,094 | 0,216 | 0,063 | 0,035 | 629 |
| INT | 0,044 | 0,209 | -0,030 | 0,060 | 629 |
| LNUNEMP | 2,352 | 2,646 | 2,219 | 0,110 | 629 |
| EXCH | 1,885 | 3,670 | 1,299 | 0,687 | 629 |

Moreover, The Hausman test with the null hypothesis of the random effect model is used to choose between fixed and random effect models, and the results indicate that the fixed effect model is the right choice. Additionally, the Chow test is performed to ensure whether the model is a common or a fixed effect model, with a null hypothesis of a common effect. The Chow test results of three regression models for the entire period are found in Table 3.

Table: 3
The Results of the Chow Test

| Model | Dependent Variable | Effects Test | Statistics | Prob. |
|---------|--------------------|--------------------------|------------|-------|
| Model 1 | LEV1 | Cross-Section F | 23.44 | 0.000 |
| | | Cross-section Chi-Square | 604.37 | 0.000 |
| Model 2 | LEV2 | Cross-Section F | 20.28 | 0.000 |
| | | Cross-Section Chi-Square | 551.09 | 0.000 |
| Model 3 | LEV3 | Cross-Section F | 16.67 | 0.000 |
| | | Cross-Section Chi-Square | 483.84 | 0.000 |

Based on Table 3 above, the fixed effect model is suggested by the p-value of Cross-section Chi-Square being less than 0.05 for all three full period models.

3.2. Panel Unit Roots

Although testing for variable stationarity is a common practice in time series analysis, testing for unit roots in a panel data set has recently become common as a result of shifting the application of panel data from large cross-sections (N) and short time series (T) to large cross sections (N) and long-time series (T) (Barreira & Rodrigues, 2005: 2). As a result, since the data in this study represents a panel data set, panel unit root tests are performed. There are different types of tests used for unit roots. In this study Phillips-Perron (PP) Fisher Chi-Square test was used. The H_0 of the test is a variable that possesses a unit root. The test result is given in Table 4 below.

Table: 4
The Result of Panel Unit Root Test

| | Constant | Constant and Trend | The first difference between the variables | |
|---------|------------------------|--------------------|--|--------------------|
| | | | Trend | Constant and trend |
| PROFT | 313.60*** ¹ | 355.19*** | 793.03*** | 659.15*** |
| TANG | 95.26 | 84.55 | 256.82*** | 208.80*** |
| SIZE | 293.89*** | 97.27 | 292.93*** | 391.01*** |
| NIM | 322.15*** | 353.90*** | 684.34*** | 611.63*** |
| GROW | 295.90*** | 403.84*** | 893.09*** | 711.67*** |
| LIQU | 229.79*** | 229.19*** | 618.48*** | 541.46*** |
| LNGDP | 190.32*** | 105.08* | 799.58*** | 641.23*** |
| INF | 1137.95*** | 870.23*** | 1041.13*** | 872.14*** |
| INT | 491.34*** | 194.65*** | 426.57*** | 823.70*** |
| LNUNEMP | 127.98*** | 56.94 | 245.28*** | 130.27*** |
| EXCH | 0,0002 | 0,003 | 37,43 | 299,73*** |

According to the results, all the remaining variables are stationary except for asset tangibility and exchange rate. Since two variables, i.e., asset tangibility and exchange rate have a unit root at level, both variables are first differenced. The first difference of asset tangibility is stationary with the trend and constant and trend. Instead, the first difference in the exchange rate is stationary with constant and trend. Therefore, in the regression analysis, the first difference between tangibility and exchange rate is represented by DTANG and DEXCH.

3.3. Structural Break Test

As indicated in the first part of this study, besides investigating the determinants impacting the capital structure, additional analysis is made to determine whether the factors affect the leverage differently before and after the global economic crisis. Therefore, it is important to indicate the structural point to split the entire sample period and determine the two sub-periods. The Dickey-Fuller breakpoint selection test determines the break period for each macroeconomic variable, including real GDP growth rates, inflation rates, interest rates, unemployment rates, and exchange rates. The results of the tests show that, excluding exchange rates, 2009 is a breakpoint for the other four macroeconomic factors. The macroeconomic variables have changed significantly since 2009. Table 5 shows the result

¹ In this study, the ***, ** and * indicate the significance level at $p < 1\%$, $p < 5\%$, and $p < 10\%$, respectively.

of each variable. Also, to get the structural break, the Chow breakpoint (Chow 1960: 602) test is applied. The results are given in Table 6 below.

Table: 5
The Variance Inflation Factor for the Full Period (2003-2017)

| Variable | VIF | 1/VIF |
|----------|------|----------|
| INT | 3.20 | 0.31205 |
| INF | 2.51 | 0.394825 |
| LNUNEMP | 1.78 | 0.560873 |
| LNNGDP | 1.69 | 0.599922 |
| EXCH | 1.47 | 0.67852 |
| SIZE | 1.39 | 0.720272 |
| TANG | 1.24 | 0.80591 |
| NIM | 1.22 | 0.818678 |
| PROFT | 1.11 | 0.899649 |
| GROW | 1.10 | 0.911832 |
| LIQU | 1.09 | 0.919534 |
| Mean | 1.62 | |

Table: 6
The Result of the Structural Break Test

| | |
|----------------------|-----------|
| F-statistic | 9.976*** |
| Log-likelihood ratio | 28.534*** |
| Wald Statistic | 39.906*** |

Based on Table 6 above, the F statistic results indicate that the null hypothesis of no breaks at specified breakpoints (2009) is rejected, and 2009 is considered a structural point. Therefore, the full-time span is divided into two sub-periods according to the results of a structural break test. In which, from the years 2003-2008 are considered the first sub-period and the years 2009-2017 are the second sub-period.

3.4. Autocorrelation and Heteroscedasticity

To test whether there is a relationship among the values of the same variable at different periods, the autocorrelation test is performed using Wooldridge's (2002: 176) test with H_0 of no serial correlation. The results revealed that there is autocorrelation in all models. Additionally, to detect whether the variance of all observations in a data set is equal or not, the heteroscedasticity test is made by modified Wald tests. The test result indicates the presence of heteroscedasticity. Therefore, the Driscoll-Kraay standard error is computed for the correct estimated regression, which provides robustness to heteroscedasticity and serial correlation (Hoechle, 2007: 29).

4. Results and Discussions

Table 7 demonstrates the correlation among the entire period's dependent and explanatory variables. Except for the five variables (asset tangibility, bank size, growth opportunity, real GDP growth rate, and exchange rate), LEV1 is negatively associated with all the remaining variables with a range between -0,01 and -0,38. The positive correlation of LEV1 with asset tangibility, bank size, and growth opportunity is statistically significant. The second leverage, LEV2, is negatively correlated with most variables. The only three

positively associated with LEV2 are real GDP growth rate, asset tangibility and bank size. Although LEV 2 is associated negatively with most independent factors, only the correlation of profitability, net interest margin, and liquidity are statistically significant.

On the other hand, LEV3 positively correlates with many variables. But statistically significant correlation is found only with bank size and growth opportunity with a degree of significance of 1% and 5%, respectively. These results imply that when the bank size and growth opportunity increase, the short-term debts also significantly increase. On the contrary, asset tangibility, net interest margin, and liquidity negatively correlate to LEV3.

Table: 7
Correlation Coefficients between Variables

| | LEV1 | LEV2 | LEV3 | PROFT | TANG | SIZE | NIM | GROW | LIQU | LNGDP | INF | INT | LNUNEMP | DEXCH |
|---------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|--------|-----------|----------|-----------|---------|-------|
| LEV 1 | 1 | | | | | | | | | | | | | |
| LEV 2 | 0.206*** | 1 | | | | | | | | | | | | |
| LEV 3 | 0.541*** | -0.262*** | 1 | | | | | | | | | | | |
| PROFT | -0.059 | -0.118** | 0.029 | 1 | | | | | | | | | | |
| DTANG | 0.265*** | 0.505*** | -0.119** | -0.078* | 1 | | | | | | | | | |
| SIZE | 0.632*** | 0.273 | 0.411*** | 0.036 | 0.407*** | 1 | | | | | | | | |
| NIM | -0.358*** | -0.090* | -0.222*** | 0.226*** | -0.148*** | -0.298*** | 1 | | | | | | | |
| GROW | 0.115* | -0.005 | 0.107** | -0.047 | -0.080* | -0.036 | -0.158*** | 1 | | | | | | |
| LIQU | -0.382*** | -0.083* | -0.330*** | -0.111** | -0.147*** | -0.220*** | 0.069 | -0.075 | 1 | | | | | |
| LNGDP | 0.023 | 0.005 | 0.025 | -0.074 | -0.025 | -0.027 | -0.089* | 0.079* | -0.006 | 1 | | | | |
| INF | -0.021 | -0.012 | 0.047 | 0.128*** | -0.063 | -0.100** | 0.109** | 0.060 | 0.012 | 0.011 | 1 | | | |
| INT | -0.062 | -0.021 | 0.056 | 0.092* | -0.066 | -0.162*** | 0.103** | 0.152*** | -0.004 | -0.108** | 0.712*** | 1 | | |
| LNUNEMP | -0.009 | -0.044 | 0.068 | 0.035 | -0.012 | 0.002 | 0.022 | 0.001 | -0.011 | -0.625*** | 0.016 | 0.211*** | 1 | |
| DEXCH | 0.081 | -0.016 | 0.033 | -0.016 | -0.036 | 0.105** | -0.040 | -0.161*** | 0.079* | -0.079* | -0.065 | -0.404*** | 0.042 | 1 |

4.1. Determinative Factors of Bank Capital Structure During the Entire Period

The fixed effects regression analysis result for the entire period is presented in Table 8 below, in which the results' robustness has been ensured through the Driscoll-Kraay (DK) model. The result indicates that profitability significantly and negatively affects the total and long-term liabilities ratios, while the effect on short-term liabilities is statistically insignificant. These results align with pecking order theory assumptions and indicate that highly profitable Turkish banks have lower debt rates than less profitable banks.

Asset tangibility significantly and positively affects long-term debt, whereas total and short-term debts are negatively affected. As a result, banks with higher tangible assets seem to undertake more long-term liabilities than short-term liabilities. In other words, banks that make increased investments in tangible assets have high levels of long-term debt and short-term debts are used for current requirements. Based on these findings, it is possible to deduce that banks in Turkey follow the maturity matching approach in their asset management. The negative association of LEV1 and asset tangibility is compatible with those predicted by the pecking order theory.

The impact of bank size seems to be significantly positive among all discussed debt ratios. Results imply that other things remain constant; large banks use more debt than small banks. Additionally, the degree of significance on all leverages indicates that in the Turkish banking sector, in line with trade-off assumptions, bank size has the most significant impact on leverage. The results of Table 8 show that; the effect of the net interest margin is

significant only on LEV2. This implies that whenever the long-term debts of banks increase, the net interest margin will also increase.

The impact of growth opportunity is positive on the three leverages. However, the effect is statistically insignificant on LEV 2. This indicates that banks with a high growth opportunity tend to hold more leverage. The main reason is that the opportunity of getting more investments makes internal funds unlikely to be sufficient, which leads banks to demand more funds, which is in line with pecking order assumptions. Liquidity significantly and negatively affects the total and short-term debt, but its effect on long-term debt is insignificant. The reason might be that when the indebtedness of banks increases, the number of current assets on hand may decrease and make liquidity turn down. These results are in line with pecking order assumptions.

Table: 8
The Regression Results of the Full Period (2003-2017)

| Variable | LEV 1 | LEV 2 | LEV 3 |
|-------------------------|----------------------|----------------------|----------------------|
| C | -0,019 (0,123) | 0,493 (0,291) | -0,775*** (0,151) |
| PROFT | -0,556*** (0,049) | -0,513*** (0,111) | -0,100 (0,075) |
| DTANG | -0,056 (0,051) | 0,300*** (0,053) | -0,259** (0,105) |
| SIZE | 0,238*** (0,034) | 0,083* (0,043) | 0,168*** (0,016) |
| NIM | -0,014 (0,123) | 0,510*** (0,103) | -0,095 (0,147) |
| GROW | 0,020*** (0,006) | 0,007 (0,010) | 0,016** (0,006) |
| LIQU | -0,002*** (0,000) | 0,000 (0,000) | -0,001*** (0,000) |
| LNGDP | 0,334** (0,112) | -0,096 (0,242) | 0,792*** (0,141) |
| INF | 0,134 (0,303) | -1,756* (0,742) | 1,333** (0,514) |
| INT | 0,524** (0,173) | 0,047 (0,308) | 0,888*** (0,130) |
| LNUNEMP | -0,027 (0,030) | -0,135** (0,045) | 0,217** (0,066) |
| DEXCH | 0,052*** (0,012) | 0,026 (0,033) | 0,020 (0,038) |
| Adjusted R ² | 0,815 | 0,634 | 0,671 |
| Wooldridge | 50,96*** | 45,34*** | 87,26*** |
| Hetrosce Wald | 15614,92*** | 3269,80*** | 2714,83*** |
| Total panel | 587 | 587 | 587 |
| No.of groups | 42 | 42 | 42 |

Regarding the regression results of macroeconomic factors, the real GDP growth rate has a significantly positive impact on LEV1 and LEV3 but not on LEV2. This finding indicates that a bank with high economic growth demands more debt than equity. The reason is that during high economic growth, the demand for external financing increase to make new investments which is similar to pecking order assumptions.

Contrarily, inflation rates' impact is statistically significant on LEV2 and LEV3. As can be observed from the result of Table 8, the coefficient of the inflation rate is high relative to the coefficients of other variables. Based on this finding, it is worth mentioning that the

inflation rate in the banking industry is considered a significant and determinative factor for the leverage rate. This result is compatible with the trade-off expectations. The statistically negative correlation between inflation and long-term liabilities might be because, during high inflation, one of the measures taken by the banks is increasing the interest rate, which increases the cost of debts of banks. Thus, banks prefer to reduce the leverage amount in the capital structure.

The interest rate positively affects the three leverages, but its effect on LEV2 is statistically insignificant. This finding implies that the leverage of banks in Turkey is sensitive to the change in interest rate. Similarly, the exchange rate affects all three leverages positively. However, the impact is significant only on total debt. The periodic exchange-rate fluctuation impacts the total liabilities rate of banks. The unemployment rate negatively affects LEV1 and LEV2. But the effect on LEV1 is statistically insignificant. Instead, the impact on LEV3 is significantly positive. This means that the increase in the unemployment rate decreases the long-term liabilities and banks' short-term liabilities.

4.2. Determinants of Banks' Capital Structure in the Two Sub-periods

Table 9 shows the regression results for both sub-periods except when all the variables are similar.

Except for the LEV2 of the second sub-period, profitability has a negative impact on all leverages in both sub-periods. But the effect is only statistically significant on the LEV2 of the first sub-period. These results indicate that before and after the financial crisis, highly profitable banks use less debt than less profitable banks, which is consistent with pecking order assumptions. Asset tangibility similarly affects the three leverages of the two sub-periods. In both periods, asset tangibility negatively affects LEV1 and LEV3 at a 1% significance level and positively impacts LEV2. Thus, banks with higher tangible assets undertake lower total and short-term debts and a higher long-term debt burden. The pecking order assumptions explain many findings in this study regarding the effect of asset tangibility on leverage.

From Table 9, the regression results of both sub-periods show that the association between bank size and leverages is significantly positive. Based on this point, it is worthwhile to deduct those large banks in Turkey use more debt in adjusting their capital structure than equity. In line with trade-off assumptions, this might happen due to significant companies' supposed diversification and steady cash flow that allows them easy access to external funds.

In the two sub-periods, the effect of net interest margin on long-term debt is significant and positive but is insignificant on short-term and total debts. Also, the impact of growth opportunity is insignificant on the three leverages of the first sub-period. While in the second sub-period, it has a statistically positive effect on LEV 1 and LEV2. The impact of liquidity on LEV1 and LEV3 of the first sub-period is negative and is statistically

significant only on LEV3. Moreover, liquidity does not affect LEV2 in both periods, which implies that, in the first sub-period, banks that hold more short-term debts have less liquidity.

Table: 9
The Regression Results for Two Sub-Periods

| Variable | First sub-period (2003 - 2008) | | | Second sub-period (2009 - 2017) | | |
|-------------------------|--------------------------------|----------------------|----------------------|---------------------------------|----------------------|----------------------|
| | LEV1 | LEV2 | LEV3 | LEV1 | LEV2 | LEV3 |
| C | 0,010 (0,126) | -0,662** (0,103) | 0,753** (0,212) | 0,055 (0,055) | 0,420 (0,222) | -0,558** (0,151) |
| PROFT | -0,129 (0,107) | -0,346*** (0,072) | -0,047 (0,132) | -0,004 (0,425) | 0,170 (0,282) | -0,049 (0,252) |
| TANG | -0,191*** (0,070) | 0,095 (0,120) | -0,308*** (0,059) | -0,175*** (0,035) | 0,226** (0,075) | -0,389*** (0,035) |
| SIZE | 0,270*** (0,030) | 0,133*** (0,035) | 0,116** (0,042) | 0,177*** (0,028) | 0,077 (0,052) | 0,104*** (0,021) |
| NIM | -0,324 (0,194) | 0,480*** (0,248) | -0,159 (0,234) | 0,142 (0,115) | 0,272*** (0,079) | -0,153 (0,109) |
| GROW | 0,012 (0,009) | -0,004 (0,010) | 0,010 (0,016) | 0,072*** (0,009) | 0,049* (0,022) | 0,020 (0,026) |
| LIQU | -0,001 (0,000) | 0,000 (0,001) | -0,002*** (0,001) | -0,001*** (0,000) | 0,000 (0,000) | 0,000** (0,000) |
| LNGDP | -0,028*** (0,005) | -0,008* (0,004) | -0,018** (0,007) | -0,405*** (0,118) | -1,860*** (0,312) | 1,426*** (0,242) |
| INF | -0,493*** (0,126) | -0,293*** (0,099) | -0,375*** (0,146) | -1,273*** (0,317) | -3,846*** (0,382) | 2,064*** (0,545) |
| INT | 0,503*** (0,115) | 0,579*** (0,090) | 0,299** (0,122) | -0,326* (0,165) | -0,758** (0,289) | 0,434 (0,541) |
| LNUNEMP | -0,346*** (0,038) | 0,027 (0,077) | -0,500*** (0,066) | 0,082*** (0,015) | 0,027 (0,048) | 0,167** (0,054) |
| EXCH | 0,624*** (0,051) | 0,305*** (0,085) | 0,549*** (0,094) | 0,058*** (0,013) | -0,014 (0,031) | 0,019 (0,034) |
| Adjusted R ² | 0,847 | 0,637 | 0,631 | 0,879 | 0,713 | 0,764 |
| Wooldridge | 26,567*** | 12,620*** | 22,220*** | 29,301*** | 42,941*** | 62,973*** |
| Hetroscee Wald | 67600,32*** | 5993,81*** | 29265,75*** | 30442,40*** | 7381,32*** | 8451,23*** |
| Total panel | 252 | 252 | 252 | 335 | 335 | 335 |
| No. of groups | 42 | 42 | 42 | 42 | 42 | 42 |

In the two sub-periods, the effect of the real GDP growth rate and inflation rate on the three leverages is similar. Except for LEV3 of the second sub-period, the two variables affect all leverages negatively. Additionally, the inflation rate seems to impact the three leverages strongly. For instance, in the second sub-period, a unit increase in inflation rate caused a significant decline of LEV1 and LEV2 by 1,27 and 3,84, respectively, While LEV3 significantly increased by 2,06. In all regression results of the first sub-period period, the impact of interest rate and exchange rate on three leverages is very positive, indicating that an increased exchange rate and interest rate increased the banks' indebtedness before the financial crisis. While after the crisis period, banks' total and long-term debts significantly decreased with the increase in interest rate. Also, in the first sub-period, the unemployment rate negatively and substantially affects LEV1 and LEV3, while in the second sub-period, the variable positively affects these two leverages.

Based on the findings of the analysis made to investigate the effect of the selected determinants on the debt level of banks, the result of some variables is like the developed hypotheses or expected results. In this study, the null hypotheses that predict a negative effect of profitability, liquidity, and the real GDP growth rate on the leverage are accepted. In contrast, the hypotheses that predict a negative impact on net interest margin and interest

rate are rejected. On the other hand, the hypotheses that estimate a positive effect of bank size, growth opportunity, unemployment rate, and exchange rate on leverage are accepted. In contrast, the hypotheses that assume the positive impact of the inflation rate and asset tangibility on debt level are rejected.

Most of the study's findings are consistent with the prediction of the pecking order theory. Even though the results of this study support the pecking order theory, the theory does not precisely explain the relationship between some variables and capital structure. According to Köksal and Orman (2015: 30), the major limitation of the pecking order theory over the trade-off theory is that it does not produce a prediction about the association of corporate debt tax shields, inflation, and non-debt tax shields with leverage. The findings of this study also indicate that neither pecking order nor trade-off theory can exactly match the relationship between leverage and some macroeconomic factors.

5. Conclusion

This study aims to determine the bank-specific and macroeconomic factors that affect the capital structure of banks in Turkey from 2003 to 2017. Apart from this, to analyse whether the 2008 global financial crisis affected the capital structure of banks or not, the full-time span is broken into two sub-periods. The first sub-division runs from 2003 to 2008, and the second runs from 2009 to 2017.

The findings show that the effect of bank size, growth opportunity, interest rate, and exchange rate on the three leverages is positive, while the impact of profitability is negative. Tangibility, net interest margin, and liquidity negatively affect the total and short-term debts; however, it does not affect long-term debts. On the contrary, inflation and real GDP growth positively impact the total and short-term liabilities. The effect of the unemployment rate on long-term liabilities is significantly negative, whereas, on short-term liabilities, the effect is positive.

When breaking the entire period into two sub-periods, the results show that except for the short-term debts of the second sub-period, the effect of real GDP growth rate, profitability and the inflation rate is significant on all leverages of the two sub-periods. Instead, bank size has a positive impact on all leverages. The effect of interest rate is significantly positive on the three leverages of the first sub-period. At the same time, in the second-sub period, it greatly affects the total and long-term debts. The association between the unemployment rate and total and short-term debts are extremely negative only in the first sub-period. The findings of this study indicate that the association between leverages and the majority of the explanatory variables are consistent with pecking order expectations. However, since this theory does not generate a prediction for the association between debt level and some of the explanatory variables used in this study, it does not precisely match all of the observed relationships between leverages and some of the selected variables. The findings of this study have significant implications, especially for bank managers who

should consider both macro and microeconomic factors when making decisions related to financing.

Even though this study tried to determine the factors that affect banks' capital structure of banks, it fails to show the impact of the factors on market-based leverage, which is assumed to be forward-looking. The other limitation of the study is that it does not provide whether the ownership structure of banks affects the capital structure, and factors related to risk and taxes such as non-debt tax shields, corporate debt tax shields, and asset quality are not observed. Therefore, it would be important to include such factors in future studies.

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Modelling of the Weighted Average Funding Cost of the CBRT: LNV-ARMA Approach

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TCMB Ağırlıklı Ortalama Fonlama Maliyetinin Modellenmesi: LNV-ARMA Yaklaşımı

Abstract

In this study, we model the monthly time series of the Central Bank of the Republic of Turkey's Weighted Average Funding Cost (Interest Rate) for the period between 2011:01-2020:12. In this framework, we establish and compare the linear and the nonlinear based various autoregressive (integrated) moving average models in two separate groups and investigate the most suitable model for the series. After all, we reveal that the relevant interest rate series can be modelled best with the LNV-ARMA(2,1) model for the related period. The first novelty of this study is that we model the relevant interest rate itself instead of investigating the relationship of this interest rate with the other macroeconomic variables. The second novelty of this study is that we circumvent the unit root problem and establish a more explanatory time series model by applying the LNV methodology.

Keywords : CBRT WAFC, LNV Methodology, ARIMA Models, Time Series, Turkey.

JEL Classification Codes : C22, C24, C52, E43, E47, E58.

Öz

Bu çalışmada, 2011:01-2020:12 dönemine ait Türkiye Cumhuriyet Merkez Bankası Ağırlıklı Ortalama Fonlama Maliyeti (Faiz Oranı) aylık zaman serisi modellenmiştir. Bu çerçevede, iki ayrı grupta doğrusal ve doğrusal olmayan temelli çeşitli otoregresif (bütünleşik) hareketli ortalama modelleri kurularak karşılaştırılmış ve seriye en uygun model araştırılmıştır. Sonuç olarak, ilgili faiz oranı serisinin bahsi geçen dönem için en iyi LNV-ARMA(2,1) modeli ile modellenebileceği ortaya konmuştur. Bu çalışmanın ilk yeniliği, bu faiz oranının diğer makroekonomik değişkenlerle ilişkisini araştırmak yerine ilgili faiz oranının kendisini modellememizdir. Bu çalışmanın ikinci yeniliği, LNV metodolojisini uygulayarak birim kök sorununu aşmamız ve daha açıklayıcı bir zaman serisi modeli oluşturmamızdır.

Anahtar Sözcükler : TCMB AOFM, LNV Metodolojisi, ARIMA Modelleri, Zaman Serileri, Türkiye.

1. Introduction

The Central Bank of the Republic of Turkey's (CBRT) Weighted Average Funding Cost (W AFC) or Interest Rate (W AFR) is defined as the weighted average of the overnight, weekly, etc. funding interest rates, which are made by using various instruments such as repo by the CBRT to meet the short-run liquidity need in the market (CBRT, 2021). Since this funding made by the CBRT constitutes a significant part of the short-term liquidity provided by the banks, this interest rate may be crucial for the banks in pricing the deposits, loans, and other financial instruments (Kara, 2015).

There are many empirical studies in the literature on the CBRT W AFC. These are generally designed to investigate the relationship between the CBRT W AFC and various macroeconomic variables (e.g., Ekinci et al., 2016; Küçük et al., 2016; Tunalı & Yalçınkaya, 2017; Varlık & Berument, 2017; Güler & Özçalık, 2018; Binici et al., 2019; Büberkökü & Kızılder, 2019; Sümer, 2019; Yüksel et al., 2019; Kartal, 2020; Felek & Ceylan, 2021). Unlike these studies, we model the CBRT W AFC time series based on the monthly data for the period between 2011:01-2020:12 in the framework of autoregressive (integrated) moving average [AR(I)MA] models by using two different approaches with linear and nonlinear and investigate comparatively. In this way, we aim to give ideas to the market participants, especially banks, by revealing to what extent the current value of the relevant time series is affected by the previous values of the series and to what extent by the random shocks. The first contribution of this study is that we model the relevant interest rate itself instead of investigating the relationship of this interest rate with the other macroeconomic variables.

We consider modelling the CBRT W AFC time series with the linear and the nonlinear approaches to make it stationary. We eliminate the stochastic and deterministic trends in the series by using difference stationarity and trend stationarity methods. In this context, we use the linear ADF unit root test and the nonlinear unit root test developed by Leybourne et al. (1998) [LNV]. The second contribution of this study is that we circumvent the unit root problem and establish a more explanatory time series model by applying the LNV methodology.

There are two motives why we prefer the LNV test in this study. Firstly, this test is one of the unit root tests, which includes a break in mean and/or trend. Unlike the unit root tests proposed by Perron (1989; 1990; 1997), Rappoport and Reichlin (1989), Zivot and Andrews (1992), and Lumsdaine and Papell (1997), which the assumption of instant deterministic structural change in mean and/or trend is made, the LNV unit root test, which has a smooth transition regression (STR) based model, allows gradual adjustment between the two regimes. This is more suitable for the structure of the economic time series. Because it is improbable for all economic agents to react simultaneously to an economic stimulus. Secondly, this test enables the detection and elimination of nonlinear structures, which may cause unit root problems in variables.

The remainder of the study is structured as follows: In Part 2, we present various empirical studies in the literature on the CBRT WAFC. In Part 3, we explain the empirical methodology applied in this study. In Part 4, we deal with the data and the unit root test results and make a comparative analysis by establishing various models in two different groups. The last part consists of the concluding remarks.

2. Literature Review

There are various empirical studies in the literature on the CBRT WAFC. We briefly explain some of these studies below.

Ekinci et al. (2016) investigate whether the CBRT WAFC is effective on the Borsa İstanbul (BIST) 100 index and conclude that the CBRT WAFC does not affect the BIST 100 index. Küçük et al. (2016) empirically analyse what determines the overnight spread between the Borsa İstanbul (BIST) repo rate and the CBRT average funding rate and find that it is recently affected by many factors both directly and closely related to the CBRT's liquidity policy. Varlık and Berument (2017) examine the effects of different monetary policy interest rates for a central bank on economic performance and indicate that choosing different policy rates allows the CBRT to achieve differentiated economic results. The finding specific to the CBRT's average funding rate is that this policy interest rate is more effective on the Treasury bond interest rates, the consumer credit interest rates, time deposits, and portfolio investments than the other monetary policy rates. Tunalı and Yalçınkaya (2017) analyse the relationship between the dollar rate, the inflation rate, and the CBRT WAFC and reveal bi-directional causality between the CBRT WAFC and the dollar rate. Güler and Özçalık (2018) examine the relationship between the BIST 100 index, the CBRT WAFC, the dollar index, and the dollar/TL rate and find that all variables are affected by each other. Binici et al. (2019) investigate the relationship between the short-term official & effective interest rates and the bank loan & deposit interest rates. The findings show that the bank loan & deposit interest rates are more sensitive to the effective interest rates like the CBRT average funding rate than the official interest rates like the CBRT lending rate. Yüksel et al. (2019) investigate whether the interest rate policy carried out by the CBRT affects the exchange rate. The findings related to the variables of the CBRT benchmark interest rate, the CBRT WAFC, and the dollar rate show that the interest rate policy is effective on the exchange rate; however, this relationship is not in the dimension of causality. Sümer (2019) analyses the overshooting effect of unconventional monetary policy shocks in Turkey. The findings in the study using the CBRT WAFC, the FED federal funds rate, and the dollar rate variables show that unconventional monetary policy shocks don't have an overshooting effect in Turkey. Büberkökü and Kızılder (2019) examine the effect of the CBRT's unconventional monetary policy on the market interest rates. The findings in the study using the CBRT WAFC and the Borsa İstanbul overnight interest rates (BIST O/N) to represent the policy stance of the Central Bank show that there is a long-term relationship between the CBRT WAFC & the Borsa İstanbul overnight rates and the market interest rates (*the weighted average interest rates of the vehicle and commercial loans extended by the banks and the weighted average interest rates applied to the deposits with various maturities*

opened by the banks). In addition, the findings reveal that the CBRT WAFC has a more considerable effect on the bank loan and deposit interest rates than the Borsa Istanbul overnight rates. The complete pass-through is only between the CBRT WAFC and the vehicle & the commercial loans. Kartal (2020) investigates the effects on the key financial indicators of the monetary policy measures taken in Turkey during the Covid-19 pandemic. The findings reveal that during the pandemic period, there are causality relationships from the weighted average funding cost and the size of the securities purchased by the Central Bank to the US dollar rate. Felek and Ceylan (2021) investigate whether the Neo-Fisher theory is valid in the interest-inflation interaction in Turkey. The findings reveal causality relationships from all interest rate variables (including the CBRT WAFC) implemented in the study to the inflation, but not the other way round. Therefore, they conclude that the Neo-Fisher theory is valid in Turkey.

As can be seen, the literature mostly deals with the relationship between the CBRT WAFC and various macroeconomic variables. This study aims to model the related interest rate's possible linear and nonlinear structure and reveal its internal dynamics. In this way, we can make various policy implications over the set of information in the data.

3. Empirical Methodology

3.1. Stationarity & Unit Root Tests

Stationarity is the absence of a systematic change in a time series's mean and variance, besides not revealing regular periodic changes. The concept of stationarity in time series can be seen in different ways. In the time path graph of a time series, the situation where there is no change in the mean overtime is defined as mean stationarity, and the situation where there is no change in the variance overtime is defined as variance stationarity. While the concept of difference stationarity is defined as making stationary of a time series by removing the stochastic trend it has, on the other hand, the concept of trend stationarity is defined as making stationary of a time series by getting rid of the deterministic trend it has. In the application related to making stationary of time series, we encounter two basic processes: trend stationarity and difference stationarity. The principal separation between the trend stationary process and difference stationary process relates to the duration of the impact of short-term shocks (for example, shocks from policy change) on the series. In the case of trend stationarity, the short-term shocks influence the long-term development of the series temporarily, while in the case of difference stationarity, the short-term shocks influence the level of the series continuously (Sevüktekin & Çınar, 2014: 81, 239-247).

The stationarity of a time series can be examined through unit root tests. These tests can be broadly categorised under three headings. These titles are; (i) Standard linear unit root tests (e.g., Dickey & Fuller, 1979; Phillips & Perron, 1988 [PP]; Kwiatkowski et al., 1992 [KPSS]; Phillips & Ploberger, 1994; Elliott et al., 1996; Perron & Ng, 1996; Bierens, 1997; Im et al., 2003), (ii) Unit root tests employing a nonlinear model (e.g., Enders & Granger, 1998 [EG]; Sollis et al., 2002; Kapetanios et al., 2003 [KSS]; Sollis, 2009) and (iii)

Unit root tests including a break in the mean and/or trend (e.g., Perron, 1989;1990;1997; Rappoport & Reichlin, 1989; Zivot & Andrews, 1992; Lumsdaine & Papell, 1997; Leybourne et al., 1998 [LNV]; Sollis et al., 1999; Becker et al., 2006; Vougas, 2006) (Omay, 2012).

3.2. LNV Methodology

For a y_t time series, Leybourne et al. (1998) [LNV] propose the following three logistic smooth transition regression (L-STR) models:

$$\text{Model K } y_t = \alpha_1 + \alpha_2 G_t(\gamma, \tau) + v_t \quad (1)$$

$$\text{Model L } y_t = \alpha_1 + \beta_1 t + \alpha_2 G_t(\gamma, \tau) + v_t \quad (2)$$

$$\text{Model M } y_t = \alpha_1 + \beta_1 t + \alpha_2 G_t(\gamma, \tau) + \beta_2 t G_t(\gamma, \tau) + v_t \quad (3)$$

where v_t is a zero-mean $I(0)$ process, $G_t(\gamma, \tau)$ is a logistic smooth transition function representing the transition between the regimes. This function is defined as follows:

$$G_t(\gamma, \tau) = [1 + \exp\{-\gamma(t - \tau T)\}]^{-1}, \gamma > 0 \quad (4)$$

where T is the number of observations (sample size), t is the time trend considered as the transition variable in the transition function, γ is the transition speed between the regimes, and τ is the midpoint of the transition (threshold-location parameter). The transition between the regimes is not in a sudden structural break form but gradual. The transition function $G_t(\gamma, \tau)$ is a continuous and monotonous function ranging from 0 to 1. Therefore, the STR models considered in Equations (1), (2), and (3) can be interpreted as regime-switching models with two extreme regimes (Omay & Yıldırım, 2013). While the extreme values of the transition functions are $G_t(\gamma, \tau) = 0$ and $G_t(\gamma, \tau) = 1$, the transition from one extreme regime to the other takes place gradually. The transition path is symmetrical around the midpoint. If the value of γ in the function is small, $G_t(\gamma, \tau)$ travels in the interval (0,1) for a long time. If γ is 0, then the $G_t(\gamma, \tau)$ function takes the value 0.5 for all t 's. For large values of γ , $G_t(\gamma, \tau)$ travels very quickly in the interval (0,1). As γ goes to $+\infty$, the function changes value from 0 to 1 abruptly in a moment of $t = \tau T$.

On the assumption that v_t is a zero-mean $I(0)$ process, in Model K, the y_t time series is stationary around a varying mean from the first value α_1 to the ultimate value $\alpha_1 + \alpha_2$. In Model L, in addition to the process in Model K, the constant slope parameter (β_1) is also considered. In Model M, on the other hand, with the change in the intercept term from α_1 to $\alpha_1 + \alpha_2$, a simultaneous change is allowed in the slope from β_1 to $\beta_1 + \beta_2$ at the same transition speed.

LNV propose that the establishment of unit root hypotheses and the calculation of test statistics should be done as follows:

$$H_0 : \text{Linear Non-Stationarity } (y_t = \mu_t, \mu_t = \mu_{t-1} + \varepsilon_t)$$

H_1 : Nonlinear Stationarity (*Model K, Model L, or Model M*)

where ε_t is assumed to be a zero-mean stationary process [i.e., $I(0)$]. The proposed test statistics are computed by a two-stage method. In Stage 1, the deterministic component of the preferred model is estimated employing the nonlinear least squares (NLS) method, and then the residuals are calculated as shown in Equations (5), (6), and (7).

$$\text{Model K } \hat{v}_t = y_t - \hat{\alpha}_1 - \hat{\alpha}_2 G_t(\hat{\gamma}, \hat{\tau}) \quad (5)$$

$$\text{Model L } \hat{v}_t = y_t - \hat{\alpha}_1 - \hat{\beta}_1 t - \hat{\alpha}_2 G_t(\hat{\gamma}, \hat{\tau}) \quad (6)$$

$$\text{Model M } \hat{v}_t = y_t - \hat{\alpha}_1 - \hat{\beta}_1 t - \hat{\alpha}_2 G_t(\hat{\gamma}, \hat{\tau}) - \hat{\beta}_2 t G_t(\hat{\gamma}, \hat{\tau}) \quad (7)$$

In Stage 2, \hat{v}_t is modelled as in Equation (8). Afterwards, the null hypothesis of $\hat{\rho} = 0$ is tested using ADF test statistics.

$$\Delta \hat{v}_t = \hat{\rho} \hat{v}_{t-1} + \sum_{i=1}^k \hat{\delta}_i \Delta \hat{v}_{t-i} + \hat{\eta}_t \quad (8)$$

The ADF test statistics of LNV are named as s_α , $s_{\alpha(\beta)}$, and $s_{\alpha\beta}$ according to the model used to construct \hat{v}_t . Particularly, it is s_α if Model K is used, $s_{\alpha(\beta)}$ if Model L is used, and $s_{\alpha\beta}$ if Model M is used. The critical values of these test statistics are gained thanks to Monte Carlo simulations in the LNV approach (Leybourne et al., 1998).

3.3. ARIMA Models

For a Y_t time series, an autoregressive integrated moving average [ARIMA (p, d, q)] model can be expressed in polynomial form as in Equation (9):

$$\Phi(L)(1-L)^d(Y_t - \mu_t) = \theta(L)\varepsilon_t \quad (9)$$

where L is the lag operator, $\Phi(L) = 1 - \phi_1 L - \phi_2 L^2 - \dots - \phi_p L^p$ and $\theta(L) = 1 + \theta_1 L + \theta_2 L^2 + \dots + \theta_q L^q$ denote lag polynomials, d is the integer order of differencing to be applied to the series, μ_t is the intercept and ε_t is the error term.

The methodology proposed by Box and Jenkins (1976) [Box-Jenkins] is prevalently used to establish a time series model. This approach is accepted as the method of finding the most appropriate ARIMA data generation process (DGP) for the actual data. The main steps of the related approach can be discussed in four stages in general terms: (i) Determination (identification) of the time series model, (ii) Making parameter estimations, (iii) Checking the adequacy of the model using diagnostic tests, and (iv) Using the model for forecasting. Notwithstanding, some matters must be considered to determine the model best fits a time series. These can be listed as the estimated parameters being significant, the residual sum of squares (RSS) being small, the likelihood ratio (LR) being as high as possible, the coefficient of determination (R^2), or the adjusted coefficient of determination (\bar{R}^2) being high, the F-statistics of the model being significant, the Akaike and the Schwarz information criteria

(AIC and SIC) being small, and the Portmanteau tests, or the Q-statistics calculated for the error terms of the model being insignificant (Sevüktekin & Çınar, 2014: 188-214).

4. Data and Empirical Analysis

4.1. Data and Unit Root Tests Results

This study uses monthly data from 120 observations between 2011:01-2020:12 for the CBRT Weighted Average Funding Cost (WAFC). The relevant data is acquired from the CBRT Electronic Data Distribution System (EDDS). The possible seasonality analysis of the monthly series is made by using the Tramo/Seats method, but it's not found any seasonality finding.

To model the CBRT WAFC time series, firstly, we carry out the stationarity analysis. For this, we employ a nonlinear test developed by LNV, one of the unit root tests with a break in the mean and/or trend, together with the linear and widely used ADF unit root test. The ADF test results are shown in Table 1.

Table: 1
ADF Unit Root Test Results

| Variable | Model without Intercept and Trend | Model with Intercept, without Trend | Model with Intercept and Trend |
|------------------|-----------------------------------|-------------------------------------|--------------------------------|
| <i>WAFC</i> | -0.387517 (0.5425) | -2.237531 (0.1944) | -3.589010 (0.0351) |
| <i>D – WAFC</i> | -3.142790 (0.0019) | -3.172292 (0.0242) | -3.141715 (0.1017) |
| <i>DD – WAFC</i> | -14.36914 (0.0000) | -14.31848 (0.0000) | -14.28712 (0.0000) |

Note: The figures are t-statistics and p-values (in parenthesis).

In Table 1, *WAFC* shows the level value of the variable, *D-WAFC* shows the first difference of the variable, and *DD-WAFC* shows the second difference of the variable. When the ADF results for the level value of the variable are examined, we see that only the model with intercept and trend is significant at 5%, hence stationary. However, when the first difference of the variable is taken, we see that the model with intercept and trend is not significant even at 10%, that is, not stationary. However, we see that the model without intercept and trend and the model with intercept without trend are significant at 1% and 5%, respectively, that is, stationary. When the second difference of the variable is taken, there is significance at 1% for all three model types, therefore stationarity.

Then, we investigate the possible deterministic trend in the series using Model M [Equation (3)] of the LNV methodology, which considers the structural break and is explained in detail above. The unit root test is carried out employing the residuals acquired from Model M, and the t-statistics value ($s_{\alpha\beta}$) is calculated as 19.4924. Since this value is bigger than the absolute values of the critical values given in the LNV methodology (-5.650, -5.011, and -4.697, respectively) at 1%, 5%, and 10%, the unit root hypothesis is rejected, and the alternative one, nonlinear stationarity, is accepted. As can be seen in Figure 1, the *WAFC* series has a nonlinear deterministic trend structure. Removing this structure from the *WAFC* series makes it stationary (trend stationarity). The stationary *WAFC* series and the

ADF test results of the *W AFC* series before and after stationarity are shown in Figure 2 and Table 2, respectively.

Figure: 1
W AFC and Nonlinear Deterministic Trend

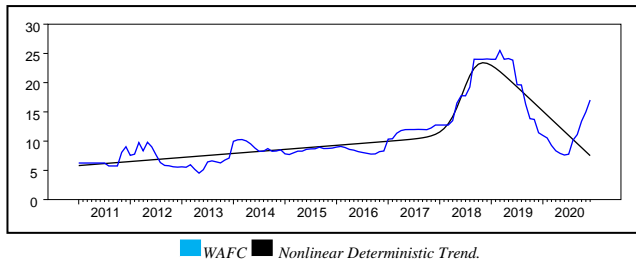


Figure: 2
Trend Stationary W AFC

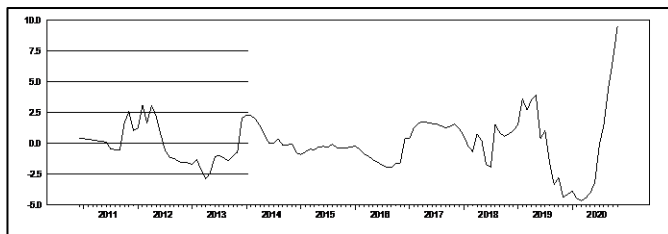


Table: 2
ADF Unit Root Test Results Before and After Trend Stationarity

| Variable | Model without Intercept and Trend | Model with Intercept, without Trend | Model with Intercept and Trend |
|--------------------|-----------------------------------|-------------------------------------|--------------------------------|
| <i>W AFC</i> | -0.387517 (0.5425) | -2.237531 (0.1944) | -3.589010 (0.0351) |
| <i>LNV – W AFC</i> | -3.749357 (0.0002) | -3.683628 (0.0055) | -3.516998 (0.0422) |

Note: The figures are t-statistics and p-values (in parenthesis).

In Table 2, *W AFC* represents the original level value of the variable, and *LNV-W AFC* represents the trend stationary *W AFC* series. When both series are compared, unlike the difference stationary series, we can say there is no observation loss. In the *LNV-W AFC* series, the nonlinear trend structure is removed from the original series, and thus the series is made stationary. When the ADF test results are examined, we can see that the original level value of the variable is significant (stationary) according to the 5% significance level only in the model with intercept and trend and insignificant (non-stationary) in the others. However, in the ADF analysis performed over the series that made trend stationary (*LNV-W AFC*) using the LNV methodology, we can see that the model without intercept and trend and the model with intercept without trend are significant (stationary) at 1%, in addition to the model with intercept and trend is significant (stationary) at 5%.

The results acquired from the unit root tests demonstrate that *LVN-WAFC* and *DD-WAFC* variables can be used in the model setup. Therefore, in the next section, LNV-ARMA and ARIMA models will be constructed and compared using these two variables as dependent variables.

4.2. Models and Comparative Analysis

Since the basic idea of the Box-Jenkins approach, which is widely used in establishing the ARIMA models, is based on the principle of parsimony, this principle envisages the establishment of an optimal model that reveals the characteristics of time series data. Here, optimal means having a minimum number of parameters in the model or considering the degrees of freedom. Box and Jenkins (1976) argue that the frugal models produce better predictions than the models with excessive parameters. Therefore, in this study, we establish various ARIMA models in line with the relevant principle and make the model selections by considering the Akaike Information Criteria (AIC) among the converged models. This criterion measures the model's goodness of fit by the number of terms in the model. While the AIC can generally be used to select the model that fits well among the alternative multivariate models, it can also be used to define the appropriate model degree for ARIMA models (Sevüktekin & Çınar, 2014:188,199). Models with different AR and MA components are shown in Table 3.

Table: 3
LNV-ARMA and ARIMA Models

| LNV-ARMA Models | AIC Values | ARIMA Models | AIC Values |
|-----------------|------------|--------------|------------|
| (2,1) | 2.7815 | (4,2) | 2.9647 |
| (4,0) | 2.7823 | (2,3) | 2.9650 |
| (4,1) | 2.8266 | (3,1) | 2.9692 |
| (4,2) | 2.8354 | (2,4) | 2.9750 |
| (4,3) | 2.8524 | (0,1) | 2.9840 |
| (3,2) | 2.8748 | (0,2) | 2.9882 |
| (1,3) | 2.8782 | (0,3) | 2.9932 |
| (3,1) | 2.8783 | (2,0) | 2.9938 |
| (3,0) | 2.8873 | (3,4) | 2.9959 |
| (1,4) | 2.8875 | (0,4) | 3.0013 |
| (2,2) | 2.8893 | (2,1) | 3.0032 |
| (3,3) | 2.8893 | (4,3) | 3.0092 |
| (2,0) | 2.9160 | (1,3) | 3.0098 |
| (2,4) | 2.9164 | (2,2) | 3.0115 |
| (2,3) | 2.9235 | (3,0) | 3.0173 |
| (1,1) | 2.9308 | (1,4) | 3.0247 |
| (1,2) | 2.9333 | (3,2) | 3.0361 |
| (4,4) | 2.9440 | (4,1) | 3.0414 |
| (1,0) | 2.9526 | (1,0) | 3.1586 |
| (0,4) | 2.9984 | (0,0) | 3.4124 |
| (0,3) | 3.0969 | (1,1) | 3.4602 |
| (3,4) | 3.2547 | (1,2) | 3.4776 |
| (0,2) | 3.3189 | (4,0) | 3.5202 |
| (0,1) | 3.5963 | (3,3) | 3.5464 |
| (0,0) | 4.3600 | (4,4) | 3.5930 |

In Table 3, we obtain the models named LNV-ARMA using the *LVN-WAFC* dependent variable provided the trend stationarity by the LNV methodology, and the ARIMA models using the *DD-WAFC* dependent variable provided the difference

stationarity by the classical differencing method. We use the Generalized Least Squares (GLS) method to estimate the LNV-ARMA models and the Conditional Least Squares-CLS method to estimate the ARIMA models. In selecting the estimation method, the results' significance is decisive. In the table, both groups of models are listed in themselves from smallest to largest according to their AIC values. For each group among these models, the converged and the smallest five models in terms of the AIC values are selected for comparative analysis and shown in Table 4 and Table 5.

Table: 4
LNV-ARMA Models

| | Model I (2,1) | Model II (4,0) | Model III (1,3) | Model IV (3,0) | Model V (1,4) |
|------------------------------|--------------------|--------------------|--------------------|------------------------------|--------------------|
| Convergence | 18 Iteration | 3 Iteration | 43 Iteration | 4 Iteration | 43 Iteration |
| C (*) | 0.0317 (0.8038) | 0.1763 (0.6866) | 0.6156 (0.5578) | 0.3528 (0.6200) | 0.5761 (0.5664) |
| AR(1) (*) | 1.9316 (0.0000) | 1.0488 (0.0000) | 0.8572 (0.0000) | 1.1116 (0.0000) | 0.8350 (0.0000) |
| AR(2) (*) | -0.9985 (0.0000) | 0.0015 (0.9908) | | -0.0091 (0.9484) | |
| AR(3) (*) | | 0.1362 (0.3029) | | -0.2330 (0.0213) | |
| AR(4) (*) | | -0.3884 (0.0001) | | | |
| MA(1) (*) | -0.9110 (0.0000) | | 0.2208 (0.0532) | | 0.2397 (0.0736) |
| MA(2) (*) | | | 0.1791 (0.1070) | | 0.1784 (0.1502) |
| MA(3) (*) | | | 0.2581 (0.0149) | | 0.3000 (0.0104) |
| MA(4) (*) | | | | | 0.1054 (0.3680) |
| R ² | 0.8207 | 0.8120 | 0.7916 | 0.7858 | 0.7932 |
| R ² | 0.8160 | 0.8055 | 0.7844 | 0.7803 | 0.7841 |
| F-Statistics (*) | 176.9699 (0.0000) | 124.2109 (0.0000) | 109.2214 (0.0000) | 141.8622 (0.0000) | 87.4485 (0.0000) |
| AIC | 2.7815 | 2.7823 | 2.8782 | 2.8873 | 2.8875 |
| SIC | 2.8745 | 2.8984 | 2.9943 | 2.9802 | 3.0268 |
| SSR | 96.9663 | 101.6398 | 112.6822 | 115.8234 | 111.8326 |
| LR | -162.8925 | -161.9372 | -167.6900 | -169.2370 | -167.2478 |
| Q-Statistics [Lag] | Insignificant [36] | Insignificant [36] | Insignificant [36] | Partially Insignificant [36] | Insignificant [36] |
| LM Test [Lag] (P- χ^2) | [1] (0.1362) | [1] (0.2439) | [1] (0.3036) | [1] (0.0001) | [1] (0.1446) |
| White Test (P- χ^2) | 0.0708 | 0.5181 | 0.0034 | 0.0643 | 0.0620 |

Note: (*) denotes p-values.

When we examine Table 4, we see that all models' AR(1) parameters are significant at 1%. However, we see that the AR(2) parameter is significant at 1% for only Model I, the AR(3) parameter is significant at 5% for only Model IV, and the AR(4) parameter is significant at 1% for Model II. When it comes to the MA components of the models; while the MA(1) parameter is significant at 1% for Model I, the MA(3) parameters are significant at 5% for Model III and Model V. However, the MA(2) parameters for Model III and Model V, the MA(4) parameter for Model V, and the intercept parameters of all models are insignificant. Considering the coefficients of determination and adjusted determination (0.8207 and 0.8160, respectively), we find that Model I is the most explanatory. We see that the F-statistics values are significant for all models. While Model I is the smallest in terms of AIC, SIC, and SSR values, Model II is the largest in terms of LR value. There are no autocorrelation problems except Model IV and heteroscedasticity problems except Model III. Finally, we find that the Q-statistics are insignificant for all models except Model IV and partially insignificant for Model IV. Given all these results, we choose the LNV-ARMA(2,1) model [Model I] as the best model in this group.

Table: 5
ARIMA Models

| | Model I (4,2) | Model II (2,3) | Model III (3,1) | Model IV (2,4) | Model V (0,1) |
|------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Convergence | 46 Iteration | 51 Iteration | 31 Iteration | 46 Iteration | 13 Iteration |
| C (*) | 0.0191 (0.6707) | 0.0156 (0.6439) | 0.0041 (0.6571) | 0.0170 (0.6450) | 0.0132 (0.6718) |
| AR(1) (*) | -0.0763 (0.3954) | -1.2327 (0.0000) | 0.1737 (0.0655) | -1.2285 (0.0000) | |
| AR(2) (*) | -0.8727 (0.0000) | -0.9995 (0.0000) | 0.1574 (0.0988) | -0.9973 (0.0000) | |
| AR(3) (*) | -0.4243 (0.0000) | | 0.2800 (0.0040) | | |
| AR(4) (*) | -0.4053 (0.0000) | | | | |
| MA(1) (*) | -0.6908 (0.0000) | 0.5898 (0.0000) | -0.9816 (0.0000) | 0.5296 (0.0000) | -0.6902 (0.0000) |
| MA(2) (*) | 0.9750 (0.0000) | 0.1652 (0.0815) | | 0.1796 (0.0606) | |
| MA(3) (*) | | -0.6393 (0.0000) | | -0.5811 (0.0000) | |
| MA(4) (*) | | | | 0.0940 (0.3330) | |
| R ² | 0.4445 | 0.4236 | 0.4166 | 0.4278 | 0.3594 |
| R ² | 0.4134 | 0.3974 | 0.3954 | 0.3963 | 0.3539 |
| F-Statistics (*) | 14.2722 (0.0000) | 16.1671 (0.0000) | 19.6375 (0.0000) | 13.5815 (0.0000) | 65.0743 (0.0000) |
| AIC | 2.9647 | 2.9650 | 2.9692 | 2.9750 | 2.9840 |
| SIC | 3.1328 | 3.1075 | 3.0856 | 3.1411 | 3.0310 |
| SSR | 114.4642 | 118.7823 | 120.2221 | 117.9168 | 132.0143 |
| LR | -161.9906 | -165.9716 | -165.7314 | -165.5474 | -174.0561 |
| Q-Statistics [Lag] | Insignificant [36] | Insignificant [36] | Insignificant [36] | Insignificant [36] | Insignificant [36] |
| LM Test [Lag] ($P-\chi^2$) | [1] (0.9514) | [1] (0.4000) | [1] (0.5840) | [1] (0.6904) | [1] (0.3129) |
| White Test ($P-\chi^2$) | 0.0769 | 0.8077 | 0.2016 | 0.6307 | 0.7961 |

Note: (*) denotes p-values.

When we examine Table 5, we see that the AR(1) parameters are significant at 1% for only Models II and IV. However, the AR(2) parameters are significant at 1% for only Models I, II, and IV. Also, the AR(3) parameters for Models I and III and the AR(4) parameter for Model I are significant at a 1% significance level. Regarding the MA components of the models, we see that the MA(1) parameters are significant for all models at a 1% significance level. However, we see that the MA(2) parameter for only Model I and the MA(3) parameters for Models II and IV are significant at a 1% significance level. But, we find that the MA(4) parameter for Model IV and the intercept parameters of all models are insignificant. Considering the coefficients of determination and adjusted determination (0.4445 and 0.4134, respectively), we find that Model I is the most explanatory. We see that the F-statistics values are significant for all models. While Model I is the smallest in terms of AIC and SSR values and the largest in terms of LR value, Model V is the smallest in terms of SIC value. There are no autocorrelation and heteroscedasticity problems in any of the models. Finally, we find that the Q-statistics are insignificant for all models. Given all these results, we choose the ARIMA(4,2) model [Model I] as the best model in this group.

When we compare the LNV-ARMA(2,1) and the ARIMA(4,2) models in themselves, we see that the best model is LNV-ARMA(2,1). First of all, this model is more dependent on the parsimony principle with less number of parameters and significance (3 significant parameters versus 5) compared to the ARIMA(4,2) model, and is also approximately twice as explanatory ($R^2_{\text{LNV-ARMA}(2,1)} = 0.8207$ and $R^2_{\text{ARIMA}(4,2)} = 0.4445$). Again, this model is smaller in terms of AIC (2.7815 versus 2.9647), SIC (2.8745 versus 3.1328), and SSR (96.9663 versus 114.4642) values.

5. Concluding Remarks

In this study, we model the monthly time series of the Central Bank of the Republic of Turkey's Weighted Average Funding Cost (CBRT WAFC) for the period between 2011:01-2020:12. In this framework, we establish and compare the linear and the nonlinear based various autoregressive (integrated) moving average [AR(I)MA] models in two separate groups and investigate the most suitable model for the series.

Firstly, we make the stationarity analysis of the series using the linear ADF test, which is widely employed in the unit root tests, and make the series difference stationary by taking the second difference of the series. Then, using this series, we establish various ARIMA models and choose the ARIMA(4,2) as the best model in this group. Secondly, we make the stationarity analysis of the related series by employing the nonlinear unit root test developed by Leybourne et al. (1998) [LNV], which is one of the unit root tests with a break in the mean and/or trend. Using this methodology, we detect and remove the nonlinear deterministic trend from the series and make the series trend stationary. Later, we build various ARMA models using this series and name these models LNV-ARMA models. We choose the LNV-ARMA(2,1) as the best model in this group. Finally, we compare the best models of these two groups and reveal that the CBRT WAFC time series can be modelled best with the LNV-ARMA(2,1) model for the relevant period. This model shows that the current CBRT WAFC is affected by the CBRT WAFC of the previous two periods and the random shocks that occurred in the last period. This case indicates that the market participants, especially banks who follow the value of the CBRT WAFC, should take into account the values of the CBRT WAFC for the last two periods and the previous period shocks that may have an impact on this rate while predicting the current value of the relevant time series.

As stated previously, the CBRT WAFC may be crucial in pricing their products, especially for the banks. In this study, the relevant interest rate is modelled by the LNV methodology, which reveals the CBRT's asymmetric behaviour. In this way, it is indicated that the banks and the other market participants should be careful about possible similar behaviour in the future.

In summary, we can make three main policy implications regarding the CBRT WAFC for the related period. These are the policy maker's asymmetric behaviour, the role of interest rates in previous periods in determining the current period interest rate and being effective of the recent unexpected developments (news) on the current period interest rate.

Modelling of the CBRT WAFC using different linear and nonlinear methodologies apart from the LNV methodology is the subject of further studies that might be conducted after this study.

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Geçici Koruma Altında Bulunan Suriye Uyruklu Kişilerin Türk Vergi Sistemine Uyumu: Bir Ölçek Geliştirme Çalışması

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A Scale Development Study on Compliance of Syrian Persons Under Temporary Protection with The Turkish Tax System

Abstract

Determining the attitudes of the Syrian people towards the tax constitutes the problem of this study. The study aims to develop a scale for the compliance of Syrian people who are income taxpayers within the borders of the Republic of Turkey with the Turkish tax system. In this direction, people who are income taxpayers in Şanlıurfa, where Syrians are concentrated, were determined as the sample. Accordingly, a 6-factor scale consisting of 27 items was developed. Consequently, the answers given to the whole scale are at the level of neither agree/disagree. Taxpayers of Syrian nationality think that other taxpayers do not have any privileges compared to them. Therefore, Syrian nationals, who are income taxpayers in Turkey, have a positive perspective on taxation.

Keywords : Syrian Nationals, Temporary Protection, Tax Compliance.

JEL Classification Codes : F22, H20, H24.

Öz

Suriyeli kişilerin vergiye ilişkin tutumlarının belirlenmesi bu çalışmanın problemi oluşturmaktadır. Çalışmada Türkiye Cumhuriyeti sınırları içerisinde gelir vergisi mükellefi olan Suriyeli kişilerin Türk vergi sistemine uyumuna dair ölçek geliştirilmesi amaçlanmıştır. Bu doğrultuda Suriyeli kişilerin yoğun olarak bulunduğu Şanlıurfa İlinde gelir vergisi mükellefi olan kişiler çalışma grubu olarak belirlenmiştir. Bu doğrultuda 27 maddeden oluşan 6 faktörlü ölçek geliştirilmiştir. Ölçeğin bütününe verilen cevapların ne katılıyorum/ne katılmıyorum düzeyinde olduğu görülmektedir. Suriye uyruklu mükellefler, diğer mükelleflerin kendilerine göre herhangi bir ayrıcalığa sahip olmadığını düşünmektedir. Dolayısıyla Türkiye’de gelir vergisi mükellefi olan Suriye uyruklu kişilerin vergilendirmeye dair olumlu bir bakış açısına sahip olduğu söylenebilir.

Anahtar Sözcükler : Suriye Uyruklu Kişiler, Geçici Koruma, Vergi Uyumu.

1. Giriş

Devletin elde ettiği en önemli kamu geliri vergi olarak kabul edilmektedir. Bu bakımdan vergi geliri devletin egemenlik yetkisine dayanarak temin ettiği bir olarak ifade edilebilir. Devletin bu yetkiyi tek taraflı şekilde kullandığı söylenebilir. Ancak vergilendirme sürecinde önemli bir taraf olan devletin yanı sıra diğer tarafta da vergi yükümlüsü bulunmaktadır (Muter vd., 1993). Dolayısıyla vergi yükümlüleri vergilerle finanse edilen kamu harcamalarının zorunlu bir finansörü durumunda olmaktadır. Bu bakımdan gelirlerinin belirli bir kısmını zorunlu bir şekilde devlete ödeyen vergi yükümlüleri vergiye karşı tepki gösterebilmektedir. Vergi yükümlülerinin ödedikleri vergiye ilişkin tepkileri ise vergiye uyum sağlamama, vergi kaçırma, vergi reddi vb. şekillerde gerçekleşebilmektedir (Çataloluk, 2008: 214). Vergi yükümlülerinin vergi ve kamu harcamalarına ilişkin tepkileri olumlu ya da olumsuz şekilde gerçekleşebilmektedir (Çelebi, 2012: 2).

Devletin vergilendirme yetkisini kullanması anayasa ve yasalarla sınırlandırılmıştır. Bu bakımdan devlet, vergilendirme yetkisini kullanırken egemenlik yetkisine dayalı mülklik ve şahsılık ilkelerine göre hareket etmektedir. Mülklik ilkesi, bir devletin sınırları içerisinde gerçekleşen ekonomik faaliyetler dolayısıyla vergilendirme yetkisini kullanmasıdır. Şahsılık ilkesi ise bireylerin, bir ülke vatandaşı olarak ülkesine vergi ödeme gerekliliğini ifade etmektedir (Şenyüz vd., 2019). Mülklik ilkesine göre bireyler, ülke sınırları içerisinde uyrukları fark etmeksizin vergilendirilebilmektedir. Bu bakımdan Türkiye Cumhuriyeti sınırları içerisinde Geçici Koruma Yönetmeliği kapsamında bulunan ve 2012 yılından bu yana yaşamlarını sürdürmekte olan Suriye uyruklu kişiler çeşitli ekonomik faaliyetlerde bulunmaktadır. Suriye uyruklu kişilerin bulundukları ekonomik faaliyetler dolayısıyla vergilendirilmeleri söz konusu olabilmektedir. Kükrer Mutlu ve Eğmir (2020), yapmış oldukları çalışmada Türkiye’de yaşamlarını sürdürmekte olan Suriye uyruklu kişilerin çeşitli vergi türleri karşısında vergi mükellefi olabileceklerini ifade etmiştir.

Bu çalışmada Türkiye’de bulunan ve geçici koruma altında olan Suriye uyruklu kişilerin vergiye ilişkin tutumlarının ölçülmesi amaçlanmıştır. Bu amaç doğrultusunda Şanlıurfa İlinde yaşamlarını sürdürmekte olan Suriye uyruklu kişilerden gelir vergisi mükellefiyeti bulunan kişilere ölçek uygulaması gerçekleştirilmiştir. Elde edilen verilerle ölçek geliştirilmesi amacıyla faktör analizi yöntemi uygulanmıştır. Çalışma kapsamında öncelikle literatür araştırmasına yer verilecek daha sonra ise ölçek sonuçları değerlendirilecektir.

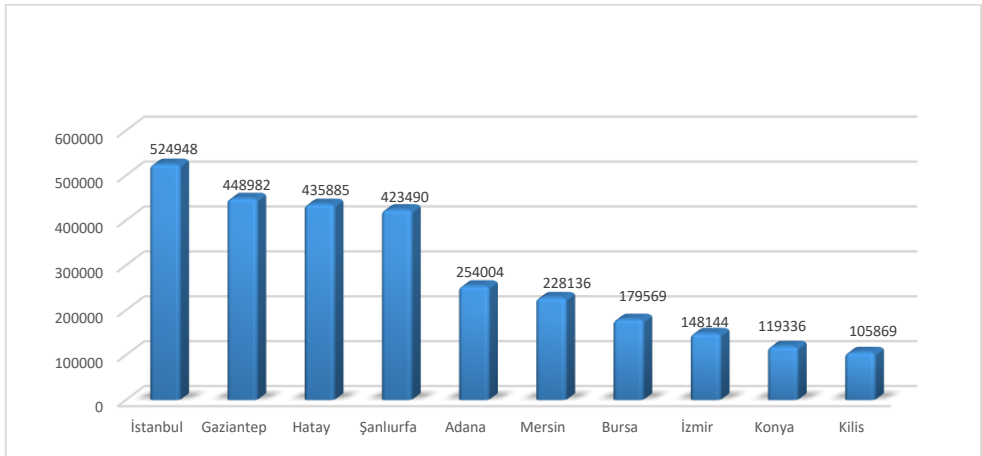
2. Geçici Koruma Yönetmeliğinin Kapsamı ve Türkiye’de Bulunan Geçici Koruma Yönetmeliği Kapsamındaki Yabancılar

Arap ülkelerinde yaşanan karışıklıklar 15 Mart 2011 tarihinden itibaren Suriye’ye de sıçramıştır. Bu bölgede yaşanan çatışmalardan dolayı insani kriz büyümüş ve Türkiye Cumhuriyeti sınırlarında da hareketlilik yaşanmaya başlanmıştır. 2011 yılı sonuna kadar

Suriye tarafından Türkiye’ye ilk nüfus hareketleri görülmeye başlanmıştır. Bu doğrultuda Türkiye Cumhuriyeti tarafından 30.03.2012 tarihinde “Türkiye’ye Toplu Sığınma Amacıyla Gelen Suriye Arap Cumhuriyeti Vatandaşlarının ve Suriye Arap Cumhuriyetinde İkamet Eden Vatansız Kişilerin Kabulüne ve Barındırılmasına İlişkin Yönerge” İçişleri Bakanlığınca yürürlüğe konulmuştur. Bu bakımdan ilgili yönergenin Suriyeli kişilere yönelik gerçekleştirilen ilk hukuki dayanak olduğu söylenebilir.

Geçici Koruma Yönetmeliği ise 6458 Sayılı Yabancılar ve Uluslararası Koruma Kanununun “Geçici Koruma” başlıklı 91. maddesine istinaden 13.10.2014 tarihinde kabul edilmiştir. Bu yönetmeliğin amacı, “ülkesinden ayrılmaya zorlanmış, ayrıldığı ülkeye geri dönemeyen, acil ve geçici koruma bulmak amacıyla kitlesel olarak veya bu kitlesel akın döneminde bireysel olarak sınırlarımıza gelen veya sınırlarımızı geçen ve uluslararası koruma talebi bireysel olarak değerlendirmeye alınamayan yabancılara sağlanan koruma” şeklinde belirtilmiştir. İlgili yönetmelik kapsamında Suriye tarafından Türkiye’ye giriş yapan yabancıların geçici koruma altına alınacağı belirtilmektedir. İlgili yönetmeliğin 22. maddesinde bu kişilere ilişkin gerekli kontrollerin gerçekleştirilmesinin ardından Türkiye’ye giriş yaptıktan sonra valilikler tarafından geçici kimlik belgesi düzenlenmektedir. Göç İdaresi Genel Müdürlüğüne göre 21.04.2021 tarihi itibarıyla 3.671.811 kişi geçici koruma altında bulunmaktadır. Bu sayı 2012 yılında 14.237 olarak gerçekleşmiş ve neredeyse her yıl geçici koruma altında bulunan kişi sayısında artış olmuştur. Şekil 1’de Türkiye’de geçici koruma kapsamında bulunan Suriye uyruklu kişilerin en fazla olduğu 10 ile yer verilmektedir.

Şekil: 1
Türkiye’de Geçici Koruma Kapsamında Bulunan Suriye Uyruklu Kişilerin En Fazla Olduğu 10 İl



Kaynak: <<https://www.goc.gov.tr/gecici-koruma5638>>, 03.03.2021.

Şekil 1 incelendiğinde geçici koruma altında bulunan Suriye uyruklu kişilerin en fazla olduđu ilin İstanbul olduđu görölmektedir. Buna ilave olarak Gaziantep, Hatay ve Şanlıurfa gibi iller ise geçici koruma altında bulunan Suriye uyruklu kişilerin en fazla olduđu diğeri iller arasında yer almaktadır.

3. Geçici Koruma Altındaki Yabancıların Çalışma İzinleri

6735 Sayılı Uluslararası İşgücü Kanunu uluslararası işgücüne dair politikaların belirlenmesi ve uygulanmasının yanı sıra yabancılara sağlanacak çalışma izin durumları ile uluslararası işgücü alanına dair yükümlölükleri içermektedir. İlgili kanunun 10. Maddesi yabancıların çalışma izin türlerini kapsamaktadır. Bu kapsamda belirli bir iş kolunda çalıştırılacak olan yabancıya en çok 1 yıllık izin verilebileceğı ifade edilmektedir. Ayrıca uzun dönem ikamet izni olanlar ya da en az sekiz yıl çalışma izni olanlar için süresiz çalışma izni tanınacağı belirtilmektedir. Süresiz çalışma iznine sahip olan yabancı, uzun dönem ikamet izninin sağladığı tüm haklardan yararlanabilecektir. Belirtilen kanunun 10. Maddesinin devamında da profesyonel meslek mensubu olan yabancılara bağımsız çalışma izni verilebileceğı tanınan diğeri haklar arasında yer almaktadır.

6735 Sayılı Uluslararası İşgücü Kanunu’nun 11. maddesi ise yabancılara turkuaz kart olarak adlandırılan çalışma hakkının tanınması ile ilgilidir. Bu hak, başvurusu uygun görülen ve yabancının bilgi/birikiminin ülke çıkarlarına etkisi doğrultusunda değerlendirilerek uygun bulunan yabancılara tanınmaktadır. Ancak ilgili maddede geçici koruma altında bulunan yabancıların turkuaz kart hakkından yararlanamayacağı ifade edilmiştir.

Geçici koruma altında bulunan kişilerin iş piyasasına erişim durumları da Geçici Koruma Yönetmeliğinin 29. maddesinde yer verilmiştir. Buna göre çeşitli iş kollarında çalışmak isteyen yabancılar Cumhurbaşkanınca belirlenecek olan sektör, iş alanı ve bölgelerde ve Aile, Çalışma ve Sosyal Hizmetler Bakanlığı tarafından temin edilecek çalışma izin belgesi alabileceklerdir. Bu bakımdan çalışma izni alan Suriye uyruklu kişiler, bir işverene bağılı olarak çalışabileceğı gibi kendi işlerini de yapabileceklerdir. Suriyeli kişilerin bu faaliyetlerde bulunması için çalışma izinlerinin bulunması gerekmektedir. Dolayısıyla çalışma izinleri olan Suriyeli kişiler bir iş kolunda gelir elde edici faaliyetlerde bulunabilecek ve bunun sonucunda da potansiyel vergi mükellefi olabilecektir.

4. Geçici Koruma Altındaki Yabancıların Vergiye Dair Tutumlarına İlişkin Literatür

Vergi devlet tarafından iktisadi ve sosyal amaçlar doğrultusunda gerçek ya da tüzel kişilerden zorunlu bir şekilde aldığı nakdi değer olarak tanımlanabilir (Şen & Sağbaşı, 2019: 1). Vergi yükümlüsünün vergiyi karşılık olmaksızın zorunlu bir şekilde ödemesi ve vergi ödemesinden dolayı kişinin gelirinde azalma meydana getirmesi mükellef nezdinde psikolojik etkilere neden olabilecektir. Reynaud (1966: 21), bununla ilgili olarak vergi yükünün mükellef tarafından hissedilme ölçüsünü vergi tazyiki olarak ifade etmiştir. Ayrıca mükelleflerin vergiye yönelik tepkileri legal ya da illegal bir şekilde olabilmektedir. Bunlar

arasında vergiyi yansıtmama, vergiye tabi işi bırakma, verginin amortismanı/kapitalizasyonu, kaçınma ve vergi kaçırma vb. gibi tepkiler bulunmaktadır. Mükellefin bu şekilde davranmasına neden olarak, vergi yükünü kabul etmemesi gösterilebilir. Bu bakımdan mükelleflerin vergiye ilişkin tepkilerinin iyi bir şekilde belirlenmesi gerekir (Şen & Sağbaş, 2019: 53). Bu bilgiler ışığında Türkiye’de yaşamlarını sürdürmekte olan Suriyeli kişiler de ekonomik hayatta yer edindikleri için vergi yükümlülükleri oluşmaktadır. Dolayısıyla Suriye uyruklu kişilerin de vergiye ilişkin tutumlarının belirlenmesi önemli görülmektedir. Bu doğrultuda literatüre bakıldığında Suriyelilerin vergiye ilişkin tutumlarının ele alındığı herhangi bir çalışmaya rastlanmamıştır. Ancak geçici koruma altındaki Suriyeli kişiler ve vergi ilişkisine yönelik çalışmalar alan yazınında mevcuttur.

Türkiye’de yaşamlarını sürdüren Suriyeli kişiler ve vergi ilişkisine yönelik olarak; Siverekli ve Ertuğrul (2016), Suriyeli sığınmacıların vergi yükümlülüğü üzerindeki etkisini ele almıştır. Bu doğrultuda Harran Üniversitesindeki vergi yükümlülerine ölçek uygulaması gerçekleştirilmiştir. Çalışma sonucunda vergi mükelleflerinin vergiye bakış açılarının Suriye tarafından yaşanan göç dolayısıyla olumsuz açıdan etkilendiği belirtilmiştir. Bununla birlikte Suriye uyruklu kişilere ise yardımların yapılması gerekliliği de araştırmada elde edilen diğer sonuçlar arasında yer almaktadır.

İrteş Gülşen (2019), geçici koruma altındaki Suriyelilerin kayıt dışı istihdam oluşturmaları nedeniyle Türkiye’deki vergi adaletine ve vergi gelirlerine olan etkisine yapmış olduğu çalışmada yer vermiştir. Çalışma sonucunda kayıt dışı faaliyet sürdüren Suriye uyruklu kişilerin vergi adaleti ve vergi gelirine olumsuz yansıdığı ifade edilmiştir.

Yavan ve Torun (2019), yaptıkları çalışmada Suriyelilerin Türkiye’de oluşturduğu mali etkiye yer vermişlerdir. Bu bakımdan Türkiye’de iller bazında vergi tahsilat oranlarına ve bu illerde yaşayan Suriyelilerin buna nasıl bir etkisi olduğu ele alınmıştır.

Kükrer-Mutlu ve Eğmir (2020), Türkiye’de yaşamlarını sürdürmekte olan Suriye uyruklu kişilerin çalışma ve ekonomik faaliyetlerde çeşitli vergi türleri karşısındaki durumlarını ele almıştır. Çalışma sonucunda Suriye uyruklu kişilerin her vergi türü için vergi karşısında herhangi bir ayrımının bulunmadığı ve Türkiye Cumhuriyeti vatandaşları gibi vergi mükellefi olabildikleri ifade edilmiştir.

5. Metodoloji

Bu çalışmada Türkiye’de yaşamlarını sürdürmekte olan Suriye uyruklu kişilerin vergiye ilişkin tutumlarının belirlenmesi amaçlanmıştır. Bu doğrultuda Şanlıurfa İlinde yaşayan ve gelir vergisi mükellefiyeti bulunan Suriye uyruklu kişilere ölçek uygulanmıştır. Uygulama sürecinde gerçekleştirilen ölçek yöntemine ilişkin detaylar ve analizlere metodoloji başlığı altında yer verilecektir. Ayrıca ilgili çalışma Afyon Kocatepe Üniversitesi BAPK Birimi tarafından desteklenen 18.KARİYER. 25 numaralı proje kapsamında yürütülmüştür.

5.1. Araştırma Modeli

Bu çalışmada Türkiye’de yaşamlarını sürdüren ve geçici koruma altında bulunan Suriye uyruklu kişilerin vergiye ilişkin tutumlarının belirlenmesi amaçlanmıştır. Bu amaç doğrultusunda çalışma, nicel araştırma yöntemlerinden biri olan tarama modeli ile gerçekleştirilmiştir. Tarama modeli, geçmiş ya da şu anki durumu var olan şekilde açıklamaya çalışan yaklaşımlardan biridir (Krathwohl, 1993). Bu model, seçilen örneklem vasıtasıyla geniş bir kütleyi ifade eden evrenle ilgili genel yargılara ulaşmak amacıyla gerçekleştirilen tarama düzenlemesi olarak belirtilebilir (Bailey, 1982). Dolayısıyla seçilen örneklemin evreni temsil etme gücünün yüksek olduğu varsayılır (Karasar, 2005). Bu çalışmada Şanlıurfa İlinde yaşayan ve gelir vergisi mükellefiyeti bulunan Suriye uyruklu kişilerin vergiye ilişkin tutumları tarama yöntemi kullanılarak ölçülmüştür. Çalışmadan elde edilen bulgular literatüre bađlı kalınarak açıklanmaya çalışılacaktır.

5.2. Evren ve Örneklem

Araştırmanın evrenini Şanlıurfa ilinde ikamet eden ve vergi dairesi kayıtlarına göre gelir vergisi mükellefi olan 730 Suriye uyruklu kişi (01.04.2021 tarihi itibarıyla) oluşturmaktadır. Çalışmada kullanılan ölçekler 2018 yılında uygulanmıştır ve bu yıl için vergi dairesine kayıtlı olan Suriyeli mükellef sayısı 204 kişiden oluşmaktadır. Çalışmada Şanlıurfa İlinin tercih edilme nedeni Suriye uyruklu kişilerin bu bölgede yoğun olarak bulunmasıdır. Bu çerçevede çalışma Şanlıurfa ilinde ikamet eden ve gelir vergisi mükellefi olan 169 Suriye uyruklu kişi ile tarama yöntemi şeklinde yürütülmüştür.

5.3. Veri Toplama Aracı

Çalışmada veri toplama yöntemi olarak ölçek uygulaması gerçekleştirilmiştir. Ölçek oluşturulması aşamasında ulusal/uluslararası alan yazından yararlanılmış ve alanında uzman kişilerce ön kontroller gerçekleştirilmiştir. Ölçek yeminli tercüman tarafından Arapçaya çevrilerek uygulanmıştır. Uygulamada kullanılan ölçek formu iki bölümden oluşmaktadır. Ölçek formunun ilk bölümünde Suriye uyruklu kişilerin demografik özelliklerini belirlemeye yönelik 6 adet soru yer almaktadır. İkinci kısımda ise beşli likert biçiminde 39 adet soru bulunmaktadır. Likert sorulara ilişkin cevap seçenekleri (1) “kesinlikle katılıyorum”, (2) “katılıyorum” (3) “ne katılıyorum ne katılmıyorum”, (4) “katılmıyorum” ve son olarak (5) “kesinlikle katılmıyorum” şeklindedir.

Yapı geçerliliğini test etmek, benzer özellikteki değişkenleri bir araya getirmek ve ölçmeyi daha az sayıda faktör ile açıklamak için faktör analizi gerçekleştirilmesi gerekmektedir (Yurtkoru vd., 2008). Çalışmada, kullanılan ölçekteki değişkenlerin boyutlarını belirlemek amacıyla açımlayıcı faktör analizi gerçekleştirilmiştir (Büyüköztürk, 2012). Bu doğrultuda ölçek maddelerinin ölçekte kalıp kalmamasına göre belirlenen faktör yük değeri 0,32 olarak belirlenmiştir (Tabachnick & Fidell, 2013). Buna ilave olarak bir maddenin diğer faktörlerde yüksek çıkmış olan yük değerleri arasındaki farkın 0,10 ve altında olması halinde bu madde binişik madde olarak değerlendirilmiştir (Büyüköztürk,

2012). Dolayısıyla çalışmada, faktör yük değeri 0,32 altında olan ve binişik madde olarak kabul edilen maddeler ölçek kapsamına dâhil edilmemiştir.

6. Bulgular

Bu bölümde Suriye uyruklu kişilerin vergiye ilişkin tutumlarının tespit edilmesi amacıyla elde edilen verilere ilişkin ilk olarak demografik bulgulara yer verilmiştir. Daha sonra ise açıklayıcı faktör analizi gerçekleştirilecek ve bu analizin sonuçları sunulmuştur.

6.1. Örnekleme İlişkin Demografik Bulgular

Suriye uyruklu kişilerin vergiye ilişkin tutumlarının belirlenmesi amacıyla ölçekte yer verilen demografik bilgilere dair bulgulara bu başlık altında değerlendirilecektir. Tablo 1’de ölçek çalışmasına katılım gösteren kişilere ilişkin demografik bilgilere yer verilmektedir.

Tablo: 1
Katılımcıların Demografik Özelliklere Göre Dağılımı

| Değişken | Alt Değişken | N | % |
|-----------------------------|---------------------|------------|------------|
| Cinsiyet | Kadın | 71 | 42 |
| | Erkek | 98 | 58 |
| Yaş | 18-30 | 47 | 27,8 |
| | 30-50 | 115 | 68 |
| | 50 ve üstü | 7 | 4,1 |
| Medeni Durum | Evli | 152 | 89,9 |
| | Bekâr | 17 | 10,1 |
| Eğitim Durumu | Okuryazar | 55 | 32,5 |
| | İlkokul | 51 | 30,2 |
| | Ortaokul | 24 | 14,2 |
| | Lise | 14 | 8,3 |
| | Üniversite ve Üzeri | 9 | 5,3 |
| Ailede Yaşayan Birey Sayısı | Okuryazar Olmayan | 16 | 9,5 |
| | 1 | 11 | 6,5 |
| | 2 | 20 | 11,8 |
| | 3 | 37 | 21,9 |
| | 4 | 40 | 23,7 |
| | 5 | 45 | 26,6 |
| | 5’ten fazla | 16 | 9,5 |
| Aylık gelir düzeyi | 0-2000 | 80 | 47,3 |
| | 2001-5000 | 80 | 47,3 |
| | 5001 ve üzeri | 9 | 5,3 |
| Toplam | | 169 | 100 |

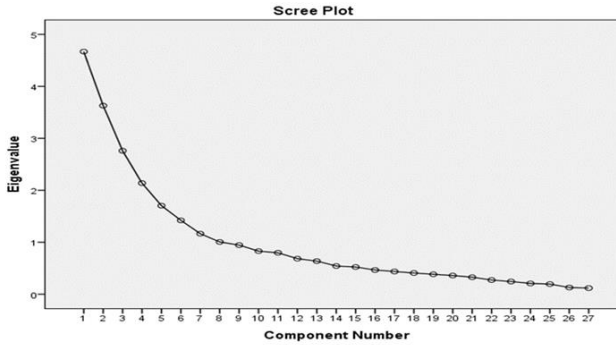
Katılımcıların demografik özelliklerinin açıklandığı Tablo 1’de erkek katılımcıların %58 orana sahip olduğu görülmektedir. Ayrıca katılım sağlayanların %68’ini 30-50 yaş arasındaki bireyler oluşturmaktadır. Bununla birlikte ölçeğe katılanların %89,9’u evli bireyleri kapsamaktadır. Ölçeğe katılım sağlayanların eğitim seviyelerine bakıldığında, ilkokul mezunu kişilerin %30,2 oranla çoğunlukta bulunduğu, üniversite ve üstü mezun bireyler ise katılımcıların %5,3 oranına sahip olmaktadır. Katılımcıların aylık gelir düzeylerine bakıldığında 5000 ve altı gelir elde eden bireylerin %90’dan fazla olduğu söylenebilmektedir. Ayrıca ailede yaşayan birey sayısına bakıldığında katılımcıların %80’den fazlasının aile içerisinde 3 ve üzeri kişi ile yaşadığı belirtilebilir.

6.2. Faktör Analizine Dair Bulgular

Suriye uyruklu kişilerin vergiye ilişkin tutumlarının belirlenmesine yönelik ölçeğin öncelikle güvenilirlik analizi ardından geçerlilik testi ve daha sonra ise tekrar güvenilirlik analiz gerçekleştirilmiştir. Bu kapsamda ilk olarak güvenilirliği test etmek amacıyla gerçekleştirilen Cronbach Alpha katsayısı .738 olarak hesaplanmıştır. Daha sonra faktör analizinin uygunluğunu ölçmek amacıyla Kaiser-Meyer-Olkin (KMO) ve Bartlett’s Sphericity (BS) Testleri gerçekleştirilmiştir. Faktör analizine uygunluğu ölçmek amacıyla gerçekleştirilen Kaiser-Meyer-Olkin (KMO) testinin .714 şeklinde çıkması ölçeğin faktör analizi için uygun olduğunu göstermektedir. Ayrıca Bartlett’s (BS) testi sonucunun da $\chi^2=1991,225$; $p<.05$ şeklinde gerçekleşmesi ve anlamlılık değerinin 0.000 çıkması maddeler arasında faktör analizi için uygunluğu ifade etmektedir.

Ölçeğin faktör analizi için uygunluğu tespit edildikten sonra temel bileşenler testi gerçekleştirilmiştir. Temel bileşenler testi yaygın bir şekilde kullanılan ve kavramlar açıdan anlamlılığı belirtmeye yönelik bir teknik şeklinde belirtilebilir (Büyüköztürk, 2012). Gerçekleştirilen açıklayıcı faktör analizinde faktör öz değeri 1’den büyük olan faktörler anlamlı olarak kabul edilmiştir. Faktör analizi neticesinde ortaya çıkan çizgi grafiği (scree plot) Şekil 2’de yer almaktadır.

Şekil: 2
Faktör Analizi Neticesinde Ortaya Çıkan Çizgi Grafiği



Şekil 2 incelendiğinde ölçeğin temelde 6 faktörlü bir yapıda olduğu söylenebilir. Gerçekleştirilen faktör testinde Varimax yöntemi kullanılmış olup aynı anda birden fazla yük değerini temsil eden maddeler binişik madde olarak değerlendirilmiş ve ölçeğe dâhil edilmemiştir. Ölçeğin 2-5-9-12-13-14-19-21-25-26-27 ve 35. maddeleri aynı anda birden fazla yük değerine sahip olma ve yük değerleri arasındaki farkın 0.10’ın altından olması durumlardan dolayı binişik madde olarak değerlendirilerek ölçeğe dâhil edilmemiştir. Sonuç olarak 6 faktörden oluşan ve 27 maddeyi kapsayan yapıda bir ölçek geliştirilmiştir. Tablo 2’de faktör analizi neticesinde oluşan faktörler ile toplam varyansı açıklama düzeylerine yer verilmektedir.

Tablo: 2
Faktör Analizi Sonuçları

| Faktör | Başlangıç Öz Değerler | | | Döndürme Öncesi Değerler | | | Döndürme Sonrası Değerler | | |
|--------|-----------------------|--------|--------|--------------------------|--------|--------|---------------------------|--------|--------|
| | Toplam | Vary % | Küm % | Toplam | Vary % | Küm % | Toplam | Vary % | Küm % |
| 1 | 4,668 | 17,289 | 17,289 | 4,668 | 17,289 | 17,289 | 3,035 | 11,241 | 11,241 |
| 2 | 3,629 | 13,439 | 30,729 | 3,629 | 13,439 | 30,729 | 2,945 | 10,907 | 22,148 |
| 3 | 2,760 | 10,223 | 40,952 | 2,760 | 10,223 | 40,952 | 2,868 | 10,623 | 32,771 |
| 4 | 2,138 | 7,918 | 48,870 | 2,138 | 7,918 | 48,870 | 2,679 | 9,922 | 42,693 |
| 5 | 1,704 | 6,311 | 55,181 | 1,704 | 6,311 | 55,181 | 2,531 | 9,372 | 52,065 |
| 6 | 1,421 | 5,265 | 60,445 | 1,421 | 5,265 | 60,445 | 2,263 | 8,380 | 60,445 |

Tablo 2 ‘de yer alan faktör analizi sonuçlarına bakıldığında ölçeğin altı faktörlü bir yapıda olduğu görülmektedir. Faktör öz değerlerinin 4,668 ile 1,421 arasında değişiklik gösterdiği söylenebilir. Ayrıca faktörlerin varyansı açıklama yüzdesine bakıldığında 1. faktörün %17,289 ile en yüksek oran olduğu görülmektedir. Buna karşın 6. faktör ise varyansı %5,265 ile diğer faktörlere göre en düşük oranda açıklamaktadır. Diğer faktörlerin varyansı açıklama yüzdesi ise %17,289 ile %5,265 arasında değişmektedir. Tüm faktörlerin varyansı açıklama yüzdesi %60,445 olarak gerçekleşmiştir. Sonuç olarak Suriye uyruklu kişilerin vergiye ilişkin tutumlarının faktör analizi ile açıklama yüzdesinin %60,445 olduğu ifade edilebilir.

Tablo: 3
Maddelerin Faktör Yükleri

| Faktör Adı | İfadeler | Yük Değerleri |
|----------------------------------|---|---------------|
| VERGİLENDİRMEDE ŞEFFAFLIK BOYUTU | 37.Türkiye’de gelirimden ve harcamamdan ne kadarını vergiye ayırdığımı hesaplayabilirim | ,857 |
| | 38.Türk vergi sistemi teknolojik gelişmelere hızlı uyum sağlamaktadır | ,792 |
| | 39.Türkiye’de vergi eğitimi kendi ülkeme göre daha yaygındır | ,908 |
| VERGİ YÜKÜ BOYUTU | 1.Türkiye’de vergi oranlarının çok yüksek olduğunu düşünüyorum | ,706 |
| | 7.Ödediğim vergilerden rahatsız olurum | ,676 |
| | 10.Vergiler yatırım kararlarımı etkilemektedir | -,685 |
| | 16.Maliye Bakanlığınca bizlerin mükellefiyetine yönelik yeterince bilgilendirmeler yapılmaktadır | -,529 |
| | 18.Türkiye’de yaşayan bizlerin vergi mükellefi olabilmesi için konulan şartlar oldukça ağırdır | ,640 |
| VERGİ BİLİNCİ BOYUTU | 23.Türkiye’de uygulanan vergi yükünden dolayı başka bir ülkeye göç etmeyi düşünüyorum | ,710 |
| | 8.Vergilerin ne amaçla alındığı konusunda yeterince bilgi sahibiyim | ,519 |
| | 11.Türkiye’de vergi cezaları yeterince caydırıcıdır | ,488 |
| | 30.Türk Vergi Sistemine uyum sağlamamız son derece kolaydır | ,555 |
| | 33.Türkiye’de vergi kaçırırsam yakalanmayacağımı düşünüyorum | -,662 |
| VERGİ SİSTEMİ BOYUTU | 34.Türkiye’de yapılan vergi reformları mükellef lehinedir | ,712 |
| | 36.Türkiye’de mükellefler kendi ülkeme göre haklarını daha iyi bilmektedir | ,716 |
| | 6.Türk vergi sistemi adildir | ,770 |
| | 4.Türk vergi sistemi açık ve anlaşılabilir | ,744 |
| | 3.Imkânım olsa hiç vergi ödemem | -,736 |
| VERGİ MEVZUATI BOYUTU | 28.Bir vergi artırıldığında, bunun karşılığı olarak tarafıma sunulan kamu hizmetlerinin artacağını düşünürüm | ,519 |
| | 17.Türkiye’de vergi mükelleflerine yönelik yapılan vergi denetimleri kendi ülkeme kıyasla çok sık ve bunalıcıdır | -,763 |
| | 15.Ülkemdeki vergi mevzuatlarının cezaı yaptırımları Türkiye’deki vergi mevzuatlarının cezaı yaptırımlardan daha caydırıcıdır | -,757 |
| | 24.Türkiye’deki vergi daireleri kendi ülkemize göre daha etkin çalışmaktadır | ,698 |
| | 20.Türk Vergi Mevzuatı konusunda yeterli bilgiye sahibim | ,655 |
| VERGİ AYRICALIĞI BOYUTU | 22.Türkiye’nin Suriyelilere yönelik yaptığı harcamalar ile kendi vatandaşlarına yaptığı harcamalar aynı paralellikte değildir | ,426 |
| | 29.Türkiye’de toplam olarak katlanmak zorunda olduğumuz vergi yükü çok ağırdır | ,773 |
| | 31.Ödediğimiz vergiler ile sağladığımız hizmetler arasında ciddi bir bağ vardır | ,556 |
| | 32.Türk vergi sisteminde bizlere yönelik yeni kanunlar oluşturulması gereklidir | ,752 |

Çalışmanın güvenilirliğine ilişkin ikinci defa gerçekleştirilen Cronbach’s Alpha analiz değerinin .703 olduğu tespit edilmiştir. Bu sonuç ölçeğin güvenilir olduğunu

göstermektedir. Tablo 3’te ölçekte yer alan maddelerin faktör yük değerlerine yer verilmektedir. Tablo 3’te faktörlere verilen isimler maddeler göz önünde bulundurularak oluşturulmuştur. Bu doğrultuda ölçek maddelerinin 6 faktör altında toplandığı görülmektedir. İlk faktör ilgili maddelerin özellikleri doğrultusunda “vergilendirmede şeffaflık” olarak adlandırılmıştır. İkinci faktör ise mükelleflerin ödediğı vergiden dolayı etkilenen davranışlarını genel olarak ifade etmektedir. Bu kapsamda ikinci faktör, “vergi yükü” olarak isimlendirilmiştir. Üçüncü faktörde, maddelerin genellikle mükelleflerin vergiye ilişkin bilinç düzeylerini açıklamaya yönelik olduğı görülmektedir. Bu bakımdan üçüncü faktör de “vergi bilinci” olarak adlandırılmıştır.

Dördüncü faktörde mükelleflerin vergi sistemine ilişkin bakış açılarına yer verilerek istenmiştir. Dolayısıyla ilgili maddeler göz önünde bulundurularak bu boyut “vergi sistemi” şeklinde ifade edilmiştir. Beşinci faktöre bakıldığında Suriye uyruklu mükelleflerin vergilendirmeye dair uygulanmakta olan mevzuata bakış açılarına yer verilmektedir. Beşinci faktör maddelere ilişkin sorulara bakılarak “vergi mevzuatı” olarak isimlendirilmiştir. Son olarak altıncı faktörde Suriyeli mükelleflerin diğer mükelleflere göre herhangi bir ayrıma maruz kalıp kalmamasına ilişkin algıyı ölçmeye ilişkin maddeleri ifade etmektedir. Bu bakımdan altıncı faktör ise “vergi ayrıcalığı” boyutu olarak adlandırılmıştır. Tablo 4’te belirlenen faktörlere ilişkin betimsel analiz sonuçlarına yer verilmektedir.

Tablo: 4
Faktörlere Verilen Cevaplara İlişkin Betimsel Analiz Sonuçları

| | N | Min. | Maks. | Ort. | Std. Sapma | Düze y |
|---------------------------|-----|-------|-------|-------|------------|--------------------------------|
| Vergilendirmede Şeffaflık | 169 | 3,00 | 15,00 | 11,49 | 1,60 | Katılıyorum |
| Vergi Yükü | 169 | 12,00 | 25,00 | 18,55 | 2,05 | Ne Katılıyorum/Ne katılmıyorum |
| Vergi Bilinci | 169 | 10,00 | 26,00 | 16,64 | 2,52 | Ne Katılıyorum/Ne katılmıyorum |
| Vergi Sistemi | 169 | 9,00 | 17,00 | 13,53 | 1,40 | Ne Katılıyorum/Ne katılmıyorum |
| Vergi Mevzuatı | 169 | 9,00 | 16,00 | 12,15 | 1,49 | Ne Katılıyorum/Ne katılmıyorum |
| Vergi Ayrıcalığı | 169 | 7,00 | 19,00 | 9,81 | 2,64 | Katılmıyorum |
| TOPLAM | 169 | 71,00 | 95,00 | 82,18 | 4,83 | Ne Katılıyorum/Ne katılmıyorum |

Faktörlere verilen cevaplara ilişkin betimsel analiz sonuçlarına bakıldığında ölçeğin bütününe verilen cevap düzeyinin ne katılıyorum/ne katılmıyorum şeklinde olduğı görülmektedir. Ayrıca vergilendirmede şeffaflık ve vergi ayrıcalığı haricindeki diğer tüm faktörler için düzeyin ne katılıyorum/ne katılmıyorum şeklinde olduğı söylenebilir. Vergilendirmede şeffaflık boyutunu ifade eden 1. faktör düzeyinin katılıyorum şeklinde olduğı görülmektedir. Vergi ayrıcalığı boyutu olarak belirlenen 6. faktöre ilişkin düzeye bakıldığında katılmıyorum şeklinde cevaplandırıldığı görülmektedir. Bu bakımdan Suriye uyruklu mükellefler, diğer mükelleflerin kendilerine göre herhangi bir ayrıcalığa sahip olmadığını düşünmektedir. Dolayısıyla Türkiye’de gelir vergisi mükellefi olan Suriye uyruklu kişilerin vergilendirmeye dair olumlu bir bakış açısına sahip olduğı söylenebilir.

7. Sonuç

Türkiye’de 2012 yılında çıkartılan Geçici Koruma Yönetmeliğı sonrasında Türkiye’de yaşayan Suriyeli kişi sayısında neredeyse her yıl artış yaşanmaktadır. Suriyeli kişilerin yaşamlarını sürdürebilmeleri için gelir elde etmeleri ve çeşitli iş kollarında yer

almaları da gereklilik olmaktadır. Bu doğrultuda Suriyeli kişiler de Türkiye vatandaşları gibi ekonomik faaliyetler içerisinde yer almaktadır. Ekonomik faaliyetler içerisinde yer alan Suriyeli kişilerin de elde ettikleri gelir dolayısıyla vergi yükümlülüğü oluşmaktadır. Verginin karşılık olmaksızın zorunlu bir şekilde ödenmesi ve vergi ödeyen kişinin gelirin azalma meydana getirmesinden dolayı vergi, mükellef üzerinde bir takım psikolojik etkilere neden olabilmektedir. Bu bakımdan Suriye uyruklu kişilerin Türkiye’de ödedikleri vergiye ilişkin bakış açıları da önem arz etmektedir. Bununla ilgili alan yazın tarandığında Türkiye’de yaşayan Suriyeli kişilerin vergiye ilişkin tutumlarının ele alındığı herhangi bir çalışma bulunmadığı görülmektedir.

Bu çalışmada Suriye uyruklu kişilerin ödedikleri vergiye ilişkin tutumlarının belirlenmesi amaçlanmıştır. Bu amaç doğrultusunda Suriyeli kişilerin yoğun olarak bulunduğu Şanlıurfa ilinde gelir vergisi mükellefiyeti bulunan 169 Suriyeli kişiye ölçek uygulaması gerçekleştirilmiştir. Ölçek sonucunda elde edilen verilerle açıklayıcı faktör analizi gerçekleştirilmiştir. Uygulanan faktör analizi neticesinde 6 faktörlü bir ölçek geliştirilmiştir. Geliştirilen ölçekte faktörler sırasıyla; “vergilendirmede şeffaflık”, “vergi yükü”, “vergi bilinci”, “vergi sistemi”, “vergi mevzuatı” ve “vergi ayrıcalığı” şeklinde isimlendirilmiştir. Faktörlere ilişkin betimsel analiz sonuçlarına bakıldığında ise katılımcılar vergilendirmede şeffaflık boyutuna katılıyorum şeklinde cevap vermişlerdir. Bu durumda bu faktör kapsamında katılımcılar ülkedeki vergi sisteminin şeffaflığı noktasında olumlu bir bakış açısına sahiptir. Vergi ayrıcalığı boyutuna ise katılımcıların katılmıyorum şeklinde cevap verdiği görülmektedir. Bu faktör kapsamında ise katılımcıların Türkiye’deki diğer mükelleflere göre herhangi bir ayrımcılığa maruz kalmadıklarını ve bu bakımdan da Türkiye’de vergilendirmeye dair olumlu bir bakış açısına sahip oldukları söylenebilir. Diğer dört faktöre ise ne katılıyorum/ne katılmıyorum şeklinde cevap verdikleri görülmektedir. Ayrıca ölçeğin bütününe verilen cevapların da ne katılıyorum/ne katılmıyorum düzeyinde olduğu belirlenmiştir. Sonuç olarak Türkiye’de yaşamlarını sürdürmekte olan Suriye uyruklu kişilerin genel olarak vergilendirmeye ilişkin olumlu bir bakış açısına sahip oldukları belirtilebilir.

Çalışma bulgularına dayalı olarak Suriyeli gelir vergisi mükelleflerinin, Türk vergi sistemine uyum sağladıkları ve olumlu bir algıya sahip oldukları söylenebilir. Çalışma sürecinde geliştirilen ölçeğin bütününe ve bazı boyutlarına orta düzeyde katılım gösterilmesinden hareketle vergi sistemi ve mevzuatına dair birtakım düzenlemeler yapılması önerilebilir. Özellikle vergi sistemi ve vergilendirme sürecine dair bilgilendirmelerin daha etkili şekilde yapılması gerekmektedir. Vergilendirme sürecine dair bilgilendirme ile birlikte kişilerin vergiye uyum düzeylerinin artacağı ifade edilebilir.

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Tüketicilerin Açık Artırma Siteleri Hakkındaki Tutumlarını Belirlemeye Yönelik Bir Uygulama

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An Application on Determining the Consumers' Attitudes Towards Auction Sites

Abstract

The context was discussed due to the deficiencies in the literature and current issue on this subject. The study aims to determine consumers' shopping habits with online auction services, specify the problems experienced in service quality, and create an innovative and time-saving service suitable for consumers by choosing their wishes and needs. This study is significant as it aims to comprehensively approach consumer-to-consumer auction systems and determine consumers' attitudes towards e-auction sites. Data were collected using the survey method, and the factor and Anova analysis were applied to the collected data. Consumers' opinions about auction sites were evaluated within the framework of factors such as "trust", "purchasing process", "competition", and "budget". According to aspect and Anova tests of consumers on consumer behaviour; it is revealed that "Trust" with $P: 0.047 < 0.05$ shows a significant difference depending on income, and "purchasing process" with $P: 0.013 < 0.05$ has a considerable difference depending on age, "competition" with $P: 0.032 < 0.05$ has a significant difference depending on gender, "budget" with $P: 0.046 < 0.05$ has a considerable difference depending on income and education ($F: 3.422 - P: 0.031 < 0.05$).

Keywords : Auction, e-Commerce, Consumer Behaviour.

JEL Classification Codes : B21, C83, D12.

Öz

Literatürde bu konuda yapılan çalışmaların eksikliği nedeniyle konu ele alınmıştır. Çalışma; tüketicilerin alışveriş alışkanlıkları ile çevrimiçi açık artırma hizmetlerinin kullanımı, hizmet kalitesinde yaşanan sorunların belirlenmesi, tüketicinin istek ve ihtiyaçlarının belirlenerek tüketicilere uygun zaman tasarrufu sağlayan ve yenilikçi hizmetin oluşturulması amacıyla hazırlanmıştır. Tüketiciden tüketiciye açık artırma sistemlerine kapsamlı yaklaşmayı, tüketicilerin e-açık artırma siteleri hakkındaki tutumlarını belirlemeyi amaçladığı için önem arz etmektedir. Anket yöntemi kullanılarak veri toplanmış ve toplanan veriler üzerinde faktör ve Anova analizi uygulaması yapılmıştır. Tüketicilerin açık artırma siteleri hakkındaki düşünceleri "güven", "satın alma süreci", "rekabet", "bütçe" faktörleri çerçevesinde değerlendirilmiştir. Tüketicilerin faktör ve Anova testleri ile tüketici davranışları üzerinde "güven" $P: 0,047 < 0,05$ gelire bağlı olarak anlamlı şekilde farklılık gösterdiği, "satın alma süreci" $P: 0,013 < 0,05$ yaşa bağlı olarak anlamlı farklılık olduğu, "rekabet", $P: 0,032 < 0,05$ cinsiyete bağlı olarak anlamlı, "bütçe" $P: 0,046 < 0,05$ gelire ve eğitime ($F: 3,422 - P: 0,031 < 0,05$) bağlı olarak anlamlı bir şekilde farklılık gösterdiği tespit edilmiştir.

Anahtar Sözcükler : Açık Artırma, e-Ticaret, Tüketici Davranışları.

1. Giriş

Teknolojik gelişmeler tüketim alışkanlıklarını ve dolayısıyla alışveriş şeklinin değişmesini sağlamıştır. Değişen alışveriş alışkanlıkları üzerinde internet önemli bir role sahiptir. Bu nedenle e-ticaret son yıllarda ivme kazanmıştır. Bu sayede; yer ve zaman farkı gözetilmeksizin, bir ürün hakkında araştırma yapılabilir. E-ticaret siteleri günlük yaşantıda tüketicilere avantaj sağlamakta, hemen her alanda kapsamlı olarak kullanılmaktadır. E-ticaret sitelerinin temeli ise oyun teorileri, yapay zekâ teknolojiler ile açık artırma teorilerine dayanmaktadır. Bunlar; elektronik ticarete rekabet avantajı sağlamaktadır.

Açık artırma kavramı ve teorisi; alıcı(ların), satıcılara fiziksel veya elektronik ortam aracılığı ile fiyat tekliflerini bildirerek eşya vb. araçların en uygun fiyatı satılmasını ifade etmektedir (Koç, 2007: 60).

Açık artırma teorisinin kökenleri milattan önceki dönemlere dayanmakta, Babil, Eski Yunan, Roma ve Osmanlı İmparatorluğu tarafından köle ticareti dahil birçok alanda kullanıldığına tarihi kaynaklarda yer verilmektedir. Kültürel ve ekonomik gelişim beraberinde etik değişimi ve açık artırma konusunun tekrar yaygınlaşmasını getirmiştir. Açık artırma, günümüzde, emlak, araba, antik eşya, canlı hayvan, devlet iç borçlanma araçları, borsada hisse alım ve satımları gibi alanlarda yaygın olarak kullanılmaktadır.

Açık artırma kavramı ve teorisi, çok yönlü ekonomik öneme sahip olmasına rağmen Türkiye’de akademik ve pratik ilgiden uzak kalmıştır. Çin, Güney Kore, Amerika Birleşik Devletleri (ABD) açısından kavramın araştırma alanları ve elektronik ticaret çevrimiçi satış yapan eBay, Alibaba, Cio. De vb. firmaların rekabetinde önemli bir yere sahiptir. Davranış ve tüketici algısı, bu mekanizma açısından önem arz etmektedir.

Çalışmada; araştırmacıların ilginin çekilmesi ve mevcut koşullarda sunulan çevrimiçi açık artırma hizmetlerinin kalitesi ile ilgili araştırma yapmak hedeflenmektedir. Çalışma kapsamında geriye doğru açık artırma sisteminin sıklıkla kullanıldığı tüketiciden tüketiciye (C2C) sistemi değerlendirilmektedir. Çalışma; gelecekte açık artırma sitelerinden alışveriş yapacak tüketici sayısı ile alışveriş sıklığının artabileceği ve bu sayede geliştirilebilir olması açısından önem arz etmektedir.

2. Elektronik Açık Artırma Sistemi Kavramı

Açık artırma, İngilizce’de “auction”, Latince’de “augere” olarak kullanılan bir terim olmakla birlikte, daha sonra “fiyatların eksiltildiği ticaret” şeklinde isimlendirilmiştir (Oran-Sözer, 2008: 125). En yaygın kullanım şekli müzayede olmakla birlikte açık artırma, mezar, ihale terimleri de kullanılmaktadır. Kamu kurumlarının malzeme alımlarında açık eksiltme mekanizması için “mubayaa” denilmektedir. Devlet veya herhangi bir özel kuruluş

tarafından açılan büyük bütçeli işler İngilizce’de “tender”, Türkçe’de “ihale” sözcüğü ile ifade edilmektedir. Bu nedenle, birbirinin yerine kullanılan terimler, kullanıldıkları anlam itibarıyla kavram karmaşasına neden olmaktadır (Güler, 2005: 55).

İlk olarak köle ticareti ile ekonomide yerini almıştır. Artan ticari faaliyetler ve coğrafi keşiflerin etkisi ile antik eşyalar, şarap, maden ocakları, karbon emisyonları, canlı hayvan, çiçek, araba, emlak, devlet iç borçlanma senetleri, yayın frekansları, borsada hisse alım ve satımları vb. farklı alanlarda kullanılması yaygınlaşmıştır. Eski çağlar, milattan önce ve sonraki dönemleri kapsayan bu ticaret şeklinin yaygınlaşması Babil, Eski Yunan, Roma, Çin ve Osmanlı İmparatorluğu ile sağlanmıştır (Özbilen, 2000: 272).

Etik olmayan ticarete kullanılması nedeniyle dünyada bir dönem popülerliğini kaybetmiş olsa da son 50 yıllık süreçte rekabet koşullarının değişmesi, açık artırmının yeniden gündeme gelmesini sağlamıştır. Bu sayede, açık artırmaya konu olan mallar ve hizmetler her geçen gün artış göstermektedir (Şenocak, 2001: 95).

Açık artırma kısaca; kıt kaynakların elde edilmesinde rekabete dayalı bir fiyatlamadır. Satıcıların tüm piyasalarda en yüksek fiyata satış yapmak istemesi ve alıcıların da aynı şekilde tüm piyasalarda en düşük fiyata satın almak istemesi, piyasa fiyatının oluşumunu sağlamaktadır (Koç, 2007: 60). Piyasada satışa söz konusu olan malın sabit ya da saptanabilen bir fiyatının olmaması durumunda açık artırma avantajlıdır.

Açık artırma işlemleri çevrimiçi ve yüz yüze olarak; satıcının hakimiyet kurduğu tipte fiyatın yükselmesine ve alıcının hakimiyet kurduğu tipte fiyatın düşmesine dayanmaktadır. Bunun temelini; ileri yönlü ve geriye doğru açık artırma oluşturmaktadır. İleri yönlü açık artırmada, birden fazla alıcı ve satıcı bulunmakta, talep yoğun mikro pazar nedeniyle fiyat eğrisi pozitif seyretmektedir (Şenocak, 2001: 95; Özbilen, 2000: 272). Geriye doğru açık artırmada ise bir alıcı ve birden fazla satıcı bulunmakta, arz yoğun pazar söz konusu olduğu için fiyatlar düşüş eğilimindedir. Bu açık artırma, genel olarak, kamu kuruluşları, kâr amacı gütmeyen kuruluşlar ve özel sektör kuruluşları tarafından kullanılmaktadır.

İngiliz Yöntemi, fiyatın giderek düştüğü ve en düşük teklifin kazandığı açık artırma türüdür (Tsai & Chou, 2011: 88). Hollanda Yöntemi’nde çok yüksek fiyattan açılan müzayede içinde fiyat giderek düşmekte, belirli bir anda müzayedeyi durduran kişi o anki fiyatla kazanmaktadır. Azalan müzayede olarak bilinmektedir. Küba’da et, İsrail’de balık ve Hollanda’da çiçek ticareti azalan müzayede açısından örnek oluşturmaktadır. Tekli veya çok birimli ihale, tekli veya çok kriterli ihale, açık eksiltme, kapalı teklif usulü ihale, tek veya çok turlu açık artırma/eksiltme ihalesi diğer açık artırma türlerini oluşturmaktadır (Tsai & Chou, 2011: 88). Satın alma açık artırımlarında; kapalı teklif yöntemi ile açık eksiltme yaygın olarak kullanılmaktadır. Kapalı teklifte katılımcılar diğerlerinin teklifini göremezken, açık eksiltmede verilen tüm fiyat teklifleri görülebilmektedir (Luton & McAfee, 1986: 189).

Açık artırma türleri tarafları açısından çeşitlilik arz etmektedir (Boyacıgil, 2008: 41):

G2G - Devletten Devlete; kamu alım satımları örnek gösterilebilmektedir.

G2B - Devletten İşletmeye; kamu ile özel sektörün yapmış olduğu ticari faaliyetlerdir. Devletin turizm alanları için yapmış olduğu ihale duyuruları örnek gösterilebilmektedir.

G2C - Devletten Tüketicie; kamunun, tüketiciye bono ve tahvil satışı örnek gösterilebilmektedir.

B2B - İşletmeden İşletmeye; özellikle Carrefoursa tarafından yapılan alım ihaleleri örnek gösterilebilmektedir.

B2C - İşletmeden Tüketicie; uçak biletlerinin erken rezervasyonu örnek olarak gösterilebilmektedir.

C2C - Tüketiciden Tüketicie; eBay, Alibaba, Cio. De gibi tüketicilerin kendi aralarında yaptığı ticarete aracılık eden platformlar örnek olarak gösterilebilmektedir.

Artan rekabet şartları, üretici ve tüketici arasındaki sirkülasyon internet kullanımı nedeniyle daha kolay ve hızlı sistemlerin oluşmasını sağlamaktadır. C2C sistemi; alıcı ve satıcılar tarafından istenen fiyatın e-açık artırma siteleri nedeniyle bireyselleştğini göstermektedir. Bu sistemde; eBay gibi siteler aracılığı ile hizmet sunulmaktadır. Bu sistemle, yer farkı olmaksızın geleneksel ortamda mümkün olamayacak sayıda şirket ve tüketici bir araya getirilmektedir.

3. Literatür Taraması

Açık artırma konusunda; yazılmış eserler, gündem oluşturmaya yönelik çalışmalar, tartışma metinleri ve akademik metinler bulunmaktadır. Vickrey (1961) tarafından hazırlanan çalışma, tüm bu çalışmaların başlangıcı kabul edilmektedir. Bu bölümde, genel literatüre yer verilmeyecek olup, çalışma özelinde e-ticaret açık artırma literatürüne yer verilecektir.

Tablo: 1
E-Ticaret Açık Artırma Literatüründe Yer Alan Çalışmalar

| Yıl | Yazar(lar) | Yöntem | Değerlendirme |
|------|-------------------|--------|--|
| 1961 | Vickrey | Nitel | Açık artırma teorisi oyun teorisi arasındaki ilişki ortaya konmuştur. |
| 1981 | Isaac & Plott | B2B | Piyasalar üzerinde fiyat kontrolleri işletmeden işletmeye yapılan açık artırma ticaretinde etkili olduğu ortaya konmuştur. |
| 1981 | Myerson | Nitel | Açık artırma teorisi optimal etkileri olumlu ve olumsuz etkileri değerlendirilmiştir. |
| 1982 | Milgrom & Weber | Nitel | Simetrik açık artırma değerlerinde bağımlı değişkenler özel değer taşıırken bağımsız değişkenler ortak değer taşıdığı tespit edilmiştir. |
| 1984 | Maskin & Riley | B2B | Açık artırmada riskten kaçınan işletmelerin piyasada standart ve optimal teklifler sunduğu bu sayede oligopol piyasa dengesi kurulacağı savunulmaktadır. |
| 1986 | Schwartz | Nitel | Açık artırma modelleri ilk kullanım alanları tespit edilmiş ve teorik kalıpları değerlendirilmiştir. Köle sistemi dahil birçok alanda kullanıldığı tespit edilmiştir. |
| 1987 | Graham & Marshall | G2B | İhalelerde kullanılan teklif sırası ve zaman kısıtı arasındaki ilişki incelenmiştir. Elde edilen sonuçlar, zaman ve rekabet koşulları teklif sırasında kayıplara yol açtığı tespit edilmiştir. |
| 1987 | Cramton et al. | G2B | İhalelerde teklif verenler arasında kapalı zarf sisteminin hukuksal açıdan korunması ve liste sıralaması kavramları üzerinde değerlendirmede bulunmuştur. |
| 1989 | Ashenfelter | Nitel | İhaleler üzerinde değerlendirmede bulunmuştur. Hükümet ve işletmeler arasında İngiliz modeli kullanıldığı ve modelin etkilerinin rekabet teorisine katkı sağladığı savunulmuştur. |

| | | | |
|------|--------------------------|-------|--|
| 1989 | Hendricks & Porter | G2B | İhaleler listesi açıklanırken özel anlaşmaların teklif verenler arasında etkileri incelenmiştir. Özel anlaşmaların en düşük fiyat veren için pozitif etkisi tespit edilmiştir. |
| 1989 | Satterthwaite & Williams | B2C | Müzayede teorilerinde alıcıların çiftte müzayede teklifinde pazar büyüdüğüce yakınsama oranının arttığı tespit edilmiştir. |
| 1990 | Macey | B2B | Mülkiyet hakları ve şirket varlıkları müzayede teorileri açısından değerlendirilmiştir. Elde edilen bulgular da değerin üstünde satışlar olduğu kadar değerinin altında yapılan satışların olumsuz etkileri savunulmuştur. |
| 1992 | Wilson | Nitel | Açık artırma teorilerinin stratejik önemi ve müzayedelerin İngiliz ve Hollanda tipi arasındaki farklılıkları üzerinde değerlendirmede bulunulmuştur. İngiliz tipi müzayedelerin kapalı zarf olmaması dezavantaj olarak görülmektedir. |
| 1993 | Back & Zender | Nitel | Hazine ve tarihi eserlerin açık artırmalar aracılığı ile ticaretinin ekonomiye etkisi üzerinde değerlendirilmiştir. Elde edilen bulgulara müze ve karaborsa ayrımı yapılarak tarihi eserlerin gerçek değerlerini tespit edilmediği ortaya konulmaya çalışılmıştır. |
| 1993 | Che | Nitel | Elde edilen bulgulara Amerikan Savunma Bakanlığının açmış olduğu silah alım ihalelerinde fiyatın tek başına karar kriteri olamayacağını, tasarım ve ilgili diğer faktörlerin de beraberinde değerlendirildiğini belirten optimal skor kuralını tasarlanmıştır. |
| 1995 | Matthews | Nitel | Müzayede teorileri teknik olarak değerlendirilmiş. ABD’de özellikle uygulanan müze yapılandırılmaları Avrupa ile karşılaştırılmıştır. |
| 1997 | Laffont | Nitel | Nash Yasası ve oyun teorileri açısından açık artırma teorileri üzerinde değerlendirmede bulunmuşlardır. Müzayede verileri değerlendirildiğinde Fransa ve İtalya’da uygulama örnekleri değerlendirilmiştir. |
| 1997 | Bakos | B2C | Elektronik pazar araştırmalarında fiyat tekliflerinin açık artırma yöntemi ile alıcı arama maliyetlerinin azaltılması arasındaki davranış hareketliliğini analiz etmişlerdir. Değerlendirme sonuçlarında alıcı maliyetlerinin azaltılması için firmaların limon piyasalardan arındırılması gerektiği vurgulanmıştır. |
| 1998 | Rutström | Nitel | Müzayede teknoloji ve teşvik mekanizması üzerinde uygulamalar değerlendirilmiştir. Özellikle teşvik uygulamalı müzayede tasarımı üzerinde durulmuştur. |
| 1998 | Klemperer | Nitel | Müzayedelerin piyasalar üzerinde nasıl bir etkiye sahip özellikle oligopol piyasalarda ne gibi etkiler doğurduğu üzerinde durulmuştur. Piyasaların ortak değerli müzayedelerde etkili olduğu vurgulanmıştır. |
| 1999 | Ethier et al. | B2C | Elektrik piyasaları için ihale yapılandırılmaları incelenmiştir. Piyasaların yerel fiyat artırımları içeren tek tip fiyat uygulamaları üzerinde değerlendirilmiştir. |
| 1999 | McCabe et al. | G2G | Kamu kurumları ve hükümet yaptırım ihaleleri üzerinde değerlendirilmiştir. İhale tasarımları kurumlar için kapalı zarf usulü tercih edildiği üzerinde değerlendirilmiştir. |
| 1999 | Lucking | C2C | Açık artırma biçimleri arasındaki dengeli test etmek için saha deneylerini internet oyun satışlarının e-ticaret teklif artırmanın pozitif etkisi vurgulanmıştır. |
| 2000 | Lucking | Nitel | Vickrey müzayedeleri 21. yüzyılda e-ticarete ve çevrimiçi açık artırmalarda yeri değerlendirilmiş ve elde edilen sonuçlar Çin ve ABD piyasalarında değerlendirilmiştir. |
| 2000 | Weiser | C2C | Çevrim içi açık artırma alışverişlerinde internet kullanımı ve cinsiyet farklılıkları iki örnek karşılaştırması şeklinde değerlendirilmiştir. Cinsiyet farklılığı erkek kullanıcılar için oyun, elektronik mal sepetini işaret ederken, bayanlar için giyim ve kozmetik alanında gerçekleştiği vurgulanmaktadır. |
| 2000 | Herschlag & Zwick | Nitel | İnternet müzayedeleri üzerine literatür taraması incelenmiştir. Avrupa ve ABD’de yapılan çalışmalar değerlendirilmiştir. Elde edilen bulgular neticesinde internet kullanımı ABD’de daha yoğun olduğu tespit edilmiştir. |
| 2000 | Kersten et al. | Nitel | E-ticaret müzakereleri açık artırmaları kullanmak zorunda mı yoksa tercih usulü seçim mi ilişkisi incelenmiştir. Rekabetin etkili olduğu ve vazgeçilmez unsur olduğu vurgulanmıştır. |
| 2001 | Shogren et al. | Nitel | Açık artırma mekanizmalarının WTP ve WTA ölçümü üzerine araştırma bulunmuştur. Elde edilen bulguların istatistik ve ekonometri alanlarında modellemeye zemin hazırladığı düşünülmektedir. |
| 2001 | Branco | Nitel | Çok turlu açık artırmalar üzerinde teklif üstünlüğü açısından değerlendirmiştir. Teklif usulü çok turlu modelde pozitif etkiye yol açmaktadır. |
| 2001 | Kandel et al. | G2C | Yatırımcıların İsrail halkına arz için açık artırma mekanizması uygulamalarını hisse senetleri üzerinden değerlendirilmiştir. Hisse senetlerinin değerinin üzerinde alıcı bulunduğu tespit edilmiştir. |
| 2001 | Strader & Hendrickson | C2C | Elektronik ticarete çevrim içi açık artırmalarda pazarlama ve tüketici davranışları üzerinde incelemede bulunmuşlardır. İstatistiksel analizlerin özellikle yer verildiği çalışmada tüketiciler için rekabet ve haz kavramları değerlendirilmiştir. |
| 2001 | Daripa & Kapur | B2C | Online açık artırmalarda internet fiyatı belirleme ve alıcı satıcı davranışları incelenmiştir. Oxford üniversite öğrencileri üzerinde yapılan çalışmada öneriler sunulmaktadır. Öğrencilerin zaman unsurunda sorunları değerlendirilmiştir. |
| 2002 | Torkzadeh & Dhillon | B2C | eBay üzerine araştırmada bulunmuşlardır. Açık artırmada öncü şirketin e-ticaret ve müşteri ilişkileri incelenmiştir. Müşterilerin e-ticaret ve tüketim alışkanlıklarını değiştirdiği vurgulanmaktadır. |
| 2002 | Parasuraman & Zinkhan | B2C | İnternet üzerinden pazarlama ve müşteri memnuniyeti açısından açık artırma teorileri incelenmiş olup sistem seyahat ve turizm açısından bilet ve indirim kampanyalarının uygulama programları açısından olumlu sonuçlar verdiği değerlendirilmiştir. |
| 2003 | Gregg & Walczak | Nitel | E-ticaret açık artırma araçları ve çevrimiçi açık artırma dinamikleri üzerinde değerlendirmelerde bulunmuştur. İndirim kampanyalarının reklam için önemli olduğu vurgulanmıştır. |
| 2003 | Joines et al. | Nitel | Tüketiciler için internet üzerinden alışveriş çevrimiçi açık artırma, e-ticaret, abonelik, konaklama hizmeti, ulaşım hizmetleri, ucuz kitap ve amazon gibi alışveriş devlerinin bilgisayar uygulamaları ile bir arada hizmet sunmasını araştırmıştır. Tüketici alışkanlıkları farklılaştırılmış ürünleri de etkilediği vurgulanmıştır. |
| 2004 | Etzion et al. | C2C | Çevrimiçi açık artırmalar için bir uygulama ve vaka çalışması ile e-ticaret alanlarında müşteri yaşam boyu değerlendirilmesi için bir modelleme yaklaşımı hazırlanmıştır. |
| 2004 | Möllenberg | C2C | Pazarlamada internet müzayedeleri ve tüketici perspektifi incelenmiştir. |
| 2004 | Nath & Zheng | C2C | E-ticaret hizmet kalitesi algısını ölçmek için internet açık artırma sitelerinin analiz çalışması yapılmıştır. |
| 2004 | Cason & Gangadharan | Nitel | Gönüllü aile koruma programları ile açık artırma tasarımı oluşturmuşlardır. Aile koruma programlarına katılmak kamu kurumları aracılığı ile gerçekleştirilirken, katılımcılar sınırlı sayıda seçilmektedir. |

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| 2005 | Maldoom | Nitel | Birleşik Krallık'ın üçüncü nesil müzayede davranışları ve teklif davranışları üzerinde araştırma yapmışlardır. Tarihi eserlerin soy aktarımı değerlendirilmiştir. |
| 2005 | Weinberg & Davis | Nicel | Çevrim içi açık artırma geri bildirimleri ve WOW üzerine araştırmada bulunmuşlardır. Açık artırmada memnunkul dereceleri müşteriler açısından değerlendirilmektedir. Müşterilerin haksız fiyat mekanizmasını destekledikleri tespit edilmiştir. |
| 2005 | Xia et al. | Nitel | Avrupa'da çift müzayede problemi üzerinde değerlendirmede bulunmuşlardır. Asya pazarlarında kullanılan çift müzayede sistemi Avrupa'da benzer problemleri tetiklediği vurgulanmıştır. |
| 2005 | Park & Bradlow | Nicel | İnternet açık artırmalarında teklif verme davranışı için kim ne zaman ne kadar artıracığını davranışlar açısından incelemiştir. Cinsiyetin ön planda olduğu vurgulanmıştır. |
| 2006 | Lin et al. | B2C | Tüketiciler çevrimiçi açık artırma pazarlarında itibar ve karar verme mekanizmaları değerlendirilmiştir. İtibarın ön planda olduğu karar verirken gelir durumunun önüne geçtiği vurgulanmıştır. |
| 2006 | Zhang | B2C | eBay çevrimiçi açık artırmalarda elde edilen deneyimler ve tüketicilerin cinsiyet açısından tercihleri değerlendirilmiştir. Bayanların daha rekabetçi olduğu fakat erkek tüketicilerin bayanlara göre daha çok haz duyduğu tespit edilmiştir. |
| 2006 | Keller | B2B | Siğır eti üreticilerinin web sitesi güvenilirliği ve e- ticaret çevrimiçi açık artırmalarına yönelik algıları ve davranışları incelenmiştir. Üreticiler özellikle açık artırma usulü satışların web sitelerde eski usule göre daha hızlı olduğunu tespit etmişlerdir. |
| 2006 | Kauffman & Wood | Nicel | İnternette kullanılan açık artırma faktörlerinin incelenmesi elektronik eşyalarda nasıl bir satış ivmesi kazandırdığı incelenmiştir. eBay ve Amazon üzerindeki satışlar karşılaştırılmıştır. eBay satışları elektronik eşyalarda daha çok tercih edildiği vurgulanmıştır. |
| 2007 | Denton & Rev | Nitel | Müzayede teorileri ve git alışverişi yap mekanizmasını harmanlanmış teorelin en temelinde açık artırma modellerinin alışveriş alışkanlıklarını değiştirdiği üzerinde durulmuştur. |
| 2007 | Dasgupta & Hansen | G2B | Kurumsal alanda finansmanların açık artırma usulü teklifler ile değerlendirildiği ve ödemelerin hangi kurum için daha karlı olacağı üzerinde değerlendirilmediği bulunmuşlardır. |
| 2007 | Flanagan & Metzger | B2B | İletişim pazarlarında çevrimiçi açık artırmalarda aracı bilgi alışverişi yoluyla belirsizliğin ve asimetrik enformasyon probleminin çözülmesi üzerinde öneriler sunulmuştur. |
| 2007 | Grimm | Nicel | Yapısal ekonometri ile açık artırma verileri değerlendirilmiştir. Ülkede GSYİH ve TÜFE arasındaki ilişki panel veri analizler ile açıklanmıştır. Elde edilen bulgular neticesinde açık artırma gelirleri GSYİH'de ve mal sepeti seçiminde farklılık arz etmediği elde edilmiştir. |
| 2007 | Daniels & Vijayakumar | G2G | Elektronik ihalelerin ve ihale türlerinin belediye tahvil piyasasına etkilerini incelemişlerdir. Küba ve Güney Amerika uygulamaları tartışılmıştır. İhalelerin özellikle hükümet politikaları ile değiştiği vurgulanmıştır. |
| 2007 | Chu & Liao | C2C | Çevrimiçi açık artırmalarda tüketici yeniden satış davranışını, kararlarını ve psikolojik etkileri açısından değerlendirmiştir. Tüketim alışkanlıklarının özellikle aile ve kültürel boyutu üzerinde durulmuştur. |
| 2007 | Andrews & Benzing | C2C | Limon piyasalar ve otomobillerde internet ihaleleri, fiyat mekanizması işleyiş düzeyi değerlendirilmiştir. Elde edilen bulgulara ters seçim oranlarının yüksek etki yarattığı vurgulanmıştır. |
| 2008 | Yen & Lu | C2C | Çevrimiçi açık artırmaların e- hizmet kalitesinde sadakat niyeti üzerinde etkileri ve pazar farkındalığı test edilmeye çalışılmıştır. Sadakat faktörü özellikle tüketici pazarlarında daha üst düzeyde olması gerektiği vurgulanmıştır. |
| 2008 | Lee et al. | C2C | Çevrimiçi açık artırmalarda tüketicilerin seçmenlere ayırma ve davranışlarını sınıflandırma çalışması yapılmıştır. Tüketiciler potansiyel kazanma heyecanı, rakiplerini yenme teşviki güdüsü davranışlarını artırdığı tespit edilmiştir. |
| 2008 | Cui et al. | C2C | Çevrimiçi açık artırmalarda tüketici davranışı üzerinde eleştirel bir literatür çalışması yapılmıştır. Araştırma sonuçlarında online alışverişin güvenilir olmadığı ve ürünlerin ne zaman son teklif fiyatına ulaşacağı belirsizlik konusu olduğu üzerinde durulmuştur. |
| 2009 | Wang & Barnes | Nicel | Mobil açık artırma piyasası Çin'de incelenmiş ve çevrimiçi müzayedeler tüketici teklif verme mekanizması değerlendirilmiştir. |
| 2009 | Bajari & Yeo | Nitel | Gizli anlaşmalar ve spektrum müzayedelerde açık artırma tasarımı araştırılmıştır. Müzayedelerin özellikle lüks malı tüketim alışkanlıklarını tetiklediği Avrupa'da gayri menkul ve mücevher satışlarının bu usulle değerlendirildiği vurgulanmıştır. |
| 2009 | Li et al. | Nicel | Kalite ve sinyaller açısından internet açık artırmalarının özellikleri alıntı indirimi ve pazarlama kalite artırımı üzerinde durulmuştur. |
| 2010 | Kauffman et al. | Nicel | Çevrimiçi açık artırmalarda grup satın alma ve adalet sağlama açısından teşvik mekanizması incelenmiştir. |
| 2010 | Chang | Nicel | Çevrimiçi açık artırmaların kullanıcı tarafından kabulü ve teknoloji açısından görev mekanizması incelenmiştir. |
| 2010 | Ginsburgh et al. | Nicel | Müzayede pazarlarındaki komisyonların görülme sıklığı hakkında değerlendirilmediği bulunmuşlardır. Komisyonların aracı satıcılar için verilen fiyat ve alıcı arasında değiştiği vurgulanmıştır. |
| 2011 | Guilloteau & Toribio | Nicel | Balık müzayede pazarları araştırılmıştır. Deniz ve okyanus balıkçılığı karşılaştırılmış özellikle Çin ve Asya ülkelerinin yapmış olduğu uygulamalar dünya pazarlarında uygulandığı vurgulanmıştır. |
| 2011 | Abdul et al. | C2C | Tüketiciler açısından çevrim içi açık artırma siteleri analiz edilmiştir. Tekli dinamikleri sınıflandırılmış ve bazı tüketicilerin ürün farklılaştırmasına verdiği tepkiler ölçülmüştür. Elde edilen bulgular da ürün farklılaştırmaları marka algısını tetiklediği tespit edilmiştir. |
| 2012 | Liu et al. | G2G | Elektrik ihale piyasaları teklif verme mekanizması üzerinde analiz çalışması yapmışlardır. Elektrik ihaleleri fabrika ve mesken ve tahliye için ayrı fiyat mekanizması uygulandığı tonaj fiyatlarının ihaleler için değişebileceği değerlendirilmiştir. |
| 2012 | Coatney et al. | Nicel | Açık artırma fiyatları, pazar ve ortak amaçlı aracı kurumlar belirleme politikaları araştırılmıştır. Elde edilen bulgulara fiyatlar oligopol piyasalarda düopol piyasalar için özellikle etkili olduğu tekstil firmalarında etkisi vurgulanmıştır. |
| 2012 | Shachat & Wei | Nicel | İngiliz usulü ihale ve kapalı teklif usulü ihaleyi karşılaştırmıştır. İngiliz usulü açık ihaleler olduğu için tekliflerin bilimesi ve artırma yoluna gidilmesi değerinin üzerinde fiyatlandırma mekanizması için önem arz ettiği vurgulanmıştır. |
| 2013 | Saprikis | Nicel | E- ters açık artırmaların benimsenmesi ve işletmeler açısından tedarikçi davranışları ele alınmıştır. Temel teorik boyutta dokunmayı amaçlayan çok maddeli ölçek geliştirilmiştir. |

| | | | |
|------|-----------------------|-------|---|
| 2013 | Ren et al. | Nitel | Çevrimiçi açık artırmalarda hakemlerin neye göre belirlendiği sınıflandırılmıştır. Sınıflandırma da ürün ve bilgi birikimi olduğu kadar uzmanlık alanları ile seçildiği vurgulanmıştır. |
| 2015 | Bei & Chen | Nicel | Hedonik ve faydacı teklif değerlerinin e- açık artırma davranışı üzerindeki etkileri ürünler için farklı alıcı grupları olduğu kadar farklı satıcı gruplarının sınıflandırması yapılmıştır. |
| 2015 | Lim | C2C | Elektronik açık artırmalarda internet reklamcılığının ve elektronik ağızdan ağıza iletişimin tüketici algıları ve niyeti üzerindeki etkisi incelenmiştir. |
| 2015 | Xu et al. | B2B | E-ticaret lojistiği için verimli inter model taşımacılık ihaleleri incelenmiştir. İhalelerin özellikle kapalı usulü tercih ettiği bu sistemde lojistik firmaları standart sistemin inter modelde geçerli olduğunu tespit etmişlerdir. |
| 2016 | Chen et al. | C2C | Çevrimiçi açık artırmalarda tüketicilerin satın alma ve yeniden satın alma niyetleri ekonomi teorileri ve eBay açısından değerlendirilmiştir. Elde edilen bulgulara eBay’da hatırlatı butonunun kullanılması ile alışveriş alışkanlıklarının pekiştiği vurgulanmıştır. |
| 2016 | Hou & Elliott | Nicel | Çevrimiçi açık artırmalarda cinsiyet farklılıkları ve davranışların ne yönde değiştiği değerlendirilmiştir. Tüketiciler özellikle cinsiyete göre mal sepeti belirlediği ve bu ihtiyaçları değiştirdiği vurgulanmıştır. |
| 2016 | Cypryański & Grzesiuk | Nicel | Çevrimiçi müzayedelerde sürü davranışı incelenmiş çevrimiçi müzayedelerde cinsiyetin rolü, ürün fiyatının etkisi, araçların rolü faktörleri etkileme dereceleri belirlenmiştir. En etkili faktörün cinsiyet olduğu ve alışveriş alışkanlıklarında bayların bayanlara göre haz mekanizmasına önem verdiği tespit edilmiştir. |
| 2017 | McLaughlin et al. | C2C | Tüketici için tüketiciye çevrimiçi açık artırma teklifleri ve satın alırken açık artırma davranışları incelenmiştir. Elde edilen bulgulara tüketiciler tarihi ve ikinci el eşyaları ayırt ettiği değerinin altında elektronik eşyaları tercih ederken tarihi eşyalarda üstünde değeri önemsemektedir. |
| 2018 | Chen & Yao | Nicel | Mobil açık artırmalarda anlık satın alma davranışını ne yönlendirir ve yerel mobil açık artırma terimleri üzerinde değerlendirmede bulunulmuştur. |
| 2018 | Xu et al. | B2C | Fiyat indirim müzayedelerinde tüketicilerin öğrenme etkisi Gongtianxia çalışması ile ele alınmıştır. Elde edilen bulgulara fiyat indirimi tüketicilerde takip mekanizması tetiklenmiş ve indirim zamanlamasını doğru buldukları tespit edilmiştir. |
| 2018 | Baranowski et al. | Nitel | Çevrimiçi açık artırmalarda kimin geri bildirimi önemli, itibar türleri nelerdir belirlenmeye çalışılmıştır. Belirlenen sınıflandırma yaş ve gelir mekanizması, soy ağacını tetiklediği vurgulanmıştır. |
| 2018 | Hossain et al. | C2C | Sinyal mekanizmaları ve limon piyasaları üzerinde çevrimiçi grupların satın alma davranışları Çin üzerinde araştırılarak limonlar nasıl azaltılır, sinyal teorisine doğrulanarak piyasa işleyişi sınıflandırılmıştır. |
| 2018 | Chiou & Pate | Nicel | Çevrimiçi gizli müzayedeler güven, itibar ve gizli teklif verme açısından davranışlar incelenmiş ve ihale sonuçları eBay açısından değerlendirilmiştir. |
| 2018 | Zhang et al. | Nitel | E-ihalelerin dolandırıcılık, ekonomik sosyal ve psikolojik kayıplara neden olduğu sürdürülebilir bir e-ihale deneyimi üzerinde tüketicilerin güvenilirliğini kazanma adına yapılan yenilikler üzerinde değerlendirme çalışması yapılmıştır. |
| 2019 | Jiang et al. | Nicel | Hollanda müzayedesinde tüketici geri alımının etki faktörleri üzerine araştırma yapılmıştır. Hollanda çiçek müzayedeleri özellikle açık fiyatlandırma mekanizması etkili olduğu vurgulanmıştır. |
| 2019 | Kwak et al. | B2C | Çin’de Ali Baba ve e-ticaret deneyiminin tüketiciler açısından önemi araştırılmış çevrimiçi açık artırmaların uygulanabilirliği Ali Baba deneyimi olarak sunulmuştur. eBay mekanizması işlemesi hedeflenen sistemde e-ticaret mekanizması etkili olurken açık artırma mekanizması etkisiz kaldığı belirtilmiştir. |
| 2019 | Maier et al. | Nicel | Açık artırma sürecine dayalı entegre EPON ve yeni bir dinamik bant oluşturmuşlardır. Açık artırma butonları bu süreç için önem arz etmektedir. Araçlar vasıtası ile yapılan satışlarda buton ve süre mekanizmasının etkili olduğu vurgulanmıştır. |
| 2020 | Jafari & Foroud | Nicel | Enerji santralleri ve açık artırma teorileri programları ele alınmış ve promosyon indirimleri bankalar aracılığı ile belirlenmekte olduğu ve elde edilen fiyatlandırma mekanizması promosyonlar için en düşük teklif veren için kazançlı çıktığı vurgulanmaktadır. |
| 2020 | Kim | Nicel | Güney Kore’de açık artırma pazarları ve çevrimiçi müzayedelerin önemi üzerinde durulmuş e-ticarette endişeler gerçekten önemli mi bunun tartışması sunulmuştur. Açık artırma pazarları ve e-ticaret mekanizmaları firma algısı yok ettiği endişesinin önemli olduğunu vurgulanmıştır. |
| 2021 | Arefeva & Meng | Nicel | İhalelerde ikinci fiyat açık artırma teorileri üzerine araştırma yapmışlardır. Elde edilen sonuçlarda Güney Kore ve Singapur gibi ülkelerin tekstil pazarları ve kozmetik alanında uygulamalarda bulunduğu ve ikinci fiyatların beklenen değer üzerinde satışlara yol açtığı vurgulanmaktadır. |
| 2021 | Angeloni & Rossi | Nicel | Arama motoru pazarlaması ve e-ticaret pazarı karşılaştırılması rakip çevrimiçi açık artırma pazarları kanallarının karlılığını karşılaştırmak için analitik bir model geliştirilmiştir. |

* Literatürde yer alan çalışmalar yıla göre en eskiden en yeniye doğru sıralanmıştır.

4. Tüketicilere Yönelik Bir Araştırma

Çalışmada; tüketicilerin açık artırma siteleri hakkındaki düşünceleri, “güven”, “satın alma süreci”, “rekabet” ve “bütçe” faktörleri çerçevesinde değerlendirilmektedir. Oluşturulan faktör gruplarının açık artırma sitelerinin iyileştirilmesi, bu sitelerdeki mevcut sorunların tespit edilmesi, bu sorunlara çözüm önerileri sunabilmesi açısından önemli olduğu düşünülmektedir.

4.1. Araştırmanın Önemi ve Amacı

Literatürde genel olarak e-ticaret ve tüketici ilişkisi incelenmekte, tüketiciden tüketiciye açık artırma siteleri ile ilgili kapsamlı çalışmalar Çin, ABD, Tayland gibi ülkelerde yoğunlaşmaktadır. Türkiye’de bu alanda yapılan çalışmalar, özel kurum ihaleleri ve tarihi eser müzayedeleri ile sınırlı kalmıştır. Yaklaşık on beş sene önce kullanıma açılan internette açık artırma sitelerinin kullanıcı sayıları her geçen gün artmaktadır.

Bu çalışma; tüketiciden tüketiciye açık artırma sistemlerine kapsamlı yaklaşmayı, tüketicilerin e-açık artırma siteleri hakkındaki tutumlarını belirlemeyi amaçladığı için önem arz etmektedir. Çalışmada; “Tüketicinin beklentilerini karşılayacak açık artırma hizmetleri ne kadar iyileştirilebilir?” sorusundan hareket edilmektedir. Çalışmada, ayrıca, tüketicilerin demografik özellikleri ile açık artırma siteleri arasındaki ilişkinin öğrenilmesi, açık artırma hizmetlerine yönelik tüketici bakışının öğrenilmesi, tüketicilerin güvenilirlik unsuruna bakışı, satın alma süreci, rekabet ve bütçe unsuruna bakışı açısından beklentileri tespit edilmektedir.

Çalışmanın, e-ticaret platformunda faaliyet gösteren hizmet sağlayıcılara kılavuz olması beklenmektedir.

4.2. Araştırmanın Evren ve Örneklemi

İnternette alışveriş yapan ve özellikle de Çevrimiçi uygulamalar sayesinde Tredyol satıcı firmaları arasında eBay, Amazon ve Alibaba açık artırma sitelerine elit üyeliği kullanan kişilerin dahil edildiği kartopu örnekleme yöntemi ile evreni ve örneklemi belirlenmiştir. Tüketicilere açık artırma sitelerinde alışveriş davranışlarına yönelik bir anket uygulanmış, bu doğrultuda araştırmanın faktörleri belirlenerek, bu faktörlerin demografik unsurlarla arasındaki ilişki sınanmıştır. İnternette alışveriş yapan ve özellikle de açık artırma sitelerini kullanan kişi sayısı kartopu¹ örnekleme yöntemi ile elde edilmiştir. Anket çalışmasına gönüllü katılımcılar dahil edilmiştir. Anket, 588 kişiye uygulanmış ve anketlerden 100 tanesi boş olduğu için 488 adet anket değerlendirmeye tabi tutulmuştur.

4.3. Araştırmanın Modeli ve Yöntemi

Araştırmada Kumar (2016) ve Boyacıgil (2008) tarafından hazırlanan çalışmalardan yararlanılarak model kurulmuş ve anket formu oluşturulmuştur. Kolayda örnekleme metodu ile anket uygulaması yapılmıştır.

¹ Herhangi bir şekilde evrendeki birimlerden biri ile bağlantı kurularak bir başkasına, daha sonra yine aynı yolla başkasına temas kurularak zincirleme olarak örnekleme oluşmasıdır.

Tablo: 2
Araştırma Modeli

| DEMOGRAFİK UNSURLAR | | | |
|--|-------------------|---------|-------|
| Cinsiyet | Yaş | Eğitim | Gelir |
| Akışveriş Akışkanlıkları | | | |
| Faktör Analizi Sonuçları | | | |
| Güven | Satın Alma Süreci | Rekabet | Bütçe |
| Tüketicilerin Açık Artırma Siteleri ile İlgili Düşünceleri | | | |

Çalışma; anket formundan yararlanarak modelin ana hatları ve hipotezleri aracılığı ile gerçekleştirilmiştir. Araştırma kapsamında elde edilen veriler SPSS ile analiz edilmiştir. Araştırmada faktörlerin oluşturulması ve güvenilirliklerinin ölçülmesi için Cronbach Alfa Güvenirlik Testi’nden² yararlanılmıştır.

Açık artırma ile ilgili likert ölçekli 10 ile 30 arasındaki 20 sorunun, kaç faktör altında toplandığını tespit etmek amacıyla Faktör Analizi kullanılmıştır. Faktörlerin hesaplanmasında analizlerin iki veya daha fazla bağımsız değişkene sahip olması hesaplanmasına zemin hazırlamıştır. Bağımsız faktöriyel tasarımlar, çok sayıda bağımsız değişken, farklı denekler üzerinde (gruplar arası) test edilmektedir (Kalaycı, 2008: 180). Faktörlerin oluşmasının ardından bağımsız değişkende çok sayıda grup olduğu için Anova Testi³ kullanılmıştır. Son olarak, demografik özellikler ile anlamlı⁴ bir ilişki olup olmadığını anlamak için Varyans Analizi ve grup içi farklılıkların belirlenmesinde Tukey Testi⁵ uygulanmıştır.

4.4. Araştırmanın Bulguları

Katılımcılara yönelik demografik özelliklere Tablo 3’ten ulaşılabilmektedir:

² Ölçekte yer alan k sorununun, homojen bir yapı gösteren bir bütünü ifade edip etmediğini araştırmaktadır. 0 ile 1 arasında değer almaktadır. Elde edilen sonuç 1’e ne kadar yakın olursa ölçek o kadar güvenilir demektir (Kalaycı, 2008: 405).

³ Bağımsız değişkenlerin kendi aralarında nasıl etkileşime girdiklerini ve bu etkileşimlerin bağımlı değişken üzerindeki etkilerini analiz etmek için kullanılmaktadır (Kalaycı, 2008: 305).

⁴ $p < 0,05$ anlamlı, $p > 0,05$ ise anlamsız.

⁵ Gruplardaki örneklem sayılarının eşit olmasına, eşit örneklem gruplarına ait ortalamalar arasındaki farkların test edilmesine yardımcı olmaktadır (İslamoğlu, 2003: 236).

Tablo: 3
Katılımcılara Ait Demografik Özellikler

| | DEMOGRAFI | FREKANS | % |
|-------------------------------|----------------|---------|-------|
| CİNSİYET | Kadın | 535 | 62,2 |
| | Erkek | 330 | 37,8 |
| YAŞ | 25-35 | 25 | 7,7 |
| | 36-45 | 212 | 30,1 |
| | 46-55 ve Üzeri | 251 | 37,2 |
| GELİR | 2000 ve Altı | 25 | 14,0 |
| | 2001-3000 | 41 | 12,7 |
| | 3001-4000 | 111 | 27,2 |
| | 4001 ve Üstü | 311 | 34,1 |
| EĞİTİM | Ön Lisans | 154 | 41,0 |
| | Lisans | 288 | 51,2 |
| | Yüksek Lisans | 40 | 6,5 |
| | Doktora | 6 | 1,3 |
| AÇIK ARTIRMAYA KATILMA NEDENİ | Kamusal İşler | 145 | 23,6 |
| | Şirket İşleri | 102 | 14,3 |
| | Bireysel İşler | 241 | 62,1 |
| | | | |
| EN ÇOK KULLANILAN TERİM | Açık Artırma | 211 | 24,6 |
| | Müzayede | 10 | 13,2 |
| | Mezat | 13 | 25,0 |
| | İhale | 254 | 37,9 |
| TOPLAM | - | 488 | 100,0 |

Tablo 3’e göre; araştırmaya katılıp değerlendirmeye alınan tüketicilerin %62,2’si kadın, %37, 8’i ise erkeklerden oluşmaktadır. Katılımcıların yaşa göre dağılımı incelendiğinde 25-35 yaş arasındakiler %7,7, 36-45 arasındakiler %30,1 ve 46-55 yaş ve üzeri aralığında olanlar ise %37,2 olarak tespit edilmiştir. Katılımcıların %14,0’ü 2000 TL ve altı, %12,7’si 2001-3000 TL arası, %27,2’s, 3001-4000 TL arası, son olarak %37,1’i 4001 TL ve üzeri gelire sahiptir. Ankete katılanların %41’i ön lisans, %51,2’si lisans, %6,5’i yüksek lisans ve %1,3’ü doktora mezunudur. Katılımcılar en çok (%37,9) ihale terimini kullanmaktadır. Açık artırma teriminin kullanımı ise %24,6 ile üçüncü sırada yer almaktadır. En çok kullanılan terimin araştırılmasının nedeni ise anlam karmaşasının önlenmeye çalışılmasıdır.

Tablo 4’te tüketicilere yöneltilen sorular ve sorulara verilen cevapların ortalama değerleri ile tüketicilerin açık artırmaya yönelik düşünceleri gösterilmektedir.

Tablo: 4
Ankete Katılanların Likert Ölçek - Faktör Değeri ve Ölçek Güvenilirlik Oranları

| No | FAKTÖRLER | Frekans Ortalaması | Faktör Değeri | Cronbach Alpha |
|----|--|--------------------|---------------|----------------|
| * | Güven | | | |
| 10 | Açık artırma sitelerinde satıcılara ayrıntılı olarak soru sorabilme imkânı vardır. | 2,71 | ,550 | ,643 |
| 11 | Açık artırma sitelerinden alışveriş yapanların kredi kartı bilgileri güvende olmaz. | 3,87 | ,432 | |
| 12 | Açık artırma site yöneticileri parayı alıp ürünün aslını göndermeye bilirler. | 2,71 | ,433 | |
| 13 | Açık artırma siteleri en az sanal mağazalar kadar güvenli alışveriş imkânı sunarlar. | 2,12 | ,422 | |
| 14 | Açık artırma site yönetimi alıcılara kötü niyetli satıcılar konusunda her türlü hizmet ve desteği sunar. | 2,43 | ,376 | |
| 15 | Açık artırma sitelerinde satış yapanlar ürünü övmek için yanlış ve yanıltıcı beyanlarda bulunabilirler. | 2,65 | ,384 | ,652 |
| * | Satın Alma Süreci | | | |
| 16 | Açık artırma sitelerinde ürün çeşitliliğinin çok yüksek olması alışverişi etkiler. | 2,70 | ,498 | |
| 17 | Açık artırma sitelerinden alınan ürünler iade edilebilir. | 3,20 | ,474 | |
| 18 | Açık artırma sitelerinde ürün kazanıldıktan sonra ürünün eve gelmesine kadar geçen süre karmaşık işlemlerle doludur. | 2,41 | ,465 | |
| 19 | Açık artırma sitelerinde biten ürünleri ve fiyatlarını görerek yeni ürün ve fiyatlarla karşılaştırma yapabileme olanağı sunar. | 2,53 | ,411 | ,732 |
| 20 | Açık artırma sitelerinde pek çok kritere göre detaylı ürün araması yapabileme imkânı sunar. | 2,12 | ,321 | |
| 21 | Açık artırma sitelerinden alışveriş bilimsiz yapılan tüketimdir. | 3,12 | ,325 | |
| * | Rekabet | | | |
| 22 | Açık artırma sürecinin yaşattığı heyecan etkilidir. | 3,63 | ,413 | |
| 23 | Açık artırmayı kazanmanın verdiği haz etkilidir. | 3,61 | ,416 | ,741 |
| 24 | Açık artırma sürecinin dolmasına kadar geçen sürede ürünü başkasına kaptırmamak için diğer alıcıların tekliflerini takip etmek zor ve sıkıcıdır. | 3,89 | ,427 | |
| 25 | Açık artırma sitelerinde “Hemen al” seçeneği ile alım yapabileme imkânı sunar. | 3,71 | ,453 | |
| 26 | Açık artırma sitelerinden normal şartlarda ulaşmanın zor olduğu eski ürünlere veya koleksiyon ürünlerine ulaşabilmem önemlidir. | 2,76 | ,421 | |
| * | Bütçe | | | |
| 27 | Açık artırma sitelerinden ikinci el veya sıfır ürünleri ucuza alıp bütçeme katkı sağlayabilmem tercih sebebidir. | 3,98 | ,489 | ,741 |
| 28 | Bir ürünü açık artırma sitelerinden almaktansa, diğer sanal mağazalardan almak daha ucuza mal olur. | 3,87 | ,454 | |
| 29 | Açık artırma sitelerinde telif verenler rekabet ortamına kapılarak ürüne değerinin üzerinde fiyat önerebilmekte; fiyatı yükseltmektedirler. | 3,52 | ,487 | |
| 30 | Açık artırma siteleri pahalı bir grubun tercih ettiği sitelerdir. | 3,64 | ,432 | |

Tablo 4’te ankete katılan kişilerin 5’li likert ölçek sorulara verdiği cevaplar değerlendirilmiştir. Likert ölçek; “1-1,5 arası kesinlikle katılmıyorum”, “1,6-2,5 arası katılmıyorum”, “2,6-3,5 arası fikrim yok”, “3,6-4,5 arası katılıyorum”, “4,6-5 arası kesinlikle katılıyorum” sınırlamasına göre değerlendirilmiştir.

Güven faktörü 5 sorudan oluşmaktadır. Cronbach Alfa değeri 0,643 bulunmuştur. Buradan hareketle; faktörün güvenilirliğinin ortalama olduğu söylenebilmektedir. Faktör Analizi sonucunda araştırmaya katılanlar; *açık artırma sitelerinde satıcılara ayrıntılı soru sorabilme imkânı vardır* (ortalama: 2,71; faktör: ,550), *açık artırma siteleri sanal mağazalar kadar güvenli alışveriş imkânı sunarlar* (ortalama: 2,12; faktör: ,422), *site yönetimi alıcılara kötü niyetli satıcılar konusunda her türlü hizmet ve desteği sunar* (ortalama: 2,12; faktör: ,422), *açık artırma sitelerinde satış yapanlar ürünü övmek için yanlış ve yanıltıcı beyanlarda bulunabilirler* (ortalama: 2,65; faktör: ,376) ifadeleri karşısında kararsız kalmışlardır. Tüketicilerin; *alışveriş yapanların kredi kartı bilgileri güvende olmaz* (ortalama: 3,87; faktör: ,550), *açık artırma site yöneticileri parayı alıp ürünün aslını gönderemeyebilirler* (ortalama: 2,71; faktör: ,422) ifadelerine katıldığı tespit edilmiştir.

Satın alma süreci faktörü 5 sorudan oluşmaktadır. Cronbach Alfa değeri 0,652 bulunmuştur. Buradan hareketle; satın alma süreci faktörünün güvenilirliğinin ortalama olduğu söylenebilmektedir. Tüketiciler; *ürün çeşitliliğinin çok yüksek olması alışverişi*

etkiler (ortalama: 2,70; faktör: ,498), *ürün kazanıldıktan sonra ürünün eve gelmesine kadar geçen süre karmaşık işlemlerle doludur* (ortalama: 2,41; faktör: ,465), *açık artırma sitelerinde bütün ürünleri ve fiyatlarını görerek yeni ürün ve fiyatlarla karşılaştırma yapabileme olanağı sunar* (ortalama: 2,53; faktör: ,411), *açık artırma sitelerinde pek çok kritere göre detaylı ürün araması yapabileme imkanı sunar* (ortalama: 2,53; faktör: ,411) ifadeleri karşısında kararsız kaldıkları belirlenmiştir. Ayrıca, tüketiciler, *açık artırma sitelerinden alınan ürünler iade edilebilir* (ortalama: 3,20; faktör: ,474), *açık artırma sitelerinden alışveriş bilinçsiz yapılan tüketimdir* (ortalama: 3,12; faktör: ,325) ifadelerine katılmaktadır.

Rekabet faktörü 5 sorudan oluşmaktadır. Cronbach Alfa değeri 0,732 bulunmuştur. Buradan hareketle, rekabet faktörünün güvenilir olduğu söylenebilmektedir. Tüketiciler; *açık artırma süresinin yaşattığı heyecan etkilidir* (ortalama: 3,63; faktör: ,413), *açık artırma süresinin dolmasına kadar geçen sürede ürünü başkasına kaptırmamak için diğer alıcıların tekliflerini takip etmek zor ve sıkıcıdır* (ortalama: 3,89; faktör: ,427), *açık artırmayı kazanmanın verdiği haz etkilidir* (ortalama: 3,61; faktör: ,416), *açık artırma sitelerinde "hemen al" seçeneği ile alım yapabileme imkanı sunar* (ortalama: 3,71; faktör: ,453), *açık artırma sitelerinden normal şartlarda ulaşmanın zor olduğu eski ürünlere veya koleksiyon ürünlerine ulaşabilmem etkilidir* (ortalama: 3,76; faktör: ,421) ifadelerine katılmaktadır.

Bütçe faktörü 4 sorudan oluşmaktadır. Cronbach Alfa değeri 0,741 bulunmuştur. Buradan hareketle, bütçe faktörünün güvenilir olduğu söylenebilmektedir. Tüketiciler; *açık artırma sitelerinden ikinci el veya sıfır ürünleri ucuza alıp bütçeme katkı sağlayabilmem tercih sebebidir* (ortalama: 3,98; faktör: ,489), *bir ürünü açık artırma sitelerinden almaktansa, diğer sanal mağazalardan almak daha ucuza mal olur* (ortalama: 3,87; faktör: ,454), *açık artırma sitelerinde teklif verenler rekabet ortamına kapılarak ürüne değerinin üzerinde fiyat önerebilmekte, fiyatı yükseltebilmektedir* (ortalama: 3,52; faktör: ,487) ifadelerine katılmakta, *açık artırma siteleri pahalı bir gurubun tercih ettiği sitelerdir* (ortalama: 2,64; faktör: ,432) ifadesi karşısında kararsız kalmaktadırlar.

Ankete katılanların verdikleri cevaplara varyans analizi uygulanmıştır. Katılımcıların demografik özellikleri bağımsız değişken olarak kabul edilmiş, açık artırma ile ilgili faktörleri etkileyip etkilemedikleri tek yönlü varyans analizine tabi tutulmuştur. Analiz sonuçları Tablo 5'te gösterilmektedir:

Tablo: 5
Varyans Analizi Sonuçları

| Faktörler | Demografik Özellikler | ANOVA | |
|-------------------|-----------------------|----------|----------|
| | | F Değeri | P Değeri |
| GÜVEN | Cinsiyet | 1,616 | 0,543 |
| | Yaş | 1,876 | 0,219 |
| | Gelir | 3,475* | 0,047 |
| | Eğitim | 2,653 | 0,321 |
| | Cinsiyet | 1,542 | 0,213 |
| SATIN ALMA SÜRECİ | Yaş | 3,631* | 0,013 |
| | Gelir | 1,653 | 0,128 |
| | Eğitim | 1,753 | 0,062 |
| | Cinsiyet | 3,391* | 0,032 |
| | Yaş | 2,543 | 0,087 |
| REKABET | Gelir | 2,321 | 0,062 |
| | Eğitim | 1,321 | 0,079 |
| | Cinsiyet | 1,987 | 0,051 |
| | Yaş | 1,560 | 0,058 |
| | Gelir | 3,121* | 0,046 |
| BÜTÇE | Eğitim | 3,422* | 0,031 |

Tablo 5’ten hareketle; tüketiciler açısından açık artırma sitelerinde, güven faktörüne verilen önemin (F: 3,475 - P: 0,047 < 0,05) gelire bağlı olarak anlamlı şekilde farklılık gösterdiği görülmektedir. T testine göre, tüketiciler açısından, açık artırma sitelerinde satın alma süreci faktöründe (F: 3,631 - P: 0,013 < 0,05) yaşa bağlı olarak anlamlı farklılık olduğu; eğitim, cinsiyet ve gelir arasında anlamlı bir farklılık olmadığı görülmektedir. Tüketiciler açısından, açık artırma sitelerinde, rekabet faktörüne verilen önemin (F: 3,391 - P: 0,032 < 0,05) cinsiyete bağlı olarak anlamlı bir şekilde farklılık gösterdiği söylenebilmektedir. T testine göre tüketiciler açısından açık artırma sitelerinde, bütçe faktöründe, (F: 3,121 - P: 0,046 < 0,05) gelire ve eğitime (F: 3,422 - P: 0,031 < 0,05) bağlı olarak anlamlı bir şekilde farklılık göstermektedir.

Tüketiciler açısından açık artırma sitelerinde ortaya çıkan sonuçlar arasında güven faktörü (gelir), satın alma süreci (yaş), rekabet (cinsiyet) ve bütçe (gelir ve eğitim) %5 anlamlılık düzeyinde test edilmiş, uygulanan analiz sonucunda elde edilen bulgulara Tablo 6’da yer verilmiştir:

Tablo: 6
Tukey Testi Sonuçları

| I | J | Ortalama Farklılık (I-J) | P Değeri |
|----------------------------------|---------------|--------------------------|----------|
| Güven Faktörü | | | |
| 2000 ve Altı | 2001-3000 | -,21864 | ,254 |
| | 3001-4000 | -,23456 | ,132 |
| | 4001 ve Üstü | ,14352 | ,052 |
| 2001-3000 | 2000 ve Altı | -,26382 | ,096 |
| | 3001-4000 | -,23652 | ,086 |
| | 4001 ve Üstü | -,10834 | ,076 |
| 3001-4000 | 2000 ve Altı | ,24683 | ,054 |
| | 2001-3000 | ,49833 | ,032 |
| | 4001 ve Üstü | ,32675 | ,041 |
| 4001 ve Üstü | 2000 ve Altı | -,26382 | ,764 |
| | 2001-3000 | -,19821 | ,098 |
| | 3001-4000 | -,16521 | ,096 |
| Satın Alma Süreci Faktörü | | | |
| 25-35 | 36-45 | -,28762 | ,075 |
| | 46-55 | -,13821 | ,054 |
| 36-45 | 25-35 | -,12689 | ,042 |
| | 46-55 | -,12867 | ,098 |
| 46-55 | 25-35 | -,18763 | ,065 |
| | 36-45 | -,30891 | ,543 |
| Rekabet | | | |
| Kadın | Erkek | ,19823 | ,861 |
| Erkek | Kadın | ,14412 | ,076 |
| Bütçe | | | |
| 2000 ve Altı | 2001-3000 | ,12398 | ,543 |
| | 3001-4000 | -,28763 | ,081 |
| | 4001 ve Üstü | -,18763 | ,062 |
| 2001-3000 | 2000 ve Altı | -,35897 | ,042 |
| | 3001-4000 | -,18662 | ,052 |
| | 4001 ve Üstü | -,14312 | ,057 |
| 3001-4000 | 2000 ve Altı | ,10873 | ,062 |
| | 2001-3000 | ,14321 | ,031 |
| | 4001 ve Üstü | -,24321 | ,089 |
| 4001 ve Üstü | 2000 ve Altı | -,14321 | ,076 |
| | 2001-3000 | -,15332 | ,052 |
| | 3001-4000 | -,19877 | ,098 |
| Ön Lisans | Lisans | -,16572 | ,065 |
| | Yüksek Lisans | -,32987 | ,049 |
| | Doktora | -,29171 | ,654 |
| Bütçe | | | |
| Lisans | Ön Lisans | ,21537 | ,345 |
| | Yüksek Lisans | ,18266 | ,213 |
| | Doktora | ,15135 | ,864 |
| Yüksek Lisans | Ön Lisans | -,18631 | ,432 |
| | Lisans | -,16526 | ,421 |
| | Doktora | -,22467 | ,097 |
| Doktora | Ön Lisans | -,21432 | ,048 |
| | Lisans | -,12432 | ,052 |
| | Yüksek Lisans | -,22455 | ,098 |

Tablo 6’da güven faktörü ile tüketicilerin gelir düzeyi arasındaki ilişki gösterilmektedir. Gelire göre güven faktörü incelendiğinde; 2001.-TL.-3000.-TL., 3001.-TL.-4000.-TL., 4001.-TL. ve üzeri geliri olanlar arasında anlamlı bir farklılık olduğu görülmektedir. Yaş düzeyine göre satın alma süreci incelendiğinde; yaşı 25-35 arasında olan tüketiciler ile 36-45 arasında olanlar anlamlı şekilde farklılaşmaktadır.

Tablo 6’da bütçe faktörü ile gelir düzeyi arasındaki ilişkiye de yer verilmektedir. Geliri; 2001.-TL.-3000.-TL. arasında olan tüketiciler ile 2000.-TL ve altı olanlar anlamlı bir

şekilde farklılaşmaktadır. Geliri; 3001.-TL.-4000.-TL. arasında olan tüketiciler ile 2001.-TL-3000.-TL. arasında olanlar bütçe faktöründen daha çok etkilenmektedir. Eğitim düzeyine göre bütçe faktörü incelendiğinde ön lisans mezunlarının, yüksek lisans mezunlarına göre bütçe faktöründen daha çok etkilendiği söylenebilmektedir.

5. Sonuç

Günümüzde, tüketiciler gelişen teknoloji ve internet sayesinde çok az emek harcayarak istediği ürünleri internet üzerinden bulabilmekte, ürünleri karşılaştırarak satın alabilmektedir. Bu sayede, firmalar 7 gün 24 saat diğer firmalarla tüketicilere kolayca ulaşabilmektedir. Bu gelişmeler, firmalar için müşteri memnuniyeti ve kalite unsurunu ön plana çıkarmaktadır.

E-ticaret zaman içinde çeşitlenmiş, On-Sale ve eBay’ın geleneksel açık artırmayı internet ortamına uyarlamıştır. Bunun sonucunda; e-açık artırma yaygınlaşmaya başlamıştır.

Çalışma kapsamında yapılan araştırmada; tüketicilerin, açık artırma sitelerinin satın alma sürecini değerlendirirken kararsız oldukları, bu sitelerde karşılaşılan olumsuzlukların varlığına katıldıkları ortaya konulmuştur. Buradan hareketle; tüketicilerin yaşanan/yaşanabilecek olumsuzluklardan rahatsız olduğu ve satın alma sürecine ilişkin bilgisizlik nedeniyle internet alışverişinden çekindiği yorumu yapılabilmektedir. Sabit fiyatlandırma ile çalışan sitelere ilişkin bu çekimserlik, dinamik fiyatlandırma ile çalışan açık artırma sitelerinde belirgin olarak görülmektedir.

Tüketiciler; açık artırma siteleri tarafından sunulan elektronik temsilci, emanet hizmeti, geri bildirim gibi hizmetlerden oldukça memnundur. Müzayede sitelerinin müdevimi olan kişiler, diğer kişilere göre daha yüksek memnuniyet düzeyine sahiptir. Bunun nedeni olarak; tüketicilerin, söz konusu siteleri kullanım düzeyi, bu sitelerden daha çok alışveriş yaptıkları için bu siteler hakkında daha çok bilgi sahibi olmaları ve bu sayede daha kararlı yorumlama yapabilmeleri gösterilebilmektedir.

Açık artırma sitelerinde gerçekleşen satın alma süreci, bazı tüketicilerin oldukça eğlenmesini sağlamakta, bazılarının ise oldukça sıkılmasına neden olmaktadır. Söz konusu sitelerde ürün çeşitliliğinin fazla olması bu durumu ortaya çıkarmaktadır.

Açık artırma sitelerinden en çok, satın almadan önce tekrar görüp dokunmayı gerektirmeyen, elektronik eşya alımı yapılmaktadır. Gelecekte bu sitelerin yaygınlaşarak gelişeceği ve bu sayede kullanıcı sayılarını artıracığı düşünülmektedir. Bu düşüncenin ortaya çıkmasında; televizyon reklamları ile bu sitelerden alışveriş yapanların sayısındaki artış eğilimi etkili olmaktadır.

Araştırmada uygulanan faktör ve Anova testlerine göre; tüketici davranışları ile “güven”, “satın alma süreci”, “rekabet”, “bütçe” faktörleri anlamlı ilişkiye sahiptir. Firmalar açısından sektörün; insan kaynağını geliştirmek, teknoloji altyapısını güçlendirmek, imajını

yenilemek, hız ve güven artırıcı hizmetler sunmak amacıyla önemli kaynak tahsis etmeye başladığı düşünülmektedir.

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Ekonomi Okuryazarlığı: Esnafa Yönelik Bir Araştırma

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Economic Literacy: A Study on Tradespeople

Abstract

In the study, the economic literacy level was measured over the tradesmen in Gaziantep, and it was found, that the economic literacy level of the tradesmen was high. In the difference tests, economic literacy level was found to be higher in tradesmen with relatively high education levels, in business owners compared to employees. There wasn't a difference according to gender. Tradesmen with high economic literacy levels have the power to affect micro and macroeconomic indicators in the medium and long term. Policymakers should consider this in their decision that may directly/indirectly affect the craftsman class and should be supported to increase their knowledge level.

Keywords : Economic Literacy, Tradesmen, SME.

JEL Classification Codes : A20, D14, D83.

Öz

Çalışmada ekonomi okuryazarlığı düzeyi Gaziantep ilindeki esnaf kesimi üzerinden ölçülmüştür. Araştırmada, Gaziantep esnafının ekonomi okuryazarlık düzeyinin yüksek olduğu bulunmuştur. Farklılık testlerinde ekonomi okuryazarlığı düzeyi, eğitim düzeyi görece yüksek esnafa ve işletme çalışanlarına kıyasla işletme sahiplerinde daha yüksek bulunmuştur. Cinsiyete göre ise farklılık göstermediği anlaşılmıştır. Sonuçlara göre, yüksek ekonomi okuryazarlık düzeyine sahip esnaf orta ve uzun dönemde mikro ve makroekonomik göstergeleri etkileyebilme gücüne sahiptir. Politika yapıcılar esnaf sınıfını doğrudan ve dolaylı etkileyebilecek karar süreçlerinde bunu dikkate almalı; bilgi düzeylerini ileriye taşıması için gerekli desteği sağlamalıdır.

Anahtar Sözcükler : Ekonomi Okuryazarlığı, Esnaf, KOBİ.

1. Giriş

Teknoloji ve iletişim çağında yaşanan ilerlemeler, bireylerin ihtiyaçlarını ve beklentilerini artırmaktadır. İhtiyaçların sonsuz hale geldiği günümüz küresel dünyasında bu ihtiyaçların karşılanmasını sağlayan kaynaklara ulaşmak da gittikçe zorlaşmaktadır. Bu kaynakların en önemlisi "bilgi" olup, paylaşıldıkça çoğalan özelliğiyle rekabette önemli bir unsur haline gelmiştir. Bilgiye ulaşmak zor olduğu gibi bilginin okuryazarlığı da bu süreçte kritik bir role sahiptir. Okuryazarlık genel olarak toplumsal ihtiyaçların hedeflerine ulaşması, bireylerin bilgi ve öğrenme potansiyelini geliştirebilmesi için basılı dokümanları kullanabilme ve anlayabilme becerisidir. Küreselleşme sürecinden önce temel düzeyde eğitim almış, günlük ihtiyaçlarını idame edecek düzeyde matematiksel bilgiye sahip kişiler iyi eğitilmiş olarak nitelendirilmiştir. Fakat günümüz rekabetçi dünyasında yaşanan hızlı değişim, bireylerin-firmaların-ülkelerin ileri düzeyde becerilere ve üstünlüklere sahip olmasını zorunluluk haline getirmiştir. Bu nedenle, toplumsal ihtiyaçların karşılanması için birçok alanda okuryazarlık düzeyinin artırılması oldukça önemlidir. Literatür incelendiğinde bilgisayar okuryazarlığı, çevre okuryazarlığı, tarih okuryazarlığı, bilgi okuryazarlığı, kültür okuryazarlığı gibi 34 farklı okuryazarlık alanı tanımlanmıştır (Snaveley & Cooper, 1997: 9-10). Bu alanların arasında şüphesiz en önemlilerinden biri de çalışmanın temelini oluşturan ekonomi okuryazarlığıdır.

Tarihsel olarak bakıldığında en eski bilim dallarından biri olan ekonomi bilimi, özellikle 2008 yılında ABD’de Lehman Brothers’ın çöküşüyle başlayan ve kısa süre içerisinde tüm dünyayı etkisi altına alan küresel kriz ile daha da önemli hale gelmiştir. Gerek bireysel gerekse firma ve kamu kurumları düzeyinde alınacak kararlarda ve atılacak adımlarda ekonomi bilgisi hayati bir role sahiptir. Çünkü sınırsız ihtiyaçlar ile kıt kaynaklar arasındaki ilişkiye dayalı teoriler üzerine kurulmuş ekonomi bilimi, gelişmiş ve gelişmekte olan ülkeler için küresel rekabette önemli bir silah olarak kullanılmaktadır. Ekonomi okuryazarlığı ise ekonomi bilgisi yeterliliğinin bir göstergesi olarak ifade edilmektedir. Bir anlamda “*ekonomik gelişmeleri ve bu gelişmelerin etkilerini yorumlayabilme becerisi*” olarak ifade edilebilen ekonomi okuryazarlığı kavramı, küresel dünyanın daha akılcı olgularla anlaşılabilmesini sağlamaktadır. Ayrıca ekonomi okuryazarlığı bireylerin ve firmaların daha rasyonel davranmasını ve yönetsel politikaların sınırları ile potansiyelinin anlaşılmasına da destek olmaktadır (Gerek & Kurt, 2011: 59).

Bu bağlamda çalışmanın temel motivasyonu ve literatürdeki diğer çalışmalardan farkı ekonomi okuryazarlığı düzeyinin, yerel ekonomilerin temel dinamiğini oluşturan esnaf ve küçük ölçekli KOBİ’ler üzerinden analiz edilmesidir. Ekonomik faaliyetini sermayesi ile birlikte bedenî çalışmasına dayandıran ve kazancı kendisine tacir veya sanayici niteliğini kazandırmayacak miktarda olan meslek ve sanat sahibi kimseler olarak tanımlanan esnaf sınıfı, Türkiye’de ekonomik hayatın önemli bir dinamiğidir (DPT, 2001: 15-19). Esnafın temel ekonomi bilgi düzeyinin ölçüldüğü çalışmada öncelikle ekonomi okuryazarlığı ile esnaf kesiminin sosyoekonomik özellikleri kavramsal düzeyde incelenmiş ve ardından konuya ilişkin literatür araştırması yapılmıştır. Çalışmanın analiz kısmında Gaziantep ilinde faaliyet gösteren 751 esnaf ile yüz yüze görüşme yöntemiyle gerçekleştirilen anketler ile

katılımcıların ekonomi okuryazarlığı düzeyleri belirlenmiş ve temel demografik özelliklerine göre ekonomi okuryazarlığı arasında farklılık olup olmadığı ortaya konulmuştur. Çalışma, analizden elde edilen bulgular üzerinden gerçekleştirilen politika önermeleriyle sonuçlandırılmıştır.

2. Teorik ve Kavramsal Çerçeve

Kıtlık bilimi olarak tanımlanan ekonomi; bireyler, firmalar ve devlet için yaşamsal öneme sahip olmasına rağmen sofistike teorileri ve görece karmaşık analizleriyle halk arasında yalnızca günlük ihtiyaçlara cevap verebilecek ölçüde kullanılmaktadır. Bu durum bireylerin ekonomi terminolojisiyle hiç ilgilenmediği manası taşımamaktadır. Çünkü günümüz küresel dünyasında her birey veya firma üretici, tüketici, yatırımcı, çalışan ve işveren gibi rollerle iktisadi bir aktör olarak yer almaktadır. Dolayısıyla da ekonomik konjonktürde yaşanan gelişmelerden etkilenmekte, sonuç olarak da ekonomi okuryazarlığına olan ilgi giderek artmaktadır (Gerek & Kurt, 2010: 89).

İktisadi analiz birimi olarak bireylerin, tam bilgi varsayımı altında rasyonel kararlar verdiği kabul edilmektedir. Dolayısıyla da bu ön kabulden yola çıkarak herhangi bir iktisadi olayda, bireylerin fayda ve/veya kârlarını maksimize etme güdüsüyle hareket ettiğini söylemek mümkündür. Ancak günümüz dünyasında bu rasyonalite kavramı eleştirilmekte ve tartışılmaktadır. Sürekli değişen ve gelişen finansal piyasalar ve küresel ekonomi, bireyleri rasyonel karar almaktan uzaklaştırmaktadır (Dilek vd., 2016: 1866). 1980'li yılların sonlarından bu yana hane halkının finansal piyasalarda yaşanan liberalizasyonun ve politik reformların (bireysel emeklilik sistemi gibi) etkisiyle artan ölçüde finansal risklerle karşı karşıya kaldığı görülmüştür. Bu süreç içerisinde ortaya çıkan küresel kriz de deneyimsiz hane halkının ortaya çıkan şokların etkisini azaltacak güce sahip olmadığını göstermiş; sonuçta da ekonomi okuryazarlık düzeyindeki farklılıklar krizin sonuçlarının yayılımını önemli ölçüde etkilemiştir (CSEF, 2009: 7).

Bu noktada ekonomi okuryazarlığı bireylerin faiz, enflasyon, yatırım, kredi, para gibi iktisadi konularda bilgi sahibi olması ve bu temel bilgileri günlük yaşamında kullanarak ekonomik faaliyetlerin yaratacağı etkilerin farkında olması durumudur (Oanea & Dornean, 2012: 114). Yani bu kavram günümüz iktisadi konjonktüründe bireylerin, verimli ve üretken olmalarını sağlayan ekonomik bilgi düzeyinin bir parçasıdır. Özetle, bireylerin iktisadi gelişmeleri ve bu gelişmelerin etkilerini yorumlayabilme becerisi olarak da tanımlanabilir (Gerek & Kurt, 2008: 4). Demokratik toplumlarda, ekonomik konularda bilgi düzeyi yüksek vatandaşların fazla olması ülke geleceği için oldukça önemlidir. İktisadi kararlara etkin olarak katılmak vatandaşların ekonominin nasıl işlediğini bilmeleri için zorunluluktur. Ayrıca değişen ve dönüşen dünya konjonktüründe vatandaşların ve firmaların bu yeniliklere ayak uydurabilmeleri için yeterli seviyede ekonomi bilgisine sahip olmaları gerekmektedir (Hayta & Akhan, 2014: 208).

Literatürde ekonomi okuryazarlığı kavramına ilişkin çeşitli tanımlamalar yapılmış, özet olarak Tablo 1'de sunulmuştur.

Tablo: 1
Ekonomi Okuryazarlığı Literatür Tanımları

| Yazar | Tanım |
|--|--|
| Miller (1988: 11) | Sınırlı sayıda kaynağın kullanımına yönelik karar verme süreçlerinde, muhakeme yapabilme yeteneğidir. |
| Lusardi (2006: 2) | Başarılı yatırımlar yapabilmek, finansal araçların getirisi vb. konularda bilgi sahibi olmak. |
| Darwin (2006: 7); Staubs (2007: 21) | Ekonomik birim olarak bireylerin üretici, tüketicisi, tasarruf sahibi ve yatırımcı rollerini yerine getirmelerine olanak tanıyan becerilere sahip olmalarıdır. Karar verme, ekonomik akıl yürütme, problem çözme, gerçek yaşam durumlarını analiz etme ve temel ekonomi kavramlarını, ilkelerini anlama ve uygulama becerileridir. |
| Remund (2010: 279) | Parayı yönetebilme yeteneğidir. |
| Gerek & Kurt (2008: 4) | İnsanların iktisadi gelişmeleri yorumlayabilme becerileridir. |
| Akhan (2013: 4) | Öğrencilerin yaş gruplarına uygun olarak üretici, tüketicisi, çalışan ve yatırımcı rollerinde sorumluluk sahibi, çalışkan ve dürüst olmaları; bu ilkeler çerçevesinde geleceğe yönelik daha iyi kararlar alan, ülkelerini ve dünyayı daha iyi anlayan ekonomik bilgi, beceri ve tutumlarla donatılmış olma durumudur. |
| Şantaş & Demirgil (2015: 46) | Ekonomideki gelişmelerin ve ilgili gelişmelerin etkilerinin analiz edilebilmesidir. |

Gerek ve Kurt (2008), ekonomi okuryazarlığını en az alfabetik okuryazarlık kadar önemli, bireylerin hayat standardını etkileyen iktisadi zorlukları idrak edebilmesinin bir ölçüsü olarak kabul etmektedir. Küresel rekabet dünyasında, sürekli değişen ekonomik koşullar altında bireyler doğru karar vermek zorundadırlar. Kişilerin yeterli düzeyde ekonomi okuryazarlığına sahip olması ise doğru ve rasyonel karar verebilmenin yollarını artırmaktadır (Yeop Yunus vd., 2010: 69). NCREL (2003); ekonomik olarak okuryazar birinin sahip olması gereken özellikleri şu şekilde ortaya koymuştur;

- Kaynakların sınırlı olduğunun bilinciyle fayda-maliyet analizi yaparak; üretici, tasarruf sahibi, yatırımcı veya hane halkı olarak bu bilgileri rasyonel seçimler yapmak üzere kullanan,
- Fayda-maliyet analizinden yola çıkarak mal ve hizmet tahsisinde farklı yöntemleri değerlendiren,
- Bireylerin iktisadi davranışlarını etkileyen ekonomik teşvikleri tanımlayarak, bu teşviklerin davranışlarını nasıl etkilediğini açıklayan,
- Rekabetin, ticaret engellerinin, arz kıtlığının ya da fazlasının, alıcı ve satıcılar arasında etkileşimin fiyat düzeyini nasıl etkilediğini anlayan,
- Federal Rezerv’in de aralarında bulunduğu kamuya ait ya da özel ekonomik kurumların rollerini tanımlayan,
- Gelir, gelir dağılımı, faiz oranı, işsizlik, yatırım ve risk gibi temel ekonomik kavramları bilen,
- Alternatif kamu politikalarının fayda-maliyetini değerlendirerek, bu doğrultuda hangi kesimlerin fayda veya maliyetle karşı karşıya kaldığını ortaya koyabilen,
- Küçük ve büyük ölçekli işletmelerin, girişimlerin ekonomik anlamda önemini anlayabilen bireylerdir.

Makro ölçekte artan ekonomi okuryazarlığı ek olarak bireylerin özel yaşamı ve profesyonel iş hayatı üzerinde pozitif etkiye sahiptir. Ekonomi okuryazarlığı seviyesinin toplumun her biriminde geliştirilmesi gerekmektedir. Ekonomi okuryazarlığı seviyesinin artması, ev halkının ekonomik refahını artırırken aile içi çatışmalar, psikolojik sorunlar ve

günlük stres gibi olumsuz etkileri azaltmaktadır. Ayrıca iş dünyasında çalışanların aidiyet duygusu artarken, iş verimliliği ve iş memnuniyeti yükselmektedir (Taft, 2013: 64).

Esnaflar örgütlenmesinin geçmişi Türkiye’de oldukça eskiye dayanmakta olup yaratmış olduğu katma değer uzun dönemde makro iktisadi göstergeler açısından oldukça yüksektir. Devlet Planlama Teşkilatının, 2001 yılında yayınladığı raporda KOBİ’lerin imalat sanayii sektöründe hizmet veren kuruluşların %99,2’sini, istihdamın da %55,9’unu karşıladığı ifade edilmiştir (DPT, 2001: 12). Toplumun ihtiyaçlarının karşılanması, istihdam olanağı yaratması, görece büyük işletmelerin müşteriye ulaşabilmesi noktasında köprü görevi görmesi, sermayenin geniş bir alan içerisinde yayılımını sağlaması, yenilikleri teşvik etmesi, bölgesel kalkınması hızlandırması şeklinde bir dizi fonksiyonu üstlenmektedir (Yılmaz & İrmiş, 2021: 346; Baykul & Dulupçu, 2009: 65). Küçük ölçekli KOBİ’ler olarak da düşünüldüğünde gerek çalışan sayısı gerekse yapılan yatırımlar üzerinden değerlendirildiğinde Türkiye ekonomisinin yerel boyutunda temel bir dinamik olduğu söylenebilir.

Türkiye ekonomisi açısından son derece önemli olan esnaf yapılanması; yoğun rekabet koşullarına uyum sağlayabilmek, uluslararası pazarlama, tanıtım ve ticari bilgiye ilişkin eksikliklerini gidermek adına kamusal destek ve teşviklerden yararlanmaktadır (DPT, 2001: 95). Devlet desteğinin yanı sıra esnaf örgütlenmesinin kendi içerisinde iktisadi farkındalığının artmasının ekonomik büyüme ve kalkınma açısından önem arz ettiği düşünülmektedir. Teknoloji ve iletişim alanında ortaya çıkan gelişmelerin etkisi ile sıradan bireylerin dahi ekonomi konusunda geçmişte olduğundan daha fazla bilgi sahibi olması gerekliliği yerel ekonomilerin önemli bir parçası olan esnaf sınıfının da ekonomi okuryazarlığını önemli bir hale getirmektedir (NCREL, 2003: 20). Çünkü faiz, istihdam, enflasyon politikaları gibi makro ekonomik değişkenler, doğrudan ve dolaylı olarak başta küçük ve orta ölçekli işletmeleri etkileyebilmektedir. Esnafın da gerçekleşen politika değişikliklerine göre kendi işletmesinde önlemler alması gerekmektedir. Örneğin faiz değişikliği karşısında dövizdeki hareketliliği tahmin ederek yeni yatırımlar yapabilmesi, ekonomi okuryazarlık düzeyini doğrudan ilgilendirmektedir.

3. Literatür Araştırması

Ekonomi okuryazarlığına ilişkin çalışmalar incelendiğinde özellikle 1980’li yıllardan sonra yaşanan ekonomik ve finansal dönüşümle birlikte; bireysel düzeyde ekonomik bilgi gereksinimi ortaya çıkmıştır. Çalışmalar genel olarak analiz edildiğinde bireylerin temel ekonomik olgulara dahi hâkim olamadığı ve ekonomi bilgi düzeylerinin düşük olduğu tespit edilmiştir (Jappeli, 2009). Ekonomi okuryazarlığı düzeyinin esnaf kesimi üzerinden analiz edildiği çalışmanın literatürdeki karşılığına bakıldığında, ilgili sınıfın ekonomi bilgi düzeylerini ölçen herhangi bir çalışmaya rastlanmamıştır. Bu kapsamda yapılan çalışmalar incelendiğinde, esnaf sorunlarının tespitine yönelik saha araştırmalarının ağırlıkta olduğu görülmektedir. Bu kapsamda, Yücel (2008) çalışmasında esnaf ve zanaatkarların yaşadıkları sorunları ve bu sorunların çözüm önerileri üzerinde durmuştur. Yücel, esnafın geleceğe ilişkin kaygılarını; sosyal güvenlik, mesleki eğitim ve istihdam, finansman, vergi

ve mevzuat, rekabet stratejileri ve kentsel dönüşüm gibi konularda mevcut iktisadi yapıyı analiz ederek ortaya koymaya çalışmıştır. Bu doğrultuda literatür taramasına ve güncel ekonomik göstergelere başvurmuştur. Esnaflara ilişkin bir diğer çalışma Gavcar vd. (2016) tarafından Muğla ilinde faaliyette bulunan 250 esnafın, sorunlarını tespit etmeye yönelik bir anket aracılığıyla yürütülmüştür. Çalışma sonunda elde edilen sonuçlardan yola çıkılarak esnaf sorunlarının çözümüne yönelik öneriler sunulmuştur. Özetle esnafı konu alan çalışmaların mahiyeti genel olarak bu doğrultuda olup; mevcut iktisadi yapı içerisinde varlıklarını sürdürebilmelerinin önemli bir ölçütü olan iktisadi olayların nedenlerini anlama, sonuçlarını analiz etme ve rasyonel tercihler yapma gibi temel ekonomik konulardaki okuryazarlık düzeyini tespit etmeye yönelik çalışmalara yer verilmemiştir. Bu nedenle Gaziantep ilinde 751 esnafa yönelik saha araştırmasının analiz edildiği çalışmanın literatürdeki bu boşluğu doldurması beklenilmektedir. Esnaf kesiminin ekonomi okuryazarlığı düzeyini ortaya koymaya yönelik çalışmalar literatürde mevcut olmasa da farklı gelir düzeyindeki hane halklarının, öğrencilerin, çeşitli meslek mensuplarının okuryazarlık düzeyini araştırarak çalışmalardan söz etmek mümkündür.

Walstad ve Soper (1988), onuncu ve on birinci sınıfların ekonomi okuryazarlığı düzeyinin ortaya konulmasına ilişkin çalışmasını 1980lerde yapmıştır. Özellikle ilgili dönemde Amerikan halkının büyük kısmı bazı konularda eğitimin niteliğinin düşük olmasından ciddi kaygı duymaktadır. Ekonomi konusu da bu alt alanlardan birini temsil etmekte; birçok öğrencinin temel ekonomik konularda dahi zayıf performans sergilediği görülmektedir. Bu çalışma kapsamında ekonomi okuryazarlığının tespitine yönelik kırk altı adet temel ekonomik konuyu içeren çoktan seçmeli sorulardan oluşan “Test of Economic Literacy” adındaki bir test geliştirilmiştir. İlgili test Ocak 1986’da 6.570 öğrenciye ön test; 8.205 öğrenci için ise Mayıs 1986’da son test olarak uygulanmıştır. Daha sonra iki veri seti birleştirilerek; 3,031 vakadan oluşan temsili bir örneklem oluşturulmuştur. Sonuçlar, sosyal bilimler dersi kapsamında ekonomi dersi almayan öğrencilerin dört seçeneikli çoktan seçmeli bir testte soruların yalnızca %37’sini; tüketici ekonomisi dersleri alan öğrencilerin %40’ını doğru yanıtladığı sonucuna ulaşılmıştır. Ek olarak sosyal bilgiler dersleri kapsamında soruların doğru cevaplanma oranlarına göre; ekonomi dersi alan öğrencilerin %48, ekonomi öğrencilerinin ise %52 puan aldığı görülmüştür. Çalışma, ekonomi okuryazarlık düzeyinin geliştirilmesi ve en azından temel düzeyde ekonomi bilgisi ediniminin önemi düşünülürse, okul müfredatlarına temel ekonomik konuları içeren derslerin eklenmesinin önemini ortaya koymuştur.

Ekonomi okuryazarlığına ilişkin bir diğer çalışma, 1992 yılında Amerika Birleşik Devletleri’nde yapılmış; Amerikan halkına işsizlik, enflasyon, ekonomik büyüme, federal bütçe açığı, vergiler, hükümet harcamaları, para politikaları, şirket kârlılığı, cari açık, dolar kuru ve günlük hayatta karşılaşılan diğer bir dizi ekonomik kavram sorulmuştur. Ortaya çıkan sonuç ise çok az kişinin ekonomik kavramlar hakkında bilgi sahibi olduğunu göstermiştir. 1005 kişilik hane halkı, 300 lise ve 300 üniversite öğrencisinden oluşturulan örneklem sonucunda, düşük seyreden ekonomi okuryazarlığı düzeyinin İngilizce, tarih, coğrafya gibi temel derslerin yanı sıra ekonomi eğitimiyle desteklenmemesi halinde toplumsal olarak ciddi bir maliyet unsuru olacağı kabul edilmiştir (Walstad & Larsen, 1992:

1229). Benzer bir ihtiyaç Çentiner ve Çilingirtürk (2019)'ün finansal okuryazarlık üzerine yürütmüş olduğu bir çalışmada da vurgulanmıştır. Çalışma sonuçları finansal okuryazarlık düzeyinin artırılması ve bireylerin finansal konularda sağlıklı kararlar alabilmesi için ilgili konuların orta öğretimden başlayarak ders müfredatlarına dahil edilmesi; akabinde lisans, yüksek lisans ve doktora seviyelerinde de ders olarak verilmesi gerektiği üzerinde durmuştur.

Gianinno ve Crittenden (2005), ekonomi okuryazarlığına yönelik araştırmasını, iktisadi mücadelenin (para, hizmet ve mal ile değişimi, ücret ve emek arasındaki ilişki gibi) çocuklar tarafından algılanışını etkileyen iki unsur üzerinden oluşturmuştur. İlk yaklaşım psikolojik ve sosyolojik unsurlardan yola çıkmış; ekonomik kavramlardaki algıyı yaşa bağlı gelişim teorileriyle açıklamıştır. Yetişkinlere yönelik olarak ise algının ekonomik olmayan faktörlerle ilişkisi ele alınmıştır. Ekonomik yaklaşımda ise ekonomi okuryazarlık düzeyinin ekonomik kavramlara yönelik algıyı etkilediği üzerinde durulmuştur. Bu amaçla yedi-sekiz, on bir-on iki ve yetişkin olmak üzere üç ayrı grup olarak saptanan 86 kişilik bir örneklem seçilmiş; elde edilen sonuçlardan yola çıkarak iktisadi mübadeleye yönelik algının ekonomi okuryazarlık düzeyinden ziyade çevresel etmenlere bağlı olduğu ortaya koyulmuştur.

OECD'nin aşağıda belirtilen seçili ülkelerde bireylerin ekonomi okuryazarlığına ilişkin yaptığı araştırma bulguları ise şu şekildedir (OECD, 2005);

- Avustralya'da araştırmaya katılanların %67'si bileşik faizin manasını bildiğini iddia etmesine rağmen sadece %28'i bileşik faizle ilgili sorulan soruyu anlayabilmiştir.
- İngiltere'deki ankete göre bireyler yatırım kararları konusunda yeterli araştırma yapmıyor ya da tavsiye almıyorlar. Sahip oldukları finansal bilgiye ise şans eseri ya bir banka broşürünü okuyarak ya da bankacılarıyla konuşarak ulaşıyorlar.
- Kanada'daki anket sonucuna göre yatırımcılar doğru yatırım ürününü seçmeyi dışçıye gitmekten daha stresli buluyor.
- Kore'deki bir lisede yapılan ankete göre öğrenciler finans okuryazarlığı ile ilgili soruların %60'ından daha azına doğru cevap verebilmiştir. Sorular doğru kredi kartının nasıl seçilip kullanılacağı, emeklilik için tasarruf ve yatırım kararlarının nasıl verileceği, risk kavramı ve sigortayı kullanarak riskten nasıl korunabileceği gibi konuları kapsamaktadır.
- Amerika Birleşik Devletleri'ndeki anketin sonucuna göre ise her on çalışandan dört tanesi bireysel emeklilik hesabına ya da birikimine sahip değildir.

Çocukların ekonomik kavramlara ilişkin algılarını yaşa bağlı olarak inceleyen bir çalışmada altı, sekiz ve on yaşlarındaki 240 çocuktan oluşan bir örneklem incelenmiş; ekonomiye ilişkin kavramlar hikayeler şeklinde çocuklara sunulmuştur. Elde edilen sonuçlar ise ekonomik kavramlara ilişkin algıların yaşa bağlı olarak değişim gösterdiğini hem kavramlara ilişkin karmaşık cevaplar hem de bilgi düzeyinin bu paralelde artış gösterdiğini ortaya çıkarmıştır. Çalışma sonucunda ise araştırmacılar, çocuklara yönelik bilgi ve gelişim düzeylerine uygun ekonomi eğitiminin önemine dikkat çekmiştir (Bayhan vd., 2007: 3-11).

Walstad, Rebeck ve Butters (2010) tarafından beşinci ve altıncı sınıf seviyesinde orta öğrenimine devam eden öğrenciler için ekonominin anlaşılmasına yönelik “The Basic Economic Test” adı verilen temel düzeyde bir test geliştirilmiştir. İlgili test; kıtlık, tercih, üretim faktörleri, karar alma, marjinal analiz, ekonomik sistem, bölüşüm mekanizması, kar, ücret, fiyat, ticaret, karşılaştırmalı üstünlükler, para ve maliye politikaları, işsizlik ve enflasyon gibi temel ekonomik kavramların bilinmesine yönelik soruları içermektedir. Temel düzey ekonomi testi üç aşamalı olmakla birlikte, ilk olarak içeriği tamamen test olan uygulamanın her bir maddesi hakkında bilgi verilerek olası bütün belirsizliklerin ortadan kaldırılması hedeflenmiştir. İkinci aşamada testin öğrencilere nasıl uygulanması gerektiği hakkında temel bilgiler verilmiş; son olarak testin uygulanıp verilerin yorumlanması ile ekonomik okuryazarlık düzeyine ilişkin sonuçlara varılmıştır. “The Basic Economic Test” 1 Nisan - 15 Haziran 2007 tarihleri arasında 4481 öğrencinin katılımına sunulmuştur. İlgili test A formunda 8 bilgi, 13 kavrama ve 9 uygulama; B formunda 10 bilgi, 12 anlama ve 8 uygulama maddesi içerek şekilde tasarlanmış; sırasıyla her bir form 2.300 ve 2.181 öğrenciye uygulanmıştır. Ancak ortalama doğru cevaplanma oranlarının bazı sınıflar açısından son derece düşük olması, testin ilgili gruplar için zorlayıcı olduğu sonucunu doğurmuş ve bu sebeple bahsi geçen gruplar örneklem dışına bırakılmıştır. Nihai tabloda 23 eyaletten, 85 öğretmen tarafından sağlanan 176 sınıf verisiyle birlikte çalışmaya 3321 öğrenci katılmıştır. Veriler cinsiyet, sınıf düzeyi, okul büyüklüğü, öğrenci/öğretmen oranı, katılımcıların ırkı ve etnik kökeni, yoksulluk düzey tahmini (ücretsiz öğle yemeği yüzdesi) ve bölge gibi çeşitli kategorilere ayrılmıştır. Test sonuçları, ekonomi eğitimi alan öğrencilerin ekonomi eğitimi almamış öğrencilere kıyasla A ve B formlarının her ikisi için de görece yüksek performans gösterdiğini ortaya koymuştur.

Burke ve Manz (2011) ise deneysel bir çalışma ile enflasyon beklentisinin oluşumunda ekonomi okuryazarlık düzeyi ve demografik özelliklerin ilişkisini tespit etmeye çalışmıştır. Ekonomi okuryazarlığını ölçmeye yönelik sorular para politikaları ve kişisel finansa ilişkin temel kavramlardan oluşurken; demografik özellikler yaş, cinsiyet, etnik köken, hane halkı geliri, çalışma durumu, anne ve babaların eğitim durumu şeklinde oluşturulmuştur. Enflasyon beklentisinin ortaya çıkmasında; ekonomik göstergelere ilişkin mevcut bilgi seçiminin ve seçilen bilgilerin kullanımının önemi üzerinde durulmuştur. Sonuçlar ekonomi okuryazarlığı görece yüksek olan bireylerin hem bilgi seçiminde hem de bilginin kullanımında daha iyi performans sergilediğini ortaya koymuştur.

Gerek ve Kurt (2011), ekonomi okuryazarlığının iktisadi hayattaki gelişmeleri ve bu gelişmelerin yaratacağı olası etkilerin anlaşılması ve analiz edilmesi noktasındaki önemini fark ederek; okuryazarlık düzeyinin ölçülmesi ve elde eden sonuçlara göre bireylerin yönlendirilmesi gereğini ortaya koymuştur. Bu doğrultuda; ekonomi okuryazarlığı ölçüğünü geliştirmeyi amaçlamıştır. Bu çalışma 355 üniversite öğrencisine uygulanmıştır. Çalışma sonucunda ekonomi okuryazarlığı düzeyinin tespitinde “ekonomi bilgisi”, “ekonomik akılcılık”, “toplumsal ekonomik yansımalar” ve “bireysel ekonomi planlama” şeklinde dört boyutuyla 34 maddeden oluşan ölçek, yapılan geçerlik ve güvenirlik analizlerinin sonuçlarına göre sadece yükseköğretim düzeyinde değil yükseköğretimde olmayan yetişkinler için de uygulanabilir olarak bulunmuştur.

Gerek ve Kurt tarafından 2011 yılında geliştirilen bu ekonomi okuryazarlığı ölçeği, Dilek vd. (2016), tarafından yürütülen bir çalışmada da kullanılmıştır. Çalışma Kastamonu Üniversitesinde öğrenim gören; fakülte, yüksekokul ve meslek yüksekokul öğrencilerinden oluşan 428 kişilik bir örneklemin ekonomi okuryazarlık düzeylerini tespit etmeye yöneliktir. Yapılan analizler sonucunda medeni durum, yaş ve cinsiyete göre önemli bir farklılık arz etmeyen ekonomi okuryazarlığı düzeyi, ekonomi eğitimi alan lisans öğrencilerinde nispeten daha yüksek çıkmıştır. Ancak genel olarak bakıldığında öğrencilerin ekonomi okuryazarlık düzeylerini iyileştirmek için kat etmesi gereken bir dizi aşama olduğu sonucuna ulaşılmıştır.

Xu ve Zia (2012) çalışmalarında, gelir seviyelerine göre ülkelerin ekonomi okuryazarlık seviyelerini ölçmüştür. Yapılan hesaplamalara göre gelir düzeyi yüksek ülkelerde ekonomi okuryazarlık düzeyinin düşük olduğu; orta ve düşük gelirli ülkelerde ise bu düzeyin daha da düşük çıktığı sonucuna ulaşılmıştır. 2012 yılında T.C. Ulaştırma Bakanlığı şubesi çalışanların ekonomi okuryazarlığını ölçmeye çalışan ampirik bir araştırma kapsamında 93 çalışana ulaşılmış (şube çalışanlarının %76’sına tekabül etmektedir) ve elde edilen verilere ilişkin analiz sonuçları çalışanların ekonomi okuryazarlık düzeyinin “bireysel ekonomi kullanımı” boyutunda yüksek olduğunu ortaya koymuştur (Mercan vd., 2012: 112).

Prete (2013) tarafından yürütülen çalışmada ise finansal yatırım fırsatlarının değerlendirilmesi ekonomi okuryazarlığı düzeyi ile ilişkilendirilmiştir. Araştırmaya göre finansal piyasalar zamanla daha karmaşık bir hale gelirken yatırım araçlarının çeşitliliği artmakta, bu da yeni yatırım fırsatları yaratarak mevcut gelir eşitsizliğini büyük ölçüde gidermektedir. Alternatif yatırımlar arasındaki rasyonel seçimler ise ileri düzey bir ekonomi okuryazarlığı gerektirmektedir. Özetle araştırma bulguları, ekonomi okuryazarlığı düzeyi ile gelir dağılımı eşitsizliği arasında negatif bir ilişki tespit etmiştir.

Akhan (2013) çalışmasında, yetişkin bireyler için oldukça karmaşık olan ekonomik karar alma süreçlerinin ilkökul düzeyinde alınan ekonomi eğitimleriyle görece daha anlaşılır hale geleceğini belirtmiştir. Bu doğrultuda ilkökul düzeyinde öğrencilerin ekonomi okuryazarlık düzeylerinin artırılması için sosyal bilgiler öğretmenlerinin kullanmasına yönelik bir takım alternatif araçlar sunmuştur. Ancak her şeyden önce öğretmenlerin ekonomik konulara ilişkin farkındalıklarının oluşması ve yüksek bir ekonomi okuryazarlık düzeyine ulaşabilmesi için kendi lisans eğitimleri sırasında konuyla ilgili eksiklerinin ortadan kalkmasını sağlayacak eğitim programına tabi olmasını gereklilik olarak açıklamıştır. Şantaş ve Demirgil (2015), bir devlet üniversitesinin iktisadi ve idari bilimler fakültesi iktisat, kamu yönetimi, maliye, çalışma ekonomisi ve işletme lisans bölümlerinde öğrenim gören 704 kişilik birinci ve dördüncü sınıf öğrencilerden bir örneklem oluşturmuştur. Çalışmadan elde edilen verilere ilişkin analiz sonuçları okuryazarlık düzeyinin yaş, cinsiyet, eğitim görülen sınıf ve bölüm, ekonomik gelişmeleri takip etme sıklığı gibi özelliklere bağlı olarak değişme gösterdiğini ortaya koymuştur. Nihai olarak 22 yaş üzeri, iktisat ve maliye lisans programlarına kayıtlı, en az beş ekonomi dersi alan, ekonomik gelişmeleri günlük olarak takip eden erkek öğrencilerin ekonomi okuryazarlık düzeyinin görece yüksek olduğu sonucuna ulaşılmıştır.

Ekonomi okuryazarlığı ile ilgili ulusal ve uluslararası literatürde yapılan araştırmalarda genel olarak ekonomi okuryazarlık düzeyinin ölçülmesinin yanı sıra temel demografik değişkenlere göre katılımcıların ekonomi okuryazarlık düzeylerinin farklılık arz edip etmediği de incelenmiştir. Yapılan araştırmalarda katılımcıların yaşına (Koshal vd., 2008; Mercan vd., 2012; Şantaş & Demirgil, 2015; Dilek vd., 2016), cinsiyetine (Sedaie, 1998; Koshal vd., 2008; Mercan vd., 2012; Şantaş & Demirgil, 2015; Dilek vd., 2016), eğitim durumuna (Sedaie, 1998; Koshal vd., 2008; Mercan vd., 2012; Şantaş & Demirgil, 2015; Dilek vd., 2016) ve unvanına (Mercan vd., 2012) göre ekonomi okuryazarlık düzeylerinin farklılık gösterip göstermediği test edilmiştir. Bu araştırmalar bu çalışmanın hipotezlerine dayanak oluşturmaktadır. Bu doğrultuda araştırmanın hipotezleri aşağıdaki şekilde belirlenmiştir:

H₁: Gaziantep esnafının ekonomi okuryazarlığı düzeyleri cinsiyetlerine göre anlamlı bir farklılık göstermektedir.

H₂: Gaziantep esnafının ekonomi okuryazarlığı düzeyleri işletmelerindeki pozisyonlarına göre anlamlı bir farklılık göstermektedir.

H₃: Gaziantep esnafının ekonomi okuryazarlığı düzeyleri yaşlarına göre anlamlı bir farklılık göstermektedir.

H₄: Gaziantep esnafının ekonomi okuryazarlığı düzeyleri eğitim durumlarına göre anlamlı bir farklılık göstermektedir.

4. Materyal ve Yöntem

Araştırmanın örneklemini Gaziantep esnafı oluşturmaktadır. Bu doğrultuda, 751 esnafın ekonomi okuryazarlık düzeyini ölçmeye yönelik bilgilere anket yöntemiyle ulaşılmıştır. Anketler kolayda örnekleme metodu ile toplanmıştır. Araştırmada, NCREL'nin (North Central Regional Educational Laboratory) belirlediği bir ekonomi okuryazarının sahip olması gereken beceriler temel alınarak Gerek ve Kurt (2011) tarafından üniversite öğrencilerine yönelik uyarlanan "Ekonomi Okuryazarlığı Ölçeği" kullanılmıştır. Ölçekte, dört faktör ve 34 madde yer almaktadır. Faktörler; ekonomi bilgisi, ekonomik akılcılık, toplumsal ekonomik yansımalar ve bireysel ekonomi planlama başlıklarıyla sınıflandırılmıştır. Ölçeğin orijinali üniversite öğrencilerine yönelik olduğu için ilk olarak keşfedici faktör analizi (KFA) ile ölçeğin esnafa uygun olup olmadığı test edilmiştir.

Ölçeğe ait geçerlik ve güvenirlik testlerinden sonra katılımcıların ekonomi okuryazarlığını temel düzeyde ve alt faktörlerde ölçmek amacıyla frekans analizinden yararlanılmıştır. Araştırma hipotezlerini test etmek amacıyla ise iki kategorili değişkenlerde farklılık analizlerinden bağımsız örneklem T-testi ikiden fazla kategorili değişkenlerde tek yönlü varyans analizi (ANOVA) kullanılmıştır. ANOVA testi sonuçları anlamlı ise hangi kategoriler arasında farklılık olduğunu göstermek amacıyla Post-Hoc testlerinden Tukey yönteminden faydalanılmıştır.

4.1. Keşfedici Faktör Analizi (KFA)

KFA, çok değişkenli normal dağılım koşulu gerektiren bir analiz türü olduğu için öncelikle verilerin normal dağılım özelliği gösterip göstermediği test edilmektedir. Bu doğrultuda, literatürde sıklıkla çarpıklık (skewness) ve basıklık (kurtosis) değerlerine bakılmaktadır. Bu değerlerin -1 ile +1 arasında yer alması normal dağılıma uygunluk açısından mükemmel olarak yorumlanmakta iken -2 ile +2 arasındaki değerler kabul edilebilir değerler olarak yorumlanmaktadır (George & Mallery, 2002). Ekonomi okuryazarlığı verilerinin çarpıklık değeri -0,826 iken basıklık değeri 0,765 olarak tespit edilmiştir. Dolayısıyla, verilerin normal dağılım özelliği gösterdiği tespit edilmiştir. KFA'da veri setinin faktör analizine uygunluğunun incelenmesi amacıyla KMO (Kaiser-Meyer-Olkin) katsayısı ve Barlett Sphericity testi sonuçlarına bakılmıştır. KMO katsayısının ,956 olması ve Barlett Sphericity testi sonuçlarının anlamlı olması ($\chi^2=17303,320$, $p<0,000$) verilerin faktör analizi için uygun olduğunu göstermektedir.

Faktör analizi sonuçları, ölçeğin dört faktörlü bir yapı sergilediğini ve açıklanan varyansın %62,266 olduğunu ortaya koymaktadır. Faktör yük değerleri ,463 ile ,880 arasındadır. Kline (1994) %40'ın üzerindeki açıklayıcılığın faktör analizinde iyi bir oran olduğunu belirtmektedir. Gerek ve Kurt (2011) çalışmalarında olduğu gibi bu çalışmada da ölçek dört faktörlü bir yapı sergilemiştir ve faktör isimleri materyal ve yöntem bölümünde belirtildiği şekilde isimlendirilmiştir. Rotasyon işlemi Varimax yöntemi kullanılmıştır. Rotasyon işlemi sonucunda ortaya çıkan faktör yük değerleri Tablo 2'de gösterilmektedir.

Tablo: 2
Rotasyon Sonucu Faktör Yükleri: Ekonomi Okuryazarlığı Ölçeği

| İfadeler | Faktörler | | | |
|----------|-----------|------|------|------|
| | 1 | 2 | 3 | 4 |
| S1 | ,664 | | | |
| S2 | ,756 | | | |
| S3 | ,790 | | | |
| S4 | ,817 | | | |
| S5 | ,803 | | | |
| S6 | ,672 | | | |
| S7 | ,737 | | | |
| S8 | ,647 | | | |
| S9 | ,727 | | | |
| S10 | ,719 | | | |
| S11 | ,640 | | | |
| S12 | ,747 | | | |
| S13 | ,722 | | | |
| S14 | | ,708 | | |
| S15 | | ,722 | | |
| S16 | | ,682 | | |
| S17 | | ,751 | | |
| S18 | | ,712 | | |
| S19 | | ,550 | | |
| S20 | | ,651 | | |
| S21 | | ,668 | | |
| S22 | | ,599 | | |
| S23 | | | ,463 | |
| S24 | | | ,619 | |
| S25 | | | ,475 | |
| S26 | | | ,620 | |
| S27 | | | ,666 | |
| S28 | | | ,617 | |
| S29 | | | ,682 | |
| S30 | | | ,660 | |
| S31 | | | ,619 | |
| S32 | | | | ,795 |
| S33 | | | | ,880 |
| S34 | | | | ,825 |

Tablo 2'ye göre, Ekonomi Okuryazarlığı Ölçeğine ait ilk 13 ifade birinci faktörü (ekonomi bilgisi), 14-22 numaralı ifadeler ikinci faktörü (ekonomik akılcılık), 23-31 numaralı ifadeler üçüncü faktörü (toplumsal ekonomik yansımalar) ve 32-34 numaralı ifadeler dördüncü faktörü (bireysel ekonomi planlama) oluşturmaktadır.

4.2. Ölçeğin Güvenilirliği

Araştırmada kullanılan ölçeğin güvenilirliğini test etmek amacıyla ölçek maddelerinin birbirleriyle tutarlılığını inceleyen Cronbach Alpha (α) katsayısına bakılmıştır. Ekonomi bilgisi faktörüne ait Cronbach α katsayısı 0,945, ekonomik akılcılık faktörüne ait Cronbach α katsayısı 0,920, toplumsal ekonomik yansımalar faktörüne ait Cronbach α katsayısı 0,886 ve son olarak bireysel ekonomi planlama faktörüne ait Cronbach α katsayısı 0,870 olarak tespit edilmiştir. Literatürde Cronbach α değeri için genel olarak 0,7'nin üzerindeki değerlerin kabul edildiği görülmektedir (Bland & Altman, 1997: 572; George & Mallery, 2003: 231).

5. Bulgular

Bu bölümde ilk olarak katılımcılara ait tanımlayıcı istatistiklere yer verilmiştir. Daha sonra katılımcıların faktörler bazında ve genel toplam olarak ekonomi okuryazarlık düzeyleri özetlenmiştir. Son olarak katılımcıların demografik özelliklerine göre ekonomi okuryazarlık düzeylerinde farklılık olup olmadığını tespit etmek amacıyla farklılık analizleri yapılmıştır.

Aşağıdaki Tablo 3'te katılımcılara ait demografik özellikler gösterilmektedir.

Tablo: 3
Katılımcılara ait Demografik Özellikler

| Demografik Özellik | Kategori | Frekans | % |
|---|-----------------|-----------|------|
| İşletmedeki Pozisyon | İşletme sahibi | 557 | 74,2 |
| | Çalışan | 194 | 25,8 |
| | Kadın | 89 | 11,9 |
| Cinsiyet | Erkek | 662 | 88,1 |
| | 20-30 arası | 247 | 32,9 |
| Yaş | 31-40 arası | 302 | 40,2 |
| | 41-50 arası | 157 | 20,9 |
| | 51-60 arası | 40 | 5,3 |
| | 61 ve üzeri | 4 | 0,7 |
| | İlköğretim | 190 | 25,3 |
| Eğitim Durumu | Lise | 335 | 44,6 |
| | Ön lisans | 103 | 13,7 |
| | Lisans ve üzeri | 123 | 16,4 |
| İşletmenin Faaliyet Gösterdiği İlçe | Şahinbey | 285 | 37,9 |
| | Şehitkamil | 334 | 44,5 |
| | Diğer | 132 | 17,6 |
| İşletmenin Hukuki Statüsü | Şahıs işletmesi | 541 | 72,0 |
| | Limited şirket | 94 | 12,5 |
| | Anonim şirket | 34 | 4,5 |
| | Diğer | 82 | 10,9 |
| İşletmenin Çalışan Sayısı | 1-10 kişi | 590 | 78,6 |
| | 11-50 kişi | 118 | 15,7 |
| | 51-250 kişi | 26 | 3,5 |
| | 251 ve üzeri | 17 | 2,3 |
| Herhangi Bir Devlet Desteğinden Faydalanma Durumu | Evet | 126 | 16,8 |
| | Hayır | 535 | 71,2 |
| | Haberim yok | 90 | 12,0 |
| İşletmenin Faaliyet Süresi | Ortalama | 12,06 yıl | |
| | Minimum | 1 yıl | |
| | Maksimum | 85 yıl | |

Tablo 3 incelendiğinde, katılımcıların %74,2'sinin işletmenin sahibi, %88,1'inin erkek, %40,2'sinin 31 ile 40 yaş arası, %44,6'sının lise mezunu olduğu görülmektedir. Ayrıca, katılımcıların işletmelerinin çoğunlukla Şehitkamil İlçesinde faaliyet gösterdiği, hukuki işletme statülerinin şahıs işletmesi olduğu, çalışan sayılarının 1 ile 10 kişi arasında olduğu, devlet desteklerinden yararlanmadığı tanımlayıcı istatistiklerde ortaya konmaktadır. İşletmelerin faaliyet süresi ise ortalama 12,06 yıldır.

5.1. Gaziantep Esnafının Ekonomi Okuryazarlığı Düzeyi

Araştırmaya katılan 751 esnafın ekonomi okuryazarlığı seviyeleri faktörler bazında Tablo 5-8'de özetlenmiştir. Katılımcılara ait genel ekonomi okuryazarlığı skoru 3,985 (std. sp.=0,677) olarak tespit edilmiştir. Bu skoru yorumlanması açısından 5'li likert tipi ölçek

değerlendirilmesinde sıklıkla kullanılan Tablo 4’teki çizelgeden yararlanılmıştır. Buna göre, örnekleme katılan esnafın ekonomi okuryazarlıkları yüksek seviyededir şeklinde yorum yapılabilir.

Tablo: 4
Likert Tipi Ölçek Değerlendirme

| Aralık | Yorum |
|-------------|------------|
| 1,00 - 1,79 | Çok Düşük |
| 1,80 - 2,59 | Düşük |
| 2,60 - 3,39 | Orta |
| 3,40 - 4,19 | Yüksek |
| 4,20 - 5,00 | Çok Yüksek |

Tablo: 5
Gaziantep Esnafının Ekonomi Bilgisi

| İfadeler | Ortalama | Std. Sap. |
|--|-------------|--------------|
| 1. Döviz fiyatlarındaki değişimin ihracat ve ithalat üzerindeki etkilerini yorumlayabilirim. | 3,50 | 1,267 |
| 2. IMF politikalarının ekonomi üzerindeki etkisini tartışabilirim. | 3,13 | 1,297 |
| 3. Menkul kıymetler borsasındaki gelişmelerin ekonomiye etkisini anlayabilirim. | 3,15 | 1,279 |
| 4. Uluslararası ekonomik kaynakların piyasaya etkisini anlayabilirim. | 3,38 | 1,265 |
| 5. Ulusal finansal kaynakların ekonomiye etkisini anlayabilirim. | 3,33 | 1,288 |
| 6. Enflasyon oranlarındaki değişimin ne ifade ettiğini anlayabilirim. | 3,64 | 1,232 |
| 7. Dış ekonomik gelişmelerin ülke ekonomisine yansımalarını yorumlayabilirim. | 3,58 | 1,216 |
| 8. Faiz oranlarının piyasaya etkisini anlayabilirim. | 3,72 | 1,220 |
| 9. Ekonomik politikaların fayda ve maliyetlerini değerlendirebilirim. | 3,48 | 1,200 |
| 10. Küçük, orta ve büyük ölçekli işletmelerin (KOBİ) ekonomik rollerini anlayabilirim. | 3,54 | 1,261 |
| 11. Döviz ve altın fiyatlarında meydana gelen değişimin nedenlerini yorumlayabilirim. | 3,65 | 1,161 |
| 12. Kamu, özel ve sivil toplum kuruluşlarının ekonomik rollerini tanımlayabilirim. | 3,32 | 1,261 |
| 13. Gelir dağılımı-ekonomi ilişkisini anlayabilirim. | 3,64 | 1,237 |
| Toplam | 3,47 | 0,965 |

Tablo 5’e göre Gaziantep esnafının ekonomi bilgisi ortalama skoru 3,47 ile yüksek düzeydedir. Ancak orta düzey sınıflandırmasına oldukça yakın noktadadır. Bu veri, sanayi kenti olarak bilinen Gaziantep esnafının faiz, döviz kuru, dış ticaret gibi makroekonomik konuları iyi takip ettiği ve bu değişkenlerin piyasaya yansımalarına da hâkim olduğu sonucunu vermektedir. Çünkü makro ekonomik konjonktür, esnaf kesimini iki şekilde etkileyebilmektedir. Hem sattığı ürünlerin maliyeti hem de bu ürünleri talep eden müşterilerinin alım gücünü doğrudan ilgilendirmektedir. Bu nedenle Gaziantep İlinde faaliyet gösteren esnafın ekonomi bilgisinin beklentiler dâhilinde yüksek çıktığı söylenebilir.

Tablo: 6
Gaziantep Esnafında Ekonomik Akılcılık

| İfadeler | Ortalama | Std. Sap. |
|--|-------------|--------------|
| 14. Ekonomik tercihlerimin fayda ve maliyetlerini karşılaştırabilirim. | 3,91 | 1,104 |
| 15. Parasal kaynaklarımı değerlendirerek akılcı (rasyonel) tercihler yapabiliyim. | 4,03 | 1,004 |
| 16. Sunulan hizmetleri ekonomik açıdan değerlendirebilirim. | 3,97 | 1,012 |
| 17. Kâr ve maliyetler arasındaki farkı anlayabilirim. | 4,19 | 0,992 |
| 18. Genel tüketim harcamalarımı gelirim göre düzenleyebilirim. | 4,16 | 1,026 |
| 19. Bireylerin davranışlarını etkileyen ekonomik unsurları algılayabilirim. | 3,93 | 1,051 |
| 20. Üretici ile tüketici arasındaki etkileşimin fiyatlara nasıl yansıdığını anlayabilirim. | 4,01 | 1,068 |
| 21. Malın azalmasının ve fazılaşmasının piyasa fiyatlarına etkisini yorumlayabilirim. | 4,09 | 1,059 |
| 22. Arz-talep dengesizliklerinin fiyatlara nasıl yansıdığını anlayabilirim. | 4,02 | 1,093 |
| Toplam | 4,03 | 0,816 |

Tablo 6’ya göre Gaziantep esnafının ekonomik akılcılık ortalama skoru 4,03 ile yüksek düzeyde çıkmıştır. Bu durum ekonomi bilgisi yüksek olan esnaf için beklenen bir sonuç olarak yorumlanabilir. Çünkü esnaf, ekonomik gelişmelerin kendilerini ne ölçüde etkileyeceğini, herhangi bir kriz anında veya piyasaların hızla iyileşme gösterdiği durumlarda nasıl pozisyon alınması gerektiğini doğru bir şekilde analiz edebilmektedirler. Bu durumun tersi olması durumunda, ortalama işletme faaliyet yılının düşük olması beklenirdi. Oysaki Tablo 3’te de görüldüğü üzere Gaziantep İlinde faaliyet gösteren esnafın ortalama faaliyet süresi 12,06 yıldır.

Tablo: 7
Gaziantep Esnafında Toplumsal Ekonomik Yansımalar

| İfadeler | Ortalama | Std. Sap. |
|--|-------------|--------------|
| 23. Tüketeceğim ürüne karar verirken fiyat-fayda ilişkisini göz önünde bulundururum. | 4,21 | 1,034 |
| 24. Rekabetin ekonomik sonuçlarını anlayabilirim. | 4,12 | 0,991 |
| 25. Reklam harcamalarının ekonomiye katkılarını yorumlayabilirim. | 3,95 | 1,085 |
| 26. Tercih edeceğim ürüne karar verirken ihtiyacımı göz önünde bulundururum. | 4,30 | 0,929 |
| 27. Rekabetin ekonomik sonuçlarını anlayabilirim. | 4,10 | 0,997 |
| 28. Bir malın fiyatı aşırı yükselirse yerine aynı faydayı sağlayan düşük fiyatlısını alırım. | 4,16 | 1,061 |
| 29. Ürün satın alırken marka yerine kalitesine bakarım. | 4,16 | 1,058 |
| 30. Ürünlerin tüketicilere ulaşım sürecinin fiyatlara nasıl yansıdığını anlayabilirim. | 4,12 | 0,991 |
| 31. Ekonomik krizlerin işsizlik üzerinde yarattığı etkileri yorumlayabilirim. | 4,09 | 1,007 |
| Toplam | 4,13 | 0,736 |

Tablo 7’ye göre Gaziantep esnafının toplumsal ekonomik yansımalar ortalama skoru 4,13 ile yüksek düzeyde çıkmıştır. Esnaf kesimi sosyoekonomik yapının temel dinamiğidir. Bu nedenle sosyoekonomik yapının temel değişkenlerini doğru yorumlamak ve sürekli bu bilgi düzeyini güncel tutmak zorundadır. Tablo 7’de de görüldüğü üzere rekabet, işsizlik, marka, reklam gibi olgulara yönelik toplumsal ekonomik yansımalarda, esnafın yüksek düzeyde bilgi sahibi olması beklenen olumlu bir sonuçtur.

Tablo: 8
Gaziantep Esnafında Bireysel Ekonomi Planlama

| İfadeler | Ortalama | Std. Sap. |
|--|-------------|--------------|
| 32. Kredi kullanırken gelir-gider dengemi sağlayabilirim. | 4,20 | 1,064 |
| 33. Kredi kartı kullanırken ödeme gücüne göre harcama yaparım. | 4,30 | 1,033 |
| 34. Taksitlendirme yaparken gelirimi göz önünde bulundururum. | 4,41 | 0,927 |
| Toplam | 4,31 | 0,899 |

Tablo 8’e göre Gaziantep esnafının bireysel ekonomi planlama ortalama skoru 4,31 ile çok yüksek düzeydedir. Bu sonuç Tablo 5-6-7 ile uyumludur. Esnaf yüksek ekonomi bilgisi ile piyasada rasyonel davranabilmekte ve bunun sosyoekonomik yansımalarını doğru yönetebilmektedir. Zaten esnafın ekonomi bilgisini bireysel ekonomi planlamasında da kullanabilmesi, bu kesimin uzun süre varlığını devam ettirebilmesi anlamına gelmektedir. Esnafın yeni yatırımlarında, borçlanma politikalarında, büyüme stratejilerinde bu bireysel planlamaları büyük önem arz etmektedir.

5.2. Farklılık Analizleri

Farklılık analizleri normallik testi sonuçlarına göre parametrik ya da parametrik olmayan yöntemler şeklinde yapılmaktadır. Veriler normal dağılım özelliği gösteriyorsa parametrik göstermiyorsa parametrik olmayan yöntemlerle farklılık analizleri gerçekleştirilir. KFA başlığında raporlandığı üzere veriler normal dağılım özelliği gösterdiği için parametrik yöntemlerle analizlere devam edilmiştir. Katılımcıların demografik özelliklerine göre ekonomi okuryazarlıklarının farklılık gösterip göstermediğini tespit etmek amacıyla iki kategorili değişkenler için bağımsız örneklem T-testi, ikiden fazla kategorili değişkenler için tek yönlü varyans analizinden (ANOVA) yararlanılmıştır.

Katılımcıların işletmedeki pozisyonuna ve cinsiyetine göre ekonomi okuryazarlığı düzeyleri arasında anlamlı bir farklılık olup olmadığını test etmek amacıyla bağımsız örneklem T-testinden yararlanılmıştır. Test sonuçları Tablo 9'da özetlenmiştir.

Tablo: 9
Cinsiyet ve İşletmedeki Pozisyona göre Ekonomi Okuryazarlığı

| | Cinsiyet | | İşletmedeki Pozisyon | |
|------|----------|-------|----------------------|---------|
| | Kadın | Erkek | İşletme sahibi | Çalışan |
| n | 89 | 662 | 557 | 194 |
| Ort. | 4,07 | 3,97 | 4,03 | 3,85 |
| t | 1,251 | | 3,11 | |
| p | ,211 | | ,002 | |

T-testi sonuçlarına göre ekonomi okuryazarlığı düzeyinin esnafın işletmedeki pozisyonuna göre anlamlı bir farklılık gösterdiği tespit edilirken cinsiyete göre anlamlı bir farklılık tespit edilmemiştir. Bu durumda araştırmanın H1 hipotezi reddedilirken H2 hipotezi kabul edilmiştir. Katılımcılar arasında işletme sahibi olanların ekonomi okuryazarlığı düzeyi çalışan grubuna kıyasla daha yüksektir. Cinsiyete göre farklılık tespit edilemeyişinin gerekçesi olarak araştırmaya katılanların %88,1'inin erkek olması gösterilebilir. Yani araştırmaya ağırlıklı olarak erkek esnaf dahil olmuştur. Ayrıca işletme sahiplerinin işletme çalışanlarına göre ekonomi okuryazarlığının yüksek çıkması da beklentiler yönündedir. Çünkü risk alan, yatırım yapan, piyasada varlığını devam ettirmek zorunda olan kişi işletme sahibidir. Bu nedenle işletme sahiplerinin piyasadaki gelişmeleri, sosyoekonomik yapıyı ve iktisadi alandaki gelecek beklentilerini doğru analiz etmesi gerekmektedir. Fakat işletmedeki çalışan, emeğinin karşılığı olan ücret dahilinde üretime katkı sağladığı için sorumluluk bilinci ve bilgi düzeyi işletme sahibi kadar olmamaktadır.

Araştırmaya dahil edilen esnafın yaşlarına ve eğitim durumlarına göre ekonomi okuryazarlığı düzeyleri arasında anlamlı bir farklılık olup olmadığını test etmek amacıyla ANOVA analizi yapılmıştır. Anlamlı bir fark olması durumunda bu farkın hangi kategoriler arasında olduğunu test etmek amacıyla Post-Hoc testlerinden Tukey testi yapılarak sonuçları raporlanmıştır.

Tablo: 10
ANOVA: Yaşa göre Ekonomi Okuryazarlığı

| Ekonomi Okuryazarlığı | Kareler Toplamı | Serbestlik Derecesi | F | p |
|-----------------------|-----------------|---------------------|-------|------|
| Gruplar arası | 2,695 | 4 | 1,473 | ,209 |
| Gruplar içi | 341,177 | 746 | | |
| Toplam | 343,872 | 750 | | |

Tablo 10’da raporlanan ANOVA analizi sonuçlarına göre katılımcıların yaşlarına göre ekonomi okuryazarlığı düzeyleri anlamlı bir farklılık göstermemektedir. Dolayısıyla araştırmanın H3 hipotezi reddedilmiştir. Farklılık olmamasının gerekçesi, esnaflık mesleğinin genellikle babadan kalma olması ve aileden her çocuğun aynı kültür ve bilinçle yetişmesi, esnafın hangi yaşta olursa olsun aynı bilinç düzeyinde olduğu şeklinde yorumlanabilir. Ayrıca araştırmaya katılan Gaziantep esnafının yaş aralığına bakıldığında ağırlığın orta yaş olduğu görülmektedir. 60 yaş üstü esnaf sayısının sadece 4 kişi olması da farklılığın yaş seviyelerine göre olmamasını açıklayabilmektedir.

Tablo: 11
ANOVA: Eğitim Durumuna göre Ekonomi Okuryazarlığı

| Ekonomi Okuryazarlığı | Kareler Toplamı | Serbestlik Derecesi | F | p |
|-----------------------|-----------------|---------------------|--------|------|
| Gruplar arası | 13,859 | 3 | 10,456 | ,000 |
| Gruplar içi | 330,013 | 747 | | |
| Toplam | 343,872 | 750 | | |

Tablo 11’de yer alan ANOVA analizi sonuçlarına göre esnafların ekonomi okuryazarlığı düzeyleri eğitim durumlarına göre anlamlı bir farklılık göstermektedir. Buna göre araştırmanın H4 hipotezi kabul edilmiştir. Hangi eğitim kategorilerinde farklılık olduğunu ortaya koymak adına yapılan Tukey testi sonuçları ise Tablo 12’de sunulmuştur. Tabloya sadece anlamlı farklılık bulunan kategoriler eklenmiştir.

Tablo: 12
Tukey Testi*: Eğitim Durumu ile Ekonomi Okuryazarlığı

| Eğitim Durumu (I) | Eğitim Durumu (J) | Ortalama Farkı (I-J) | Standart Hata | p |
|-------------------|-------------------|----------------------|---------------|------|
| İlköğretim | Ön lisans | -0,29995 | 0,08133 | ,001 |
| | Lisans ve üzeri | -0,38307 | 0,07692 | ,000 |
| Lise | Lisans ve üzeri | -0,27501 | 0,07008 | ,001 |

Tukey testi sonuçlarına göre, ilköğretim mezunu esnaf ile ön lisans ve lisans ve üzeri mezunu olan esnaf arasında ekonomi okuryazarlığı düzeyi açısından anlamlı farklılıklar vardır. Ortalama farklar incelendiğinde hem ön lisans mezunlarının hem de lisans ve üzeri eğitim seviyesine sahip esnafın ekonomi okuryazarlığı düzeylerinin ilköğretim mezunlarından daha yüksek olduğu görülmektedir. Ayrıca, lisans ve üzeri eğitim düzeyine sahip esnafın ekonomi okuryazarlık düzeyi lise mezunu olanlardan anlamlı şekilde daha yüksektir. Eğitim seviyesinin artması; esnafın bilinç düzeyini yükseltmekte, araştırma-sorgulayan insan profilinin oluşmasını sağlamakta ve bu durumun ekonomi okuryazarlık düzeyini artmasını desteklemektedir. Dolayısıyla yapılan araştırmada, eğitim seviyesinin yükselmesi esnafın ekonomi okuryazarlığını artırmaktadır.

6. Sonuç ve Öneriler

Ekonomi okuryazarlığı krizlerin daha sık yaşandığı, piyasa dalgalanmalarının sürekli hale geldiği günümüz dünyasında görece önemli hale gelmiştir. Bireysel olarak rasyonel tercihlerde bulunmaya yardımcı olan ekonomi okuryazarlığı, genel olarak tüketicileri risklerden korumakta ve fayda düzeyini de artırabilmektedir. Firmalar açısından düşünüldüğünde ise ekonomi okuryazarlığı yatırım kararlarında, üretim süreçlerinde, risk analizlerinde ve beklentilerde büyük fayda yaratmaktadır. Ekonomi okuryazarlığının firmalar ve bireylerdeki bu etkisi, sosyoekonomik açıdan düşünüldüğünde ülkenin makroekonomik beklentilerini doğrudan etkileyebilmektedir.

Çalışmada ekonomi okuryazarlığı, Gaziantep ilinde faaliyet gösteren esnaf ve küçük ölçekli KOBİ'ler üzerinden araştırılmıştır. Bilindiği üzere esnaf sınıfı yerel ekonomilerin temel dinamiğini oluşturmaktadır. Esnaf, sermayesi ile bedeni çalışmasını da işletmesine katarak faaliyet göstermekte olup tacir veya sanayici olamayacak kadar küçük ölçeklidir. Yerel ve makroekonomik konjonktürde ağırlığı olan bu kesimin ekonomi okuryazarlık düzeyi orta ve uzun dönemde ülke ekonomisi ve yerelde sosyoekonomik yapı için oldukça önemlidir. Gaziantep ilinde kayıtlı 751 esnaf ile yüz yüze görüşme yöntemiyle gerçekleştirilen anketlerde, Gaziantep ilinde faaliyet gösteren esnafın ekonomi bilgi düzeylerinin 3,47'lik skor ile yüksek düzeyde olduğu görülmüştür. Alt boyutlar itibarıyla incelendiğinde ise "ekonomik akılcılık" ortalama skorunun 4,03 ile yüksek düzeyde, "toplumsal ekonomik yansımalar" ortalama skoru 4,13 ile yüksek düzeyde, "bireysel ekonomi planlama" ortalama skoru ise 4,31 ile çok yüksek düzeyde çıkmıştır.

Elde edilen sonuçlardan da görüldüğü üzere Gaziantep ilinde faaliyet gösteren esnafın, faiz, döviz kuru, enflasyon gibi makroekonomik değişkenlerin ne anlama geldiğini, olumlu veya olumsuz sonuçlarının neler olabileceğini, işletmesinin piyasadaki gelişmelere göre nasıl pozisyon alması gerektiğini bilmektedir. Yerel ekonomide güçlü bir yapısı olan ve sosyoekonomik açıdan düşünüldüğünde geniş bir etki alanı olan esnafın bu derece yüksek ekonomi okuryazarlığı olması orta ve uzun dönemde olumlu bir gelişmedir. Politika yapıcılarının, esnafı ilgilendiren karar süreçlerinde bu durumu dikkate alması gerekmektedir. Özellikle enflasyon, faiz oranları, işsizlik gibi makroekonomik değişkenler, esnafın hem mal tedarikinde hem de ürünlerin tüketiciye ulaştırılmasında etkili olduğu bilinmelidir. Esnaf ise bu yüksek bilgi düzeyini daha ileri aşamaya taşıyarak, işletmesini büyütme ve orta ölçekli bir firma olma yolunda adım atması beklenmektedir. Bunun içinde ekonomi biliminin temelini oluşturan kıt kaynak yönetiminin doğru ve rasyonel yapılması önerilmektedir.

Yapılan çalışmada ortaya çıkan bir başka sonuç ise ekonomi okuryazarlığı düzeyinin eğitim düzeyi ve işletme sahipliği ile ilişkili olduğudur. Esnafın eğitim seviyesinin artması ekonomi okuryazarlığını da yükseltmektedir. Ayrıca kendi işletmesini yöneten esnafın ekonomi okuryazarlık düzeyinin de yüksek olduğu sonucuna ulaşılmıştır. Esnafın eğitim düzeyinin artırılması, işletmesindeki iktisadi kararları da etkileyebilmektedir. Yüksek eğitilmiş esnafın ise orta vadede işletmesini büyütmesi beklenmektedir.

Çalışmada elde edilen sonuçlar literatürdeki birçok çalışma ile uyumludur. Fakat literatürde ekonomi okuryazarlığının esnaf sınıfı üzerinden araştırıldığı çalışmalar yeterli düzeyde olmadığı için doğrudan karşılaştırma yapılamamaktadır. İlgili alanda çalışma yapmak isteyen yeni araştırmacılara ise ekonomi okuryazarlığının farklı meslek dalları üzerinden yapılarak analizlerin yorumlanması ve politika önerilerinin geliştirilmesi önerilebilir. Çalışmanın temel kısıtı araştırmanın Gaziantep ilinde yapılmasıdır. Bu nedenle çalışmanın ülke genelinde yapılabilmesi durumunda daha genel sonuçların elde edileceği düşünülmektedir.

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Yenilik ve Ekonomik Büyüme Arasındaki İlişki: Panel Eşbütünleşme ve Panel Nedensellik Analizi¹

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The Relationship Between Innovation and Economic Growth: Panel Cointegration and Panel Causality Analysis²

Abstract

This paper aims to examine the relationship between innovation and economic growth. For this purpose, panel cointegration and causality analysis were applied to 36 developed and developing countries from 1996-2018. According to the study results, economic growth positively affects the number of patent applications (PA) and composed innovation index (CII). In contrast, economic growth does not affect the number of patent cooperation treaty (PCT) documents. On the other hand, the results show that while PA and PCT documents positively affect economic growth, the CII does not significantly affect economic growth.

Keywords : Innovation, Economic Growth, Panel Cointegration Analysis, Panel Causality Analysis, Principal Components Analysis.

JEL Classification Codes : O30, O31, O32, O40.

Öz

Bu çalışmanın amacı, yenilik ve ekonomik büyüme arasındaki ilişkiyi incelemektir. Bu amaçla, 1996-2018 yılları için 36 gelişmiş ve gelişmekte olan ülke üzerinde panel eşbütünleşme ve nedensellik analizi uygulanmıştır. Çalışma sonuçlarına göre ekonomik büyüme, patent başvuru sayısını (PA) ve birleşik yenilik endeksini (CII) olumlu yönde etkilerken ekonomik büyüme, patent iş birliği anlaşması (PCT) belge sayısını etkilememektedir. Diğer yandan çalışmanın sonuçları, PA ve PCT belge sayısının ekonomik büyüme üzerinde olumlu bir etkisi olduğunu, CII'nin ise ekonomik büyüme üzerinde anlamlı bir etkisinin olmadığını göstermektedir.

Anahtar Sözcükler : Yenilik, Ekonomik Büyüme, Panel Eşbütünleşme Analizi, Panel Nedensellik Analizi, Temel Bileşenler Analizi.

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1. Giriş

Yenilik ve ekonomik büyüme literatürünün teorik temellerini oluşturan Schumpeter (1939), inovasyonu üretim fonksiyonu aracılığıyla tanımlamıştır. Bu fonksiyon, faktör miktarları değiştiği zaman ürün miktarlarının nasıl değiştiğini açıklamaktadır. Eğer faktörlerin niceliği yerine işlevi değiştirilirse bu yeniliğe yol açacaktır. Yazara göre inovasyon, kısaca yeni bir üretim fonksiyonunun kurulmasıdır. Bu yeni bir metanın yanı sıra birleşme, yeni pazarların açılması gibi yeni bir örgütlenme biçimini de kapsamaktadır. Başka bir deyişle inovasyonu; yapılmakta olan şeyleri yeni bir şekilde yapmak ya da yeni kombinasyonlar geliştirmek şeklinde ifade etmiştir. Neoklasik büyümenin en önemli temsilcisi olarak bilinen Solow (1956)’un büyüme modelinde ise fiziksel sermaye birikimi ve teknolojik gelişme önemli bir role sahiptir. Daha sonra Arrow (1961) büyüme literatüründe önemli bir yere sahip olan yaparak öğrenme kavramını modele dahil etmiştir. İçsel büyüme modellerinin en önemli temsilcileri Romer (1986) ve Lucas (1988) beşerî sermaye kavramını modele dahil ederek literatüre önemli bir katkı sağlamışlardır. Barro (1990) ise büyüme modeline kamu kesimini dahil ederek farklı bir bakış açısı kazandırmıştır. AR-GE modelleri olarak bilinen Grossman & Helpman (1989), Romer (1990) ve Aghion & Howitt (1992)’in modelleri ayrı bir teknoloji üreten sektörün olduğu doğrudan teknolojik büyümeye dayalı modellerdir. Ayrıca bu modellerde eksik rekabet piyasasının koşulları da dikkate alınmaktadır.

Yenilikle birlikte daha yüksek rekabet gücüne yol açan ürünlerin üretim maliyetlerinde bir azalma meydana gelmektedir. Ayrıca işgücü verimliliğinde bir iyileşmenin gerçekleşmesi, üreticinin daha fazla gelir elde etmesini ve katma değer yaratmasını sağlamaktadır. Yenilik ve ekonomik büyüme arasındaki ilişkide önemli bir kanal, yayılma etkisidir. Her firma kendi üretimine özgü sorunları çözmeye çalışmaktadır. Bunu başardıkça ortaya çıkan yenilikleri diğer firmaların takip etmesi yoluyla teknolojik yeniliklerin yayılması gerçekleşir. Bu yayılmalar, toplam üretimin artmasına ve ekonomik büyüme sürecinin pozitif etkilenmesine yol açar. Bir diğer kanal ise geri besleme etkisidir. Daha iyi bir ekonomik aktivite, girişimciler için yeni fırsatlar yaratacak ve yeniliği teşvik edecektir. Girişimcilerin faaliyetlerini gerçekleştirmeye teşvik eden sosyal stresin azaltılması, finansal kaynak ihtiyaçlarının karşılanması gibi unsurlar, yeniliği artıracaktır. Bu unsurlar, geri besleme etkisi olarak ifade edilmektedir. Dolayısıyla ekonomik büyümenin bu süreçte pozitif etkisi olacaktır. Yenilikler, yeni fırsatlar açısından girişimciliği teşvik edecek ve başka bir geri besleme etkisi ortaya çıkacaktır. Bir diğer önemli kavram ise Arrow (1961) tarafından ortaya atılan yaparak öğrenmedir. Yazara göre teknolojik değişim, içinde çalıştığımız çevre hakkında geniş ve uzun süreli bir öğrenme süreci ve zaman içinde performansta meydana gelen iyileşme şeklinde ifade edilmektedir. Öğrenme, deneyimin ürünüdür; yaparak öğrenme, ancak bir problemi çözme girişimiyle sadece aktivite sırasında gerçekleşebilir. Son olarak üzerinde durulması gereken bir diğer önemli kavram ise beşerî sermaye etkisidir. Beşerî sermaye, eğitim ve öğretime adanan çabanın birikimidir. Bir bireyin edindiği beceriler, sürekli gelişen bir dizi üretim teknolojisine uygulanabilir. Bu sayede beşerî sermayenin değeri zaman içinde sürekli olarak artacaktır. Nitelikli iş gücünün

bol olduğu büyük ekonomiler, çok sayıda endüstriyel araştırma yapacaktır. Böyle bir ekonomi daha hızlı büyüyecektir.

Bu çalışmanın amacı, yenilik ve ekonomik büyüme arasındaki nedensellik ilişkisini incelemektir. Çalışmada panel eşbütünleşme ve nedensellik analizi kullanılmıştır. Analize başlamadan önce seriler arasında yatay kesit bağımlılığın olup olmadığı tespit edilmiştir. Yatay kesit bağımlılığın olması durumunda ikinci nesil birim kök testleri kullanılmaktadır. Bu nedenle çalışmada, yatay kesit bağımlılığın var olduğunun tespit edilmesi üzerine ikinci nesil olan Pesaran (2007) CIPS birim kök testi uygulanmıştır. Sonraki aşamada ikinci nesil olan Westerlund (2007) eşbütünleşme testi yapılmıştır. Homojenlik/heterojenlik test sonucuna göre tüm eğim katsayılarının aynı değere sahip olmadığı, bir diğer deyişle heterojen olduğu belirlenmiştir. Daha sonra değişkenler arasındaki ilişkinin yönünü tespit etmek için Dumitrescu ve Hurlin (2012) tarafından geliştirilen panel nedensellik testi yapılmıştır. Paneli oluşturan ülkeler arasında hem yatay kesit bağımlılığı hem de heterojenliği göz önünde bulundurması nedeniyle bu analiz seçilmiştir. Son olarak yatay kesit bağımlılığı ve eğim katsayılarının heterojenliğini dikkate alan Genişletilmiş Ortalama Grup (AMG - Augmented Mean Group) tahmincisi kullanılmıştır.

Tahminler gelişmiş ve gelişmekte olan 36 ülke için 1996-2018 dönemi verilerini kapsamaktadır. Uygulama bölümünde kullanılan değişkenler Romer (1990)’in AR-GE modelinden yola çıkılarak oluşturulmuştur. Yenilik göstergelerinin ve ekonomik büyümenin bağımlı değişken olduğu altı farklı model kullanılmıştır. Yenilik göstergeleri; patent başvuru sayısı, uluslararası patent sınıflandırmasına göre patent iş birliği anlaşması belgelerinin sayısı ve birleşik yenilik endeksidir. Birleşik yenilik endeksi; patent sayısı, patent iş birliği anlaşması belgelerinin sayısı ve AR-GE harcamaları değişkenlerinden temel bileşenler analiziyle elde edilmiştir. Ekonomik büyümenin bağımlı değişken olarak kullanıldığı üç modelde ise kullanılan ekonomik büyüme göstergesi kişi başına GSYH değişkenidir. Her bir model, kullanılan yenilik göstergesine göre birbirinden ayrılmaktadır. Kullanılan diğer değişkenler ise beşerî sermaye endeksi, sabit sermaye oluşumu ve toplam işgücüdür.

Çalışma birkaç açıdan özgünlük taşımaktadır. İlk ve en önemli nokta, önceki çalışmalardan farklı olarak temel bileşenler analiziyle oluşturulan birleşik yenilik endeksinin modellerde kullanılmasıdır. Bilindiği gibi literatürdeki çalışmaların büyük bir çoğunluğu, yenilik göstergesi olarak AR-GE harcamaları ve patent başvuru sayısını kullanmaktadır. Bu çalışmada kullanılan birleşik yenilik endeksi, değişkenlerin ayrı ayrı etkisinden ziyade genel etkiyi anlamaya yardımcı olacaktır. Oluşturulan endeks, yenilik göstergelerinin bir bütün olarak takip edilmesinin önemli olup olmadığına açıklık getirecektir. İkinci nokta ise literatürdeki çalışmalar, OECD ülkelerini ya da kesişme kümesi büyük olan Avrupa Birliği ülkelerini ve gelişmiş ülkeleri ele almaktadır. Bu ülke grupları, homojen bir yapıda olduğu için birbirini doğrulayan ampirik sonuçlar elde edilmektedir. Bu çalışmada gelişmiş ülkelerin yanı sıra gelişmekte olan ülkeler de yer aldığı için daha heterojen bir örneklemle konu tekrar incelenmiştir. Üçüncü olarak çalışmanın yöntemi, değişkenler arasındaki nedenselliğe bakmakta ve heterojen yapıyı dikkate alan AMG tahmincisine dayanmaktadır.

Çalışma öncelikle teorik arkaplan ile başlamaktadır. Bu kısımda Schumpeter (1939)’den başlayarak büyüme modelleri anlatılmıştır. Sonraki bölümde ampirik literatür, çalışmaların yöntemi ve örnekleme üzerinden sınıflandırılarak ele alınmıştır. Panel eşbütünleşme ve nedensellik analizine ilişkin yöntem bölümünden sonra model, veri ve beklentiler kısmına yer verilmiştir. Daha sonra ampirik sonuçlar sunulmuştur. Çalışma, bulguları ve politika önerilerini içeren sonuç bölümü ile tamamlanmaktadır.

2. Teorik Arkaplan

Literatürde yenilik ve ekonomik büyümenin teorik temelleri ilk olarak yeniliği üretim fonksiyonu aracılığıyla açıklayan Schumpeter (1939) tarafından ortaya atılmıştır. Yenilik, kısaca yeni bir üretim fonksiyonunun kurulmasıdır. Bu yeni bir metanın yanı sıra birleşme, yeni pazarların açılması gibi yeni bir örgütlenme biçimini de kapsar. Başka bir deyişle yenilik, yapılmakta olan şeyleri yeni bir şekilde yapmak ya da yeni kombinasyonlar geliştirmektir (Schumpeter, 1939: 84). Ekonomik büyüme üzerinde yaratıcı tepki önemli bir yere sahiptir. Yaratıcı tepki sonraki olayların tüm seyrini ve onların uzun vadeli sonuçlarını şekillendirir. Öte yandan sosyal ve ekonomik durumları iyi yönde değiştirir. Bu nedenle yaratıcı tepki tarihsel süreçte önemli bir unsurdur (Schumpeter, 1947: 150). Klasiklerin teorisi, ekonomik büyümeyi çevresel faktörlere dayandırmaktadır. Onların teorilerinin arkasındaki fikir, statik aktivitelerin ekonomiyi etkilemesidir. Nüfus artışı, sermayedeki artış, üretim yöntemlerinde ilerleme, sanayinin ekonomik organizasyonunda ilerleme ve tüketici tercihlerinin gelişimi olmak üzere beş farklı çevresel faktör vardır. Bu değişikliklerin itici gücü sebebiyle ekonomik büyüme adeta otomatik olarak gerçekleşir. Bu teori, klasik teori ile uyumsuz değildir ancak klasik teoriyi yetersiz görmektedir. Çünkü ekonomik büyümenin daha derin nedenlerini ortaya çıkarmak yerine ya süreçleri ya da sonuçları yüzeysel olarak ortaya çıkarmaktadır (Schumpeter & Backhaus, 2003: 67-68).

Neoklasik büyümenin en önemli temsilcisi Solow (1956)’un büyüme modelinde teknolojik değişim, büyük bir rol oynamaktadır. Bu model Harrod-Domar modelinin genişletilmiş halidir. Harrod-Domar modelinde, uzun vadede bile ekonomik büyüme en iyi ihtimalle bıçak sırtında dengelenmektedir. Tasarruf oranı, sermaye-çıktı oranı, işgücü artış oranı gibi kilit parametreler çok az kayacak olsaydı, sonuç ya artan işsizlik ya da uzun süreli enflasyon olurdu. Kritik denge sorunu, teknolojik değişimin yokluğunda işgücü artışına bağlı olan doğal büyüme oranı ile hane halkı ve firmaların tasarruf ve yatırım alışkanlıklarına bağlı olan büyüme oranı arasında bir karşılaştırmaya indirgenir. Harrod-Domar modelinin dikkate değer bir özelliği, olağan kısa vadeli araçlarla uzun vadeli sorunları sürekli olarak incelemesidir. Bu model, sabit oranlar varsayımı hariç tüm Harrod-Domar varsayımlarını kabul eden bir büyüme modelidir. Standart neoklasik koşullar altında tek bir bileşik metanın emek ve sermaye tarafından üretildiği varsayılmaktadır. Model dışsal olarak verimli bir işgücü artış hızına uyarlanmıştır. Faize karşı fiyat-ücret tepkileri bu neoklasik uyum sürecinde önemli bir rol oynar. Öte yandan modelde teknolojik değişime izin verilmiştir (Solow, 1956: 65-66). Arrow (1961) modelinde Solow (1956) modeline ek olarak bilginin zaman içinde büyüdüğü gerçeği göz önüne alınmaktadır. Arrow (1961) büyüme literatüründe önemli bir yere sahip olan yaparak öğrenme kavramını modele dahil etmiştir.

Bilginin edinilmesi genellikle “öğrenme” olarak adlandırılır. Teknolojik değişim, içinde çalıştığımız çevre hakkında geniş ve uzun süreli bir öğrenme süreci ve zaman içinde performansta meydana gelen iyileşmedir. Öğrenme deneyimin ürünüdür. Öğrenme ancak bir problemi çözmeye girişimi ile gerçekleşebilir ve bu nedenle sadece yaparak öğrenme ile gerçekleştirilir. Klasiklere göre öğrenme deneylerinin çoğunda problemin tekrarı söz konusudur. Bu sebeple bilginin azalan getirilere tabi olduğu varsayımı vardır. Oysa bu davranışların yalnızca tekrardan ziyade sürekli olarak evrim geçirmesi gerekir (Arrow, 1961: 2-3).

Neoklasik büyüme modellerinden sonra Romer (1986), Lucas (1988) ve Barro (1990)’nın içsel büyüme modelleri, literatüre yön vermektedir. İçsel büyüme modellerinde beşerî sermaye kavramına büyük önem verilmiştir. Romer (1986)’in modelinde bilgi, artan marjinal verimliliğe sahip bir girdidir. Esasen, içsel teknolojik değişime sahip rekabetçi bir denge ve uzun dönemli bir büyüme modelidir. Azalan getirilere dayalı modellerin aksine, büyüme oranları zaman içinde artabilir. Büyük ülkeler her zaman küçük ülkelere göre daha hızlı büyüyebilir. Bilgi dışındaki faktörlerin arzı sabittir. Bu, fiziksel sermayenin, emeğin ve nüfusun büyüklüğünün sabit tutulduğu anlamına gelir. Bu modelin önemli ayırt edici özelliği, kişi başına gelirdeki sınırsız büyüme için nüfus artışının gerekli olmamasıdır. Fiziksel sermaye birikimine izin vermek daha ilgi çekici olacaktır (Romer, 1986: 1002, 1019).

Lucas (1988)’ın içsel büyüme modeli, neoklasik büyüme teorilerinin üzerine inşa edilmiştir. Neoklasik modelde; rekabetçi piyasa, rasyonel beklentiler ve sabit getirili teknolojinin olduğu kapalı bir ekonomi vardır. Üretimin, sermaye ve emek girdileriyle birlikte teknolojiye bağlı olduğu varsayılmaktadır. Teknik değişim oranı ise modelde dışsal faktör olarak ele alınmıştır (Lucas, 1988: 6-8). Büyümenin kaynağı olarak teknolojiye önemli bir rol verilmektedir. Ancak teknoloji seviyesi ve değişim hızı bakımından ülkeler arasındaki farklılıklar göz önünde bulundurulmamıştır (Lucas, 1988: 15). Bu modelde iki tür sermaye değişkeni vardır. Biri, neoklasik teoride olduğu gibi teknoloji altında üretimde biriken ve kullanılan fiziksel sermayeyken diğeri ise verimliliği (veya hem emeği hem de fiziksel sermayeyi) artıran beşerî sermayedir. Beşerî sermaye, birikmektedir. Fiziksel sermayenin marjinal ürünü sabittir. Başlangıçta yoksul olan ekonomilerin uzun dönemli gelir artış oranları, zengin olan ekonomilerinkiyle aynı olmasına rağmen görece olarak yoksullaşacaktır. Otarşik olarak işleyen bu tür ekonomilerden oluşan bir dünyada, ülkeler tek tip büyüme oranları sergileyecek ve zaman içinde mükemmel bir şekilde istikrarlı gelir ve servet dağılımı sağlanacaktır (Lucas, 1988: 39). Barro (1990)’nın içsel büyüme modelinde ise kamu sektörü basit ve sabit getirili bir ekonomik büyüme modeline dahil edilmiştir. İçsel büyüme modelleri üretimi veya faydayı etkileyen vergiyle finanse edilen devlet hizmetlerini içerecek şekilde genişletilmiştir. Büyüme ve tasarruf oranları, hizmet gibi harcamalardaki artış ile birlikte düşmektedir. Bu iki oran başlangıçta üretken hükümet harcamaları ile yükselir. Ancak daha sonra düşer. Bilgi yayılımını veya diğer dışsalıkları yansıtan sosyal getiriler, sabit veya artan oranlı olabilir (Barro, 1990: 103-104).

İçsel büyüme modellerinden sonra Grossman & Helpman (1989), Romer (1990) ve Aghion & Howitt (1992) ayrı bir teknoloji üreten sektörün olduğu doğrudan teknolojik büyümeye dayalı modeller inşa etmişlerdir. Bu modellerde eksik rekabet piyasası koşulları dikkate alınmıştır. Romer (1990)’in modelinde üç temel argüman vardır. Bunlardan ilki, hammaddeler ile ilgili teknolojik değişimin iyileştirilmesi, ekonomik büyümenin merkezinde yatmakta olduğundan teknolojik değişim, sermaye birikimi için teşvik sağlar. Sermaye birikimi ve teknolojik değişim, çalışılan saat başına çıktıdaki artışa neden olan unsurlardır. İkincisi, teknolojik değişimin büyük ölçüde piyasa teşviklerine yanıt veren kişiler tarafından alınan kasıtlı eylemler olmasıdır. Bu nedenle model, dışsal teknolojik değişimden ziyade içseldir. Üçüncü ve en temel argümana göre hammaddeler ile çalışma, diğer ekonomik mallarla çalışmaktan farklıdır. Çünkü yeni bir süreç oluşturmanın maliyeti, hiçbir ek maliyet olmaksızın tekrar kullanılabilir. Yani, sabit maliyet vardır. Bu özellik teknolojinin belirleyici özelliğidir (Romer, 1990: 72). Burada oluşturulan model için hesaplanan dengenin en ilginç özelliği piyasa büyüklüğündeki artışların, sadece gelir ve refah düzeyi üzerinde değil aynı zamanda büyüme üzerinde de etkiler yaratmasıdır. Geniş bir piyasa, daha fazla araştırmaya yol açar ve daha hızlı bir büyümeyi teşvik eder. Nüfus, pazar büyüklüğünün doğru ölçütü değildir. Beşerî sermaye stokundaki büyüme hızı artmaktadır. Ancak bu, işgücünün ve nüfusun toplam büyüklüğüne bağlı değildir. Günümüzün en fakir ülkelerinde beşerî sermaye stoku çok düşükse büyüme hiç gerçekleşmeyebilir (Romer, 1990: 73).

Grossman & Helpman (1989)’a göre yalnızca sermaye yatırımı içeren modeller, uzun vadeli büyümenin analizi için uygun değildir. Büyüme ile ilgili araştırmalar gösteriyor ki sermaye/emek oranındaki artışlar geçen yüzyılın kişi başına gelirinin büyümesinde pek de önemli bir etkiye sahip değildir. Profesyonel görüş ve sağduyu tarafından bu etkilerin çoğu teknolojideki gelişmelere atfedilmektedir. Modelde birincil kaynaklar ve daha önce birikmiş bilgileri kullanarak yeni ürünler için tasarımlar üreten bir AR-GE sektörü, oligopolistik üreticiler tarafından farklılaştırılmış ürünlerin üretildiği bir ara malı sektörü ve her ülkeye özgü emek ve ara girdileri kullanarak nihai çıktı üreten bir tüketim malları sektörü vardır. AR-GE’ye ayrılan kaynaklar, zaman içinde nihai ürünlerin üretiminde üretkenliğe olduğu kadar bilimsel ve mühendislik bilgi stokuna da katkıda bulunur (Grossman & Helpman, 1989: 1-3). Yenilikçiler, ticari değeri olan bir şeyi keşfetme umuduyla kaynaklara yatırım yapmaktadır. Bunun neticesinde kâr elde etmeyi ummaktadırlar. Neoklasik büyüme modelindeki tüm firmaların tam rekabet ortamında fiyat alıcı olarak hareket ettiği varsayımı, burada geçerli değildir. Firmalar AR-GE harcamaları için katlandıkları maliyetleri geri kazanabilmeleri için ürünlerini birim üretim maliyetlerini aşan fiyatlarla satmalıdırlar. Başka bir deyişle ürün pazarlarında eksik rekabet koşulları geçerlidir (Grossman & Helpman, 1994: 32). Aghion & Howitt (1992) modelinde ise yenilik süreci, yaratıcı yıkım yoluyla basit bir büyüme modeli üzerine inşa edilmiştir. Temelde Schumpeter’in teorisine dayanmaktadır. Rekabetçi bir araştırma sektörü tarafından üretilen dikey yeniliklerin büyümenin temel sebebini oluşturduğu bir model geliştirilmiştir. Denge, herhangi bir dönemdeki araştırma miktarının bir sonraki dönemde beklenen araştırma miktarına bağlı olduğu ileriye dönük bir fark denklemi ile belirlenir. Bu zamanlar arası ilişkinin kaynağı, yaratıcı yıkımdır. Yani,

gelecek için daha fazla araştırma beklentisi, mevcut araştırma tarafından yaratılan rantları tehdit ederek mevcut araştırmayı caydırmaktadır (Aghion & Howitt, 1992: 323).

3. Literatür Taraması

Yenilik ve ekonomik büyüme arasındaki ilişkiyi inceleyen ampirik çalışmaların öne çıkan birkaç özelliği bulunmaktadır. İlk olarak bu çalışmaların örnekleme, büyük oranda kesişen OECD ülkeleri, Avrupa Birliği ülkeleri ya da yüksek gelirli gelişmiş ülkelerden oluşmaktadır. İkinci özellik yenilik değişkeni olarak AR-GE harcamaları ve patent sayısının yaygınca kullanılmasıdır. Literatürde bu iki değişkenin dışında kullanılan yenilikçi firma sayısı, teknoloji ihracatı ve araştırmacı istihdamı gibi başka yenilik göstergelerinin kullanıldığı çalışmalar da bulunmaktadır. Üçüncüsü veri kısıtı nedeniyle çoğunlukla panel veri analiziyle yapılan çalışmalar olmasıdır. Dördüncüsü olarak iki değişken arasındaki ilişkiden ziyade yeniliğin ekonomik büyüme üzerindeki etkisine odaklanmalarıdır. Literatür taraması belirtilen dört özellik çerçevesinde sınıflandırılmıştır.

OECD ülkeleri üzerine yapılan panel veri çalışmalarında AR-GE'nin ekonomik büyüme üzerindeki etkisinin pozitif olduğu sonucu yaygın olarak görülmektedir (Griffith vd., 2004; Guellec & Van Pottelsberghe, 2004; Falk, 2007; Eid, 2012; Altıntaş & Mercan, 2015; Işık & Kılınç, 2016). Bununla birlikte Sadraoui & Zina (2009)'nın büyük oranda OECD ülkelerini içeren çalışmasında da benzer sonuca ulaşılmıştır. Ayrıca Alene (2010)'nin 52 Afrika ülkesi; Göçer (2013)'in 11 Asya ülkesi için yaptığı panel veri çalışmaları da pozitif etkiyi göstermektedir. Goel & Ram (1994) ise diğer çalışmalara göre daha heterojen 52 ülke (18 gelişmiş ülke ve 34 gelişmekte olan ülke) için AR-GE'nin ekonomik büyüme üzerinde pozitif etkisi olduğu sonucuna ulaşmıştır. Panel eşbütünleşme analiziyle konuyu ele alan Gülmez & Yardımcıoğlu (2012)'na göre AR-GE ve ekonomik büyüme değişkenleri arasında iki yönlü nedensellik vardır. Zaman serisi analizlerinde de AR-GE harcamaları ve ekonomik büyüme arasında nedensellik ilişkisi olduğunu gösteren çalışmalar bulunmaktadır (Wu & Zhuo, 2007; Altın & Kaya, 2009).

AR-GE'nin ekonomik büyüme üzerindeki etkisine ilişkin farklı sonuçlar elde eden panel veri çalışmaları da bulunmaktadır. Sylwester (2001) ve Bernier & Plouffe (2019)'nin çalışmasından elde edilen bulgulara göre OECD ülkeleri için AR-GE harcamalarından ekonomik büyümeye doğru herhangi bir etki yoktur. Güneş (2019), OECD ülkelerinde ekonomik büyümekten AR-GE harcamalarına doğru tek yönlü nedensel ilişki olduğunu, buna karşılık AR-GE harcamalarından ekonomik büyümeye doğru ise herhangi bir ilişki bulunmadığını belirtmektedir. Inekwe (2014)'ye göre değişkenler arasındaki ilişki, üst-orta gelirli ekonomiler için pozitifken düşük gelirli ekonomiler için önemsizdir.

Literatürde patent sayısı ve patent başvuru sayısı, yenilik göstergesi olarak ele alınan diğer değişkenlerdir. Panel veri analiziyle konuyu ele alan Galindo & Mendez (2013), 13 gelişmiş ülkede; Hasan & Tucci (2010), gelişmiş ve gelişmekte olan 58 ülkede patent sayısındaki artışların ekonomik büyümeyi artırdığı sonucuna ulaşmıştır. Ayrıca Çin'deki eyaletler üzerinden konuyu ele alan Jian vd. (2020), 31 eyalet için patent sayısındaki artışın

ekonomik büyümeyi pozitif olarak etkilediğini bulmuştur. Diğer yandan Bucci vd. (2021), OECD ülkelerinde 72 sektör için ve Kesbiç & Şimşek (2020), 33 OECD ülkesi için patent başvurularının ekonomik büyümeyi pozitif olarak etkilediği sonucuna ulaşmıştır. Benzer şekilde Maradana vd. (2019), Avrupa Ekonomik Alanı ülkeleri için patent başvuru sayısı ve ekonomik büyüme arasında çift yönlü nedensellik tespit etmiştir. Zaman serisi analizine dayanan çalışmasında Yang (2006), patent sayısındaki artışın ekonomik büyümeyi pozitif olarak etkilediğini tespit ederken Barış (2018), değişkenler arasında herhangi bir ilişki olmadığını belirtmektedir.

Pece vd. (2015) ve Gülmez & Akpolat (2014) tarafından panel veri analiziyle Avrupa ülkeleri üzerine yapılan çalışmalarda hem AR-GE harcamaları hem de patent sayılarının ekonomik büyüme üzerine etkisi pozitiftir. Benzer şekilde Dam & Yıldız (2016)’ın, BRICS-TM ülkeleri üzerine panel veri analizine dayanan çalışmasında ve Özden & Uysal (2020)’ın, Türkiye için 1990-2017 dönemini ele alan zaman serisi çalışmasında AR-GE harcamaları ve patent sayısının ekonomik büyüme üzerindeki etkisi pozitiftir. Kacprzyk & Doryn (2015) çalışmasında AR-GE harcamalarının ekonomik büyüme üzerinde önemli bir etkisinin olmadığını, mevcut ve kümülatif patent faaliyetlerinin AB-13 alt örneğinde ve bir bütün olarak A-28 örneğinde ekonomik büyümeyi belirlediğini göstermektedir.

Pradhan vd. (2018a), yenilik endeksi oluşturarak konuyu ele almıştır. Panel veri analizi kullanılarak yapılan çalışma, 49 Avrupa ülkesinin 1961-2014 dönemini kapsamaktadır. Modelde yer alan yenilik endeksi; yerleşik olanlar tarafından alınan patentler, yerleşik olmayanlar tarafından alınan patentler, toplam patent sayısı, AR-GE harcamalarının GSYH içindeki payı, araştırmacı sayısı, yüksek teknoloji ihracatı, bilimsel ve teknik dergi makaleleri gibi çeşitli yenilik göstergelerinden oluşmaktadır. Çalışmanın sonuçlarına göre yenilik ve ekonomik büyüme arasında nedensellik ilişkisi vardır. Benzer yenilik endeksiyle Pradhan vd. (2018b) tarafından 23 Avrupa ülkesi için ve Pradhan vd. (2020) tarafından Avrupa Birliği için yapılan çalışmalarda da benzer sonuçlara ulaşılmıştır.

AR-GE harcamaları ve patent sayısı dışındaki yenilik değişkenleriyle analiz yapan ampirik çalışmaların özeti Tablo 1’de yer almaktadır.

Tablo: 1
Farklı Yenilik Değişkenleri Kullanan Ampirik Çalışmalar

| Çalışma | Yöntem / Örneklem / Dönem | Bulgular |
|------------------------------|---|---|
| Pala (2019) | Panel Eşbütünleşme Yöntemi / 25 Ülke / 1996-2016 | İran, Meksika, Tunus ve Özbekistan’da araştırmacı sayısının ekonomik büyüme üzerinde etkisi negatifken Ukrayna, Türkiye, Rusya ve Çin’de pozitif etkiye sahiptir. Çin, Mısır, İran, Moldova, Panama, Sırbistan ve Özbekistan’da AR-GE harcamalarının ekonomik büyüme üzerinde etkisi negatif ve anlamlıdır. |
| Ulku (2004) | Panel Veri Analizi (GMM) / 20 OECD ülkesi ve 10 OECD dışı ülke / 1981-1997 | AR-GE stokunun yenilik üzerindeki etkisinin yalnızca büyük pazarlara sahip OECD ülkelerinde önemli olduğu tespit edilmiştir. Patent stoku ve patent akışları hem OECD ülkelerinde hem de OECD dışı ülkelere kişi başına GSYH üzerinde pozitif etkiye sahiptir. |
| Andergassen & Nardini (2005) | OLS / OECD Ülkeleri / 1960-1990 | AR-GE firmalarının sayısının ele alındığı çalışmada büyümenin inovasyon dalgaları (yayımla etkisi) aracılığıyla gerçekleştiği belirlenmiştir. |
| Moutinho vd. (2015) | Yapısal Eşitlik Modeli / 34 OECD ülkesindeki 396 bölge ve 18 Avrupa ülkesindeki 158 bölge | Kurumsal AR-GE, devlet AR-GE yatırımı, teknolojik kapasite, bilgi yoğunluğu, üniversite AR-GE istihdamı ve devlet AR-GE istihdamının ekonomik büyüme üzerindeki etkisi pozitiftir. |

| | | |
|----------------------|--|--|
| Işık & Kılınç (2016) | Panel Eşbütünleşme Analizi / Bazı seçilmiş ülkeler / 1990-2011 | Elektrik sektöründeki teknoloji ihracatı ve ekonomik büyüme arasında hem kısa hem uzun dönemli ilişki vardır. |
| Fan vd. (2017) | Havuzlanmış OLS / Çin'de borsaya kayıtlı 415 şirket / 2012-2014 | Devlet desteği, teknik çalışan oranı ve teknik varlık oranı gibi inovasyon unsurları, ekonomik büyümeyi anlamlı ve pozitif olarak etkilerken çalışanların oranı, eğitim durumu, AR-GE yoğunluğu gibi diğer inovasyon unsurlarının ekonomik büyüme üzerinde önemli bir etkisi bulunamamıştır. |
| Oğuztürk vd. (2017) | Johansen Eşbütünleşme ve Granger Nedensellik / Güney Kore / 1884-2015 | Marka, faydalı model, AR-GE, tasarım değişkenleri arasında tek yönlü bir nedensellik ilişkisinin olduğu belirlenmiştir. |
| Adak (2015) | OLS / Türkiye / 1981-2013 | Teknolojik ilerleme (elektronik cihaz ithalatı ve makine ithalatı) ve yeniliğin (toplam patent başvuruları) ekonomik büyüme üzerinde pozitif bir etkisi vardır. |
| Sungur vd. (2016) | Engle-Granger eşbütünleşme ve Hatemi-J Asimetrik Nedensellik Testi / Türkiye / 1990-2013 | Araştırmacı sayısından ekonomik büyümeye doğru tek yönlü nedensellik ilişkisi tespit edilmiştir. |
| Xiong vd. (2020) | Panel Veri Analizi / Çin'deki 31 şehir / 1998-2013 | AR-GE girdisi ve AR-GE çıktısıyla ekonomik büyüme arasındaki ilişkinin farklı bölge ve sektörler için değiştiği, pozitif etkilerin ise özel sektörlerden kaynaklandığı belirlenmiştir. |

4. Yöntem

Çalışmada yenilik ve ekonomik büyüme arasındaki ilişkiyi incelemek için panel veri analizi kullanılmıştır. Panel veri analizleri, yatay kesit bağımlılık testleriyle başlamaktadır. Birimler arasında yatay kesit bağımlılığının olması, bir birimde meydana gelen şokun tüm birimleri etkilemesi anlamına gelmektedir. Dikkate alınmaması durumunda yatay kesit bağımlılık, sapmalı sonuçlara ve dolayısıyla hatalı yorumlara yol açmaktadır. Öte yandan kullanılacak panel birim kök testleri, panel eşbütünleşme testleri ve uygun tahmincinin seçimi yatay kesit bağımlılık testinin sonucuna göre belirlenmektedir.

Seriler arasındaki yatay kesit bağımlılığın tespiti için $N > T$ durumunda Pesaran (2004) scaled LM ve Pesaran (2004) CD testleri kullanılmaktadır. Boş hipotezin reddedilmesi, birimler arasında yatay kesit bağımlılığının olduğu anlamına gelir. Bu durumda ikinci nesil birim kök testlerinin kullanılması gerekmektedir. Yatay kesit bağımlılığı dikkate alan ikinci nesil birim kök testi olan Pesaran (2007) CIPS birim kök testinde boş hipotezin reddedilmesi, birim kökün olmadığı ve serilerin durağan olduğu anlamına gelir.

Düzeyde durağan olmayan serilerin doğrusal bileşimleri durağan olabildiği için aralarındaki uzun dönemli ilişkiyi incelemek gerekir. Bu ilişkinin tespiti, panel eşbütünleşme testleri ile yapılmaktadır. Bu testlerin seçimine karar verirken de yatay kesit bağımlılık önemlidir. İkinci nesil eşbütünleşme testi olan Westerlund (2007), yatay kesit bağımlılığı dikkate almaktadır. Belirtilen eşbütünleşme testi, koşullu bir hata düzeltme modelinde hata düzeltme teriminin sıfıra eşit olup olmadığı sonucunu ortaya koyarak sıfır hipotezini test etmektedir. Bu test, diğer eşbütünleşme testlerine kıyasla daha güçlü sonuçlar vermektedir. Boş hipotezin reddedilmesi, eşbütünleşme ilişkisinin olduğu anlamına gelir.

Değişkenler arasında nedensellik ilişkisini tespit etmek amacıyla Dumitrescu & Hurlin (2012) panel nedensellik analizi yapılmaktadır. Belirtilen nedensellik testi, birkaç nedenle diğer nedensellik testlerine göre tercih edilmektedir. Paneli oluşturan ülkeler arasındaki hem yatay kesit bağımlılığı hem de heterojenliği göz önünde bulundurmaktadır. Bununla birlikte $N > T$ durumunda da kullanılabilir. Ayrıca hem dengeli hem de

denge panel veri setlerinde etkin sonuçlar verebilmektedir. Boş hipotezin reddedilmesi, değişkenler arasında nedensellik ilişkisinin olduğu anlamına gelir.

Panel eşbütünleşme tahmini yapmadan önce modellerdeki eğim katsayılarının homojen veya heterojen yapıya sahip olup olmadığını test etmek gerekmektedir. Tüm eğim katsayıları aynı değere sahip ise homojendir, aksi halde heterojendir. Homojenlik/heterojenlik durumunu belirlemek için Pesaran & Yamagato (2008) testi kullanılmaktadır. Pesaran & Yamagato (2008) testi, hem $N > T$ hem de $T > N$ durumunda uygulanabilmektedir. Ayrıca dengeli ve dengesiz panellerin her ikisinde de kullanılabilmektedir. Boş hipotezin reddedilmesi, eğim katsayılarının heterojen olduğu yani tüm eğim katsayılarının aynı değere sahip olmadığı anlamına gelir.

Yatay kesit bağımlılığı ve eğim katsayılarının heterojenliğini dikkate alan Eberhardt & Bond (2009) tarafından geliştirilen Genişletilmiş Ortalama Grup (AMG - Augmented Mean Group) tahmincisi panel grupları arasındaki gözlenebilen ve gözlenemeyen etmenlerin farklılıklarının yanı sıra zaman serisi özelliklerini de dikkate alır. Serilerin birinci farklarda durağan olması durumunda kullanılan AMG tahmincisi, paneli oluşturan ülkelere ve panelin geneline ait eşbütünleşme katsayılarını hesaplayabilmektedir. Belirtilen tahminci serilerdeki ortak faktörleri göz önünde bulundurmakta ve açıklayıcı değişken ile hata terimleri arasında korelasyon olduğunu gösteren içsellik probleminin varlığında da güçlü sonuçlar vermektedir. Paneldeki her bir ülkenin katsayılarının ortalaması alınarak hesaplanmaktadır. Ayrıca eşbütünleşme katsayılarının aritmetik ortalamasını ağırlıklandırarak tahmin yaptığı için diğer katsayı tahmin yöntemlerine göre daha etkilidir.

5. Model, Veri ve Beklentiler

Çalışmada kullanılan modeller, Romer (1990:80)'in üretim fonksiyonunu esas alan ve doğrudan teknolojik büyümeye dayalı AR-GE modelinden yola çıkılarak oluşturulmuştur.

$$Y(H_Y, L, x) = H_Y^\alpha L^\beta \sum_{i=1}^{\infty} x_i^{1-\alpha-\beta} \quad (1)$$

Modelde Y , nihai çıktıyı; L , fiziksel emeği; H_Y , nihai çıktıya ayrılmış beşerî sermaye ve fiziksel sermayeyi; X , nihai çıktı üreten bir firma tarafından kullanılan girdi listesini gösterir. Modelde birkaç basitleştirici varsayım vardır. İlki hem nüfus hem de işgücü arzının; ikincisi, nüfustaki toplam beşerî sermaye stokunun ve piyasaya arz edilen kısmının sabit olmasıdır. Bu nedenle L ve H faktörlerinin arzı, sabittir. H 'nin sabit olduğu varsayımı, insanların sınırlı yaşama sahip olmasıdır. Sermayenin terk edilmiş çıktı olarak biriktirilebileceğini varsaymak sermaye mallarının nihai çıktı sektörü ile aynı teknolojiye sahip ayrı bir sektörde üretildiğini varsaymakla eşdeğerdir. Ayrıca araştırmanın görece beşerî sermaye ve bilgi yoğun olduğu yönündeki makul iddia, yeni fikirler veya bilgiler üretmek için yalnızca bilginin ve beşerî sermayenin kullanıldığı aşırı bir durumdur. (Romer, 1990: 79-80).

Eğer araştırmacı bir miktar beşerî sermayeye sahipse H^J ve önceki fikirlerde ima edilen toplam bilgi stokunun (A^J) bir kısmına erişimi varsa araştırmacı (J) tarafından yeni fikirlerin üretim oranı $\delta H^J A^J$ olacaktır. δ bir verimlilik parametresidir. Burada araştırmaya katılan birinin tüm bilgi stokuna özgürce erişebileceği fikri vardır. Bu mümkündür çünkü bilgi rakipsiz bir girdidir. Tüm araştırmacılar aynı anda A'dan yararlanabilir. Araştırmacı j'nin çıktısı $\delta H^J A^J$ dir. Araştırmacı tüm insanları toplarsak toplam fikir stoku aşağıdaki gibi olur (Romer, 1990: 83);

$$\dot{A} = \delta H_A A. \quad (2)$$

Burada H_A , araştırma sektörüne ayrılan beşerî sermaye stokunu gösterir. Denklemin iki önemli varsayımı vardır. İlki, araştırmaya daha fazla beşerî sermaye ayrılmasının yeni fikirlerin daha yüksek oranda üretilmesine yol açması; ikincisi, toplam fikir ve bilgi stoku ne kadar büyükse araştırma sektöründe çalışan bir mühendisin üretkenliğinin de o kadar yüksek olacağıdır. Bu varsayıma göre bugün çalışan bir üniversite mezunu bir mühendis ile 100 yıl önce çalışan mühendis, aynı insan sermayesine sahiptir. Bugün çalışan mühendis daha üretkendir. Çünkü biriken daha geniş bilgi birikiminden yararlanma imkânı vardır. Modeldeki bir diğer önemli varsayım, bilginin üretime iki farklı yoldan girmesidir. Yeni bir fikir, çıktı üretmek için kullanılacak yeni bir malın üretilmesini sağlar. Bu durum, aynı zamanda toplam bilgi stokunu ve dolayısıyla araştırma sektöründeki beşerî sermayenin üretkenliğini de artırır. (Romer, 1990: 83-84).

Romer (1990)'in çalışmasından yola çıkılarak bu çalışmada, üretim fonksiyonunu temsilen sermaye (sabit sermaye oluşumu) ve emek (toplam iş gücü) değişkenleri yer almaktadır. Yine Romer (1990)'in modelinde önemli bir rol oynayan beşerî sermaye ve AR-GE harcamaları da bu çalışmadaki modellere dahil edilmiştir. Çalışmada kullanılan modellere ilişkin denklemler, aşağıda yer almaktadır.

$$\text{Model 1 } \ln Y_{it} = \alpha_{it} + \beta_1 \ln PA_{it} + \beta_2 RD_{it} + \beta_3 HCI_{it} + \beta_4 GFC_{it} + \beta_5 \ln LF_{it} + \varepsilon_{it} \quad (3)$$

$$\text{Model 2 } \ln Y_{it} = \alpha_{it} + \beta_1 \ln PCT_{it} + \beta_2 RD_{it} + \beta_3 HCI_{it} + \beta_4 GFC_{it} + \beta_5 \ln LF_{it} + \varepsilon_{it} \quad (4)$$

$$\text{Model 3 } \ln Y_{it} = \alpha_{it} + \beta_1 CII_{it} + \beta_2 SSO_{it} + \beta_3 \ln LF_{it} + \varepsilon_{it} \quad (5)$$

$$\text{Model 4 } \ln PA_{it} = \alpha_{it} + \beta_1 \ln Y_{it} + \beta_2 RD_{it} + \beta_3 HCI_{it} + \beta_4 GFC_{it} + \beta_5 \ln LF_{it} + \varepsilon_{it} \quad (6)$$

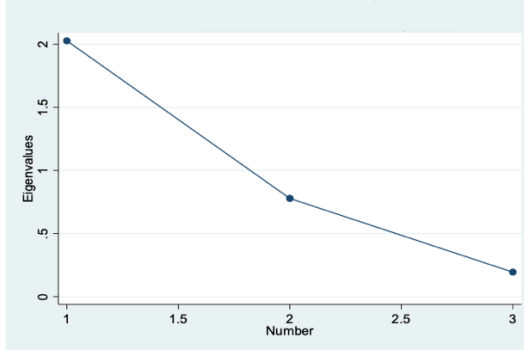
$$\text{Model 5 } \ln PCT_{it} = \alpha_{it} + \beta_1 \ln Y_{it} + \beta_2 RD_{it} + \beta_3 HCI_{it} + \beta_4 GFC_{it} + \beta_5 \ln LF_{it} + \varepsilon_{it} \quad (7)$$

$$\text{Model 6 } CII_{it} = \alpha_{it} + \beta_1 \ln Y_{it} + \beta_2 GFC_{it} + \beta_3 \ln LF_{it} + \varepsilon_{it} \quad (8)$$

(1), (2) ve (3) numaralı modellerdeki bağımlı değişken olan Y, kişi başına gayrisafi yurtiçi hasılayı ifade etmektedir. (4), (5) ve (6) numaralı modellerdeki bağımlı değişkenler sırasıyla patent başvurularının sayısı (PA), uluslararası patent sınıflandırmasına göre patent iş birliği anlaşması belge sayısı (PCT) ve birleşik yenilik endeksi (CII) değişkenleridir. Modeldeki diğer değişkenler ise AR-GE harcamaları (RD), beşerî sermaye (HC), sabit sermaye oluşumu (GFC) ve toplam işgücü (LF) değişkenleridir. CII değişkeni temel bileşenler analizinden yararlanılarak PA, PCT ve RD değişkenlerinden oluşturulmuştur. Bu

değişkenler arasındaki ilişkinin önemli olup olmadığını ve verilerin temel bileşenler analizine uygun olup olmadığını ölçmek için yapılan Kaiser-Meyer-Olkin testi, 0,5554 olarak elde edilmiştir. Test değeri $0,5554 > 0,50$ olduğu için veri seti temel bileşenler analizi için uygundur. Değişkenlerin yük değeri verdiği bileşenlere ait özdeğerlerin (eigenvalue) incelenmesi amacıyla yamaç-eğim grafiği, Şekil 1’de yer almaktadır.

Şekil: 1
Yamaç-Eğim Grafiği (Scree Plot)



Temel bileşenler analizi sonucunda Tablo 2’de özdeğerler ve değişkenlerin bileşenlere verdikleri yük değerinin, varyans açıklama yüzdeleri yer almaktadır. Bulgulara göre özdeğer vektörlerinin işaretleri, birinci temel bileşenlerde PA, PCT ve RD değişkenleri için pozitif olduğu görülmektedir. Birinci temel bileşenler, veri setindeki toplam varyansı yaklaşık olarak %67,57 oranında açıklamaktadır.

Tablo: 2
Özdeğerler, Özdeğer Vektörleri ve Bileşen Varyans Açıklama Yüzdeleri

| Temel Bileşenler | 1 | 2 | 3 |
|-----------------------------------|--------|----------|----------|
| Özdeğerler | 2,2724 | 0,778435 | 0,194326 |
| Varyans açıklama yüzdesi (toplam) | 67,57 | 25,95 | 6,48 |
| Özdeğer Vektörleri | | | |
| PA | 0,6235 | -0,3991 | 0,6722 |
| PCT | 0,6525 | -0,2079 | -0,7287 |
| RD | 0,4306 | 0,8930 | 0,1308 |

Not: Bulgulara göre birinci bileşen yük değeri kullanılarak oluşturulan birleşik yenilik endeksinin ilişkin denklem şu şekildeki gibidir: $CII = PA (0,6235) + PCT (0,6525) + RD (0,4306)$.

CII değişkeni, RD değişkenini içerdiğinden bu iki değişken, içsellik problemine neden olmaması için aynı modelde kullanılmamıştır. Modellerdeki katsayılar, detaylı listesi Ek-1’de verilen gelişmiş ve gelişmekte olan 36 ülke için 1996-2018 dönemine ait verilerle tahmin edilmiştir. Modeller tahmininde dengeli panel veri kullanılmıştır. Ayrıca değişkenlere ilişkin tanımlar, veri kaynakları ve katsayılarla ilişkin beklenen işaretler, Tablo 3’te yer almaktadır.

Tablo: 3
Açıklayıcı Değişkenlerin Tanımları ve Kaynakları

| Değişkenler | Tanım / Kaynak | Beklenen İşaretler |
|-------------|---|--------------------|
| lnPA | Ülkelerdeki yerleşik olanların ve yerleşik olmayanların yapmış olduğu toplam patent başvuru sayısının logaritması / Dünya Bankası | + |
| lnPCT | Uluslararası patent sınıflandırmasına göre patent iş birliği anlaşması belge sayısının logaritması / Dünya Fikri Mülkiyet Örgütü | + |
| CII | PA, PCT ve RD değişkenlerinden temel bileşenler analiziyle oluşturulan birleşik yenilik endeksi | + |
| lnY | Kişi başına GSYH'nin logaritması / Dünya Bankası | + |
| RD | AR-GE harcamalarının GSYH içindeki payı / Dünya Bankası | + |
| HCI | Beşeri sermaye endeksi / Penn World Table | + |
| GFC | Brüt sabit sermaye oluşumunun GSYH içindeki payı / Dünya Bankası | +/- |
| lnLF | Toplam işgücünün (+15) logaritması / Dünya Bankası | +/- |

6. Ampirik Sonuçlar

Yatay kesit bağımlılık testi sonuçları, Tablo 4'te yer almaktadır. Hem Pesaran LM testi hem de Pesaran CD testi sonuçlarına göre değişkenlere ait olasılık değerleri, 0,05'ten küçük olduğu için boş hipotez reddedilir. Bu durum serilerde yatay kesit bağımlılığın olduğunu göstermektedir.

Tablo: 4
Yatay Kesit Bağımlılık Testi

| Değişkenler | Pesaran LM Testi | Pesaran CD Testi |
|-------------|------------------|------------------|
| lnY | 312,931 (0,000) | 106,71 (0,000) |
| lnPA | 125,230 (0,000) | 0,854 (0,393) |
| lnPCT | 225,638 (0,000) | 90,751 (0,000) |
| CII | 132,537 (0,000) | 56,493 (0,000) |
| RD | 97,914 (0,000) | 40,794 (0,000) |
| HCI | 366,923 (0,000) | 116,927 (0,000) |
| GFC | 81,930 (0,000) | 14,828 (0,000) |
| lnLF | 241,791 (0,000) | 34,685 (0,000) |

Not: Parantez içindeki değerler olasılık değerini vermektedir.

Yatay kesit bağımlılığın olması sebebiyle ikinci nesil birim kök testi olan CIPS uygulanmıştır. Tablo 5'te verilen CIPS birim kök testi sonuçlarına göre değişkenlerin düzeyde durağan olmadıkları, farkı alınan serilerin birinci farklarda durağan olduğu görülmektedir.

Tablo: 5
CIPS Birim Kök Testi

| Değişkenler | Düzeyde | | Birinci Farklarda | |
|-------------|-----------|-----------|-------------------|-----------|
| | Z (t-bar) | P- değeri | Z (t-bar) | P- değeri |
| lnY | -1,238 | 0,108 | -4,667 | 0,000 |
| lnPA | -0,689 | 0,245 | -5,136 | 0,000 |
| lnPCT | -0,740 | 0,230 | -3,117 | 0,001 |
| CII | 0,352 | 0,637 | -6,274 | 0,000 |
| RD | 0,734 | 0,768 | -2,613 | 0,004 |
| HCI | -1,041 | 0,149 | -2,745 | 0,003 |
| GFC | 1,513 | 0,935 | -3,686 | 0,000 |
| lnLF | 1,260 | 0,896 | -5,768 | 0,000 |

Birinci farklarda durağan olan seriler arasındaki uzun dönemli ilişkiyi tespit etmek için kullanılan Westerlund (2007) eşbütünleşme testi sonuçları, Tablo 6'da yer almaktadır. Tablodaki bulgulara göre eşbütünleşme testi sonuçları, %5 düzeyinde istatistiksel olarak

anlamlıdır. Bu bulgu, ekonomik büyümenin bağımlı değişken olduğu (1), (2) ve (3) numaralı modellerde ve yenilik göstergelerinin ayrı ayrı bağımlı değişken olduğu (4), (5) ve (6) numaralı modellerde değişkenler arasında eşbütünleşme ilişkisinin var olduğunu göstermektedir.

Tablo: 6
Westerlund (2007) Eşbütünleşme Testi

| Modeller | Bağımlı Değişken | Açıklayıcı Değişken | İstatistik Değeri | Olasılık Değeri |
|----------|------------------|---------------------|-------------------|-----------------|
| Model 1 | lnY | lnPA | -1.574 | 0.057 |
| Model 2 | | lnPCT | -1.473 | 0.070 |
| Model 3 | | CII | 3.438 | 0.000 |
| Model 4 | lnPA | lnY | -2.733 | 0.003 |
| Model 5 | lnPCT | | -2.648 | 0.004 |
| Model 6 | CII | | -4.220 | 0.000 |

Değişkenler arasında bir nedensellik ilişkisinin olup olmadığını tespit etmek için kullanılan Dumitrescu & Hurlin (2012) panel nedensellik testi sonuçları, Tablo 9’da yer almaktadır. Elde edilen bulgulara göre lnPA ve lnPCT’den lnY’ye doğru bir nedensellik ilişkisi vardır. Ancak CII’dan lnY’ye doğru bir nedensellik ilişkisi tespit edilmemiştir. Bu durumda patent başvuru sayısı ve PCT belge sayısı dikkate alındığında yenilik göstergeleri, ekonomik büyümenin nedenidir. Diğer değişkenler dikkate alındığında RD değişkeni dışında diğer değişkenlerden ekonomik büyümeye doğru bir nedensellik ilişkisi vardır. GFC değişkeni dışındaki bütün değişkenlerden lnPA değişkenine, RD değişkeni dışında diğer değişkenlerden lnPCT değişkenine doğru bir nedensellik ilişkisi vardır. Son olarak modelde yer alan tüm değişkenler CII’nın nedenidir.

Tablo: 7
Dumitrescu & Hurlin (2012) Panel Nedensellik Testi

| Değişkenden → | Değişkene | Wald Testi | Z-bar | Olasılık Değeri |
|---------------|-----------|------------|--------|-----------------|
| lnPA | lnY | 9,778 | 2,062 | 0,039 |
| lnPCT | | 1,928 | 2,801 | 0,005 |
| CII | | 1,546 | 1,485 | 0,137 |
| RD | | 7,902 | 0,669 | 0,503 |
| HCI | | 30,618 | 17,532 | 0,000 |
| GFC | | 9,629 | 1,951 | 0,051 |
| lnLF | | 10,677 | 2,729 | 0,006 |
| lnY | lnPA | 8,654 | 8,490 | 0,000 |
| RD | | 5,494 | 3,238 | 0,001 |
| HCI | | 9,251 | 9,483 | 0,000 |
| GFC | | 4,438 | 1,483 | 0,137 |
| lnLF | | 9,234 | 9,454 | 0,000 |
| lnY | | 5,279 | 2,846 | 0,004 |
| RD | | 4,432 | 1,448 | 0,147 |
| HCI | lnPCT | 5,167 | 2,661 | 0,007 |
| GFC | | 4,840 | 2,123 | 0,033 |
| lnLF | | 5,070 | 2,501 | 0,012 |
| lnY | CII | 5,331 | 14,602 | 0,000 |
| GFC | | 5,434 | 3,138 | 0,001 |
| lnLF | | 5,764 | 16,101 | 0,000 |

Panel eşbütünleşme tahmini yapmadan önce modellerdeki eğim katsayılarının homojen veya heterojen yapıya sahip olup olmadığını test etmek için yapılan Pesaran & Yamagato (2008) heterojenlik testi sonuçları Tablo 8’de yer almaktadır. Tablodaki

homojenlik/heterojenlik testi sonuçlarına göre eğim katsayılarının homojen olduğunu gösteren boş hipotez reddedilir. Bir başka deyişle eğim katsayıları, heterojendir.

Tablo: 8
Pesaran & Yamagato (2008) Testi

| Modeller | Bağımlı Değişken | Bağımsız Değişken | İstatistik Değeri | Olasılık Değeri |
|----------|------------------|-------------------|-------------------|-----------------|
| Model 1 | lnY | lnPA | 26.903 | 0.000 |
| Model 2 | | lnPCT | 24.132 | 0.000 |
| Model 3 | | CII | 33.317 | 0.000 |
| Model 4 | lnPA | lnY | 20.636 | 0.000 |
| Model 5 | lnPCT | | 18.925 | 0.000 |
| Model 6 | CII | | 16.821 | 0.000 |

Yatay kesit bağımlılık ve eğim katsayılarındaki heterojenlik durumunda kullanılan AMG tahmincisinin uygulandığı serilerin I(1) olması gerekmektedir. AMG tahmincisi, açıklayıcı değişken ile hata terimleri arasında korelasyon olduğunu gösteren içsellik probleminin varlığında da güçlü sonuçlar vermektedir.

Bağımlı değişkenin ekonomik büyüme olduğu modeller için AMG tahmincisi kullanılarak elde edilen sonuçlar, Tablo 9’da yer almaktadır. Tabloda yer alan (1) numaralı modelin sonuçlarına göre lnPA değişkeninin katsayı işareti beklentilere uygun bir şekilde pozitifdir ve %1 düzeyinde istatistiksel olarak anlamlıdır. lnPA değişkenindeki %1 oranında artış, ekonomik büyümede %0,057 artışa neden olmaktadır. Modele göre patent başvuru sayısı arttıkça o ülkelerin ekonomik büyümesi artmaktadır. Bununla birlikte HCI değişkeninin katsayı işareti, beklentilere uygun bir şekilde pozitifdir ve %10 düzeyinde istatistiksel olarak anlamlıdır. Beşerî sermaye değişkenindeki artış, ekonomik büyümeyi artırmaktadır. Benzer şekilde GFC değişkeninin katsayı işareti pozitifdir ve %1 düzeyinde istatistiksel olarak anlamlıdır. Sabit sermaye oluşumundaki artış, ekonomik büyümeyi artırmaktadır. Buna karşılık RD ve lnLF değişkeninin katsayı işareti pozitifdir fakat istatistiksel olarak anlamlı değildir.

Tablo: 9
Ekonomik Büyümenin Belirleyicileri Üzerine AMG Tahmin Sonuçları

| Açıklayıcı Değişken | N=36 T=23 Gözlem Sayısı=828 | | |
|---------------------|-----------------------------|---------------------------|----------------------------|
| | Model 1 (lnY) | Model 2 (lnY) | Model 3 (lnY) |
| lnPA | 0,057 (3,62) ^a | | |
| lnPCT | | 0,019 (2,44) ^b | |
| CII | | | 0,058 (0,056) |
| RD | 0,027 (0,88) | 0,021 (0,68) | |
| HCI | 0,256 (1,86) ^c | 0,307 (1,73) ^c | |
| GFC | 0,007 (6,42) ^a | 0,009 (7,94) ^a | 0,009 (0,001) ^a |
| lnLF | 0,107 (0,44) | 0,161 (0,61) | 0,154 (0,212) |
| C | 8,449 (1,92) ^c | 7,778 (1,58) | 1,029 (0,155) ^a |
| Wald chi2 | 58,94 | 75,20 | 47,32 |
| Prob. | 0,000 | 0,000 | 0,000 |

Not: a, b, c sırasıyla %1, %5 ve %10 düzeyinde istatistiksel olarak anlamlılığı ifade etmektedir. Parantez içindeki değerler, z değerlerini göstermektedir.

Tablo 9’da yer alan (2) numaralı modelin sonuçlarına göre lnPCT değişkeninin katsayı işareti beklentilere uygun bir şekilde pozitifdir ve %5 düzeyinde istatistiksel olarak anlamlıdır. lnPCT değişkenindeki %1 oranında artış, ekonomik büyümede %0,019 artışa

neden olmaktadır. Bu bulguya göre PCT belge sayısı arttıkça o ülkelerin ekonomik büyümesi artmaktadır. Bununla birlikte HCI değişkeninin katsayı işareti, beklentilere uygun bir şekilde pozitifdir ve %10 düzeyinde istatistiksel olarak anlamlıdır. Beşerî sermaye değişkenindeki artış, ekonomik büyümeyi artırmaktadır. Benzer şekilde GFC değişkeninin katsayı işareti pozitifdir ve %1 düzeyinde istatistiksel olarak anlamlıdır. Sabit sermaye oluşumundaki artış, ekonomik büyümeyi artırmaktadır. Buna karşılık RD ve lnLF değişkeninin katsayı işareti pozitifdir fakat istatistiksel olarak anlamlı değildir.

Tablo 9’da yer alan (3) numaralı modelin sonuçlarına göre CII değişkeninin katsayı işareti beklentilere uygun bir şekilde pozitifdir fakat anlamlı değildir. Yenilik değişkenleriyle oluşturulan CII değişkenin ekonomik büyüme üzerinde anlamlı bir etkisi yoktur. Ayrıca GFC değişkeninin katsayı işareti pozitifdir ve %1 düzeyinde istatistiksel olarak anlamlıdır. Sabit sermaye oluşumundaki artış, ekonomik büyümeyi artırmaktadır. Buna karşılık lnLF değişkeninin katsayı işareti pozitifdir fakat istatistiksel olarak anlamlı değildir.

Bağımlı değişken olarak yenilik göstergelerinin kullanıldığı modeller için AMG tahmincisi kullanılarak elde edilen sonuçlar, Tablo 10’da yer almaktadır. Tabloda yer alan (4) numaralı modelin sonuçlarına göre lnY değişkeninin katsayı işareti beklentilere uygun bir şekilde pozitifdir ve %5 düzeyinde istatistiksel olarak anlamlıdır. lnY değişkenindeki %1 oranında artış, lnPA’yı %1,436 oranında artırmaktadır. Bu durumda ekonomik büyüme arttıkça o ülkede patent başvuru sayısı da artmaktadır. Bununla birlikte RD değişkeninin katsayı işareti, beklentilere uygun bir şekilde pozitifdir ve %10 düzeyinde anlamlıdır. AR-GE harcamalarındaki artış, patent başvuru sayısını artırmaktadır. Modelde yer alan HCI, GFC, lnLF değişkeninin katsayı işareti negatiftir ancak anlamlı değildir.

Tablo: 10
Yenilik Göstergelerinin Belirleyicileri AMG Tahmin Sonuçları

| Açıklayıcı Değişken | N=36 T=23 Gözlem Sayısı=828 | | |
|---------------------|-----------------------------|---------------------------|-----------------------------|
| | Model 4 (lnPA) | Model 5 (lnPCT) | Model 6 (CII) |
| lnY | 1,436 (2,24) ^b | -0,299 (-0,32) | 1,130 (0,47) ^b |
| RD | 0,223 (1,79) ^c | 0,194 (1,00) | |
| HCI | -0,648 (-0,84) | 3,534 (2,37) ^b | |
| GFC | -0,013 (-1,35) | -0,013 (-0,99) | -0,021 (-0,01) ^b |
| lnLF | -0,167 (-0,19) | 0,341 (0,19) | -2,141 (2,15) |
| C | -7,939 (-0,66) | -9,725 (-0,35) | 0,692 (0,27) ^b |
| Wald chi2 | 11,22 | 10,14 | 8,53 |
| Prob | 0,047 | 0,071 | 0,036 |

Not: a, b, c sırasıyla %1, %5 ve %10 düzeyinde istatistiksel olarak anlamlılığı ifade etmektedir. Parantez içindeki değerler z değerlerini göstermektedir.

Tablo 10’da yer alan (5) numaralı modelin sonuçlarına göre lnY değişkeninin katsayı işareti negatiftir fakat anlamlı değildir. Ekonomik büyümenin PCT belge sayısı üzerinde anlamlı bir etkisi yoktur. HCI değişkeninin katsayı işareti, beklentilere uygun bir şekilde pozitifdir ve %5 düzeyinde istatistiksel olarak anlamlıdır. Beşerî sermaye değişkenindeki artış, PCT belge sayısını artırmaktadır. Modelde yer alan RD, GFC ve lnLF değişkenlerinin katsayıları, istatistiksel olarak anlamlı değildir.

Tablo 10’da yer alan (6) numaralı modelin sonuçlarına göre $\ln Y$ değişkeninin katsayı işareti, beklentilere uygun bir şekilde pozitifdir ve %5 düzeyinde anlamlıdır. Sonuçlara göre $\ln Y$ değişkenindeki %1 oranındaki artış, CII değişkenini 1,130 birim artırmaktadır. Bu sonuç, ekonomik büyümenin birleşik yenilik endeksini artırdığını göstermektedir. GFC değişkeninin katsayı işareti negatifdir ve %5 düzeyinde istatistiksel olarak anlamlıdır. Sabit sermaye oluşumundaki artış, birleşik yenilik endeksini azaltmaktadır. $\ln LF$ değişkeninin katsayı işareti negatifdir fakat istatistiksel olarak anlamlı değildir.

7. Sonuç

Çalışmada yenilik ve ekonomik büyüme arasındaki ilişkiyi incelemek için panel eşbütünleşme ve nedensellik analizi kullanılmıştır. Romer’in AR-GE modelinden yola çıkılarak oluşturulan altı farklı modele ilişkin tahminler, gelişmiş ve gelişmekte olan 36 ülkenin 1996-2018 yıllarına ait verilerini kapsamaktadır. Çalışmada patent başvuru sayısı, patent iş birliği anlaşması belge sayısı ve birleşik yenilik endeksi olmak üzere üç farklı yenilik göstergesi yer almaktadır. Birleşik yenilik göstergesi; patent başvuru sayısı, PCT belge sayısı ve AR-GE harcamaları değişkenlerinden temel bileşenler analiziyle oluşturulmuştur. Ekonomik büyümenin bağımlı değişken olarak kullanıldığı üç modelde ise gösterge olarak kişi başına gayrisafi yurtiçi hasıla ele alınmıştır.

Panel veri analizi, ilk olarak yatay kesit bağımlılık testiyle başlamaktadır. Yatay kesit bağımlılığın olması nedeniyle bir sonraki adımda, ikinci nesil birim kök testi olan CIPS testi uygulanmıştır. Üçüncü adımda yine yatay kesit bağımlılığı dikkate alan ikinci nesil eşbütünleşme testi olan Westerlund (2007) eşbütünleşme testi yapılmıştır. Sonraki aşamada değişkenler arasındaki ilişkinin yönünü tespit etmek için Dumitrescu & Hurlin (2012) panel nedensellik testi yapılmıştır. Belirtilen panel nedensellik testi; yatay kesit bağımlılığı ve heterojenliği göz önünde bulundurması, yatay kesit boyutunun zaman boyutundan büyük olması, dengeli panel veri analizlerinde etkin sonuçlar vermesi ve eşbütünleşme ilişkisinin varlığında yapılabilmesi açısından avantajlara sahiptir. Son olarak homojenlik/heterojenlik test sonucuna göre eğim katsayılarının heterojen olduğunun belirlenmesi üzerine yatay kesit bağımlılığı da dikkate alan AMG tahmincisi kullanılmıştır.

Çalışmanın üç temel sonucu bulunmaktadır. İlk olarak patent başvuru sayısı ve PCT belge sayısı ile ekonomik büyüme arasında çift yönlü nedensellik ilişkisi bulunurken ekonomik büyümeden birleşik yenilik endeksine doğru tek yönlü nedensellik ilişkisi bulunmaktadır. İkinci olarak patent başvuru sayısı ve PCT belge sayısı ekonomik büyümeyi pozitif etkilerken birleşik yenilik endeksinin ekonomik büyüme üzerindeki etkisi anlamlı değildir. Son olarak ekonomik büyümenin patent başvuru sayısı ve yenilik endeksi üzerinde pozitif etkisi bulunurken PCT belge sayısı üzerinde herhangi bir etkisi bulunmamaktadır. Bu sonuçlar, nedensellik ilişkisi ve karşılıklı etki açısından patent başvuru sayısının önemli bir yenilik göstergesi olduğunu ve birleşik yenilik endeksinin diğer değişkenler kadar etkin olmadığını göstermektedir. Bu bulgulardan, yenilik göstergelerinin birlikte takip edilmesinden ziyade ayrı ayrı etkilerinin izlenmesinin daha önemli olduğu anlamı çıkartılabilir.

Patent başvuru sayısı, her iki durumda da pozitif ve anlamlı sonuçlar vermektedir. Anlamlı sonuçlar dikkate alındığında patent başvuru sayısı, diğer yenilik göstergelerine göre ekonomik büyümeyi daha fazla etkilemekte ve ekonomik büyümedeki artışlardan daha fazla etkilenmektedir. Patent başvuru sayısı ve PCT belge sayısının ekonomik büyüme üzerindeki pozitif etkisine ilişkin sonuçlar, Falk (2007), Pece vd. (2015), Wu & Zhuo (2007) ve Özden & Uysal (2020) tarafından yapılan ampirik çalışmaların sonuçları ile tutarlılık göstermektedir. Bu sonuçlardan yola çıkarak özellikle patent başvuru sayısını artırmaya yönelik uygulanabilecek bir politikanın ekonomik büyüme için önemli sonuçlar doğuracağı söylenebilir.

Birleşik yenilik endeksindeki artışların ekonomik büyüme üzerinde anlamlı bir etkisi olmadığını gösteren sonuç, Sylwester (2001), Kacprzyh & Doryn (2015), Inekwe (2015), Barış (2018) ve Güneş (2019) tarafından yapılan ampirik çalışmaların sonuçlarını destekler niteliktedir. Bu sonuç, literatürde yaygın olarak kabul edilen teorik beklentilere uygun değildir. Sylwester (2001)’a göre teknoloji sınırındaki ülkelerde ekonomik büyümeyi açıklamada AR-GE’nin rolü daha önemlidir. Diğer yandan beklenen ilişkinin bulunmadığı ülkelerde ekonomik çıktının yarısından fazlası, hizmet sektöründeki büyümeden kaynaklanmaktadır. Bu ülkelerde yenilikler, hizmet sektörünün verimliliğini artırsa da yeniliklerin, sektörün üretimi üzerindeki rolü belirsizdir. Yazara göre hizmet sektörü büyüklüğü, ülkeler arasında farklılık gösterdiğinden dolayı bazı ülkelerde AR-GE harcamaları, ekonomik büyümeyle daha az ilgili olabilir.

Yenilik üzerinde önemli etkisi olan bir diğer unsur, beşerî sermayedir. Beşerî sermayenin yeniliği etkileyen kanallardan biri olması politika aracı olarak daha fazla dikkate alınması gerektiğini göstermektedir. Eğitim kalitesinin yükseltilmesi ve yaparak öğrenme gibi deneyimlerin artırılması ile bireylerin daha nitelikli hale getirilmesine yönelik politikaların uygulanması, yeniliğin artmasına katkı sağlayacaktır.

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EKLER:

Ek: 1 Örnekleme Yer Alan Ülkeler Listesi

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|-------------------------|--|
| Gelişmiş Ülkeler | Almanya, Amerika Birleşik Devletleri, Avusturya, Belçika, Birleşik Krallık, Çek Cumhuriyeti, Danimarka, Estonya, Fransa, Finlandiya, Güney Kore, Hollanda, İspanya, İsrail, İsveç, İzlanda, Japonya, Kanada, Norveç, Polonya, Portekiz, Slovakya, Yunanistan |
| Gelişmekte Olan Ülkeler | Bulgaristan, Çin, Hindistan, Hırvatistan, Letonya, Litvanya, Macaristan, Meksika, Romanya, Rusya, Singapur, Türkiye, Ukrayna |

Müzakereci ve Eşitlikçi Demokrasinin Ekonomik Büyüme Üzerindeki Etkisi: OECD Ülkeleri Üzerine Kulüp Yakınsama Analizi

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The Impact of Deliberative and Egalitarian Democracy on Economic Growth: A Club Convergence Analysis on OECD Countries

Abstract

This study explains the relationship between democracy and economic growth in OECD countries. In line with this purpose, in this study covering the period 1996-2020, the relationship between democracy and economic growth in OECD countries, which are divided into three different groups according to per capita income level by club convergence analysis, was examined by a panel cointegration and panel causality methods. According to the analysis results, in which deliberative and egalitarian democratic regime definitions are used to represent democracy, in the long run, the causality relationship between democracy and economic growth differs according to the per capita income levels and the implementation of the democratic regime of the countries.

Keywords : Democracy, Economic Growth, Club Convergence Analysis, Panel Data Analysis.

JEL Classification Codes : B22, O1, O43.

Öz

Bu çalışmada, OECD ülkelerinde demokrasi ve ekonomik büyüme arasındaki ilişkinin açıklanması amaçlanmaktadır. Bu amaç doğrultusunda 1996-2020 dönemini kapsayan çalışmada, kulüp yakınsama analizi ile kişi başına gelir düzeyine göre üç farklı gruba ayrılan OECD ülkelerinde demokrasi ve ekonomik büyüme arasındaki ilişki panel eşbütünlüşme ve panel nedensellik yöntemleriyle incelenmiştir. Demokrasiyi temsilen müzakereci ve eşitlikçi demokratik rejim tanımlarının kullanıldığı analiz sonuçlarına göre, uzun dönemde demokrasi ve ekonomik büyüme arasında tespit edilen nedensellik ilişkisi, ülkelerin kişi başına gelir düzeylerine ve demokratik rejimin uygulanış biçimine göre farklılaşmaktadır.

Anahtar Sözcükler : Demokrasi, Ekonomik Büyüme, Kulüp Yakınsama Analizi, Panel Veri Analizi.

1. Giriş

Ekonomik büyüme, ekonomi tarihinin ilk dönemlerinden itibaren hem ekonomistlerin hem de politik karar alıcıların üzerinde durduğu önemli bir konu olmuştur. Özellikle Sanayi Devrimi ile birlikte ülkeler arasında var olan gelişmişlik farklarının daha da artması, ekonomik büyüme ve kalkınmanın belirleyicilerini ve ülkeler arasındaki gelişmişlik farklarının nedenlerini açıklamaya yönelik yapılan çalışmaları artırmıştır. Ekonomi literatüründe yapılan ilk dönem çalışmalar, tasarruf, nüfus, fiziksel sermaye, teknoloji, beşeri sermaye gibi faktörlerin ekonomik büyümenin temel belirleyicileri olduğunu göstermektedir. Bununla birlikte, benzer düzeyde sermaye, tasarruf, nüfus ve teknoloji düzeyine sahip olan ülkelerin farklı oranlarda büyüme sağlaması, ekonomik büyümeyi açıklamak için farklı faktörlere olan ihtiyacı artırmıştır. Bu bağlamda, geleneksel büyüme teorilerinde göz ardı edilen kurumsal faktörleri dikkate alan kurumsal iktisat 1990’lı yıllardan itibaren dikkat çekmeye başlamıştır. Buna göre ülkelerin ekonomik performanslarını etkileyen ve ülkeler arasındaki gelir farklılıklarının oluşmasına neden olan en önemli unsurlardan biri kurumlardır (Acemoglu et al., 2014a: 2). Douglass North’un (2010: 9) bir toplumda oynanan oyunun kuralları olarak tanımladığı kurumlar, ekonomik büyümenin temel unsurları için teşvik edici bir ortam sağlamaktadır. Gelişmiş bir kurumsal yapı, girişimciler için güvenli bir yatırım ortamı oluşturmakta, yenilikler sonrası ortaya çıkan hakları teminat altına alarak yenilikleri harekete geçirmekte, ortaya çıkan anlaşmazlıkların adil biçimde çözümünü sağlamakta ve ekonomik özgürlükleri korumaktadır. Böylece ekonomik büyüme için uygulanan politikalar daha verimli olmakta ve daha kısa sürede sonuç vermektedir.

Ekonomik büyümenin ve ülkeler arasındaki gelişmişlik farklılıklarının temel nedenlerinden biri, ülkelerin kurumsal yapılarının farklı niteliklerde işlemesidir. Literatürde yapılan çalışmalar, kurumsal kalitesi yüksek olan ülkelerde ekonomik büyümenin de yüksek olduğunu göstermektedir. Dolayısıyla, kurumsal kalitenin ekonomik büyümenin önemli besleyicilerinden biri olduğu söylenebilmektedir (Acemoglu et al., 2005: 2-3). Kurumsal yapısı güçlü olan ülkeler, aynı zamanda yolsuzlukların düşük düzeyde olduğu, hukukun üstünlüğü anlayışının işlediği, bağımsız ve etkin çalışan bir yargı sistemiyle hakların ve özgürlüklerin güvence altına alındığı, dolayısıyla belirsizliklerin düşük olduğu ve güven ortamının tahsis edildiği demokratik bir siyasi rejime sahip olan ekonomik büyüme düzeyleri de yüksek olan ülkelerdir (Peev & Mueller, 2012: 372). Dolayısıyla, güçlü kurumsal yapının en önemli temsilcilerinden biri demokrasidir. Demokratik rejimin iyi işlediği toplumlarda politik istikrarsızlıklar daha az gözlemlenmektedir. Bu durum devletin uygulayacağı politikalara ilişkin belirsizlikleri azaltmakta ve politik karar alıcıların kaynakları daha etkin kullanmasını sağlamaktadır (Razaq et al., 2020: 2). Bireylerin haklarının ve özgürlüklerinin korunduğu bir ortamın oluşmasıyla hem toplumsal çatışmalar önlenerek güven ortamı tahsis edilmekte, hem de daha kaliteli ve adil bir yaşam standardı oluşturularak üretim sürecindeki verimlilik artırılmakta ve daha fazla getiri sağlayan ekonomik fırsatların ortaya çıkması mümkün olmaktadır (Nairobi et al., 2021: 122; Acemoglu et al., 2019: 50). Bu bağlamda, demokratikleşme bir yandan yatırımları ve ekonomik reformları teşvik ederek, diğer yandan kamu yararını artırıp sosyal huzursuzlukları azaltarak ekonomik büyümeye önemli ölçüde

katkı sağlamaktadır (Acemoglu et al., 2014b: 3). Bu yönüyle diğer rejimlere nazaran, ekonomik özgürlükleri de içeren bir demokrasi ekonomik gelişme için uygun koşulları sağlayabilmektedir.

Literatürde yapılan çalışmalar demokrasi ve ekonomik büyüme arasındaki ilişkinin çift yönlü olduğunu göstermektedir. Demokratikleşme ve demokratik kalitenin artışı, ekonomik büyüme ve kalkınma sürecinin hızlanmasını etkileyerek toplumun yaşam koşullarını iyileştirirken, benzer şekilde ekonomik büyüme süreci de demokratik özgürlüklere katkı sağlayarak demokrasiyi etkileyen önemli unsurlardan biri olmaktadır. Lipset (1959: 76) tarafından ortaya atılan bu düşünceye göre, demokratik bir yönetimin kurulması ve iyileştirilmesi için ekonomik ve politik gelişme gerçekleşmelidir. Ekonomik büyüme ve refah düzeyi yükseldikçe demokratikleşmenin artması ve ekonomik gelişmelerin demokratikleşmeyi tetiklemesi beklenmektedir (Barro, 1996: 3). Ekonomik büyüme düzeyinde yaşanan artışla birlikte bu sürecin yarattığı ekonomik ve sosyal pozitif dışsallıklar, şehirde yaşayan orta sınıf ve işçi sınıfının artmasını sağlayarak demokratikleşmeyi olumlu etkilerken, aynı süreçte ortaya çıkabilecek gelir adaletsizliği artışı demokratik yapının zayıflamasına sebep olabilmektedir. Bununla birlikte, ekonomik büyümenin ilerleyen aşamalarında artan pozitif etkilere bağlı olarak gelir adaletsizliğinin yarattığı olumsuz etkinin de azalması ve demokratikleşmenin artması beklenmektedir (Muller, 1995: 967-969).

Ekonomik büyüme ve demokrasi arasında etkileşim olabileceği fikrinin gelişmesiyle birlikte, bu ilişkiyi açıklamaya yönelik farklı bakış açıları ve teoriler geliştirilmiştir. Bu amaç doğrultusunda yapılan çalışmalara bağlı olarak, Bağdaşma Yaklaşımı (*The Compatibility Perspective*), Çatışmacı Yaklaşım (*The Conflict Perspective*) ve Şüpheli Yaklaşım (*The Skeptical Perspective*) olmak üzere üç farklı yaklaşımdan bahsedilmektedir (Sirowy & Inkeles, 1990: 128-134). Demokrasinin ekonomik büyüme üzerinde olumlu etkisinin olduğu temeline dayanan bağdaşma yaklaşımı, demokratik yönetimin ekonomik büyümenin tamamlayıcısı olduğunu ortaya koymaktadır. Buna göre demokrasi, kaynakların ve gücün adil biçimde dağılımını sağlayarak toplumsal çatışmaları azaltmakta ve temel hak ve özgürlükleri desteklemektedir. Demokratik rejimin geçerli olduğu ve iyi yönetildiği toplumlarda hukukun üstünlüğü, ifade özgürlüğü, mülkiyet hakları gibi sivil hak ve özgürlüklerin uygulanma kapasitesi gelişmekte; daha az kırılgan, daha yüksek hesap verebilirlik ve şeffaflık düzeyine sahip ve daha risksiz yatırım seçenekleri barındıran, ekonomik özgürlüklerin yüksek olduğu bir ekonomik yapı ortaya çıkmaktadır. Böylelikle, ekonomik büyüme için gerekli olan elverişli sosyoekonomik koşullar daha kolay işletilebilmektedir (Jaunky, 2013: 990; Samarasinghe, 2018: 10).

Demokrasiyi ekonomik büyüme için önemli bir engel olarak ortaya koyan çatışmacı yaklaşıma göre, demokratikleşme ve ekonomik büyüme arasında tamamlayıcı bir ilişki değil, rekabet ilişkisi bulunmaktadır. Hızlı ve başarılı bir ekonomik genişlemenin gerçekleşmesi için gerekli olan ekonomik ve sosyal unsurların sağlanabilmesi için özellikle az gelişmiş ve gelişmekte olan ülkelerde otoriter bir rejimin varlığı gerekmektedir (Sirowy & Inkeles, 1990: 129). Bu yaklaşıma göre, ekonomik kalkınma için ihtiyaç duyulan büyük

ölçekli yatırımları ve yerli-yabancı sermaye birikimini teşvik eden zorlu ekonomi politikalarının uygulanması konusunda güçlü otoriter rejimler, siyasi ve sivil hak ve özgürlüklerden temellenen ve uzun vadeli ekonomik kararlardan ziyade vatandaşların günlük ihtiyaçlarını ön planda tutan demokratik rejimlere göre daha başarılıdır. Otokratik rejimler, yoksullar pahasına da olsa ekonomik büyüme için gerekli olan katı ekonomi politika kararlarını daha kolay alabilmekte ve etnik, dini veya sınıfsal çatışmalardan kaynaklı toplumsal istikrarsızlıklarla mücadelede daha kesin politik uygulamalar yapabilmektedir (Nosier, 2018: 3). Bu doğrultuda siyasi demokrasi, özellikle kalkınma süreçlerinin başında olan az gelişmiş ve gelişmekte olan ülkeler için ekonomik büyüme sürecini yavaşlatabilen bir unsurdur (Jaunky, 2013: 990). Bağdaşmacı ve çatışmacı yaklaşımlarının aksine ekonomik büyüme ve demokratik kurumlar arasında doğrudan bir ilişki olmadığını ortaya koyan şüphecî yaklaşım, başarılı bir ekonomik performans için hükümet politikalarının etkinliği, kurumsal olgunluk, devlet kurumları arasındaki koordinasyon gibi unsurların demokrasinin varlığından daha önemli bir rol oynadığını iddia etmektedir (Heo & Hahm, 2012: 6). Bu bağlamda ekonomik büyüme, demokrasi veya otokrasi kurumlarıyla sağlanabilir. Önemli olan sahip olunan kurumların hangi yönde ve hangi unsurlar aracılığıyla işletildiğidir (Sirowy & Inkeles, 1990: 133-134).

Literatürde yapılan çalışmalar, demokrasinin de dahil olduğu politik kurumlar için ideal bir durumun mevcut olmadığını; çünkü politik kurumların farklı çoğunluk ya da azınlık gruplar yaratabileceğini ortaya koymaktadır (Acemoglu et al., 2019: 59-60). Oligarşik rejimler görece mevcut zenginleri ve zaten yerleşik konumda olanları korumak adına çarpıtmalar yaratabilirken; demokrasiler genel olarak daha az şanslı olanlara yeniden dağıtılmak üzere gelir elde edebilmek adına zenginler için daha yüksek vergi politikaları gibi uygulamaları kullanabilmektedir. Bu bağlamda hangi sistemin ekonomik büyümeyi daha fazla artırdığını kesin bir şekilde ortaya koymak zordur. Bununla birlikte, modern kapitalizmin büyümesinin temel unsurlarından biri olan yaratıcılığa diğer siyasi rejimlere göre daha elverişli olan demokratik sistemin, hem teknolojik gelişmelere daha kolay uyulanabilmesi, hem de daha esnek politik uygulamaları içermesi açısından ekonomik büyüme için daha verimli olabileceği düşünülmektedir (Nairobi et al., 2021: 127).

Bu kapsamda bu çalışmada, ekonomik büyüme ve demokrasi arasındaki ilişkinin 1996-2020 döneminde OECD ülkeleri için kulüp yakınsama yöntemiyle oluşturulan farklı gruplarda nasıl işlediği araştırılmaktadır. Demokrasinin temsili için *müzakereci* ve *eşitlikçi demokrasi* olmak üzere iki farklı demokrasi tanımının kullanıldığı bu çalışmada, demokratik rejimin kapsamına bağlı olarak ekonomik büyüme demokrasi ilişkisinin farklılaşp farklılaşmadığının ortaya konulması amaçlanmaktadır. Bu doğrultuda, çalışmanın ikinci bölümünde ilgili konuya ilişkin literatürde yer alan çalışmalar incelenmektedir. Üçüncü bölümde çalışmada kullanılan veri seti ve yöntem açıklandıktan sonra dördüncü bölümde analiz sonuçlarına yer verilmektedir. Son olarak sonuç bölümünde, ulaşılan bulgular değerlendirilmekte ve ekonomik büyüme ve demokrasi arasındaki etkileşim kanallarına ilişkin bulgulardan hareketle politika önerileri tartışılmaktadır.

2. Literatür Tarama

Ülkelerin gelişmişlik düzeylerinin açıklanmasında kurumsal faktörlerin kullanılmasının artışıyla birlikte, siyasi rejim ve gelişmişlik arasındaki etkileşimin incelenmesi de literatürde tartışılan önemli konulardan biri haline gelmiştir. Ekonomik büyüme ve demokrasi arasındaki etkileşim ekonomi literatüründe dikkat çeken konulardan biri olma özelliğini hala korumaktadır. Bu kapsamda yapılan çalışmalar ele aldıkları dönem ve ülke grupları itibarıyla farklı sonuçlara ulaşmıştır. Ekonomik büyüme ve demokratikleşme arasında pozitif bir ilişki olduğunu ortaya koyan bağdaşmacı yaklaşımı destekleyen yoğun bir literatür olduğu gibi; demokrasinin gelişmesinin ekonomik büyümeyi azaltabileceği yönündeki ters etkiyi belirten çatışmacı yaklaşımı içeren ve ekonomik büyüme arasında bir ilişkinin olmadığı sonucuna ulaşan çalışmalar da bulunmaktadır.

Elde ettikleri sonuçlar itibarıyla bağdaşmacı yaklaşımı destekleyen Aghion et al. (2007), politik kurumların, özellikle demokrasinin ekonomik büyümeyi nasıl etkilediğini araştırmayı amaçlayan ve 180 ülkeyi kapsayan çalışmalarında, demokrasinin ekonomik performansı zayıf düzeyde olumlu etkilediği sonucuna ulaşmışlardır. Buna göre, demokrasi toplam üretkenlik artışını farklı sektörler için farklı şekilde etkilemekte ve bu farklılık demokrasinin ekonomik performans üzerindeki olumlu etkisinin görece zayıf olmasına neden olabilmektedir. Jaunky (2013), demokratikleşme ve ekonomik büyüme arasındaki etkileşimi 28 Sahra-altı Afrika ülkesi için 1980-2005 döneminde araştırmıştır. Çalışmanın sonuçlarına göre, kısa dönemde demokrasi ekonomik büyümeyi pozitif yönde etkiliyorken, uzun dönemde demokrasi ve ekonomik büyüme arasında çift yönlü, güçlü bir pozitif nedensellik ilişkisi bulunmaktadır. Demokrasi ve ekonomik büyüme arasındaki ilişkiyi 1960-2010 dönemleri için seçili ülkelerde araştıran Acemoglu et al. (2014), demokrasinin ekonomik büyüme üzerinde güçlü ve önemli bir etkisi olduğu sonucuna ulaşmışlardır. Çalışmanın sonuçları demokrasi rejimine geçen ülkelerde uzun dönemde kişi başına GSYİH düzeyinde yaklaşık %20'lik bir artış olduğunu gösterirken; özellikle eğitim seviyesinin daha yüksek olduğu ülkelerde demokrasinin daha yüksek ekonomik büyüme düzeylerine ulaşma konusunda daha elverişli olduğu vurgulanmaktadır.

Malikane ve Chitambara (2017) 8 Güney Afrika ülkesinin 1980-2014 dönemi verileriyle yaptıkları analizde güçlü demokratik kurumların ekonomik büyümenin önemli unsurlarından biri olduğunu belirtmektedirler. Doğrudan yabancı yatırımları da modele dahil eden çalışma, güçlü demokratik kurumların doğrudan yabancı yatırımlardan kaynaklanan pozitif dışsallıkları daha iyi özümstediklerini ve bu etkiyi ekonomik büyümeye daha fazla yansıtıklarını ortaya koymaktadır. Kim ve Heshmati (2019), demokrasi ve ekonomik büyüme arasındaki ilişkiyi statik ve dinamik modeller şeklinde tahmin edilen üretim fonksiyonlarını oluşturarak 144 ülke için 1980-2014 yılları arasında analiz etmişlerdir. Ampirik sonuçlara göre, daha iyi yönetilen demokrasiye sahip olan ülkelerde ekonomik büyüme düzeyi artmakta ve bu ülkelere yapılan yabancı yatırım akışının ekonomik büyüme üzerindeki pozitif etkisi daha belirgin olmaktadır. Benzer şekilde Baklouti ve Boujelbene (2020), demokrasi ve ekonomik büyüme arasındaki etkileşim ilişkisini politik istikrar çerçevesinde araştırmışlardır. 1998-2011 dönemi için 17 Orta Doğu ve Kuzey Afrika

ülkesini kapsayan çalışmanın sonuçları, ekonomik büyüme ve demokrasi arasında çift yönlü pozitif bir ilişkinin olduğunu göstermektedir. Demokrasinin ekonomik büyüme üzerindeki pozitif etkisinin gücü politik istikrara bağlıdır. Demokratik kalitenin ekonomik büyüme üzerindeki etkisini Endonezya için 2011-2019 dönemleri arasında araştıran Nairobi et al. (2021), demokrasinin ekonomik büyümeyle uzun dönemde pozitif olarak etkilendiği sonucuna ulaşmışlardır.

Bağdaşmacı yaklaşımı destekleyen yoğun bir literatür olmakla birlikte, demokrasi ve büyüme arasındaki engelleyici ilişkiyi ortaya koyan çatışmacı yaklaşımın sonuçlarına ulaşan çalışmalar da bulunmaktadır. Tavares ve Wacziarg (2001), demokrasinin ekonomik büyüme üzerindeki etkisini 65 gelişmiş ve gelişmekte olan ülke için farklı kanallar üzerinden incelemişlerdir. Çalışmanın sonuçları, demokrasinin beşerî sermayeyi artırdığını ve gelir dağılımındaki adaletsizliği düşürdüğünü ortaya koymaktadır. Bununla birlikte demokrasinin ekonomik büyüme üzerindeki toplam etkisi negatiftir. Narayan ve Smyth (2006), Çin ekonomisi için araştırdıkları demokrasi ekonomik büyüme ilişkisini içeren çalışmalarında, kısa dönemde ekonomik büyüme ve demokrasi arasında çift yönlü bir nedensellik ilişkisi varken, uzun dönemde demokrasiden ekonomik büyümeye doğru negatif yönlü bir ilişkinin olduğunu tespit etmişlerdir. Fayad et al. (2012), gelir ve demokrasi arasındaki ilişkiyi Sahra-altı Afrika ülkeleri için Lipset Hipotezi’nin geçerliliğini sorgulamak amacıyla araştırmışlardır. Çalışmanın sonuçları, demokrasi ve kişi başına gelir arasında anlamlı bir negatif ilişki bulunduğunu ortaya koymaktadır. Ele alınan ülkelerdeki vergi matrahının niteliğine bağlı olarak ulaştıklarını iddia ettikleri bu sonuca göre, düşük kişi başına gelir düzeyi demokratikleşmeyi harekete geçirmektedir. Aisen ve Veiga (2013), 1960 ile 2004 yılları arasında 169 ülkeden oluşan bir örneklemde doğrusal dinamik panel veri modeli üzerinden ekonomik büyüme ve demokrasi ilişkisini araştırmışlardır. Buna göre, daha yüksek derecede siyasi istikrarsızlıklar ekonomik büyüme oranlarını düşürmektedir ve demokrasinin büyüme üzerinde küçük bir olumsuz etkisi bulunmaktadır. Benzer şekilde Rachdi ve Saidi (2015), demokrasi ve ekonomik büyüme arasındaki etkileşimin yönünü ve boyutunu 17 MENA ülkesi için 1983-2012 dönemi için araştırmışlardır. Farklı demokrasi göstergelerini kullanarak panel veri yöntemi ile analiz edilen çalışmanın sonuçları, demokrasinin MENA ülkeleri için ekonomik büyüme üzerinde güçlü ve negatif bir etkisi olduğunu göstermektedir. Lopes ve Riviero-Catro (2017), demokrasinin ekonomik büyüme üzerindeki etkisini güven kanalı üzerinden açıklamışlardır. 79 ülkeyi kapsayan ve 1994-2014 arasındaki dönemi inceleyen çalışmanın sonuçları, yüksek güven düzeyine sahip demokratik ülkelerin demokratik olmayan ülkelere göre daha az büyüme gösterdiğini, demokrasi-güven kombinasyonunun yatırımları azalttığını ve hükümet harcamalarını artırdığını göstermektedir. Etkileri büyüme oranına bağlı olduğunda, demokratikleşme ve ekonomik büyüme arasındaki ilişkiyi 108 ülke için 1960-2011 döneminde araştıran Lin ve Hsiao (2021), demokrasinin ekonomik büyüme üzerindeki etkisinin düşük büyüme oranlarına sahip ülkelerde pozitif ve güçlü; yüksek büyüme oranlarına sahip ülkelerde ise zayıf olduğunu göstermektedir.

Ekonomik büyüme ve demokrasi arasında doğrudan güçlü bir ilişki olmadığını ortaya koyan şüphecî yaklaşımı destekleyen sonuçlara ulaşan De Haan ve Sierman (1995), bu

ilişkiyi 110 ülke için 1961-1992 dönemini kapsayacak şekilde araştırmışlardır. Buna göre demokratikleşmenin ekonomik büyüme üzerinde kesin ve güçlü bir etkisi yoktur. Adejumobi (2000), ekonomik gelişme ve demokrasi arasındaki etkileşimin kanallarını Afrika için araştırdığı çalışmasında, ekonomik gelişmeye yol açan temel unsurun politik rejimden çok uygulanan reform politikaları olduğunu ortaya koymaktadır. Drury et al. (2006) demokrasi ve ekonomik büyüme arasındaki ilişkiyi gelişmiş ve gelişmekte olan 100 ülke için yolsuzluk kanalıyla incelemişlerdir. Çalışmanın sonuçlarına göre, demokrasinin ekonomik büyüme üzerinde anlamlı bir etkisi yoktur. Literatürde bağdaşmacı, çatışmacı ve şüpheli yaklaşımları destekleyen pek çok çalışma yer almakla birlikte, yapılan bazı çalışmalar ekonomik büyüme ve demokrasi arasındaki etkileşim için ele aldıkları ülkeler açısından karmaşık sonuçlara ulaşmıştır. Narayan et al. (2011), ekonomik büyüme ve demokrasi arasındaki etkileşimi 30 Sahra-altı Afrika ülkesi için inceledikleri çalışmalarında, ekonomik büyüme ve demokrasi arasında çift yönlü ve pozitif bir ilişki olduğu sonucuna ulaşmışlardır. Bununla birlikte, Gabon ve Sierra Leone ülkelerinde demokrasi ekonomik büyümeyi negatif etkilemektedir. Demokrasinin ekonomik büyüme üzerindeki dolaylı etkisini eğitim, sağlık, ticari açıklık, fiziksel sermaye birikimi gibi farklı kanallar üzerinden 11 MENA ülkesi için 1990-2015 döneminde araştıran Nosier ve Karamani (2018), bu farklı kanallar için farklı sonuçlara ulaşmıştır. Buna göre, bu dolaylı etkiler göz önünde bulundurulursa, demokrasinin ekonomik büyüme üzerindeki etkisi demokrasi düzeyi düşük yoksul ülkelerde negatif iken; demokrasi düzeyi görece daha yüksek olan ve zengin ülkelerde pozitif olmaktadır. Bozkurt et al. (2018), ekonomik büyüme ve demokrasi ilişkisini 8 yükselen piyasa ekonomisi için 1972-2016 dönemi için araştırmışlardır. Çalışmanın sonuçlarına göre, Türkiye, Brezilya, Hindistan ve Şili'de demokrasi ve ekonomik büyüme arasında pozitif bir ilişki varken; Arjantin, Çin, Endonezya ve Güney Afrika'da demokratikleşme ekonomik büyümeyi negatif olarak etkilemektedir. Bu bağlamda çalışma, ülkeler için demokratik kurumların geliştirilmesi ve ekonomik büyümeyi etkileme kanalları açısından farklı politika önerilerinde bulunmaktadır. Demokratikleşme ve ekonomik özgürlüklerin ekonomik büyümeye etkisini 1995 -2002 yılları arasında, gelir düzeyinin farklılaştığı ülkeler için araştıran Oral (2020), her bir ülke düzeyi için farklı ilişki sonucuna ulaşmıştır. Gelir düzeyi en düşük ve en yüksek ülkelerde ekonomik özgürlükler, demokrasi ve ekonomik büyüme arasında pozitif yönlü bir ilişki varken, orta gelirli ülkeler için demokrasi ve ekonomik özgürlükler, ekonomik büyümeyi negatif etkilemektedir.

Ekonomik büyüme literatürü incelendiğinde, demokrasi ve büyüme arasındaki ilişkiyi açıklayan üç temel yaklaşımı destekleyen çalışmalara ulaşmak mümkündür. Çalışmaların ulaştıkları sonuçlar ele alınan analiz dönemine, ülke gruplarına ve demokrasinin temsili için seçilen değişkenlere göre farklılaşabilmektedir.

3. Metodoloji ve Bulgular

Demokrasi ve ekonomik büyüme arasındaki ilişkiyi OECD ülkeleri için 1996-2020 döneminde incelemeyi amaçlayan bu çalışmada iki bölümden oluşan bir analiz yöntemi uygulanmaktadır. Bu kapsamda, ilk olarak kulüp yakınsama yöntemiyle OECD ülkeleri kişi başına düşen gelir düzeylerine göre kendi içinde farklı yakınsama kulüplerine ayrılmıştır.

Analizin ikinci kısmında, kulüp yakınsama analiz yöntemi kullanılarak elde edilen yakınsama kulüplerinde demokrasi ve ekonomik büyüme arasındaki ilişki, ekonomik özgürlükler değişkeninin kontrol değişkeni olarak dahil edildiği bir panel tahmin modeline her bir kulüp için yatay kesit bağımlılığı, homojenlik, birim kök, eşbütünleşme, katsayı tahmincisi ve nedensellik testleri uygulanarak araştırılmıştır.

Analizde ekonomik büyümeyi temsilen kullanılan kişi başına düşen gelir değişkeni verilerine Dünya Bankası’ndan, ekonomik özgürlükleri temsilen kullanılan ekonomik özgürlük endeksi verilerine Heritage Foundation’dan ulaşılmıştır. Ekonomik özgürlük endeksi; hukukun üstünlüğü (devlet bütünlüğü, yargı etkinliği, mülkiyet hakları), devlet büyüklüğü (vergi yükü, devlet harcamaları, mali sağlık), düzenleyici verimlilik (çalışma özgürlüğü, parasal özgürlük, iş özgürlüğü), açık piyasalar (yatırım özgürlüğü, ticaret özgürlüğü, finansal özgürlük)’den oluşan on iki ekonomik özgürlük göstergesinin her birine eşit ağırlık verilerek ortalamaları alınarak elde edilmektedir. Demokrasiyi temsilen V-Dem’den elde edilen *müzakereci* ve *eşitlikçi demokrasi* endeksleri olmak üzere iki farklı demokrasi tanımının kullanılmıştır. Yönetim biçiminde kararların alındığı sürece odaklanan *müzakereci demokrasi ilkesine* göre demokrasi, mevcut tercihlerin bir araya getirilmesinden fazlasını gerektirmektedir. Buna göre, iktidara açık, bilgili ve yetkin katılımcılar arasında tercih oluşumundan nihai karara kadar her düzeyde saygılı bir diyalog olmalıdır (V-Dem, 2021). Maddi ve manevi eşitsizliklerin resmi hak ve özgürlüklerin kullanılmasını engellediğini ve tüm sosyal gruplardan vatandaşların katılım yeteneğini azalttığını kabul eden *eşitlikçi demokrasi* ise, bireylerin hak ve özgürlüklerinin tüm sosyal gruplarda eşit olarak korunmasını ifade etmektedir. Buna göre, kaynakların tüm sosyal gruplara eşit olarak dağıtılması ve grup ve bireylerin güce eşit erişim hakkına sahip olması beklenmektedir. (V-Dem, 2021). Analizde kullanılan tüm değişkenlere ait ayrıntılı açıklama Tablo 1’de yer almaktadır:

Tablo: 1
Analizde Kullanılan Değişkenler

| Değişkenler | Kısaltma | Birim | Kaynak |
|----------------------|----------|------------------|---------------------|
| Kişi Başına GSYİH | GDP | Sabit 2015 US \$ | WDI |
| Ekonomik Özgürlük | EF | Endeks | Heritage Foundation |
| Müzakereci Demokrasi | DEM1 | Endeks | V-Dem |
| Eşitlikçi Demokrasi | DEM2 | Endeks | V-Dem |

3.1. Kulüp Yakınsama Analizi

Ülkelerin kişi başına gelir düzeylerine bağlı olarak ekonomik büyüme ve demokrasi arasındaki ilişkinin yönünün ve boyutunun farklılaşıp farklılaşmadığını ortaya koyabilmek amacıyla ülkelerin gelir düzeyine göre gruplandırılması gerekmektedir. Bu bağlamda çalışmada, Phillips ve Sul (2007)’un çalışmada ortaya koydukları algoritma, OECD ülkelerinde kişi başına geliri sınıflandırmak için kullanılmaktadır. Phillips ve Sul’un (2007) ifade ettikleri kulüp yakınsama yöntemini, geleneksel yöntemlerden (β - ve σ -yakınsama) farklı olarak, bireysel heterojenliğe ve yaklaşım yakınsama kulüplerinin içsel olarak belirlenmesine izin vermektedir. Ayrıca, geleneksel durağanlık ve uzun dönem ilişkinin elde edildiği eşbütünleşme testlerinden farklı olarak, söz konusu değişkenin heterojenliği ve

durağanlık özelliklerine karşı sağlam olmasına bağlı olarak, stokastik durağanlık veya eğilim durağanlığıyla ilgili herhangi bir özel varsayım dayatmamaktadır.

X_{it} , $i = 1, 2, \dots, N$ ve $t = 1, 2, \dots, T$ olan panel veri seti için değişkeni, N , yatay kesit birimlerinin sayısını ve T ise örneklem büyüklüğünü temsil ediyorken, kişi başına gelir X_{it} olarak gösterildiği takdirde, zamanla değişen ve doğrusal olmayan faktör modeline göre X_{it} iki ayrı bileşeden meydana gelmektedir:

$$X_{it} = g_{it} + a_{it} \quad (1)$$

Denklem 1’de g_{it} sistematik, a_{it} ise geçici değişkenleri göstermektedir. Elde edilen iki bileşen Denklem 2’de gösterilmektedir:

$$X_{it} = \left(\frac{g_{it} + a_{it}}{\mu_t} \right) \mu = \delta_{it} \mu_t \quad (2)$$

Burada δ_{it} , zamanla değişen kendine özgü ögeyi ifade ederken, μ_t bir ortak bileşeni göstermektedir. Denklem 2, μ_t ’nin dinamik faktör modeli olarak ifade edilirken, stokastik eğilimli davranış δ_{it} ise, X_{it} ile μ_t arasındaki mesafeyi ölçmektedir. δ_{it} ve μ_t üzerinde birtakım kısıtlamalar getirilerek model uygulandığında, ortak faktörün aşağıdaki şekilde kaldırılmaktadır:

$$h_{it} = \frac{X_{it}}{N^{-1} \sum_{i=1}^N X_{it}} = \frac{\delta_{it}}{N^{-1} \sum_{i=1}^N \delta_{it}} \quad (3)$$

3 nolu denklemde h_{it} , bağıl geçiş parametresini göstermektedir. Bağıl geçiş parametresi t zamanında panelden elde edilen ortalamaya göre yükleme katsayısını ölçmektedir. Yani, h_{it} , bireysel i ’nin geçiş yolunu panelden elde edilen ortalamaya göre takip etmektedir. Yukarıdaki denklemde, h_{it} ’in yatay kesit varyansının ise 0’a yakınsadığını ve h_{it} ’in yatay kesit ortalamasının 1 olduğunu gösterilmektedir. Bu kapsamda, $H_0 : \delta_i = \delta$ ve $\alpha \geq 0$ ve $H_A : \delta_i \neq \delta \forall_i$ veya $\alpha < 0$ hipotezlerinin sınandığı Phillips ve Sul (2007) testinden elde edilen log (t) regresyonu ile yakınsamanın boş hipotezi test edilmektedir:

$$\log \left(\frac{H_t}{H_t} \right) - 2 \log L(t) = \hat{\alpha} + \hat{\beta} \log t + \hat{u}t, t = [rT], [rT] + 1, \dots, T \text{ ve } r > 0 \quad (4)$$

4 no’lu denklemde yer alan tek taraflı log (t) testinin -1.65’ten küçük olması durumunda yakınsamanın boş hipotezi reddedilmektedir. Panelin tamamı için boş hipotezin reddedilmesi, panele ait alt gruplarda yakınsamayı ortadan kaldıramamaktadır. Bu durumda ilk olarak tüm ülkeler sahip oldukları son dönem girdilerine göre sıralanmaktadır. Daha sonra, en güçlü ve en uyumlu yakınsamaya sahip ülkeler tarafından çekirdek alt grup oluşturulmaktadır. Sonraki aşamada her ülke teker teker gruba eklenmekte ve gruba yakınsamaları test edilmektedir. Eğer herhangi bir yakınsamaya rastlanmazsa diğer alt gruplar oluşturularak süreç tekrarlanmaktadır (Cieslik & Wcislik, 2020: 42-43). Bu doğrultuda, OECD ülkelerinde kişi başına gelir yakınsamasının analizi için uygulanan kulüp yakınsama testine ait sonuçları aşağıdaki tabloda yer almaktadır:

Tablo: 2
Tüm Örneklem için log (t) Yakınsama Testi Sonuçları

| Test | Katsayı | Std. Hata | T-stat |
|---------|---------|-----------|----------|
| Log (t) | -0.3573 | 0,0189 | -18,8801 |

Not: Boş hipotez, $H_0 : \delta_t = \delta$ ve $\alpha \geq 0$ (Tüm ülkelerde yakınsama var) ve alternatif hipotez, $H_A : \delta_t \neq \delta \forall t$ veya $\alpha < 0$ (Bazı ülkeler için yakınsama yok) şeklinde tanımlanmaktadır.

Tüm panel için uygulanan log (t) testi sonuçlarından elde edilen t istatistiği değeri -18,8801 Tablo 2’de gösterilmektedir. Elde edilen sonuç -1,65’ten küçük olduğu için tüm panelin yakınsamasını öne süren boş hipotez reddedilmektedir. Elde edilen log (t) testine ait sonuçlarına göre, OECD ülkelerinin tamamının ortak bir dengeye yakınsamadıkları sonucuna ulaşılmıştır. Ardından, kişi başına gelirin farklılaştığı kulüplerin elde edilmesi için, 38 OECD ülkesine ait örneklem için kulüplerin kümelenmesini baz alan algoritma kullanılmıştır. Tablo 3’te yer alan sonuçlara göre 7 adet yakınsama kulübüne ulaşılmıştır:

Tablo: 3
Başlangıç Kulüp Yakınsama log (t) Testi Sonuçları

| log (t) | Kulüp 1 | Kulüp 2 | Kulüp 3 | Kulüp 4 | Kulüp 5 | Kulüp 6 | Kulüp 7 | Yakınsama Yok |
|---------|---------|---------|---------|---------|---------|---------|---------|---------------|
| Katsayı | 0,013 | 0,197 | 0,063 | 0,074 | 0,289 | 0,285 | 0,235 | -0,663 |
| T-stat | 0,313 | 5,626 | 2,820 | 3,447 | 6,564 | 4,879 | 2,984 | -25,997 |

Elde edilen 7 yakınsama kulübü arasında yakınsamanın da test edilmesi gerekmektedir. Bu bağlamda Phillips ve Sul (2009) tarafından geliştirilen birleştirme testi uygulanmıştır. Tablo 4’te uygulanan birleştirme testi sonuçları yer almaktadır:

Tablo: 4
Birleştirme Kulüpleri log (t) Testi Sonuçları

| log (t) | Kulüp 1+2 | Kulüp 2+3 | Kulüp 3+4 | Kulüp 4+5 | Kulüp 5+6 | Kulüp 6+7 | Kulüp 7+8 |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Katsayı | 0,006 | 0,146 | 0,065 | 0,133 | 0,174 | -0,055 | -0,567 |
| T-stat | 0,203 | 4,921 | 2,982 | 3,850 | 3,823 | -1,246 | -28,245 |

Tablo 4’te gösterilen kulüp birleştirme sonuçlarına göre, her kulüp çift içinde t istatistik değeri -1,65 değerinden büyük elde edilmiştir ve bu yüzden kulüp çiftlerinin birleştirilmesi gerekmektedir. Birleştirme testinden sonucu elde edilen OECD ülkelerinde kişi başına gelir yakınsamasını gösteren üç kulüp Tablo 5’te verilmektedir. Kulüp 1 kişi başına gelirin en yüksek olduğu durumu gösterirken, Kulüp 2’de kişi başına gelir daha az gerçekleşmektedir. Kulüp 3 ise kişi başına gelirin en az olduğu grubu göstermektedir:

Tablo: 5
Kulüplere Ait Ülkeler

| Kulüpler | Kulüp Üyeleri |
|----------------------------|---|
| Kulüp 1 (10) | Avustralya, Danimarka, İzlanda, İrlanda, Litvanya, Norveç, Güney Kore, İsveç, İsviçre, ABD |
| Kulüp 2 (14) | Avusturya, Belçika, Kanada, Estonya, Finlandiya, Fransa, Almanya, İsrail, Japonya, Letonya, Yeni Zelanda, Polonya, Slovakya, Birleşik Krallık |
| Kulüp 3 (12) | Şili, Kolombiya, Kosta Rika, Çekya, Yunanistan, Macaristan, İtalya, Meksika, Portekiz, Slovenya, İspanya, Türkiye |
| Yakınsama Olmayan Grup (2) | Lüksemburg, Hollanda |

3.2. Panel Veri Analizi

Analizin ikinci bölümünde, kulüp yakınsama analizi sonucu elde edilen kişi başına düşen gelir düzeyleri farklı üç kulüpte ekonomik büyüme ve demokrasi arasındaki ilişkinin varlığının ve yönünün tespit edilmesi amacıyla panel veri analiz yöntemi kullanılmıştır. Bu kapsamda, öncelikle serilerin durağanlık durumlarını için yatay kesit bağımlılığı ve birim kök testleri uygulanmış; ardından seriler arasındaki uzun dönem ilişkinin varlığını ve yönünü tespit etmek amacıyla sırasıyla panel eşbütünleşme ve panel nedensellik analizleri yapılmıştır.

Ülkeler arası ilişkilerin gelişmesiyle birlikte artan ticari işlemler ve ekonomik etkileşim, analiz yapılırken ülke gruplarında ele alınan yatay kesit serileri arasındaki ilişkilerin de göz önünde bulundurulması gerekliliğini doğurmaktadır. Çalışmada tutarlı ve sapmasız sonuçlara ulaşılabilmesi ve analizde kullanılacak birim kök ve eşbütünleşme testlerinin belirlenebilmesi amacıyla öncelikle yatay kesit bağımlılık ve homojenlik testlerinin yapılması gerekmektedir. Bu kapsamda çalışmada sırasıyla Breusch ve Pagan (1980) ve Pesaran CD_{LM} yatay kesit bağımlılığı testleri ve Pesaran ve Yamagata (2008) homojenlik testleri kullanılmıştır.

Seriler arasında yatay kesit bağımlılığı varlığının tespit edilebilmesi için Breusch ve Pagan (1980)'in geliştirdiği ve yatay kesit boyutundan büyük olduğu ($T > N$) durumlarda kullanılan LM testi aşağıdaki şekilde ifade edilmektedir:

$$Y_{it} = \alpha_i + \beta_i X_{it} + \varphi_{it} \quad (5)$$

5 no'lu denklemde $i = 1, 2, \dots, N$ yatay kesit boyutunu ve $t = 1, 2, \dots, T$ zaman boyutunu gösterirken, X_{it} bağımsız değişken vektörü temsil etmektedir. Bu kapsamda LM test istatistiği şu şekilde hesaplanmaktadır:

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \quad (6)$$

Breusch ve Pagan (1980) tarafından geliştirilen LM testinin yanlı sonuçlar verdiğini öne süren Pesaran (2004), LM testinde birtakım düzenlemeler yaparak LM testinin geliştirilmiş hali olan CD_{LM} testini ortaya koymuştur:

$$CD_{LM} = \sqrt{\frac{2T}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N \left(\frac{(T-k)\hat{\rho}_{ij}^2 - [(T-k)\hat{\rho}_{ij}^2]}{\text{var}[(T-k)\hat{\rho}_{ij}^2]} \right) \quad (7)$$

7 no'lu denklemde $\hat{\rho}_{ij}^2$, her bir yatay kesit boyutu için en küçük kareler yönteminden elde edilen ikili korelasyon katsayısını ifade etmektedir (Le & Öztürk, 2020: 22686). Her iki yatay kesit bağımlılığı testi de zaman boyutunun yatay kesit boyutundan büyük olduğu ($T > N$) durumlarda kullanılmaktadır.

Panel veri analizinde kullanılan değişkenlerin homojen ve heterojen olmalarına göre panel analiz için uygulanacak birim kök ve eşbütünleşme analizlerinde farklılık oluşabilmektedir. Bu nedenle panel veri analizinde yatay kesit heterojenliğinin oluşup oluşmadığını incelemek oldukça önemlidir. Yatay kesitler arası eğim katsayılarının homojenliğin sınanması amacıyla Swamy (1970) tarafından ortaya konulan homojenlik testi, Pesaran ve Yamagata (2008) tarafından geliştirilerek Δ ve Δ_{adj} testleri oluşturulmuştur (Aydın, 2019: 624):

$$S = \sum_{i=1}^N \left(\beta_i - \beta_{WFE} \right)' \frac{X_i' M_{\tau} X_i}{\sigma_i^2} (\beta_i - \beta_{WFE}) \quad (8)$$

8 no’lu denklemde \tilde{S} , değiştirilmiş Swamy modelini göstermektedir. Bu modelden hareketle geliştirilen $\bar{\Delta}$ modeli ve küçük örneklerde daha iyi sonuç veren $\overline{\Delta_{adj}}$ modeli sırasıyla 9 ve 10 no’lu denklemlerde yer almaktadır:

$$\bar{\Delta} = \sqrt{N} \left(\frac{N^{-1} \tilde{S} - k}{\sqrt{2k}} \right) \quad (9)$$

$$\overline{\Delta_{adj}} = \sqrt{N} \left(\frac{N^{-1} \tilde{S} - k}{\sqrt{\frac{2k(T-K-1)}{T+1}}} \right) \quad (10)$$

Bu bağlamda, seriler arasındaki yatay kesit bağımlılığını test eden Breusch ve Pagan (1980) ve Pesaran CD_{LM} yatay kesit bağımlılığı testleri ve Pesaran ve Yamagata (2008) homojenlik testlerinin sonuçları Tablo 6’da yer almaktadır:

Tablo: 6
Yatay Kesit Bağımlılığı ve Eğim Homojenliği Testi Sonuçları

| | | | Breusch Pagan LM Test | | Pesaran CD_{LM} | |
|-----------------------|---------|----------|-----------------------|----------|-------------------|----------|
| GDP | Kulüp 1 | | 1016,457(0,000)* | | 102,400(0,000)* | |
| | Kulüp 2 | | 2001,391(0,000)* | | 141,607(0,000)* | |
| | Kulüp 3 | | 910,732(0,000)* | | 73,524(0,000)* | |
| EF | Kulüp 1 | | 350,4840(0,000)* | | 32,200(0,000)* | |
| | Kulüp 2 | | 747,437(0,000)* | | 48,658(0,000)* | |
| | Kulüp 3 | | 245,440(0,000)* | | 15,618(0,000)* | |
| DEM1 | Kulüp 1 | | 215,661(0,000)* | | 17,989(0,000)* | |
| | Kulüp 2 | | 477,665(0,000)* | | 28,661(0,000)* | |
| | Kulüp 3 | | 346,687(0,000)* | | 24,430(0,000)* | |
| DEM2 | Kulüp 1 | | 225,996(0,000)* | | 19,078(0,000)* | |
| | Kulüp 2 | | 508,515(0,000)* | | 30,948(0,000)* | |
| | Kulüp 3 | | 367,544(0,000)* | | 26,246(0,000)* | |
| Eğim Homojenlik Testi | | | | | | |
| | Kulüp 1 | | Kulüp 2 | | Kulüp 3 | |
| Test | T-stat | p-değeri | T-stat | p-değeri | T-stat | p-değeri |
| $\hat{\Delta}$ | 11,307 | 0,000* | 10,813 | 0,000* | 11,782 | 0,000* |
| $\hat{\Delta}_{adj}$ | 12,641 | 0,000* | 12,089 | 0,000* | 13,173 | 0,000* |

Not: Yatay kesit bağımlılığı testleri için boş ve alternatif hipotezler; “ $H_0: Cov(\varphi_{it}, \varphi_{it}) = 0$ (Yatay kesit bağımlılığı yoktur ve $H_1: Cov(\varphi_{it}, \varphi_{it}) \neq 0$ (Yatay kesit bağımlılığı vardır)” ve homojenlik testleri boş ve alternatif hipotezler; “ $H_0: \beta_i = \beta$ Eğim katsayıları homojendir, $H_1: \beta_i \neq \beta$ Eğim katsayıları heterojendir” şeklindedir. * %1 anlamlılık düzeyinde boş hipotezin reddedildiğini gösterir.

Tablo 6’da yer alan test sonuçlarına göre, her üç kulüp için değişkenler arasında yatay kesit bağımlılığı olmadığını varsayan boş hipotez reddedilmekte ve değişkenler arasında yatay kesit bağımlılığının varlığına ulaşılmaktadır. Pesaran ve Yamagata (2008) delta testi

sonuçları, eğitim katsayılarının homojen olduğu boş hipotezinin üç kulüp için reddedildiğini ve her üç kulüp için eğitim heterojenliği sorununun olduğunu göstermektedir. Bu bağlamda, tutarlı sonuçlara ulaşabilmek için yatay kesit bağımlılığı ve heterojenlik varsayımının dikkate alınması gerekmektedir.

Panel veri analizlerinde tutarlı sonuçlara ulaşılabilmesi için serilerin durağan olması oldukça önemlidir. Bu doğrultuda çalışmada serilerde durağanlığın test edilmesi amacıyla birim kök olup olmadığının belirlenebilmesi için yatay kesit bağımlılığı ve heterojenlik varsayımı altında da sapsız sonuçlar veren ve ikinci nesil birim kök testlerinden biri olan CIPS (kesitsel artırılmış Im Pesaran-Shin) testi kullanılmıştır. Pesaran (2007) tarafından geliştirilen bu birim kök testinde, her bir yatay kesit için hesaplanan CADF istatistiklerinin ortalaması bulunarak CIPS istatistik değerleri hesaplanmaktadır:

$$CIPS = N^{-1} \sum_{i=1}^N CADF_i \quad (11)$$

Denklem 11'de yer alan $CADF_i$, kesitsel olarak artırılmış Dickey-Fuller istatistiğini göstermektedir. CIPS durağanlık testi için, seride birim kökün varlığını ifade eden boş hipotez, seride durağanlığı ifade eden alternatif hipoteze karşı test edilmektedir. CIPS testi sonucunda elde edilen test istatistiği kritik değerlerden büyükse boş hipotez reddedilmekte ve değişkende birim kök olmadığı sonucuna ulaşılmaktadır. Tablo 7, her üç kulüp için yapılan birim kök test sonuçlarını göstermektedir:

Tablo: 7
CIPS Panel Birim Kök Testleri

| | Kulüp 1 | | Kulüp 2 | | Kulüp 3 | |
|------|---------|--------------|-----------|--------------|---------|--------------|
| | Düzy | Birinci Fark | Düzy | Birinci Fark | Düzy | Birinci Fark |
| GDP | 0,065 | -4,674* | -0,573 | -1,349*** | -0,948 | -2,909* |
| EF | 0,321 | -4,000* | -1,294*** | -5,779* | -0,056 | -5,766* |
| DEM1 | 0,267 | -4,079* | 0,303 | -4,496* | 0,776 | -2,923* |
| DEM2 | -0,157 | -5,366* | 0,179 | -3,316* | 2,268 | -3,812* |

Not: Testin hipotezleri: "H0= Birim kök vardır, H1= Birim kök yoktur" şeklindedir. *, ** ve *** sırasıyla %1, %5 ve %10 anlamlılık düzeylerinde boş hipotezin reddedildiğini göstermektedir. CIPS test istatistikleri, bireysel CADF istatistiklerinin basit ortalamasıdır.

Yukarıdaki tabloda yer alan sonuçlara göre, Kulüp 1 ve Kulüp 3'te yer alan ekonomik büyüme (GDP), ekonomik özgürlükler (EF), müzakereci demokrasi (DEM1) ve eşitlikçi demokrasi (DEM2) değişkenlerinin düzey değerlerinde birim kök içerdikleri ve değişkenlerin birinci farkları alındıktan sonra durağan hale geldikleri görülmektedir. Kulüp 2'de ise, ekonomik büyüme (GDP), müzakereci demokrasi (DEM1) ve eşitlikçi demokrasi (DEM2) değişkenleri birinci farkları düzeyinde durağanken, ekonomik özgürlükler (EF) düzey değerinde durağandır.

Seriler arasındaki uzun dönemli ilişki eşbütünleşme testleri ile araştırılmaktadır. Bu doğrultuda çalışmada, değişkenler arasında istikrarlı bir uzun dönem ilişkisi olup olmadığını belirlemek için Westerlund ve Edgerton (2007) tarafından sunulan LM bootstrap panel eşbütünleşme testi uygulanmıştır. LM bootstrap panel eşbütünleşme testi yatay kesit birimleri arasındaki bağımlılığı ve heterojenliği dikkate alırken, küçük örneklemelerden oluşan paneller için sağlıklı sonuçlar vermektedir:

$$LM_N^+ = \frac{1}{NT^2} + \sum_{i=1}^N \sum_{t=1}^T \widehat{w}_i^{-2} s_{it}^2 \quad (12)$$

12 no’lu denklemde s_{it}^2 , hata terimlerinin kısmi toplamlarını ve \widehat{w}_i^{-2} hata terimlerinin uzun dönemli varyanslarını göstermektedir. Yatay kesit bağımlılığı bulunan modellerde LM bootstrap testi sonucunda elde edilen bootstrap kritik değerleri kullanılmaktadır. Buna göre, LM Bootstrap panel eşbütünleşme test sonuçları Tablo 8’de verilmektedir:

Tablo: 8
Panel Eşbütünleşme Test Sonuçları (LM Bootstrap)

| | LM Stat | Bootstrap p-değeri | Asym p-değeri |
|---------|---------|--------------------|---------------|
| Kulüp 1 | -4,009 | 1,000 | 1,000 |
| Kulüp 2 | -4,744 | 1,000 | 1,000 |
| Kulüp 3 | -4,392 | 1,000 | 1,000 |

Not: Testin hipotezleri; “H0= Eşbütünleşme vardır, H1= Eşbütünleşme yoktur” şeklindedir. Bootstrap değeri 1000 tekrarlama.

Tablo 8’de yer alan LM bootstrap panel eşbütünleşme testi sonuçlarına göre, her üç kulüp için eşbütünleşme vardır boş hipotezi reddedilememekte ve üç kulüp için tüm değişkenler arasında eşbütünleşme ilişkisi olduğu sonucuna ulaşılmaktadır. Dolayısıyla, GDP, EF, DEM1 ve DEM2 değişkenleri üç kulüpte de uzun dönemde birlikte bir hareket etmektedirler.

Uzun dönemde birlikte hareket eden seriler arasındaki bu ilişkinin boyutlarının belirlenebilmesi için eşbütünleşme katsayılarının tahmin edilmesi gerekmektedir. Bu noktada, yatay kesit bağımlılığı altında rastgele etkiler modeli ve sabit etkiler modeli güvenilmez ve tutarsız sonuçlar veririrken, OLS ve GLS gibi yöntemlerin sonuçları da yanlış olmaktadır (Le & Sarkodie, 2020: 968). Pesaran (2006) çalışmasında yatay kesit bağımlılığı varlığında bağımlı ve bağımsız değişkenlerin yatay kesit ortalamalarını gözlenmemiş ortak etkiler ile birleştiren CCEMG tahmincisini kullanmaktadır:

$$Y_{it} = \alpha_i + \beta_i X_{it} + \delta_i \bar{Y}_{it} + \theta_i \bar{X}_{it} + \varphi_i f_t + \omega_{it} \quad (13)$$

13 nolu denklemde, Y_{it} bağımlı değişkeni, X_{it} ise bağımsız değişkeni temsil ederken; α_i her bir yatay kesit biriminin heterojen sabit etkilerini ve β_i ise her bir yatay kesit biriminin eğimini göstermektedir. φ_i ve f_t sırasıyla heterojen faktör yükleri (loading) ve gözlemlenmeyen ortak etkileridir. Her bir yatay kesit biriminin eğimlerinin ortalaması alınarak CCEMG için MG tahmincisi şu şekilde hesaplanmaktadır:

$$CCEMG = \frac{1}{N} \sum_{i=1}^N \hat{\beta}_i \quad (14)$$

$\hat{\beta}_i$, denklem 13’teki OLS regresyonu kullanılarak hesaplanan yatay kesit birimlerinin katsayısını temsil etmektedir. Uzun dönemli ilişkilerin incelendiği CCEMG tahminci sonuçları hem panel geneli hem de ülke bazında üç kulübü de içerecek şekilde Tablo 9’da gösterilmektedir:

Tablo: 9
CEEMG Tahminci Sonuçları

| Ülkeler | lnEF | lnDEM1 | lnDEM2 |
|------------------|------------------|------------------|------------------|
| Kulüp 1 | | | |
| Avustralya | 0,836(0,000)* | 0,795(0,051)*** | -0,706(0,116) |
| Danimarka | -0,292(0,218) | -0,611(0,607) | -0,673(0,729) |
| İzlanda | 0,734(0,000)* | -0,175(0,183) | 0,569(0,254) |
| İrlanda | 2,642(0,001)* | 1,987(0,055)*** | -4,240(0,237) |
| Litvanya | -0,621(0,060)*** | 0,892(0,223) | -0,063(0,962) |
| Norveç | -0,268(0,001)* | 0,149(0,823) | -1,160(0,088)*** |
| Güney Kore | 0,346(0,335) | -0,082(0,896) | -0,319(0,741) |
| İsveç | 0,325(0,018)** | -0,210(0,427) | 0,149(0,601) |
| İsviçre | -0,226(0,283) | 3,522(0,077)*** | -1,334(0,422) |
| ABD | -0,159(0,168) | 0,172(0,034)** | -0,516(0,004)* |
| Panel | 0,331(0,265) | 0,644(0,104) | -0,829(0,048)** |
| Kulüp 2 | | | |
| Avusturya | 0,039(0,785) | -0,228(0,044) | 0,421(0,126) |
| Belçika | -0,173(0,000)* | -2,031(0,000)* | 1,668(0,000)* |
| Kanada | 0,547(0,001)* | -0,087(0,587) | -0,267(0,184) |
| Estonya | 0,684(0,000)* | -0,391(0,052)*** | -0,980(0,190) |
| Finlandiya | 0,084(0,709) | 1,680(0,001)* | -2,499(0,000)* |
| Fransa | -0,173(0,185) | -1,051(0,081)*** | 0,260(0,551) |
| Almanya | 0,527(0,019)** | 2,301(0,118) | -2,418(0,062)*** |
| İsrail | 0,547(0,008)* | 0,473(0,564) | -0,454(0,574) |
| Japonya | 0,011(0,898) | 0,217(0,734) | -0,702(0,201) |
| Letonya | -0,010(0,968) | -0,334(0,357) | 0,180(0,706) |
| Yeni Zelanda | 0,160(0,743) | 1,674(0,016)** | -2,187(0,037)** |
| Polonya | 0,527(0,021)** | 1,197(0,007)* | -1,920(0,010)** |
| Slovakya | 0,026(0,907) | -0,017(0,925) | -0,689(0,135) |
| Birleşik Krallık | 0,866(0,002)* | -1,268(0,009)* | 1,382(0,012)** |
| Panel | 0,261(0,004)* | 0,152(0,641) | -0,586(0,099)*** |
| Kulüp 3 | | | |
| Şili | 0,787(0,207) | -1,419(0,060)*** | 1,369(0,002)* |
| Kolombiya | 0,204(0,684) | 0,265(0,148) | 0,164(0,561) |
| Kosta Rika | 0,659(0,198) | -1,791(0,167) | 4,496(0,000)* |
| Çekya | -0,010(0,968) | -0,632(0,090)*** | 1,729(0,001)* |
| Yunanistan | 1,069(0,000)* | -1,714(0,000)* | -1,049(0,356) |
| Macaristan | 0,417(0,183) | 0,278(0,240) | -0,229(0,441) |
| İtalya | 0,680(0,083)*** | 0,196(0,836) | -0,773(0,518) |
| Meksika | -0,758(0,000)* | 0,151(0,129) | -0,088(0,328) |
| Portekiz | 0,172(0,760) | -1,703(0,055)*** | 4,197(0,001)* |
| Slovenya | -0,041(0,730) | 0,338(0,010)** | -1,076(0,000)* |
| İspanya | 0,421(0,381) | -2,808(0,027)** | 3,056(0,025)** |
| Türkiye | 0,946(0,001)* | -0,629(0,003)* | 1,231(0,013)** |
| Panel | 0,379(0,010)** | -0,789(0,011)** | 1,083(0,055)*** |

Not: *, ** ve *** sırasıyla %1, %5 ve %10 anlamlılık düzeylerinde boş hipotezin reddedildiğini göstermektedir.

Tablo 9’da yer alan sonuçlara göre; Kulüp 1 panel geneli için yalnızca eşitlikçi demokrasiden (DEM2) ekonomik büyüme (GDP) değişkenine doğru istatistiksel olarak anlamlı ve negatif bir ilişkiye ulaşılmaktadır. Kulüp 2 panelinde ekonomik özgürlüklerden ekonomik büyümeye doğru pozitif ve istatistiksel olarak anlamlı, eşitlikçi demokrasiden ekonomik büyümeye doğru negatif ve anlamlı bir ilişki mevcuttur. Kişi başına gelir düzeyi düşük OECD ülkelerini kapsayan Kulüp 3 panelinde ise ekonomik özgürlüklerden ve eşitlikçi demokrasiden ekonomik büyümeye doğru pozitif ve anlamlı, müzakereci demokrasiden ekonomik büyümeye negatif ve anlamlı bir ilişki olduğu gözlemlenmektedir. Uzun dönemde eşbütünleşme ilişkisi kulüpler içerisindeki ülkeler bazında farklılaşmaktadır.

Yapılan analizler sonucunda değişkenlerin nedensellik ilişkilerinin bilinmesi, elde edilemeyen sonuçlardan dolayı politika yapıcılara yön gösterici olmaktadır. Bu sebeple, analizin son bölümünde bu ilişkiyi belirlemek için hem $N > T$ hem de $N < T$ şartlarında

uygulanabilen ve yatay kesit bağımlılığı varlığı altında güvenilir sonuçlar veren Dumitrescu ve Hurlin (2012) nedensellik testi kullanılmıştır (Wang et al., 2020). İki değişken arasındaki nedensellik ilişkisini incelemek için Dumitrescu ve Hurlin (2012) aşağıdaki doğrusal modeli önermektedir:

$$Y_{it} = \alpha_i + \sum_{k=1}^K \gamma_i^{(k)} Y_{i,t-k} + \sum_{k=1}^K \beta_i^{(k)} X_{i,t-k} + \varepsilon_{i,t} \quad (15)$$

Bu modelde α_i sabit terimi, γ_i (k) gecikme parametresini, K gecikme uzunluğunu, β_i (k) eğim katsayılarını ve γ_i (k) ve β_i (k) kesit birimleri arasındaki farkları ifade etmektedir. T<N iken Wald istatistiğinin (W) ve T>N iken Zbar istatistiğinin (\bar{Z}) kullanıldığı nedensellik testi için bu test istatistikleri sırasıyla şu şekilde hesaplanmaktadır:

$$\bar{W} = \frac{1}{N} \sum_{i=1}^N W_i \quad (16)$$

$$\bar{Z} = \sqrt{\frac{N}{2K}} (\bar{W} - K) \quad (17)$$

W_i , T zamanındaki birim Wald istatistik değerlerini ifade ederken, K gecikme uzunluğunu göstermektedir. Tablo 10’da değişkenler arasındaki nedensellik ilişkisini ortaya koyan Dumitrescu-Hurlin heterojen panel nedensellik testi sonuçları yer almaktadır:

Tablo: 10
Dumitrescu-Hurlin Panel Nedensellik Test Sonuçları

| Hipotezler | Kulüp 1 | Kulüp 2 | Kulüp 3 |
|------------------|------------------|-----------------|----------------|
| | Zbar | Zbar | Zbar |
| <i>GDP EF</i> | 3,387(0,000)* | -0,364(0,715) | 0,147(0,883) |
| <i>EF GDP</i> | 4,381(0,000)* | 17,343(0,000)* | 1,312(0,189) |
| <i>GDP DEM1</i> | 1,8937(0,058)*** | -0,054(0,956) | 3,852(0,000)* |
| <i>DEM1 GDP</i> | 0,371(0,710) | 1,935(0,053)*** | 5,264(0,000)* |
| <i>GDP DEM2</i> | -1,059(0,289) | 0,546(0,584) | 4,576(0,000)* |
| <i>DEM2 GDP</i> | 0,369(0,711) | 2,718(0,006)* | 4,869(0,000)* |
| <i>EF DEM1</i> | 0,486(0,626) | 1,137(0,255) | 4,388(0,000)* |
| <i>DEM1 EF</i> | 1,316(0,188) | 0,753(0,451) | 2,890(0,003)* |
| <i>EF DEM2</i> | 0,675(0,500) | 3,161(0,001)* | 3,020(0,002)* |
| <i>DEM2 EF</i> | 2,138(0,032)** | 1,835(0,066)*** | 2,348(0,018)** |
| <i>DEM1 DEM2</i> | 4,260(0,000)* | 5,256(0,000)* | 5,377(0,000)* |
| <i>DEM2 DEM1</i> | 2,953(0,003)* | 7,487(0,000)* | 6,317(0,000)* |

Not: Testin hipotezleri; “H0= Pannelde nedensellik yoktur, H1= En az birinde nedensellik vardır” şeklindedir. *, ** ve *** sırasıyla %, %5 ve %10 anlamlılık düzeylerinde boş hipotezin reddedildiğini göstermektedir.

Tablo 10’da yer alan nedensellik sonuçları, kişi başına düşen gelir düzeyinin farklılaştığı bu kulüp düzeylerinde seriler arasındaki nedensellik ilişkilerinin de farklılaştığını göstermektedir. Buna göre, kişi başına gelir düzeyinin en yüksek olduğu OECD ülkelerini kapsayan Kulüp 1’de, ekonomik özgürlüklerden ekonomik büyümeye doğru çift yönlü ve ekonomik büyümeden müzakereci demokrasiye doğru tek yönlü bir nedensellik ilişkisi varken; eşitlikçi demokrasiden ekonomik özgürlüklere doğru tek yönlü bir ilişki gözlemlenmektedir. Kulüp 2 ülkelerinde, demokrasi ve ekonomik büyüme arasındaki nedensellik ilişkisi, müzakereci ve eşitlikçi demokrasiden ekonomik büyümeye doğru tek yönlü olarak işlemektedir. Aynı zamanda ekonomik özgürlüklerden ekonomik

büyümeye ve eşitlikçi demokrasiye doğru tek yönlü bir nedensellik ilişkisi bulunmaktadır. Bu durum, Kulüp 2 ülkeleri için ele alınan dönemde hem eşitlikçi hem de müzakereci şekilde uygulanan demokrasinin ekonomik özgürlüklerle birlikte ekonomik büyüme sürecinde etkin olduğunun bir göstergesidir. Kişi başına gelir düzeyinin en düşük olduğu OECD ülkelerini kapsayan Kulüp 3'te ise, ekonomik büyümeden ve ekonomik özgürlüklerden eşitlikçi ve müzakereci demokrasiye doğru çift yönlü bir nedensellik ilişkisi mevcuttur. Bu bağlamda, Kulüp 3 ülkelerinde ekonomik özgürlükleri içeren demokratikleşme ve büyüme süreçlerinin birbirini etkileyen iki önemli unsur olduğu söylenebilmektedir. Son olarak, Tablo 10'da yer alan sonuçlara göre, her 3 kulüp için müzakereci ve eşitlikçi demokrasi arasında çift yönlü bir nedensellik ilişkisi vardır. Dolayısıyla, demokratik rejimin uygulanış biçimi de demokratikleşme sürecine karşılıklı olarak etki etmektedir.

4. Sonuç

Ekonomik büyümenin kaynaklarının ve ülkeler arasındaki büyüme farklılıklarının açıklanması ekonomi literatüründe her dönem dikkat çeken en önemli konulardan biridir. Bu bağlamda yapılan erken dönem çalışmalar ekonomik büyümeyi açıklayabilmek için tasarruf oranı, nüfus, fiziksel sermaye, beşerî sermaye, teknoloji gibi temel faktörlerden yararlanmışlardır. Bununla birlikte, bu temel faktörlerin ülkeler arasındaki büyüme farklılıklarının açıklanmasında yetersiz kalmasıyla kurumsal faktörler iktisadi büyüme literatürünün temel unsurlarından biri haline gelmiştir. Bir toplumda oynanan oyunun kuralları olarak tanımlanabilen kurumsal faktörlerden biri olarak demokratikleşme ve ekonomik büyüme arasındaki ilişki, özellikle 1990'lı yılların başından itibaren yaygın biçimde üzerinde çalışılan bir araştırma alanıdır. Bu kapsamda yapılan çalışmalar, demokrasi ve ekonomik büyüme arasındaki ilişkinin açıklanmasında heterojen sonuçlara ulaşmışlardır. Demokrasi ve ekonomik büyüme arasında pozitif ve güçlü bir ilişki olduğunu ortaya koyan bağdaşmacı yaklaşımı destekleyen yoğun bir literatür olmakla birlikte; ülkelerin sahip oldukları sosyoekonomik koşullara göre demokrasinin ekonomik büyümeyi olumsuz etkileyebileceğini veya aralarında net bir ilişki olamayacağını belirten çatışmacı ve şüpheli yaklaşimleri de destekleyen oldukça fazla çalışma mevcuttur.

Bu çalışmada demokratikleşme ve ekonomik büyüme arasındaki ilişkinin yönü ve boyutu OECD ülkeleri için 1996-2020 dönemi için araştırılmaktadır. Bu amaç doğrultusunda demokrasiyi temsilen *eşitlikçi ve müzakereci demokrasi* olmak üzere iki farklı göstergenin kullanıldığı çalışmada, öncelikle kulüp yakınsama analizi yapılarak OECD ülkeleri sahip oldukları kişi başına gelir düzeylerine göre üç farklı gruba ayrılmış ve böylelikle farklı kulüp düzeylerinde büyüme ve demokrasi ilişkisinin farklılaşıp farklılaşmadığı incelenmiştir. Çalışmanın sonuçlarına göre, uzun dönemde kişi başına gelir düzeyi daha yüksek olan Kulüp 1 ve Kulüp 2 ülkelerinde eşitlikçi demokrasi ekonomik büyümeyi negatif etkilerken, müzakereci demokrasinin ekonomik büyüme üzerinde anlamlı bir etkisi yoktur. Kişi başına gelir düzeyinin daha düşük olduğu Kulüp 3 ülkelerinde ise, eşitlikçi demokrasiden ekonomik büyümeye doğru pozitif bir ilişki varken, müzakereci demokrasi ekonomik büyümeyi negatif etkilemektedir. Buna göre, Kulüp 1 ve Kulüp 2 ülkeleri için çatışmacı yaklaşım geçerli iken, Kulüp 3 ülkeleri için heterojen bir sonuca

ulaşmıştır. Kulüp 3 ülkelerindeki bu heterojen sonuçlar birkaç farklı nedenle açıklanabilir. Politik karar alma sürecinde herkesin sürece dahil olması gerektiğini ifade eden ve ortak kararların alınması için diyalog kanallarının gelişmiş olmasını gerektiren *müzakereci demokratik rejim*, ekonomik büyüme için gerekli olan ekonomi kararlarının alınma sürecini uzatılabilmekte ve ekonomik büyümeyi negatif etkilemektedir. Diğer taraftan, hak ve özgürlüklerinin tüm sosyal gruplarda eşit olarak korunmasını ve kaynakların ve gücün tüm sosyal gruplara eşit olarak dağıtılmasını ifade eden *eşitlikçi demokratik rejimin* işletildiği toplumlarda; ifade özgürlüğü, mülkiyet hakları gibi sivil hak ve özgürlüklerin uygulanma kapasitesi gelişmektedir. Bu durum, ekonomik özgürlüklerin yüksek olduğu bir ekonomik yapı ile ekonomik büyüme için gerekli olan elverişli sosyoekonomik koşulları ortaya çıkarmakta ve demokrasi ekonomik büyümeyi pozitif etkilemektedir. Bunun yanı sıra, çalışmada ekonomik büyüme ve demokrasi arasındaki var olan bu ilişkinin yönünü ortaya koyan nedensellik analizi sonuçları, OECD ülkelerinde en yüksek gelire sahip olan Kulüp 1 ülkelerinde kişi başına gelirden müzakereci demokrasiye doğru tek yönlü; orta düzey gelire sahip olan Kulüp 2 ülkelerinde hem müzakereci hem eşitlikçi demokrasiden kişi başına gelire doğru tek yönlü ve son olarak karşılaştırmalı olarak en düşük gelire sahip olan Kulüp 3 ülkelerinde ise, kişi başına gelirden müzakereci demokrasiye doğru çift yönlü bir nedensellik ilişkisi bulunduğunu göstermektedir.

Çalışmada ulaşılan sonuçlar, demokratikleşmenin ekonomik büyümeye katkısının ülke grupları bazında farklılaştığını göstermektedir. Buna göre, ülkeler düşük veya orta düzeyde gelire sahipken eşitlikçi demokrasi ekonomik büyümeyi desteklerken, ülkeler zaten yüksek gelir düzeyine sahip olduklarında, demokrasinin ekonomik büyümeye olan etkisi negatif olmaktadır. Kişi başına gelir düzeyi düşük olan gelişmekte olan ülkelerde kurumsal yapının kırılgan ve sosyoekonomik gelişimin görece zayıf olması; özellikle ekonomik büyümenin başlangıç dönemlerinde demokrasinin ekonomik büyüme üzerindeki tamamlayıcı etkisine engel olabilmekte ve bu aşamada yolsuzluk, çıkar çatışması gibi demokratikleşme sürecini olumsuz etkileyen durumlar ekonomik büyümeyi azaltan bir etki ortaya çıkarabilmektedir. Bu anlamda demokrasinin ekonomik büyüme üzerindeki pozitif etkisinin ortaya çıkabilmesi, demokratikleşme sürecinin nasıl yürütüldüğüne bağlıdır. Gelir düzeyi düşük olan gelişmekte olan ülkeler, özellikle büyümenin erken dönemlerinde ulusal ve uluslararası yatırımları destekleyerek ekonomik gelişmeyi sağlayan politikaların hızlı ve doğru biçimde uygulanabildiği bir ekonomik yapı geliştirmeli; daha sonra bu politikalara paralel biçimde, kurumsal kalitelerini ve sosyal yapılarını etkin hale getiren ve ekonomik büyüme potansiyellerini destekleyen demokratik kurumları sağlıklı olarak işletmelidirler.

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Dijital Türk Lirasının (DTL) Kullanım Kabulü: Teknoloji Kabul Modeli (TKM) ve Planlı Davranış Teorisi (PDT) Çerçevesinde İncelenmesi

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User Acceptance of Digital Turkish Lira (DTL): Investigation in the Framework of Technology Acceptance Model (TAM) and Planned Behaviour Theory (PBT)

Abstract

The increase in technological devices has made the digitalisation of many products and services compulsory. One of the essential results of this digitalisation is the Digital Turkish Lira (DTL). The current study examines the factors affecting the acceptance and intention to use DTL. In this context, the acceptance of use by users has been tried to be explained by structural equation modelling based on TAM and TPB in the literature. The proposed research model was analysed with the Smart PLS 3 package program. When the hypothesis results are examined, firstly, the variables within the scope of TPB have a positive effect on the intention to use. In contrast, the other variables positively impact the intention to use over the ease of use within the scope of TAM. It has been determined that users find DTL more reliable than cryptocurrency /digital money. The relationship between DTL and the Central Bank of the Republic of Turkey can be shown as the reason for this.

Keywords : Digital Turkish Lira (DTL), E-Commerce, Metaverse, Blockchain, Cryptocurrency, Last Mile Delivery.

JEL Classification Codes : B26, M31, M38.

Öz

Teknolojik cihazların yaygınlaşması birçok ürün ve hizmetin dijitalleşmesini zorunlu hale getirmiştir. Bu dijitalleşmenin önemli sonuçlarından biri de Dijital Türk Lirasıdır (DTL). Mevcut çalışma DTL'nin kullanım kabulünü, niyetini etkileyen faktörlerin incelenmesi üzerine kurulmuştur. Bu bağlamda kullanıcıların kullanım kabulü literatürdeki TKM ve PDT'ye dayandırılarak yapısal eşitlik modellemesiyle açıklanmaya çalışılmıştır. Önerilen araştırma modeli Smart PLS 3 paket programı ile analiz edilmiştir. Hipotez sonuçları incelendiğinde ilk olarak PDT kapsamındaki değişkenler kullanma niyetini olumlu etkilerken, TKM kapsamındaki güven kullanma kolaylığı üzerinden diğer değişkenler ise fayda üzerinden kullanma niyetini pozitif etkilemiştir. Kullanıcıların kripto/dijital paralara göre DTL'yi daha güvenilir bulduğu tespit edilmiştir. DTL ile Türkiye Cumhuriyet Merkez Bankası arasındaki ilişki bunun nedeni olarak gösterilebilir.

Anahtar Sözcükler : Dijital Türk Lirası (DTL), E-Ticaret, Metaverse, Blokzincir, Kripto Para, Son Adım Teslimat.

1. Giriş

Teknolojinin gelişimi insan hayatında köklü değişimlerin yaşanmasına neden olmaktadır. Teknolojik yeniliklerin insan davranışlarına farklı yansımaları vardır ve bu nedenle yeniliklerin kabulü süreç içerisinde uzmanların araştırdığı önemli konulardan birisi olmuştur (Assaker, 2020: 430-435).

Teknolojik gelişim farklı amaçlara yönelik ürün ve hizmetlerin ortaya çıkışını beraberinde getirmektedir. Bu kapsamda ortaya çıkan önemli yeniliklerden birisi de blokzincir teknolojisidir. Blokzincir teknolojisinin ilk kullanım alanı kişiler arası elektronik (kripto) para transfer sistemidir (Nakamoto, 2008: 1-5; Di Pierro, 2017: 92-95). Blokzincir teknolojisi kripto paralar ile finansal işlemlerin 7/24 gerçekleştirilmesine imkân tanınması ve merkezi bir otoriteye bağlı kalmamasıyla devrim niteliğinde bir yenilik olarak tanımlanabilmektedir. (Nuryyev vd., 2020: 5-20).

Blokzincir teknolojisi genellikle finansal işlemlerin yanında farklı alanlarda da kullanılmaktadır. Örneğin, lojistik, tedarik zinciri yönetimi, çevrim içi eğitim, bulut depolama işlemleri, e-ticaret faaliyetleri ve bankacılık gibi birçok sektörde aktif olarak kullanılmaktadır (Wüst & Gervais, 2018: 47-50).

Mevcut çalışma blokzincirin teknolojisinin kullanılacağı yeniliklerden biri olan Dijital Türk Lirası (DTL) üzerinedir. Türkiye Cumhuriyet Merkez Bankası (TCMB) tarafından duyurulan DTL'nin gelecekte kullanıma sunulması için çalışmalar yürütülmektedir (TCMB, 2021). Bu bağlamda çalışmada DTL'nin kullanım kabulünü etkileyen faktörler araştırılacak olup, elde edilen veriler ışığında DTL kullanımını olumlu veya olumsuz etkileyebilecek durumlar incelenmiştir. Dijitalleşen dünyada TCMB'nin DTL çalışmaları teknolojinin tabana yayılmasıyla birlikte daha fazla önem kazanacak olup söz konusu çalışma bu süreçte önem arz edecektir.

Teknolojinin kullanma niyeti, kabulü, aktif kullanımı ve süreçleri geçmişten günümüze kadar uzmanların ilgilendiği ve çalışmalar yürüttüğü bir alan olmuştur. Bu kapsamda yeni teknolojilerin benimsenme süreçlerinde Gerekçeli Eylem Teorisi (GET), Planlı Davranış Teorisi (PDT), Teknoloji Kabul Modeli (TKM) ve Yeniliklerin Yayılma Teorisi (YYT) sıkça kullanılan modellerdir (Ajzen, 1991: 3-6; Davis vd., 1989: 983-990; Rogers, 2002: 989-993). Çalışma teknolojik yeniliklerden biri olan DTL özelinde gerçekleştirildiği için literatürde sıkça kullanılan modellerden faydalanılmıştır. Araştırma modelinde Şekil 3'te görüleceği üzere TKM ve PDT daha güvenilir sonuçlar elde edilmesi amaçlanarak kullanılmıştır.

2. Literatür

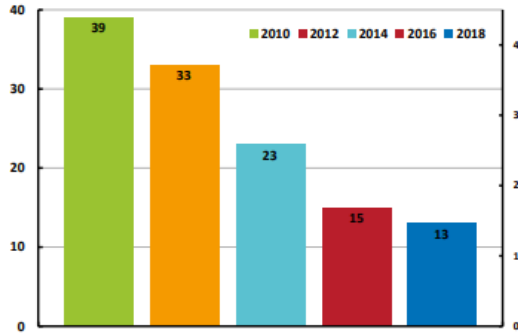
2.1. Blokzincir Teknolojisi

Blokzincir teknolojisi, kişiler arası işlemlere imkân veren, dağıtık sisteme sahip dijital kayıt defteridir. İlgili teknoloji Nakamoto tarafından 2008 yılında Bitcoin elektronik

para sisteminin önerisinde kullanılmıştır. Bitcoin'in 2010'dan sonra piyasaya sürülmesiyle insanlar farklı bir yapıda finansal ürün ile karşılaşmıştır (Warkentin & Orgeron, 2020). Bilgi işlem sistemlerinde alışlagelen tek bir merkezin tüm faaliyetleri incelemesi ve yönetmesi blokzincir teknolojisi ile değişmiştir. Tek bir yetkili yerine sisteme dahil olanlara yetkinin devredilmesinden söz edilebilir. Blokzincirin gelişimiyle dijitalleşmenin farklı bir boyuta taşındığı söylenebilir (Yang, 2019: 109-115). Blokzincir teknolojisi sunduğu tam zamanlı veri aktarımı ve dağıtık alt yapısıyla birçok sektörde kullanım alanı bulmuştur. Blokzincir teknolojisi sadece üretim süreçlerinde değil aynı zamanda tedarik zinciri yönetimi, çevrim içi eğitim, bankacılık ve çevrim içi ortamlarda depolama faaliyetlerinde de kullanılmaktadır (Queiroz vd., 2021: 6090-6100).

Blokzincir teknolojisini geliştiren şirketler kullanıcılarına farklı hizmetler sunmaktadır. Bunlardan bir tanesi Ethereum tarafından geliştirilen akıllı sözleşmelerdir. Burada sunulan hizmet blokzincir teknoloji üzerinden yapılan işlemlerin birer sözleşme haline getirilerek tarafların akitlerinin değiştirilmemek üzere kayıt altına alınmasıdır. Devam eden süreçte noter işlemlerinin söz konusu teknolojiler ile tamamlanması mümkün olabilecektir (Ethereum, 2021). Ayrıca teknolojik gelişmeler sonucu sunulan farklı ödeme yöntemlerinin insanlar tarafından kullanılmasıyla birlikte nakit para kullanımının azalması merkez bankaları bakımından ilgi çekici bir konu olmuştur (Sveriges Riksbank, 2018: 2-6). Şekil 2'de dijital para çalışmalarını sürdüren ülkelerden biri olan İsveç merkez bankasının yayınladığı verilerde nakit kullanım oranının yıllar itibarıyla düşüşü görülmektedir.

Grafik: 1
İsveç'te Nakit Kullanım Oranı



Araştırmada blokzincir teknolojisinin ilk kullanım alanlarından olan dijital (kripto) paralar farklı bir bakış açısı ile işlenmiştir. Kripto paraların üreticileri özel ve tüzel kişi olabilirken günlük hayatta kullanılan banknotlar sadece ülkelerin merkez bankaları tarafından arz edilmektedir. Bu noktada ülke dijital paralarının da merkez bankalarının kontrolünde piyasaya sürülmesi zorunlu olduğundan dijital paralar merkez bankaları bağlamında incelenmiştir. İsveç, Uruguay ve Çin merkez bankaları dijital para konusunda

süreçleri aktif olarak yönetmektedir (Bench & Garratt, 2017: 57). Bu hususta HAVELSAN, ASELSAN ve TÜBİTAK-BİLGEM ile ikili mutabakat imzalanarak Türkiye Cumhuriyet Merkez Bankası (TCMB), Dijital Türk Lirası (DTL) çalışmalarına başlandığı bilinmektedir. TCMB, çalışmaların ilk faz sonuçları 2022 yılında yayınlayacaktır. (TCMB, 2021).

TCMB'nin DTL üzerinde yaptığı çalışmaların dijitalleşen dünyada önemli bir başlangıç olduğu düşünüldüğünde bu kapsamda dijital paraların kullanım süreçlerinin uzmanlar tarafından araştırılması gereklilik arz etmektedir. Ayrıca konu ile ilgili literatürde çok fazla çalışma olmaması nedeniyle mevcut çalışma yapılmıştır. Bununla birlikte mevcut araştırma ilgili literatürde planlı davranış teorisi ve teknoloji kabul modeli kavramsal çerçevesinde Türk insanının DTL'yi kabulünü etkileyen faktörleri incelenmiştir.

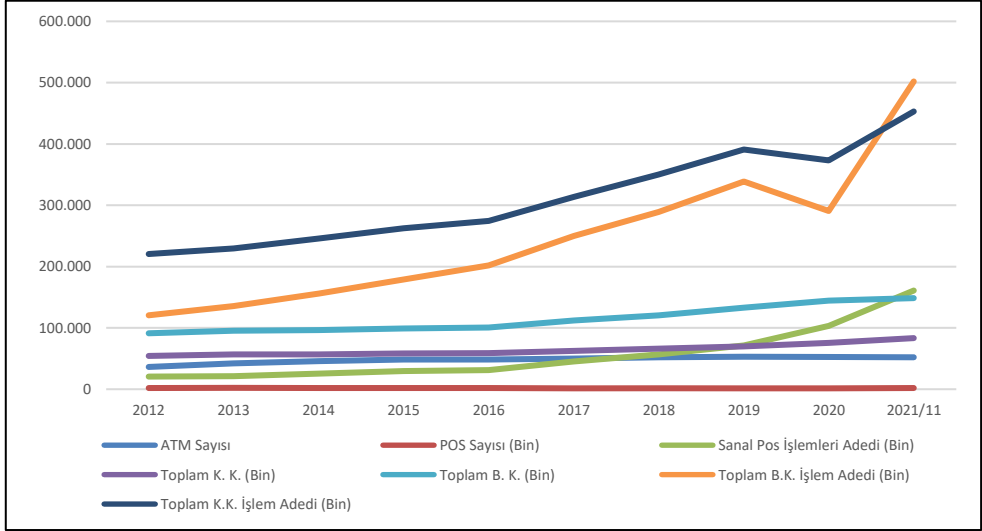
2.2. Dijital Para ve Kullanımı

Gelişmiş ülkelerde dijitalleşme süreci ilk olarak özel sektör tarafından başlatılmıştır. Fakat son süreçte süreçleri hızlandırmak, sürdürülebilirlik, verimlilik, maliyet vb., gibi durumlardan dolayı ülkeler alt yapılarını teknolojik cihazlar ile güçlendirerek dijitalleştirme adımlarını hızlandırmaktadır. Bunlardan bir tanesi de blokzincir teknolojisinin kullanımudur. Blokzincir temel kullanım alanı olarak özellikle finansal piyasalarda gelişim göstermektedir. Blokzincir temelli dijital paralar kullanıcıları tarafından sistemlerinden ötürü risksiz bulunmuş, ayrıca kullanıcıların finansal davranışlarına uyumlu oldukları tespit edilmiştir. Ayrıca teknolojik gelişmeler sonucu nakit kullanımının azalmaya başlaması COVID-19 süreciyle birlikte daha da belirgin hale gelmiştir. Merkez bankaları bu durumu kaydı ve nakdi kullanılan paraların dijitalleştirilmesini düşünmeye sevk etmiştir. Ayrıca bu konuda farklı merkez bankaları tarafından çalışmalar sürdürülmektedir (Sveriges Riksbank, 2018: 2-6; Bech & Garratt 2017: 3-5; Yanagawa & Yamaoka, 2019: 3).

Uruguay, İsveç, Çin ve Türkiye merkez bankaları dijital paralar üzerinde aktif olarak çalışmaktadırlar. Teknolojinin gelişimi ve geniş kullanıcı kitlesine yayılmasıyla birlikte bireyler alışverişlerinde veya paranın kullanılabileceği herhangi bir işlemde mekân fark etmeksizin nakdi ödeme dışındaki ödeme türlerini kullanabilecektir. Bu kapsamda nakdi ödemelerin azalmasıyla birlikte merkez bankalarının bireylere dijital ortamda kullanabilecekleri yeni bir ürünü piyasaya süreceği varsayılmaktadır (Auer vd., 2020: 3; Adrian & Mancini-Griffoli, 2019: 5-8).

Grafik 2'de görülebileceği üzere banka kartı ve kredi kartı sayıları artış gösterirken, banka ve kredi kartı kullanım adetleri de artış göstermiştir. Bunun yanı sıra sanal POS işlem sayılarında da belirgin artış görülmektedir. Bu kapsamda alışverişlerde kartla ödeme ve temassız ödeme yöntemlerinin yoğun şekilde kullandığı görülmektedir. Ayrıca Türkiye özelinde COVID-19 sürecinde 2020-2021 arası nakit kullanım oranlarında görülen azalma DTL'nin kullanımını pozitif olarak destekler niteliktedir (BKM, 2021).

Grafik: 2
Türkiye’deki Banka, Kredi Kartı ve POS İşlemleri



Kaynak: BKM verileri kullanılarak hazırlanmıştır (BKM, 2021).

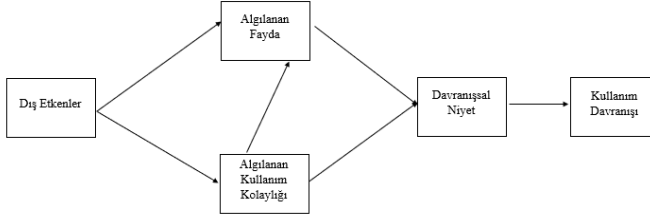
Ek olarak Türkiye’de 1 Aralık 2021 tarihinde yayımlanan “Elektronik Para” yönetmeliği gelecek süreçte kaydi paraların kullanım alanlarının artacağını bir göstergesidir. Mevcut çalışma DTL’nin kullanımını etkileyen faktörlerin araştırılması ve aktif kullanım öncesinde geri bildirimde bulunarak sistemin işleyişine katkı sağlamayı amaçlamıştır.

3. Teknoloji Kabul Modeli (TKM)

İnsan davranışlarının uzmanlar tarafından anlamlandırılması sıklıkla üzerinde çalışılan bir konu olmuştur. Bu kapsamda TKM yeni teknolojilerin kabulü sürecinde kullanıcı davranışlarının analizinde sıkça kullanılan modellerden birisi olmuştur. TKM teorik alt yapısını insan davranışlarının belirli nedenlere bağlı olduğunu varsayan Gerekçeli Eylem Teorisine (GET) dayandırmaktadır. GET’e göre insanlar davranışlarını gerçekleşmesini istediği durum özelinde tutumları ve çevrelerinden alacakları geri bildirimlere göre şekillendirmektedir. TKM, yeni teknolojilerin kabulü sürecini işlerken insan davranışlarının araştırılmasında sıkça kullanılan GET’e dayandırılmaktadır (Davis vd., 1989: 983-990).

TKM, yeni teknolojik cihaz veya uygulamaların aktif kullanımını, niyetini, yeniliğe karşı tutumu, algılanan faydasını ve algılanan kullanım kolaylığını içermektedir (Davis, 1989: 322-329).

Şekil: 1
Teknoloji Kabul Modeli (TKM)



Kaynak: Venkatesh & Davis, 1996.

Davranışsal tutum, kişilerin bir teknolojiyi kabul sürecini olumlu veya olumsuz olarak değerlendirmesidir. Kullanıcının söz konusu yeniliği kabulündeki değerlendirmesi olarak tanımlanabilir. DTL'nin kabul sürecinde kişilerin sahip olduğu tutum, ilerleyen süreçte kullanım niyetinin anlaşılmasında önemli bir etken olacaktır (Ajzen, 1991). Literatüre göre aşağıdaki hipotez oluşturulmuştur.

H1: Davranışsal tutumun, DTL'yi kullanma niyeti üzerinde etkisi vardır.

Niyet, kişilerin aktif kullanıma yönelik olumlu veya olumsuz düşüncelerinden oluşmaktadır. Sosyal psikologlar davranışın öncülü olarak niyeti gördüklerinden ötürü aktif kullanımı etkileyen en önemli değişken olarak görülmektedir. Araştırmada kullanılan kullanım niyeti değişkeni, bu bağlamda kişilerin kullanım davranışını açıklayan en önemli faktördür (Venkatesh & Davis, 1996: 451-481). Literatüre göre aşağıdaki H2, H3 ve H4 hipotezler oluşturulmuştur.

H2: Algılanan faydanın DTL'yi kullanma niyeti üzerinde etkisi vardır.

H3: Öznel normun DTL'yi kullanma niyeti üzerinde etkisi vardır.

H4: Algılanan davranışsal tutumun DTL'yi kullanma niyeti üzerinde etkisi vardır.

Algılanan fayda kişilerin yeni bir teknolojiyi kullandığında iş performanslarının artacağına inanma derecelerini belirtmektedir. Kullanıcıların sistemden algıladıkları faydalar bazı dış faktörlerden etkilenmektedir. TKM'de süreçlerin farklılaşması ile algıladıkları faydaları etkileyebilecek farklı değişkenler modele eklenebilmektedir. (Sukendro vd., 2020: 8). Literatüre göre aşağıdaki hipotez oluşturulmuştur.

H5: Algılanan faydanın davranışsal tutum üzerinde etkisi vardır.

Yeni teknoloji kullanımının yaygınlaşabilmesi için önemli faktörlerden bir tanesi de algılanan kullanım kolaylığı faktörüdür. Kullanıcıların sistemleri kullanırken sistemin kullanım kolaylığına sahip olması niyetin belirlenmesinde önemli bir rol oynamaktadır (Davis, 1989: 322-329; Venkatesh & Davis, 1996: 451-481). Kullanım kolaylığına sahip

teknolojiler, benimsenme sürecinde niyet üzerinde pozitif bir etkiye sahiptir. Literatüre göre aşağıdaki hipotez oluşturulmuştur.

H6: Algılanan kullanım kolaylığının algılanan fayda üzerinde etkisi vardır.

Güven teknolojik bir yeniliğin benimsenmesinde önemli bir dışsal faktör olarak görülmektedir. Kişilerin algıladıkları güven olgusu sistemin kullanımını direkt etkileyecektir. Bunun nedeni ise yeni teknolojilerin beraberinde belirsizliği getirmesiyle etkileşimin sınırlı olmasıdır. Bu nedenle yeniliklerin kabulü süreçleri incelenirken, güven değişkeni sıklıkla kullanılan bir faktör olmuştur (Gefen, 2000: 726-730; Pavlou, 2003: 101-134). Araştırmada incelenen teknolojik yenilik dijital para olduğu için kullanıcıların yeniliğe olan güveninin ölçümü oldukça önemlidir. Literatüre göre aşağıdaki H9 ve H10 hipotezleri oluşturulmuştur (Jarvenpaa vd., 1999: 791-815).

H9: Algılanan güvenin, algılanan fayda üzerinde etkisi vardır.

H10: Algılanan güvenin, algılanan kullanım kolaylığı üzerinde etkisi vardır.

Kişilerin yeni sistemleri kullanırken algılayamadıkları faktörlerin kullanım niyetlerini olumsuz olarak etkileyeceği varsayılmaktadır. Algılanan risk, sistem kullanıcılarının niyetini etkileyecek dış bir faktör olarak Planlı Davranış Teorisine (PDT) dahil edilmiştir (Ajzen, 1991: 2-4). Algılanan risk faktörünün kullanım niyetini dolaylı olarak etkilediği varsayılmaktadır (Pavlou, 2002: 2-4). Literatüre göre aşağıdaki H11 ve H12 hipotezleri oluşturulmuştur.

H11: Riskin, algılanan fayda üzerinde etkisi vardır.

H12: Riskin, algılanan kullanım kolaylığı üzerinde etkisi vardır.

Algılanan uyumluluk, kişilerin alışkanlıklarıyla yeni bir teknolojiyi benimsemesinin uyumlu olacağına inanmasıdır. Yeniliklerin kişilerin geçmiş alışkanlıklarıyla uyumlu olması söz konusu teknolojinin benimsenmesinde önemli dışsal bir faktör olarak değerlendirilmektedir (Karahanna vd., 1999: 183-213; Plouffe vd., 2001: 208-222; Min vd., 2019: 770-783). Literatüre göre aşağıdaki hipotezler oluşturulmuştur.

H13: Algılanan uyumluluğun, algılanan fayda üzerinde etkisi vardır.

H14: Algılanan uyumluluğun, algılanan kullanım kolaylığı üzerinde etkisi vardır.

Tablo 1’de TKM çerçevesinde yeni teknolojilerin kabulü için yapılan araştırmalar da bulunmaktadır. Araştırmalar geliştirilen uygulamalar ve cihazlar özelinde olduğu görülmektedir. Teknolojik gelişimini sürdürürken önceden fiziksel ortamda yapılan çoğu işlemin çevrim içi ortamlara aktarıldığı gözlemlenmektedir.

Salloum vd. (2019), Sukendro vd. (2020) ve Rafique vd. (2020) çalışmaları teknolojik cihazların yaygınlaşmasıyla birlikte eğitimin ve öğrenmenin dijital ortama taşınması ile ilgilidir. Min vd. (2019) ve Kong vd. (2021) çalışmalarında ise mobil sosyal

medya uygulamalarının kullanım kabulüne yer verdikleri görülmektedir. İnsanların mobil uygulama kullanımlarının etkilendiği faktörlerin öğrenilmesi, yapılacak iyileştirmeler ile daha sağlıklı hizmet sunulabilmesini sağlayacaktır. Manis vd. (2019), Sagnier vd. (2021), Fussell ve Truong'un çalışmaları ise teknolojik gelişmelerin gelecek teknolojiye ilişkin kabulünü irdelemektedir. Belirtilen çalışmalarda insanların bulundukları ortamı terk etmeden farklı yerlerde bulunmalarını sağlayan teknolojilerin kabulü incelenmektedir. Çalışmaların geneline bakıldığında ise bazı çalışmalarda başarılı sonuç veren hipotezler diğerlerinde aynı sonucu vermemektedir. Bunun nedeni örneklem farklılığı ve insanların birbirinden farklı davranışlara sahip olmaları olarak görülebilir.

Tablo: 1
TKM'ye İlişkin Araştırmalar

| Yıl | Yazar | Sektör | Hipotez | İlişki | Model |
|------|------------------|--|---|--|---|
| 2010 | Chandra vd. | Yeni Teknoloji Kabulü: Mobil Ödeme Sistemleri | AG→AF AG→AKK AKK→KN AF→KN AKK→AF | Desteklenmedi Desteklendi Desteklenmedi Desteklendi Desteklendi | Teknoloji Kabul Modeli (TKM) ve Yeniliğin Yayımla Teorisi (YYT) |
| 2019 | Salloum vd. | Yeni Teknoloji Kabulü: E-Öğrenme | AKK→AF AF→KN AKK→KN DT→KN KN→AK | Desteklendi Desteklendi Desteklendi Desteklendi Desteklendi | |
| 2019 | Min vd. | Yeni Teknoloji Kabulü: Uber Mobil Uygulaması | AU→AF AU→AKK AF→DT AKK→DT DT→KN | Desteklendi Desteklendi Desteklendi Desteklendi Desteklendi | |
| 2019 | Manis vd. | Yeni Teknoloji Kabulü: Sanal Gerçeklik Cihazları Üzerine bir Araştırma | DT→KN AF→KN AF→DT AKK→AF | Desteklendi Desteklendi Desteklendi Desteklendi | |
| 2020 | Sagnier vd. | Yeni Teknoloji Kabulü: Sanal Gerçeklik Cihazları Üzerine bir Araştırma | AF→KN AKK→KN AKK→AF | Desteklendi Desteklenmedi Desteklenmedi | |
| 2020 | Sukendro vd. | Yeni Teknoloji Kabulü: E-Öğrenme | AKK→AF AF→DT AKK→DT DT→KN AF→KN | Desteklendi Desteklenmedi Desteklendi Desteklendi Desteklendi | |
| 2020 | Rafique vd. | Yeni Teknoloji Kabulü: Mobil Kütüphane | AKK→AF AF→KN AKK→KN | Desteklendi Desteklendi Desteklendi | |
| 2021 | Kong vd. | Yeni Teknoloji Kabulü: Mobil Sosyal Medya Uygulamaları | AKK→AF AF→DT AKK→DT DT→KN AF→KN AKK→KN | Desteklendi Desteklendi Desteklendi Desteklendi Desteklenmedi Desteklendi | |
| 2021 | Fussell & Truong | Yeni Teknoloji Kabulü: Sanal Gerçeklik Cihazları Üzerine Bir Araştırma | AKK→AF AF→DT AKK→DT ADK→KN | Desteklendi Desteklendi Desteklendi Desteklendi | |
| 2022 | Toraman | Yeni Teknoloji Kabulü: Metaverse Üzerine Bir Araştırma | AKK→AF PU→I AT→I | Desteklendi Desteklendi Desteklendi | |

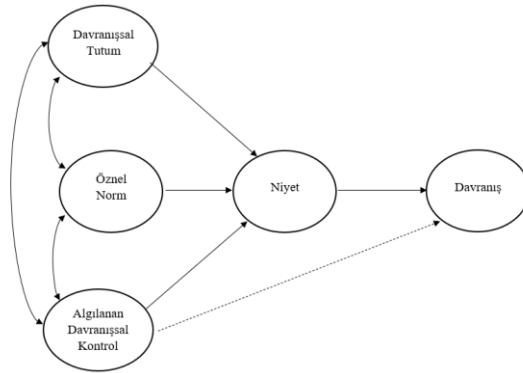
AF: Algılanan Fayda, AU: Algılanan Uyumluluk, AKK: Algılanan Kullanım Kolaylığı, DT: Davranışsal Tutum, KN: Kullanma Niyeti, AK: Aktif Kullanım, ADK: Algılanan Davranışsal Kontrol, AG: Algılanan Güven.
Tablo yazar tarafından oluşturulmuştur.

Dolayısıyla, Tablo 1 ve Tablo 2’de görüleceği üzere yapılan çalışmalarda kullanma niyeti ile öznel norm, algılanan davranışsal kontrol ve davranışsal tutum değişkenleri arasında anlamlı ilişki bulunmuştur.

3.1. Planlı Davranış Teorisi (PDT)

Planlı Davranış Teorisi (PDT), TKM’de olduğu gibi aynı modele dayandırılarak temellendirilmiştir. Söz konusu model Gerekçeli Eylem Teorisi (GET) olarak bilinmektedir. GET’e algılanan davranışsal kontrol değişkeni (ADK) eklenmiştir. PDT’ye kişilerin davranışlarını etkileyen faktörlerin belirlenmesi için kullanılan farklı bir model olarak yeniliklerin kabulünde sıkça başvurulmaktadır (Ajzen, 1991: 1-3). PDT’yi farklılaştıran faktör, algılanan davranışsal kontrol değişkenidir (Soliman, 2021: 524-549). Davranışsal tutum, öznel norm ve algılanan davranışsal kontrol değişkenleri kullanıcıların yenilikleri benimsemesindeki faktörlerin anlamlandırılmasında etkili olmaktadır (Morris & Venkatesh, 2000: 117-130).

Şekil: 2
Planlı Davranış Teorisi (PDT)



Kaynak: Ajzen, 1991.

Davranışsal tutum, kişilerin bir teknolojiyi kabul sürecini olumlu veya olumsuz olarak değerlendirmesidir. Kullanıcının söz konusu yeniliği kabulündeki değerlendirmesi olarak tanımlanabilir. DTL’nin kabul sürecinde kişilerin sahip olduğu tutum, ilerleyen süreçte kullanım niyetinin anlaşılmasında önemli bir etken olacaktır (Ajzen, 1991). Literatüre göre aşağıdaki hipotez oluşturulmuştur.

H1: Davranışsal tutumun, DTL’yi kullanma niyeti üzerinde etkisi vardır.

Algılanan davranışsal kontrol, kişinin söz konusu davranış üzerindeki kontrolüdür. Kullanıcının sergileyeceği davranış üzerinde yüksek kontrole sahip olmasının, kullanma niyetini pozitif olarak etkileyeceği varsayılmaktadır. (Ajzen, 1991: 1-3; Ajzen & Sheikh, 2013: 155-162). Literatüre göre aşağıdaki hipotez oluşturulmuştur.

H7: Algılanan davranışsal tutumun, davranışsal tutum üzerinde etkisi vardır.

Öznel norm, kişilerin sergileyeceği davranışın çevresinden nasıl bir tepki alacağı ile ilgilidir. Kişiler söz konusu DTL'yi kullanacakları süreçte çevresinin bu konuda kişiyi destekleyeceğini düşünürse bu durum DTL kullanma niyetini pozitif olarak etkileyecektir. Fakat yeni sistemlerin ilk etapta belirli bir grup tarafından benimsendiği düşünüldüğünde, kişiler çevresindeki insanların konu özelinde bilgisinin olmadığını düşünerek söz konusu yeniliklerde olumlu olarak düşünmediklerini hesaplayarak hareket edecektir. Bu durumun ise teknoloji kullanımını negatif olarak etkileyeceği varsayılmaktadır (Morris & Venkatesh, 2000: 117-130). Literatüre göre aşağıdaki hipotezler oluşturulmuştur.

H8: Öznel Norumun, davranışsal tutum üzerinde etkisi vardır.

Tablo 1 ve Tablo 2’de görüleceği üzere yapılan çalışmalarda kullanma niyeti ile öznel norm, algılanan davranışsal kontrol ve davranışsal tutum değişkenleri arasında anlamlı ilişki bulunmuştur.

Tablo: 2
PDT’ye İlişkin Araştırmalar

| Yıl | Yazar | Sektör | Hypotheses | Relation | Model |
|------|--------------------|--|------------|---------------|-------------------------------|
| 2017 | Gao vd. | Enerji Sistemleri | DT→N | Desteklendi | Planlı Davranış Teorisi (PDT) |
| | | | ÖN→N | Desteklenmedi | |
| | | | ADK→N | Desteklendi | |
| 2017 | Yang vd. | Akıllı Ev Teknolojilerinin Kullanıcıları Tarafından Kabulü | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklendi | |
| | | | ADK→N | Desteklendi | |
| 2018 | Hansen vd. | Sosyal Medyanın Ödeme İşlemlerinde Kullanımı | DT→N | Desteklenmedi | |
| | | | ADK→N | Desteklendi | |
| 2019 | Kamble vd. | Tedarik Zinciri Yönetiminde Blokszincir Teknolojisinin Kullanımı | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklenmedi | |
| | | | ADK→N | Desteklendi | |
| 2020 | Dalvi-Esfahani vd. | Yeşil Bilgi Teknolojileri | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklenmedi | |
| | | | ADK→N | Desteklendi | |
| 2021 | Soliman | Turizm | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklendi | |
| | | | ADK→N | Desteklendi | |
| 2021 | Tama vd. | Tarım | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklenmedi | |
| | | | ADK→N | Desteklendi | |
| | | | DT→ÖN | Desteklendi | |
| | | | DT→ADK | Desteklendi | |
| | | | ÖN→ADK | Desteklendi | |
| 2021 | Aboelmaged | E-Atık Geri Dönüşüm Tersine Lojistik | DT→N | Desteklendi | |
| | | | ÖN→N | Desteklenmedi | |
| | | | ADK→N | Desteklenmedi | |

DT: Davranışsal Tutum, ÖN: Öznel Norm, ADK: Algılanan Davranışsal Kontrol, N: Niyet.
Tablo tarafımızca oluşturulmuştur.

Tablo 2’de görüleceği üzere yeni bir sürecin başlangıç aşamalarında insanların karşılaşacağı yeniliklere nasıl tepki vereceğinin anlaşılması üzerine PDT kullanılmıştır. Yang vd. (2017), Hansen vd. (2018) ve Kamble vd. (2019) yaptıkları çalışmalar incelendiğinde, yeni teknolojilerin kullanımını etkileyen faktörlerin araştırdıkları görülmektedir. Gao vd. (2017), Aboelmaged (2021), Dalvi-Esfahani vd. (2020), Soliman (2021) ve Tama vd. (2021) çalışmalarında görüleceği üzere farklı alanlarda ortaya çıkan

yeniliklerin kullanımı araştırılmıştır. Buradan hareketle PDT insan davranışlarının farklı sektörlerde kullanıldığını göstermektedir.

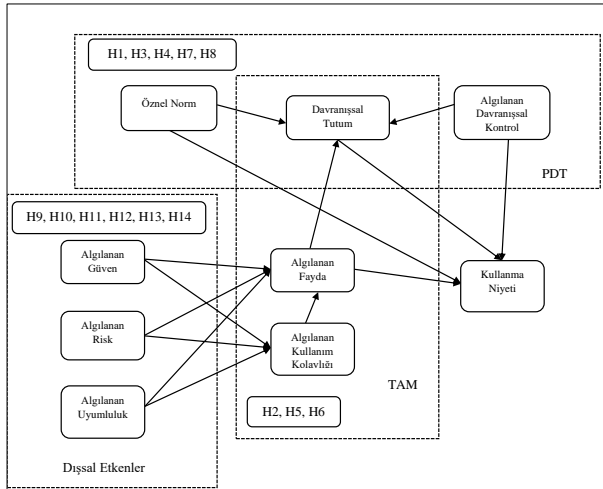
4. Araştırmanın Yapısı

4.1. Araştırmanın Örneklemi, Kapsamı, Kısıtları ve Veri Toplama

Araştırma kapsamı ve amacına uygun olarak araştırmanın teması itibariyle Dijital Türk Lirasının (DTL) toplumun her kesimi tarafından kullanılabileceği için araştırmanın evreni 18 yaş üzeri akıllı cihaz (telefon, tablet vb.) kullanan ve blokzincir teknolojisine sahip kripto para kullanıcısı bireylerden oluşmaktadır (Özdamar, 2004: 3-58). Araştırmada tesadüfi olmayan örnekleme, kolayda örnekleme yöntemi kullanılmıştır. Kolayda örnekleme araştırma kapsamındaki kişilerden sadece ulaşılabilenlerin araştırmaya dahil edilmesidir. (Kurtuluş, 2010: 5-66).

Araştırma veri toplamanın kolaylığı bakımından İstanbul'da gerçekleştirilmiştir. COVID-19 nedeniyle yüz yüze yöntem yerine, araştırmanın verileri çevrim içi anket yöntemiyle toplanmıştır. Araştırmanın verileri 10.11.2021-10.12.2021 tarihleri arasında Google Formlar aracılığıyla toplanmıştır. Araştırmanın anketi 400 kişiye gönderilmiş olup, 256 geri dönüş alınmıştır. Araştırmanın analizi öncesinde veriler düzenlendiğinde 170 kişilik bir kullanılabilir veri seti elde edilmiştir.

Şekil: 3
Araştırma Modeli



4.2. Araştırma Modeli ve Değişkenleri

Araştırmada Dijital Türk Lirasının kullanım kabulünü etkileyen faktörlerin incelenmesi için araştırma modeli Şekil 3'te gösterildiği gibi kurgulanmıştır. Araştırma modeli oluşturulurken literatürde yeni teknolojilerin kabulünde sıkça kullanılan modellerden faydalanılmıştır. Araştırmanın modeli Planlı Davranış Teorisi (PDT) ve Teknoloji Kabul Modeli (TKM) çerçevesinde kullanıcıların kullanım niyetini ölçmek adına modele dahil edilmiştir (Ajzen, 1991: 1-5; Schierz vd., 2010: 210-213).

4.3. Araştırmanın Analiz ve Bulguları

Yapısal eşitlik modellemesinde birden fazla bağımsız değişkenin birden fazla aracı ve bağımlı değişken ile arasındaki ilişkileri dikkate alınmaktadır. Araştırmada birden fazla değişkenin birbiri ile olan ilişkisi incelendiğinden, literatürde sıkça kullanılan yapısal eşitlik modellemesi kullanılmıştır (Hair vd., 2010: 39). Araştırmada yapısal eşitlik modellemelerinin analizinde sıklıkla kullanılan Smart PLS 3 programı kullanılmıştır. Araştırmanın analiz kısmında ilk olarak değişkenlere ait elde edilen verilerin güvenilirliği ve geçerliliği kontrol edilmiştir (Hair vd., 2017: 44).

Araştırmanın güvenilirlik ve geçerlilik analizleri Tablo 3'te gösterildiği gibidir. Veriler analiz edildiğinde; değişkenlere ait faktör yükleri, Cronbach's alpha değerleri, Kompozit Güvenilirlik değerleri 0,70'ten daha büyük değerler elde edilmiş, ayrıca Ortalama Varyans Değerleri de (AVE) 0,50'den büyük olduğu için araştırma güvenilirliği ve geçerliliği sağlamıştır (Hair vd., 2017: 6-88).

Tablo: 3
Araştırmanın Güvenilirlik ve Geçerlilik Analizleri

| Değişkenler | Faktör Yükleri | Cronbach's Alpha | Kompozit Güvenilirlik | Ortalama Varyans Değeri (AVE) | Ortalama | Standart Sapma |
|--|----------------|------------------|-----------------------|-------------------------------|----------|----------------|
| KN1 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanmayı düşünürüm. | 0.941 | 0.854 | 0.932 | 0.872 | 3.175 | 1.115 |
| KN3 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanmak isterim. | 0.927 | | | | 3.287 | 1.137 |
| DT1 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) gelecekte işlemlerimde kullanmak benim için değerlidir | 0.932 | 0.918 | 0.948 | 0.859 | 3.135 | 1.076 |
| DT2 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) gelecekte kullanarak aldığım ürünlerin ücretini ödeme süreçlerini tamamlamak önemlidir. | 0.926 | | | | 3.164 | 1.085 |
| DT3 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) gelecekte kullanarak aldığım ürünlerin ücretini ödeme süreçlerini tamamlamak ilgimi çekmektedir. | 0.923 | | | | 3.094 | 1.094 |
| ADK1 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kolaydır. | 0.935 | 0.895 | 0.935 | 0.827 | 3.222 | 1.086 |
| ADK2 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanarak aldığım ürünlerin ücretini ödeme süreçlerini tamamlamak tamamen bana kalmıştır. | 0.888 | | | | 3.211 | 1.109 |
| ADK3 Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanmaktan eminsem onu kullanabilirim. | 0.903 | | | | 3.374 | 1.098 |
| ÖN1 Çoğu insanın Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanmam gerektiğini düşünmesi benim için önemlidir. | 0.878 | 0.885 | 0.929 | 0.814 | 2.889 | 1.068 |
| ÖN2 Görüşüne değer verdiğim çoğu insanın Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanmamı onaylar. | 0.934 | | | | 3.029 | 1.045 |
| ÖN3 Tanıdıklarım ve arkadaşlarım gelecekte Blokcincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) kullanır. | 0.894 | | | | 3.123 | 1.061 |

| | | | | | | |
|--|-------|-------|-------|-------|-------|-------|
| AF1 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) kullanışlı olacaktır. | 0.866 | | | | 3.298 | 1.149 |
| AF2 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) finansal işlemleri kolaylaştıracaktır. | 0.922 | | | | 3.386 | 1.136 |
| AF3 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) işlemlerin daha hızlı bitmesini sağlayacaktır. (Örneğin, ekstra banka onay mesajı veya provizyon beklemeden işlemler tamamlanır). | 0.877 | 0.917 | 0.941 | 0.800 | 3.363 | 1.143 |
| AF4 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) kullanıcıların seçeneklerini artıracaktır. (Örneğin, kullanıcılar farklı güvenli ödeme yöntemlerine ek olarak kullanılabilecektir). | 0.912 | | | | 3.368 | 1.025 |
| AKK1 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) kullanma becerisi kazanmak kolay olacaktır. | 0.923 | 0.845 | 0.928 | 0.866 | 3.234 | 1.056 |
| AKK2 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası (DTL) kullanmak açık ve anlaşılır olacaktır. | 0.938 | | | | 3.216 | 1.029 |
| R1 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirasının (DTL) gelecekte kullanılmasının potansiyel risk taşıdığını düşünmüyorum. | 0.901 | | | | 2.953 | 1.086 |
| R2 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirasının (DTL) gelecekte ödeme sistemlerinde kullanılmasının potansiyel risk taşıdığını düşünmüyorum. | 0.912 | 0.877 | 0.925 | 0.803 | 3.012 | 1.081 |
| R3 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirasının (DTL) gelecekteki farklı sektörlerde ürün ve hizmet alımında kullanılmasının potansiyel risk taşıdığını düşünmüyorum. | 0.875 | | | | 3.058 | 1.064 |
| AG1 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirasının (DTL) kullanımının emniyetli olduğuna güvenirim. | 0.905 | | | | 2.942 | 1.069 |
| AG4 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirasını (DTL) ilerleyen süreçte kullanırken güvenirim. | 0.930 | 0.879 | 0.926 | 0.806 | 3.082 | 1.073 |
| AG5 Blokzincir teknolojisini kullanacak olan Dijital Türk Lirası ile ilgili işlemlerde (DTL) 3. kişiler tarafından kontrol edilmesi bile işlemlerin doğru bir şekilde gerçekleştirilebileceğine güvenirim. | 0.857 | | | | 2.877 | 1.077 |
| AU1 DTL'yi kullanmak yaşam tarzıma uygundur. | 0.913 | | | | 3.099 | 1.063 |
| AU2 DTL'yi kullanmak, benim ürün ve hizmet satın alma tarzıma uygundur. | 0.938 | 0.899 | 0.937 | 0.832 | 3.047 | 1.086 |
| AU3 Banka kartı, kredi kartı nakit vb. parayı kullanma yöntemlerine göre DTL'yi kullanmaktan memnun olacağımı düşünüyorum. | 0.884 | | | | 3.111 | 1.100 |

KN: Kullanma Niyeti, DT: Davranışsal Tutum, ADK: Algılanan Davranışsal Kontrol, ÖN: Özel Norm, AF: Algılanan Fayda, AKK: Algılanan Kullanım Kolaylığı, R: Risk, AG: Algılanan Güven, AU: Algılanan Uyumluluk

Araştırmaya ait Multicollinearity; Variance Inflation Factors (VIF) değerleri, kısaca çoklu bağlantı özelinde incelendiğinde algılanan uyumluluk 2 değişkeninin VIF değeri 4.250'dir. 1 ile 5 arasındaki VIF değerleri literatürde kabul gördüğünden dolayı AU2'nin değeri kabul edilebilirdir. Modelin alt boyutları incelendiğinde ise değerler 2 ile 3.8 değerleri arasındadır. Çoklu bağlantı sorunu nedeniyle KN2, AKK2, AKK3, AG2 ve AG3 alt boyutları modelden çıkartılmıştır (Daoud, 2017: 1-5).

Tablo: 4
Fornell-Lacker Kriteri Tablosu, Değişkenler Arası Korelasyon Analizi Sonuçları

| | ADK | AF | AG | AKK | AU | DT | KN | R |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| ADK | 0.909 | | | | | | | |
| AF | 0.830 | 0.894 | | | | | | |
| AG | 0.758 | 0.761 | 0.898 | | | | | |
| AKK | 0.792 | 0.816 | 0.755 | 0.930 | | | | |
| AU | 0.710 | 0.701 | 0.807 | 0.658 | 0.912 | | | |
| DT | 0.845 | 0.847 | 0.765 | 0.815 | 0.735 | 0.927 | | |
| KN | 0.833 | 0.826 | 0.786 | 0.768 | 0.778 | 0.858 | 0.934 | |
| R | 0.621 | 0.658 | 0.668 | 0.577 | 0.528 | 0.655 | 0.575 | 0.896 |

KN: Kullanma Niyeti, DT: Davranışsal Tutum, ADK: Algılanan Davranışsal Kontrol, ÖN: Özel Norm, AF: Algılanan Fayda, AKK: Algılanan Kullanım Kolaylığı, R: Risk, AG: Algılanan Güven, AU: Algılanan Uyumluluk

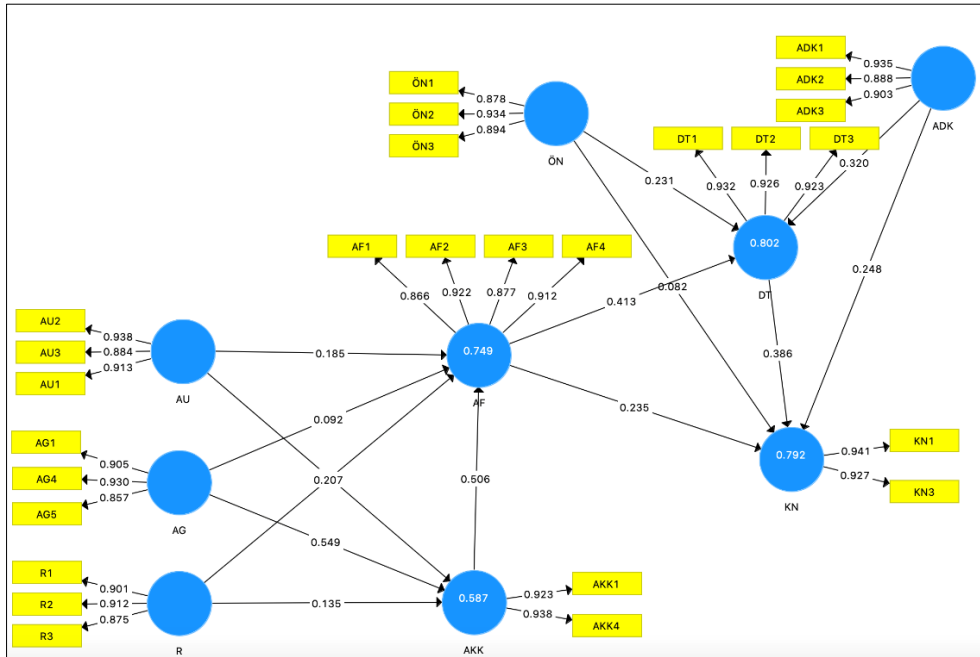
Araştırma verilerinin analizi sonucunda güvenilir ve geçerli olduğu gözlemlendikten sonra araştırmanın değişkenleri arasındaki korelasyon analizi gerçekleştirilmiştir. Analiz sonuçları Tablo 4'te gösterilmektedir. Fornell-Lacker Kriteri Tablosu olarak da bilinen

Korelasyon analizi AVE değerlerinin karekökü alınarak elde edilmektedir. Değişkenler arasındaki korelasyon incelendiğinde literatüre uygun olarak herhangi sorun teşkil edecek değişkene rastlanmamıştır (Davis, 1989: 322-329; Hair vd., 2017: 3-78; Şimşek vd., 2021: 9-10; Yorulmaz & Alnıpak, 2020: 1938).

4.4. Yapısal Model

Araştırma analizi sonucunda modelin güvenilir ve geçerli olduğu tespit edilmiştir. Değişkenler arasındaki korelasyonda beklenildiği gibi çıkmıştır. Fakat çoklu bağlantı sorunu nedeniyle KN2, AKK2, AKK3, AG2 ve AG3 alt boyutları modelden çıkartılmıştır (Daoud, 2017: 1-5). Analizin devamında ise yol analizi ile modelde kurgulanan hipotezlerin varlığı test edilmiştir. Araştırma modelinin Smart PLS 3 çıktısı Şekil 4'te verilmiştir.

Şekil: 4
Araştırma Modelinin Smart PLS 3 Çıktısı



KN: Kullanma Niyeti, DT: Davranışsal Tutum, ADK: Algılanan Davranışsal Kontrol, ÖN: Özel Norm, AF: Algılanan Fayda, AKK: Algılanan Kullanım Kolaylığı, R: Risk, AG: Algılanan Güven, AU: Algılanan Uyumluluk

Araştırmanın hipotez test sonuçları Tablo 5'te gösterildiği gibidir. Model içerisinde kurgulanan H5, H9, H12 ve H14 hipotezlerinin p değerleri incelendikten sonra reddedilmiş, diğer hipotezler kabul edilmiştir (Hair vd., 2017: 10-98). Bu bağlamda katılımcılar algıladıkları riski ve uyumluluğu DTL sisteminden sağlayacakları fayda ile

ilişkilendirmişlerdir. Diğer yandan güven kısmında ise DTL'nin alt yapısını oluşturan sistemin güvenliği önem arz etmektedir.

Tablo: 5
Yapısal Modele Ait Çıktılar

| Hipotez | İlişki | Yol Katsayısı | t Değeri | p Değeri | p<0,05 Hipotez desteklendi mi? |
|---------|--------|---------------|----------|----------|--------------------------------|
| H1 | DT→KN | 0.320 | 2.971 | 0.003 | Evet |
| H2 | AF→KN | 0.248 | 2.264 | 0.024 | Evet |
| H3 | ÖN→KN | 0.413 | 4.978 | 0.000 | Evet |
| H4 | ADK→KN | 0.235 | 2.491 | 0.013 | Evet |
| H5 | AF→DT | 0.092 | 0.921 | 0.357 | Hayır |
| H6 | AKK→AF | 0.549 | 5.048 | 0.000 | Evet |
| H7 | ADK→DT | 0.506 | 5.953 | 0.000 | Evet |
| H8 | ÖN→DT | 0.185 | 2.565 | 0.010 | Evet |
| H9 | AG→AF | 0.144 | 1.471 | 0.142 | Hayır |
| H10 | AG→AKK | 0.386 | 3.846 | 0.000 | Evet |
| H11 | R→AF | 0.207 | 3.941 | 0.000 | Evet |
| H12 | R→AKK | 0.135 | 1.613 | 0.107 | Hayır |
| H13 | AU→AF | 0.231 | 2.292 | 0.022 | Evet |
| H14 | AU→AKK | 0.082 | 1.153 | 0.249 | Hayır |

p<0,05 değer aralığında anlamlıdır. KN: Kullanma Niyeti, DT: Davranışsal Tutum, ADK: Algılanan Davranışsal Kontrol, ÖN: Özel Norm, AF: Algılanan Fayda, AKK: Algılanan Kullanım Kolaylığı, R: Risk, AG: Algılanan Güven, AU: Algılanan Uyumluluk

Tablo 6'da görüleceği üzere Algılanan Güven'in (AG) Algılanan Kullanım Kolaylığı (AKK) üzerinden dolaylı bir etkisi olduğu tespit edilmiştir. Yapılan önceki çalışmada blokzincir tabanlı kripto paraların kullanımında kişilerin AG'lerinin AF ve AKK'ları ile anlamlı bir ilişki bulunamamıştır. Ancak mevcut TCMB'nin arkasında bulunacağı DTL sisteminin alt yapısının kullanılmasının kişilerin sistem üzerindeki güvenlik algılarını pozitif olarak etkilediği söylenebilir. Fakat mevcut çalışma farklı bir çalışmadaki gibi dolaylı olarak KN'yi etkilemiştir (Chandra vd., 2010: 571).

Tablo: 6
Dolaylı Etkiler

| İlişki | t Değeri | p Değeri |
|-----------------|----------|----------|
| AG→AF→DT→KN | 0.866 | 0.387 |
| AG→AKK→AF | 3.989 | 0.000 |
| AKK→AF→DT | 3.526 | 0.000 |
| AG→AKK→AF→DT | 2.924 | 0.004 |
| AG→AKK→AF→DT→KN | 2.320 | 0.021 |

p<0,05 değer aralığında anlamlıdır. KN: Kullanma Niyeti, DT: Davranışsal Tutum, AF: Algılanan Fayda, AKK: Algılanan Kullanım Kolaylığı, AG: Algılanan Güven

Tablo: 7
Değişkenlere Ait R² Değerleri

| Değişken | R ² | Radj ² |
|------------------------------|----------------|-------------------|
| Algılanan Fayda | 0.749 | 0.743 |
| Algılanan Kullanım Kolaylığı | 0.587 | 0.579 |
| Davranışsal Tutum | 0.802 | 0.798 |
| Kullanma Niyeti | 0.792 | 0.787 |

Araştırmaya ait R² değerleri Tablo 7'de gösterilmektedir. Araştırmanın odağını oluşturan Dijital Türk Lirası (DTL) şu an kullanım sürecinde olmadığı için DTL'nin aktif kullanımından ziyade kullanım niyeti önemli hale gelmiştir. Araştırmanın bağımlı değişkeni kullanma niyetinin R² değeri 0,792, Radj² değeri ise 0.787 olarak bulunmuştur. 0.70

üzerindeki R^2 değerleri güçlü bir açıklama yüzdesine sahip olduğunun göstergesidir. Bu bağlamda insanların DTL'yi kullanma motivasyonlarını kabulündeki etkili olan faktörlerin önemli bir kısmının modele dahil edildiği söylenebilir (Agustina, 2019: 282).

5. Sonuç ve Öneriler

Teknolojinin her geçen gün insan hayatının farklı bir alanında kullanım alanı bulması kullanılacak teknolojiye karşı sergilenecek davranışların anlaşılmasına çalışmasını da önemli hale getirmektedir.

Dijital Türk Lirası (DTL) hakkında 2022 yılındaki çalışmalar olumlu sonuçlandıği takdirde faaliyete geçirileceğinden hali hazırda kullanılmamaktadır. Bu nedenle araştırmada kurgulanan model kişilerin DTL'yi aktif kullanımından ziyade kullanma niyetine odaklanmıştır. TKM ve PDT modelinin temellerini atan Davis'in bu konuda, bir davranışın sergilenmesinin ön koşulu söz konusu davranışına yönelik niyettir. Bu çerçevede kişilerin DTL'yi kullanma niyetlerinin etkilendiği faktörlerin araştırılması yeniliğin gelecekte insanlar tarafından kullanımının önemli bir basamağıdır (Ajzen, 1991: 1-5; Davis vd., 1989: 983-990; Davis & Venkatesh, 2000: 4).

Araştırma kurgulanırken yeni teknolojilerin benimsenmesinde sıkça kullanılan iki farklı model kullanılmıştır. Bu nedenle önce PDT daha sonra TKM çerçevesinde katılımcıların DTL kullanım niyetleri ele alınmıştır.

Ajzen'e göre, insanlar davranışlarını çevresindeki kişilerin düşünceleri, ortaya çıkabilecek sonuçları ve davranış üzerindeki kontrol gücüne göre şekillendirmektedir (Ajzen, 1991: 2). Bu bağlamda araştırmanın H1, H3, H4, H7 ve H8 hipotezleri PDT kapsamında modele dahil edilmiştir. Tablo 5'te görüleceği üzere PDT kapsamındaki hipotezlerden literatüre paralel bir sonuç elde edilmiştir (Ajzen & Sheikh, 2013: 158; Giampietri vd., 2017: 160-166).

Kişilerin öznel normları, çevresinde görüşüne değer verdiği insanlardan DTL'yi kullandığında göreceği tepkinin pozitif olduğunu göstermektedir. Kişilerin davranışa yönelik kontrolleri, merkez bankasını arkasına almış bir DTL gücüne olan güvenin, DTL'nin kullanımı artırarak kişi davranışlarına olumlu yansımaktadır. Bu sebep ile algılanan davranış ve öznel norm değişkenleri DTL kullanma niyeti de pozitif etkilenmiştir. Son olarak PDT kapsamında DTL'ye karşı tutum kişilerin kullanma niyetine pozitif etki göstermiştir.

TKM çerçevesinde ise, H2, H6, H10 ve H11 hipotezleri pozitif etki göstermiştir. Araştırmanın bu kısmı literatür ile paralellik göstermektedir. Kişilerin sistemden algıladıkları faydanın sistem kullanımı üzerindeki etkisi literatürdeki önceki çalışmalara benzer niteliktedir. Bu durumun yanı sıra sistemden algılanan kullanım kolaylığının sistemden elde edilecek faydayı artıracak varsayımı da desteklenmektedir (Rafique vd., 2020: 1-10; Min vd., 2019: 780-783; Kong vd., 2021: 366-368).

Model içerisinde kurgulanan H5, H9, H12 ve H14 hipotezleri kabul edilmemiştir. Bu kapsamda sonuçlar incelendiğinde, katılımcılar algıladıkları riski ve uyumluluğu DTL sisteminden sağlayacakları fayda ile ilişkilendirmişlerdir. Diğer yandan sisteme güven ise sistemde algıladıkları güveni işaret etmektedir. Fakat Tablo 6 incelendiğinde kişilerin DTL sistemine karşı algıladıkları güvenin sistemin güvenilirliğine bağlı olarak dolaylı bir şekilde kullanım kolaylığı üzerinden pozitif olarak faydayı, tutumu ve sistemi kullanma niyetini etkilemektedir. Buradan hareketle katılımcılar merkez bankasının alt yapısını sunduğu sistemi güvenilir bulmaktadır. DTL kullanıma sunulduğunda insanların araştırma sonuçlarına göre kullanım sürecinde zorlanmayacağı düşünülmektedir.

Literatürdeki bir çalışmada blokzincir tabanlı kripto paraların kullanımının hem fayda hem de kullanım kolaylığı ile ilişkisi bulunamamıştır. Burada merkez bankası gibi bir otoritenin merkeziyetsiz bir sistemde sadece gözlemci olarak bile var olmasının insanlara güven verdiği varsayılabilir. Başka bir çalışmada ise Dijital Türk Akçeleri (DTA) ile şirket borçlanmaları için önerilen bir sistemde DTL'nin alt yapısının kullanılması önerilmiştir. Arkasında bir dayanağı olmayan kripto para sistemleri yerine yatırımcıların itibarı değeri olan bir varlığa yatırım yapmasını da öneren sistem araştırmaya dahil olan uzmanlar tarafından gelecekte hukuki düzenlemelerin gelmesiyle birlikte DTL sistemi ile uygulanabileceği ifade edilmiştir (Toraman, 2021: 131).

Gelecekte dijitalleşmenin hız kazanacağı ve alışveriş ortamlarının elektronik olan metaverse gibi sistemlere taşınacağı düşünüldüğünde DTL'nin şu an için elzem bir ürün olarak görülmesi de gelecekte finansal sistemin sağlıklı işleyebilmesi için gerekli olacağı düşünülmektedir. DTL'nin arzının TCMB kontrolünde olması nedeniyle arz yönlü artış endişesinin önüne DTA ile geçilebilecektir. Ayrıca DTL'nin alt yapısını kullanan bir DTA metaverse tabanlı elektronik alışveriş ortamlarında ödeme kolaylığı sağlarken merkez bankası içinde para akışının izlenebilmesini kolaylaştıracaktır.

Literatürde Dijital Türk Lirası ile ilgili çalışmaların az olması nedeniyle araştırmanın bu alana katkı sunması beklenmektedir. Araştırma planlı davranış teorisi ve teknoloji kabul modeli ile gerçekleştirilmiştir. Dijital Türk Lirası çalışmaları diğer teknoloji benimsenme süreçlerinde kullanılan modeller ile araştırılabilir. Literatüre farklı bir bakış açısı sunulabilir. İlerleyen süreçte DTL'nin ve DTA'nın Metaverse entegrasyonu ile ilgili araştırmalar ile mevcut çalışma genişletilecektir.

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Erzurum’da Konut Fiyatlarına Etki Eden Faktörlerin Hedonik Analiz Yardımıyla Belirlenmesi

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Determining the Factors Affecting House Prices in Erzurum Using Hedonic Analysis

Abstract

The study aims to determine the factors that cause the differentiation of house prices and rents according to different locations of settlements in Erzurum. As the study area, three regions with the highest housing density in Erzurum were determined: Erzurum city centre (Yakutiye), urban development area (Palandöken) and satellite city settlement area (Aziziye). The hedonic price analysis method was used to analyse house prices. Within the scope of the study, building typologies, which are thought to be important in the differentiation of house prices and rent in the city, were analysed, and the variables affecting the housing prices were interpreted together with the urban development dynamics in this study different than the previously conducted housing studies in the region.

Keywords : Erzurum, House Prices, Hedonic Analysis.

JEL Classification Codes : R31, C21, O18.

Öz

Çalışmanın amacı Erzurum’un farklı kentsel yerleşim alanlarına göre satılık ve kiralık konut fiyatlarının farklılaşmasına sebep olan faktörleri belirlemektir. Çalışma alanı olarak Erzurum’un kent merkezi (Yakutiye), kentsel gelişim alanı (Palandöken) ve uydu kent yerleşim alanı (Aziziye) olmak üzere Erzurum’da konut yoğunluğunun en fazla olduğu üç bölge belirlenmiştir. Konut fiyatlarının analiz edilmesinde hedonik fiyat analiz yöntemi kullanılmıştır. Çalışma kapsamında, bölgede daha önce yapılan konut çalışmalarından farklı olarak; şehirdeki satılık ve kiralık daire fiyatlarının farklılaşmasında önemli olduğu düşünülen bina tipolojileri ile konut fiyatlarına etki eden değişkenlerin kentsel gelişme dinamikleriyle birlikte yorumlanması gerçekleştirilmiştir.

Anahtar Sözcükler : Erzurum, Konut Fiyatları, Hedonik Analiz.

1. Giriş

Konut, bireylerin temel ihtiyaçlarından biri olan barınma ihtiyacını karşılayan fiziksel bir yapı olmanın ötesinde bireylerin sosyalleşme aşamasının başlangıcı sayılan bir yer, aidiyet hissi veren sosyal bir ortamdır. Konut aynı zamanda, bireylerin bir araya gelerek toplumsal ilişkiler sağlaması, kentleşme politikalarını yönlendirmesi ve yatırım aracı olarak görülmesi bakımından ekonomik bir birimdir (Durkaya & Yamak, 2004: 75; Uğurlar & Özelçi-Ecerel, 2014: 133).

Makroekonomide konut, yatırımcılar tarafından enflasyonun yarattığı belirsizlik ortamında sermayenin değer kaybını önlemesi açısından güvence unsuru olarak görülmektedir. Konut, ekonomik belirsizlik dönemlerinde yatırım için önemli bir alternatiftir. Bu nedenle konutların yalnızca “ev sahibi olmak” amacıyla alınmadığı, aynı zamanda yatırım aracı olarak da kullanıldığı bilinmektedir (Bolat & Şenol, 2020: 217). Konutların herhangi bir malın yerine ikame edilememesi, yaşamın devamı için zorunlu olması ve uzun ömürlü olması sebebiyle dayanıklı bir tüketim malıdır ve kullanımının belli bir süreyle başkalarına bırakılmasının sağladığı kira ve muhtemel değer artışı beklentisi sebebiyle de önemli bir yatırım malıdır (Büyükduman, 2014: 16; Çalmaşur & Aysin, 2019: 78).

Konut piyasalarındaki fiyat oluşumu, konut arz ve talebini belirleyen faktörlerin yanı sıra ülkenin enflasyon ve faiz oranları gibi makroekonomi göstergelerinde yaşanan gelişmelerden de etkilenmektedir. Konut fiyatlarının her ne kadar piyasa mekanizmasına göre şekillendiği belirtilse de diğer mal ve hizmet piyasalarından ayrılan birçok özelliği bulunmaktadır (Kördiş vd., 2014: 105-106). Çünkü konutun sabitlik, dayanıklılık, benzersizlik ve kıt olma gibi özellikleri, diğer mal ve hizmetlerden ayrılan bir piyasa işleyişine sahip olmasına sebep olmaktadır (Irak & Şen, 2020: 2016). Konut piyasası ile tam rekabetçi piyasalar arasındaki en önemli fark tam rekabet piyasasında malların homojen olması ve birbirlerinin yerine ikamelerinin mümkün olmasıdır. Konut piyasasında ise konutların birbirinden yapısal, fiziksel, çevresel ve konumsal açıdan farklı özelliklere sahip olması sebebiyle heterojen olması ve heterojen malların birbirlerini ikame etmelerinin de mümkün olmamasıdır (Çetin & Akpınar, 2021: 45). Bir diğer fark ise piyasanın yerelliğidir. Tam rekabetçi piyasalarda çok sayıda alıcı ve satıcının bulunması sebebiyle tek başına hiçbir alıcı ve satıcı piyasayı etkilememektedir. Konut piyasasında ise belirli bir bölgede ve fiyat aralığında az sayıda alıcı ve satıcı bulunmakta ve konutun sabit olması piyasaya yerellik katmaktadır. Bu az sayıdaki alıcı ve satıcı da piyasayı etkileyebilmektedir. Rekabetçi piyasalarda fiyatlar kararlı iken konut piyasalarında dalgalanan, yerel arz ve talebe göre değişen fiyatlar söz konusudur. Rekabetçi piyasalarda sunulan mallar çoğunlukla hemen tüketilebilen, kolay taşınabilir ve hızlı temin edilebilir özelliklere sahipken, konut piyasalarında uzun ömürlü ve likidite oranı düşük mallar bulunmaktadır (Appraisal Institute, 2004: 99).

Konut piyasası, talep yönü olan ve konut arzının yetersiz kaldığı durumlarda konut sorununun ortaya çıkmasına sebep olan bir piyasadır (Yılmaz, 2016: 31-3). Konutun diğer

tüketim malları gibi seri şekilde üretilmemesi, stoklanamaması ve uzun inşa süresinin olması arzın talepten geri kalmasına sebep olabilmektedir. Konuta olan talebin hızlı bir şekilde artması ve arzın bu talep artışına aynı hızda cevap verememesi arz ve talep uyumsuzluğuna neden olmaktadır. Talep arttığında ve arz bunu karşılayamadığında konut fiyatlarının yükselmesi beklenir; tersi durumda arzın çok arttığı zamanlarda da fiyatların düşmesi beklenmektedir (İçli, 2015: 33). Hane halkının kira veya satın alma için toplam gelirinden konuta ayırdığı pay, konuta olan talebin temelini oluşturmaktadır. Bireylerin konut talebini belirleyen birçok unsur bulunmaktadır. Bunlar arasında başlıca konut fiyatları, kişinin geliri, diğer malların fiyatları, bireylerin tercihleri, aile yapısı, nüfus artışı, kentleşme boyutu, sosyal olanaklar ve konutun konumu vb. bulunmaktadır (Yayar & Bursal, 2019: 2012).

Konut arzını ise temel olarak bireylerin talepleri şekillendirmektedir. Bu arz; konut fiyatları, piyasa faiz oranı, konut finansman olanakları, kentleşme oranı, hükümet politikası, arsa üretimi, yapı malzemelerinin maliyeti, yapı malzemesi ve yapım teknolojisindeki gelişmeler ve diğer faktörler tarafından belirlenmektedir (Öztürk & Fitöz, 2009: 22). Konut arz ve talebinin yönlendirdiği konut piyasasındaki konut fiyatları, konuta olan talebi yönlendirirken aynı zamanda o bölgedeki talebi de yansıtmaktadır (Uğurlar & Özcelçi-Ecer, 2014: 138).

Konut fiyatları bina inşaat maliyeti, arsa maliyeti ve faiz oranı gibi değişkenlere bağlı olarak hareketlilik gösterirken, bu fiyat değişimlerinden yararlanmak üzere sahibine sermaye kazancı sağlamaktadır. Konutun diğer yatırım araçlarından ayrılan yönü, mülkiyet sahibinin konut değer artışına müdahale edebilmesidir. Bir örnekle açıklamak gerekirse bir hisse senedinin değeri şirketin mali durumundaki değişimlere, endüstriyel veya genel ekonomideki makro değişimlere bağlıyken, eski ve yıpranmış bir konut değeri konutun yenilenmesine, otopark eklenmesine vb. hedonik özelliklerindeki değişikliklere bağlı olarak artırılabilmektedir (Alp & Seven, 2019: 5-6).

Konut fiyatlarına etki eden hedonik özelliklerinin tespit edilmesi, konut satın alınabilirliği ve sürdürülebilir kentsel gelişme ile ilgili politika yapımı için potansiyel olarak değerli çıkarımlar sağlamaktadır. Konut piyasasının yerel niteliğe sahip olması, konut fiyatlarındaki değişimlere sebep olabilecek faktörlerin yerel düzeyde tespit edilmesini gerekli kılmaktadır. Bu noktada çalışmanın amacı, Erzurum'da konut sektöründeki tüketici eğilimlerinin tespit edilmesi, konut piyasasında konut fiyatlarını etkileyen unsurların Erzurum'un merkez ilçelerine (Yakutiye, Aziziye, Palandöken) göre farklılaşan yönlerinin hedonik analiz yöntemiyle belirlenmesidir. Konutların heterojen özelliklere sahip olması sebebiyle konut piyasasıyla ilgili yapılan çalışmalarda tüketici teorisine dayanan hedonik fiyat modeli kullanılması hedeflenmiştir. Erzurum'da konut fiyatlarının farklılaşmasına sebep olan faktörleri belirlemeyi amaçlayan bu çalışmayı akademik yazındaki diğer çalışmalardan ayıran en önemli yönü, kentsel morfolojik özelliklerden bina tipolojilerinin de konut fiyatları üzerindeki etkisinin analize dahil edilmiş olması ve kentin farklı kentsel gelişme dinamiklerine göre gelişen kent merkezi (Yakutiye), kentsel gelişim alanı (Palandöken) ve uydu kent (Aziziye) yerleşim alanında konut fiyatlarına etki eden

değişkenlerin kentsel gelişme dinamikleriyle birlikte yorumlanacak olmasıdır. Satılık ve kiralık konut fiyatlarını etkileyen değişkenlerin, yapılı çevrenin yerele özgü farklılaşan kentsel gelişim özellikleriyle birlikte yorumlanması konutun tek başına kapalı bir yaşam alanı olmanın ötesinde içinde bulunduğu kentsel çevreden etkilenen ve aynı zamanda onu etkileyen, kentsel yaşam alanının dinamik bir unsuru olarak görülmesini sağlayacaktır.

Bu kapsamda çalışmada öncelikle hedonik analiz yöntemiyle konut fiyatları araştırmaları irdelendikten sonra, Erzurum’da konut sektörü üzerine odaklanılmakta ve çalışma yöntemi, analizler ve bulgular ortaya konulmaktadır. Sonuç bölümünde ise Erzurum’un üç merkez ilçesindeki konut fiyatlarını etkileyen değişkenlerin ortak ve farklılaşan yönleri, her bölgenin yerele özgü konut gelişim özellikleriyle birlikte tartışılmaktadır.

2. Konut Fiyatlarının Analizinde Hedonik Fiyat Modeli

Mallar, tüketicilerin farklı ihtiyaçlarını karşılamakta ve her bir özelliğin tüketiciye sağladığı tatmin, memnuniyet ve fayda “hedonik” fiyatları oluşturmaktadır (Yayar, 2011: 21-2). Hedonik fiyat modeli, heterojen olan malların (konut, arazi, otomobil) farklı özelliklerden meydana geldiğini ve her bir değişkenin malın kalitesini etkilediği için, malın fiyatını değiştirebileceğini savunmaktadır. Model, malın değeri ile malın özellikleri arasında anlamlı bir ilişkinin varlığını kabul etmektedir. Malın fiyatını, o malın sahip olduğu özelliklerin fiyatlarının toplamı olarak değerlendirmekte ve her bir özelliğin değerinin regresyon analizi ile tahmin edileceğini ortaya koymaktadır (Shimizu vd., 2010: 354; Arıkan, 2008: 3; Bourassa vd., 2007: 144).

Court (1939)’un otomobilin çeşitli özelliklerinin göreceli önemlerini ağırlıklandırmak için otomobil fiyat endeksi oluşturmayı amaçladığı çalışması, “hedonik” teriminin bu anlamıyla kullanıldığı ilk çalışmadır (Colwell & Dilmore, 1999: 620). Court (1939: 107), hedonik kelimesini neden kullandığını şöyle açıklamıştır: “Faydacılık, iyiliği bir bütün olarak toplumun büyük mutluluğunda arayan hedonistik doktrinin başıdır. Hedonik fiyat karşılaştırmaları, herhangi bir ürünün, bu durumda bir araba motorunun, toplumun ve ona ödeme yapanların mutluluk ve refahına olan potansiyel katkısını ayırt eder” (Goodman, 1998: 292).

Hedonik fiyat modelinin konut fiyatlarının analizinde kullanılması Ridker ve Henning (1967: 246) çalışmasına dayanmaktadır. Bu modelde bağımlı değişken konutun fiyatı; bağımsız değişkenler ise konutun fiyatına etki eden konutun sahip olduğu yapısal ve çevresel özellikler ile diğer değişkenlerdir. Model, birtakım avantaj ve dezavantajlar içermektedir. Tüketicilerin gerçekçi tercihlerini tespit etmesi, mal fiyatlarının hangi değişkenlere göre değiştiğini belirlemesi, ürün özellikleriyle ilgili birçok kaynaktan bilgi elde edilebilmesi ve güvenilir verileri kullanması modelin avantajları arasındadır. Modelin dezavantajları ise bazı durumlarda veri toplama maliyetinin yüksek olması, genelde çevresel faktörlere ilişkin verilerin sınırlı olması, yöntem sonucunun ağırlıklı olarak modele dâhil edilen değişkenlere bağlı olması ve günlük hayatta faiz oranı ve enflasyon gibi bazı makro

değişkenlerin kişinin satın alma/almama isteğini yönlendirebileceğini hesaba katmamasıdır (Ayvaz, 2002: 10).

Uluslararası ve ulusal yazında önemli bir yer tutan hedonik fiyat modeli, konut fiyatlarına etki eden faktörlerin belirlenmesine yönelik yapılan çalışmalarda yaygın olarak kullanılan bir yöntemdir. Konut fiyatlarının belirlenmesinde hedonik analiz yöntemi kullanılarak yapılan çalışmalarda konut fiyatlarını etkileyen değişkenler ağırlıklı olarak dört grupta toplanmaktadır. Bunlar konutun büyüklüğü, oda sayısı, banyo sayısı, jakuzinin bulunması, şöminenin varlığı, salon ve odaların döşeme durumu, akıllı ev özellikleri gibi göstergelerden oluşan yapısal özellikleri (Türel, 1981: 101; Çiçek & Hatırlı, 2015: 105; Alkan-Gökler, 2017: 310; Çalınışur & Aysin, 2018: 83; Ak-Çetin & Akpınar, 2021: 49; İslamoğlu & Bulut, 2018: 172; Kangallı-Uyar & Yayla, 2016: 334; Kangallı-Uyar & Keten, 2020: 721; Üçdoğruk, 2001: 152; Özus vd., 2007: 712); otoparkın, asansörün, yüzme havuzunun varlığı, güvenliğin bulunması, binanın yaşı, konutun tipi, konutun bulunduğu binanın blok şeklinde olması göstergelerinden oluşan bina özellikleri (Afşar vd., 2017: 201; Randeniya vd., 2017: 117; Ellibeş & Görmüş, 2018: 51; Alkay, 2008: 119); şehir merkezine uzaklık, alışveriş merkezine uzaklık, en yakın otobüs durağına uzaklık, hastaneye uzaklık, konutun bulunduğu yerin çevre kirliliği, olumsuz çevre koşullarına uzaklık, deniz manzarası, yoğunluk, bulunduğu yerin enlemi-boylamı gibi göstergelerden oluşan konum özellikleri (Bulut vd., 2015: 127; McCord vd., 2018: 367; Panduro, 2019: 7; Xiao vd., 2019: 15; Kangallı-Uyar & Yayla, 2016: 335; Koramaz & Dökmeci, 2012: 1230); konutun bulunduğu muhitin gelir düzeyi, kaliteli okulların varlığı, hanehalkı büyüklüğü gibi göstergelerden oluşan semtin sosyoekonomik durumu (Boza, 2015: 100; Aliagaoglu, 2016: 192; Cui vd., 2018: 4349) değişkenleri olarak özetlenebilir.

Hedonik fiyat yaklaşımında, konut fiyatlarına etki eden değişkenlerin belirlenmesine yönelik farklı modeller geliştirilmiştir. Akademik yazında sıklıkla kullanılan modeller incelendiğinde; doğrusal model (Leishman, 2001: 141; Yayar & Demir, 2014: 76; Yayar & Gül, 2014: 94; Çiçek & Hatırlı, 2015: 108; Güler vd., 2019: 2300), logaritmik doğrusal model (Üçdoğruk, 2001: 159; Özus & Dökmeci, 2006: 184; Başlevant & Şahinkaya, 2010: 6; Ayan & Erkin, 2014: 195; Kördiş vd., 2014: 120; Afşar vd., 2017: 201), tam logaritmik model (Sunding & Swoboda, 2010: 556; Koramaz & Dökmeci, 2012: 1228; Daşkiran, 2015: 855), yapay sinir ağları modelinin (Din vd., 2001: 1996; Curry vd., 2002: 666; Selim, 2009: 2851) konut fiyatına etki eden faktörlerin belirlenmesinde yoğun olarak kullanıldığı görülmektedir. Bu modeller konut fiyatlarının belirlenmesinde mekânın etkisini ve piyasanın heterojenliğini göz ardı ederken, son yıllarda komşuluk etkisi sonucu ortaya çıkan mekânsal bağımlılığı da analizlere dahil eden modeller araştırmalarda önemli yer tutmaya başlamıştır. Bu modeller, mekânsal Durbin modeli (Osland, 2010: 305; Kangallı-Uyar & Yayla, 2016: 337; Mussa vd., 2017: 19), mekânsal kantil regresyon modeli (Liao & Wang, 2012: 23; Bekar, 2013: 78; Liu & Hite, 2013: 17; Kangallı-Uyar & Keten, 2020: 720), mekana göre değişen katsayılar modeli (Pavlov, 2000: 255), mekânsal otoregresif model (Kestens vd., 2006: 65; Farber & Yeates, 2006: 410), mekânsal otokorelasyon modeli (Cohen & Coughlin, 2007: 12; Holly vd., 2010: 167), coğrafi ağırlıklı regresyon modeli (Kestens vd., 2006: 68; Huang vd., 2017: 76; McCord vd., 2018: 35; Bera & Kangallı-Uyar,

2019: 237), yerel ağırlıklı regresyon modeli (McMillen & Redfearn, 2010: 719; Sunding & Swoboda, 2010: 558), mekânsal gecikme modeli (Anselin & Lozano-Gracia, 2008: 16; Zietz vd., 2008: 9; Liao & Wang, 2012: 24), mekânsal hata modeli (Çelik & Turgut, 2019: 45, Kangalli Uyar & Keten, 2020: 726) olmak üzere çeşitlilik göstermektedir. Genel olarak değişkenlerin konut fiyatlarına olan etkisi ve kullanılan yöntemler çalışmanın yapıldığı yere göre farklılık göstermektedir. Konut piyasasının yerel özelliğe sahip olması konutun bulunduğu alana özgü sonuçları ortaya çıkarmaktadır. Bu çalışmada Erzurum’un merkez ilçeleri Yakutiye, Palandöken, Aziziye olmak üzere üç farklı ilçesindeki satılık ve kiralık konut fiyat dinamikleri analiz edilmektedir. Analizlerde yol gösterici olması açısından öncelikle Erzurum konut piyasası ve konut gelişim sürecinden kısaca bahsedilecektir.

3. Erzurum’da Konut Piyasası

Türkiye’de konut sektörünün imalat ve makine sanayi gibi çeşitli sektörlerle girdi-çıkı ilişkisine sahip olması yapılan konut yatırımlarının bu sektörleri de etkilemesine neden olmakta ve inşaat sektörünü lokomotif sektör olarak karşımıza çıkarmaktadır. Bu durum konut fiyatlarına yansırken farklı konut projelerinin ortaya çıkmasına ve her bölgede konut sunumları ile fiyatlarının farklılık göstermesine neden olmaktadır. Yeni konut yatırımlarının artmasıyla, inşaat sektörünün ilişkili olduğu diğer sektörler canlanmakta ve istihdam alanı genişlemektedir (Kördiş vd., 2014: 104; Alkan-Gökler, 2017: 306).

Erzurum konut piyasasının değerlendirme sürecinde konut satış oranının ve konut fiyatlarının hızlı bir şekilde yükseldiği 2013 yılı sürecin başlangıcı olarak kabul edilmiştir. 2013 yılı, ülke ekonomisi için de konut satışlarında ve fiyatlarında hızlı bir artışın yaşandığı bir dönemin başlangıcıdır. Bu artışın en önemli nedeni olarak konut talebi görülmektedir (Kudaka, 2015: 67; Yıldırım, 2017: 131).

Tablo: 1
Türkiye ve Erzurum’da İlk ve İkinci El Konut Satışlarının Yıllara Göre Dağılımı

| Yıllar | TÜRKİYE | | | | Toplam | ERZURUM | | | | |
|--------|-----------|----|-----------------|----|---------|-----------|----|-----------------|----|--------|
| | İlk Satış | % | İkinci El Satış | % | | İlk Satış | % | İkinci El Satış | % | Toplam |
| 2013 | 529129 | 46 | 628061 | 54 | 1157190 | 3062 | 49 | 3211 | 51 | 6273 |
| 2014 | 541554 | 46 | 623827 | 54 | 1165381 | 3174 | 50 | 3203 | 50 | 6377 |
| 2015 | 598667 | 46 | 690653 | 54 | 1289320 | 3451 | 47 | 3817 | 53 | 7268 |
| 2016 | 631686 | 47 | 709767 | 53 | 1341453 | 3473 | 48 | 3826 | 52 | 7299 |
| 2017 | 659698 | 47 | 749616 | 53 | 1409314 | 4539 | 51 | 4304 | 49 | 8843 |
| 2018 | 651572 | 47 | 723826 | 53 | 1375398 | 4811 | 54 | 4092 | 46 | 8903 |
| 2019 | 511682 | 38 | 837047 | 62 | 1348729 | 4083 | 46 | 4708 | 54 | 8791 |
| 2020 | 469740 | 31 | 1029576 | 69 | 1499316 | 3647 | 37 | 6290 | 63 | 9937 |

Kaynak: TÜİK, 2021.

Türkiye’de 2013 yılında 1,15 milyon konut satılmış olup bunun %46’sını yeni yapılan konutların satışları yani ilk satışlar oluşturmaktadır. Türkiye’de konut satışları 2013 yılından günümüze %29,6 artmıştır. Erzurum’da ise 2013 yılında 6273 adet konut satılmış olup bunun %49’unu ilk satışlar oluşturmaktadır (Tablo 1). 2020 yılında Türkiye’deki toplam satışların %0,66’sı Erzurum’da gerçekleşmiş olup 2013 yılından günümüze kadarki konut satışlarında %58,4 artış yaşanmıştır.

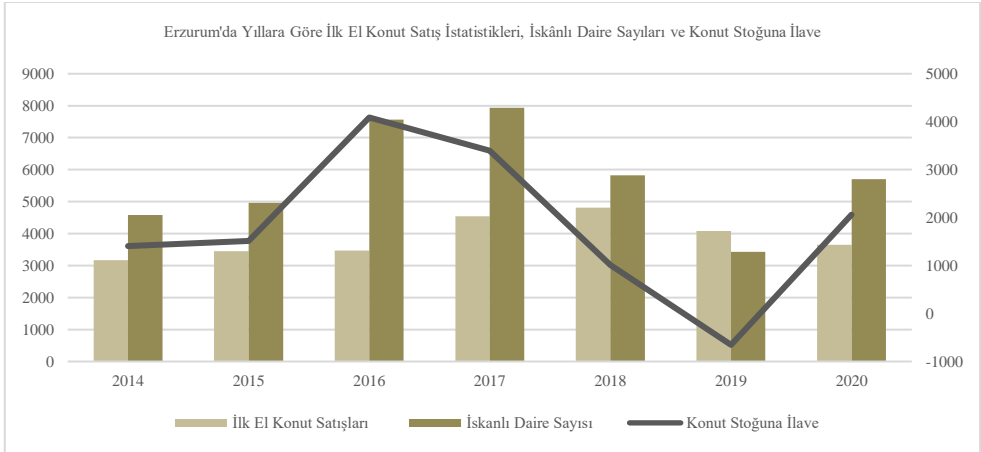
Türkiye ve Erzurum'daki yeni yapılan konut satış sayısının ve ilk satışların, toplam satış içerisindeki oranı (Tablo 1) özellikle 2018 yılından itibaren Gayri Safi Yurt İçi Hasıla (GSYH)'nın küçülmesi ve inşaat sektörünün yaşadığı krizin etkisiyle hızla azalmaktadır (Yeşilbağ, 2020: 110). 2019 yılında ilk satışlar bir önceki yıla göre Türkiye'de %21,47 azalırken, Erzurum'da %15,13 oranında düşüş göstermiştir (Tablo 2). Bunun aksine aynı dönemde ikinci el satış sayılarında artış yaşanmış, 2020 yılında Erzurum'da ikinci el satış sayısı %33,6 artmıştır. Yıllara göre artan ikinci el konut satışları aslında konutun diğer ekonomik mallardan ayrıldığını ve iyi bir yatırım aracı olduğunu da ispatlar niteliktedir. Günümüzde konutun güvenilir bir yatırım aracı olarak görülmesi bireyleri konut almaya yönlendirmektedir. Ayrıca gelişen teknoloji ve altyapı imkânlarıyla konutun yapısı ve kalitesi iyileşmektedir. Bu noktada konut fiyatlarını etkileyen özelliklerin araştırılması yapılacak olan yeni yatırımlara yön gösterecektir.

Tablo: 2
Türkiye ve Erzurum'da İlk ve İkinci El Konut Satışlarının Yıllara Göre Değişimi (%)

| Yıllar | TÜRKİYE | | ERZURUM | |
|------------|---------------|---------------------|---------------|---------------------|
| | İlk satış (%) | İkinci el satış (%) | İlk satış (%) | İkinci el satış (%) |
| 2013- 2014 | 2,35 | -0,67 | 3,66 | -0,25 |
| 2014- 2015 | 10,55 | 10,71 | 8,73 | 19,17 |
| 2015- 2016 | 5,52 | 2,77 | 0,64 | 0,24 |
| 2016- 2017 | 4,43 | 5,61 | 30,69 | 12,49 |
| 2017- 2018 | -1,23 | -3,44 | 5,99 | -4,93 |
| 2018- 2019 | -21,47 | 15,64 | -15,13 | 15,05 |
| 2019- 2020 | -8,20 | 23,00 | -10,68 | 33,60 |

Kaynak: TÜİK, 2021.

Şekil: 1
Erzurum'da Yıllara Göre İskânlı Daire Sayıları ve İlk El Konut Satışları



Kaynak: TÜİK, 2021.

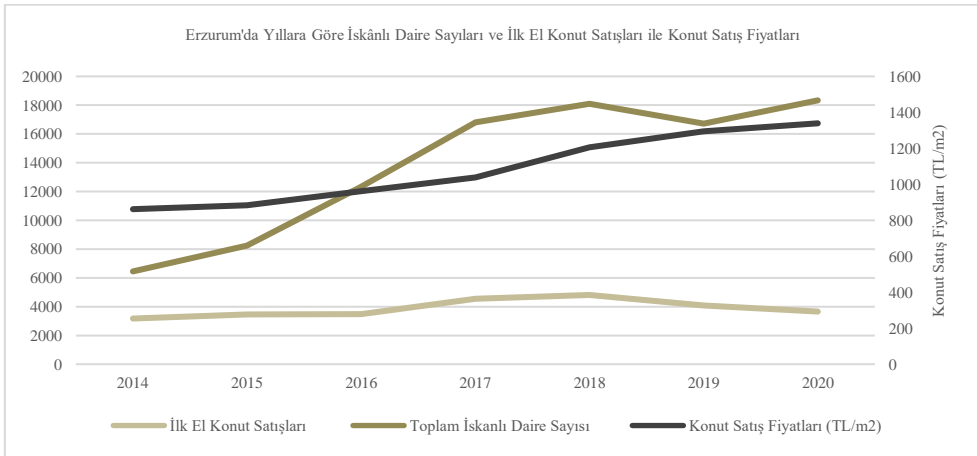
Konut piyasasında yeni konut yatırımları, arz ve dolaylı olarak talebi etkilemekte ve konut arz fazlasının ortaya çıkmasında etkili olmaktadır. Konut sektöründe arz ve talep

dengeğini analiz etmek amacıyla arzı temsil eden satışa sunulmaya hazır iskânlı daire sayılarını ve talebi temsil eden ilk el konut satış istatistiklerini incelemek mümkündür (Tunçay, 2020: 246). Erzurum'da 2014 yılından 2019 yılına kadar her yıl iskânı alınmış yeni konut daire sayılarının aynı yıllardaki ilk el satış sayılarının üzerinde olduğu görülmektedir. Bu yıllarda arz edilen miktarın, talep edilen miktardan fazla olması arz fazlalığına sebep olmaktadır. 2019 yılında ise arz ve talep miktarları düşmekte, talep edilen miktar, arzdan fazla olmaktadır. Bu durum ülke genelinde GSYH'nın değişimiyle beraber incelendiğinde, GSYH 2018'in son çeyreğinde %2,8, 2019'un ilk çeyreğinde ise %2,3 küçülmüş; buna paralel inşaat sektörü ise sırasıyla %7,8 ve %9,2 küçülmüştür. Bu veriler, inşaat sektörünün genel iktisadi parametrelerden daha şiddetli bir kriz yaşadığını göstermektedir (Yeşilbağ, 2020: 110). 2019 yılının son çeyreğinde düşük maliyetli ve uzun vadeli krediler sağlanmış, konut satışları artırılmaya çalışılmıştır. Ancak 2020 yılında arz miktarı talebin üstünde seyreitse de ilk el satış miktarı geçmiş yılların altında kalmıştır (Şekil 1).

Satışa sunulan iskânlı daire sayısı ile aynı dönemdeki ilk el konut satış adeti arasındaki fark arz edilen konut miktarı fazlalığını göstermekte ve konut stokuna ilave gelmektedir. Bu noktada arz ve talep uyumsuzluğu ortaya çıkmakta ve arzın talebin üstündeki aşırı artışı sebebiyle konut fiyatlarının zamanla düşmesi beklenilmektedir (İçli, 2015: 33). Erzurum'da yıllara göre konutun arz edilen miktarındaki görece artışı sürekli devam ederken yeni konut fiyatları (TL) varsayımlara ters bir şekilde artmaya devam etmektedir. 2014 yılında metrekare başına düşen konut satış fiyatı 861,91 TL iken 2020 yılında %61,65 artış göstererek 1339,29 TL olmuştur (Şekil 2).

Şekil: 2

Erzurum'da Yıllara Göre İskânlı Daire Sayıları ve İlk El Konut Satışları ile Konut Satış Fiyatları



Kaynak: TÜİK, 2021; Zingat, 2021.

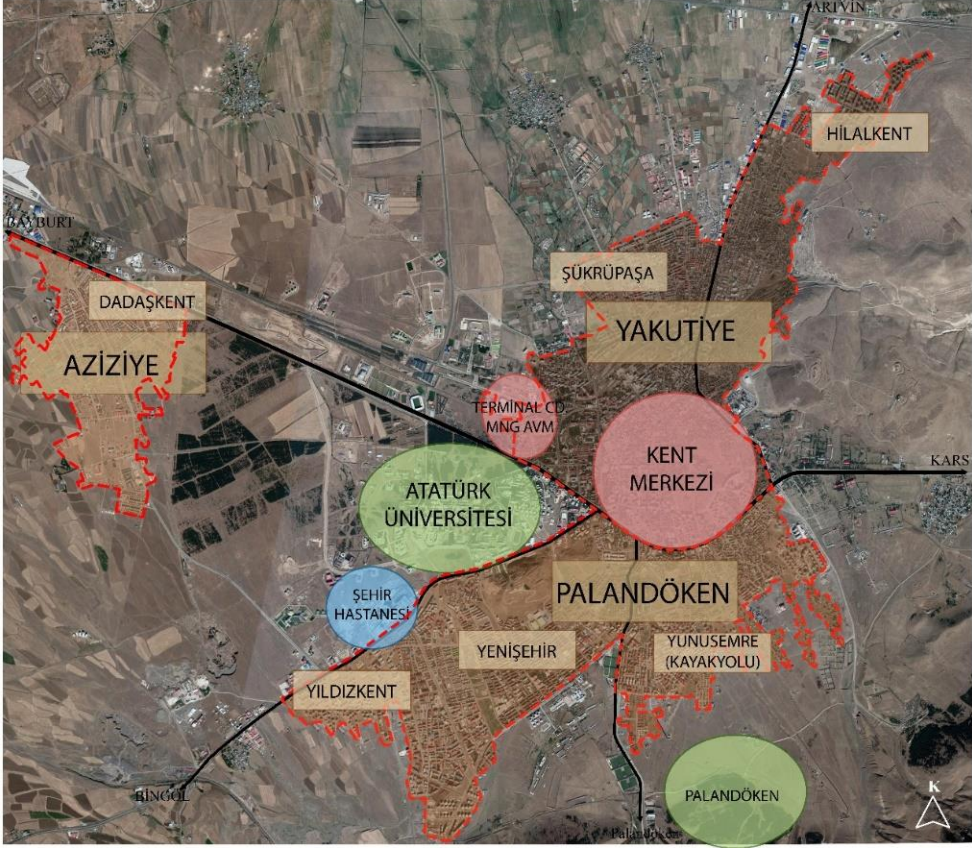
Arz talep uyumsuzluğu konut talep edenler açısından incelendiğinde ise farklı bir durum söz konusudur. Ülkemizde halkın geniş bir kesiminin konut talebi yüksek olsa da piyasa şartlarında konut erişimlerinde sıkıntı yaşanmaktadır. Piyasada alt ve orta gelir grupları konut arz edenler için cazip bir kitle olmamakta, sosyal konutlar çok kısıtlı bir kârla ve bazen de zararlı üretilmektedir. Bu sebeple özel sektör çoğunlukla orta ile özellikle üst gelir grubu için konut üretmeyi tercih etmekte ve özel sektör tarafından üretilen yeni konutlar düşük gelir grubuna hizmet etmemektedir (Özdemir-Sarı & Aksoy-Khurami, 2018: 2). Alt ve orta gelir kesiminden büyük talep olmasına rağmen üretilen konutların önemli bir kısmının üst gelir grubuna hitap etmesi, alt gelir grubunun gelir yetersizliğinden dolayı satın alınamayan konutların artması ve arz fazlalığı; dolayısıyla yine arz talep uyumsuzluğu ortaya çıkmaktadır. Ülkemizde özellikle son yirmi yıllık dönemde konut talebini karşılayabilmek için konut sektöründeki üretimde hızlı bir artış görülürken, buna bağlı olarak farklı tipoloji ve mekânsal kurgu örnekleri karşımıza çıkmaktadır (Hasgöl & Özsoy, 2016: 75).

Bu çalışma kapsamında Erzurum'daki farklı konut tipolojileri: düzensiz konut dokusu, bahçeli ev dokusu, geleneksel apartman dokusu, avlu blok konut dokusu, çizgi blok konut dokusu, 3-5 katlı apartman dokusu, 6-10 katlı apartman dokusu ve nokta blok konut dokusu olmak üzere sekiz grupta ele alınmıştır. Genel olarak, Yakutiye ve Palandöken ilçelerinde katsayı ortalaması beş ve üzeri olan konutlar bulunurken Aziziye ilçesinde daha az katlı konutlar yer almaktadır. Farklı konut tipolojilerinin kentsel mekândaki dağılımı incelendiğinde (Şekil 3 ve Şekil 4), Bayburt-Kars karayolunun kuzeyinde yer alan Yakutiye ilçesinin çekirdeği 1939 tarihli Lambert Planı'nın etkisinde gelişerek geleneksel apartman dokusundan oluşmaktadır. İlçenin kuzeyine doğru özellikle 2010 yılından sonra gelişen çoğunlukla 3-5 katlı apartman dokusundan oluşan Şükrüpaşa yerleşimi yer almakta, en kuzeyinde ise özellikle son yıllarda birçok kentte artan nokta blok konut dokusuna sahip konutların ağırlıklı olarak görüldüğü Hilalkent yerleşimi bulunmaktadır. Kentin çeşitli ticari kullanımlarının bulunduğu kent merkezi ile yoğun olarak yeme-içme mekânlarının ve alışveriş merkezinin bulunduğu Terminal Caddesi Yakutiye ilçesinde yer almaktadır.

Çalışma alanının en batısında ise Aziziye ilçesi bulunmakta, bir uydu kent olarak gelişen Dadaşkent yerleşimi bu ilçe sınırları içerisinde yer almaktadır. Dadaşkent, ilk gelişmeye başladığı 1990'lı yıllarda 1-2 katlı bahçeli ev dokusu olarak gelişirken ilerleyen zamanlarda 5 kata kadar izin verilmiş, güneye doğru apartman tipi yapılaşmayla kentsel gelişimini sürdürmüştür (Dursun & Güller, 2019: 18). Günümüzde yine bahçeli ev dokusuyla güneye doğru gelişmeye devam etmektedir.

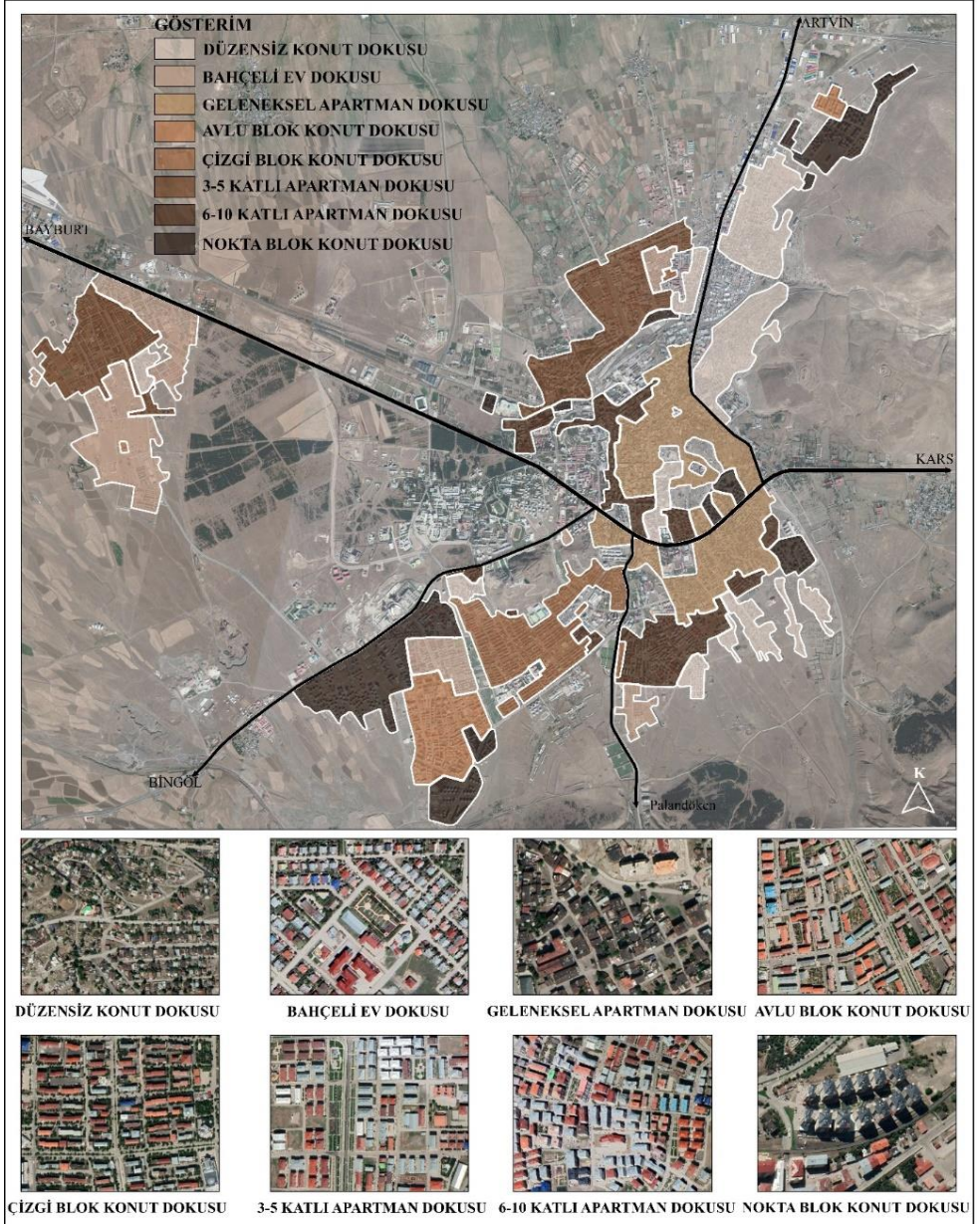
Bayburt-Kars karayolunun çizdiği yayın güneyinde yer alan bölge ise Palandöken ilçesidir. İlçe, farklı kentsel gelişim dinamikleriyle ortaya çıkan mekânsal yapılarla sahiptir. Karayolunun çizdiği yayın hemen güneyi az katlı geleneksel konut dokusundan oluşmaktadır. Bölgenin güneyinde yer alan Kayakyolu yerleşiminde ise var olan dokunun tersine 6 kat ve üzerindeki çok katlı apartman dokusu görülmektedir. Palandöken Yolu üzerinde dağın sırtlarına doğru ise 1-2 katlı bahçeli ev dokusu bulunduğu gözlemlenmektedir.

Şekil: 3
Çalışma Alanı



Palandöken Yolu'nun batısında 1980'li yıllardan itibaren konut talebini karşılamak için ortaya çıkan kooperatif eliyle inşa edilmiş çizgi blok konut dokusundan oluşan Yenişehir yerleşimi bulunmaktadır. Bölgenin güneyine doğru 1-2 katlı bahçeli ev dokusunun ve avlu blok konut dokusunun yer aldığı görülmektedir. Son yıllarda ise Bingöl yolu üzerinde Şehir Hastanesi'nin kurulmasıyla birlikte hastanenin yakın çevresinde bulunan Yıldızkent yerleşimi, nokta blok konut dokusuyla hızlı bir şekilde yapılaşmaya başlamıştır. Bölgenin güneyi de benzer şekilde nokta blok konut dokusuyla gelişmeye devam etmektedir.

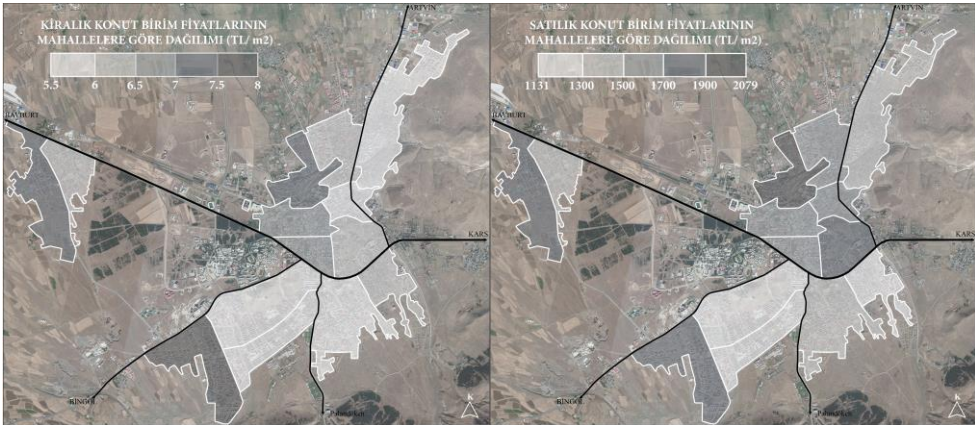
Şekil: 4
Farklı Konut Tipolojilerinin Kentsel Mekândaki Dağılımı



Farklı konut tipolojilerinden oluşan ilçelerdeki mahallelerin kiralık ve satılık konut birim fiyatları da farklılık göstermektedir. Bu analizlerin farklı konut tipolojilerinden oluşan bölgelere göre yapılmasının daha doğru sonuçlar vereceği düşünülse de çalışma kapsamında bu verilere ulaşılamaması ve sadece mahalle verilerine erişilebilmesinden dolayı mahallelerdeki konut fiyatlarının değişimi genel hatlarıyla sunulmuştur. Kiralık konut birim fiyatları (TL/m²) yoğunlukla nokta blok konut dokusundan oluşan Palandöken ilçesinin güneyindeki mahallede en yüksek değere sahiptir. Satılık konut birim fiyatlarının en yüksek Yakutiye ilçesinde yer alan ve son yıllarda hızlı bir kentsel gelişim süreci yaşayan Şükrüpaşa yerleşiminde olduğu görülmektedir. Kiralık ve satılık konut birim fiyatlarının en düşük olduğu bölgenin ise kooperatif eliyle inşa edilen ve çoğunlukla çizgi blok yapılaşma dokusuna sahip Yenişehir yerleşimi olduğu gözlemlenmektedir (Şekil 5).

Şekil: 5

Kiralık ve Satılık Konut Birim Fiyatlarının Mahallelere Göre Dağılımı (TL/m²)



Kaynak: Endeksa, 2021.

4. Materyal ve Yöntem

Erzurum’daki kiralık ve satılık konut fiyatları Hepsî emlak ve Sahibinden internet sitelerindeki konut ilanlarından 2021 yılının Ağustos-Eylül ayları içerisinde toplanarak veri girişi yapılmıştır. İlgili dönemde veri tabanında çalışma alanına ilişkin yaklaşık 285 adet kiralık, 310 adet satılık konut ilanı yer almaktadır. Veri toplama sürecinde basit rastgele örnekleme yöntemi kullanılmış, çalışmada ele alınan değişkenlere ait özelliklerin belirtilmediği ilanlar ve aynı binada bulunan benzer özelliklere sahip ilanlar analize dahil edilmemiştir. Aziziye ilçesinde ilan sayısının diğerlerine göre en az olması ve gerekli koşulları sağlamayan ilanların elenmesi sebebiyle bütün şartları sağlayan 50 adet ilan elde edilebilmiştir. Çalışma alanındaki her ilçe için gerekli koşulları sağlayan benzer sayıda örneklem büyüklüğü kullanılmış, satılık ve kiralık 50’şer adet ilanın veri girişi yapılarak toplamda 300 adet ilan kaydedilmiştir. Veri girişi yapılırken her bir ilanın konum bilgisinin olmasına özen gösterilmiş, konum bilgileri Google Earth üzerine işlenerek mesafeye dayalı

veriler üretilmiştir. Çalışmada lokasyon verileri toplanırken konut ilan sitelerinde bulunan konum verileri sahada incelenmiş, enlem-boyam verilerinin gerçek konum bilgisiyle tutarlı olmadığı, konutun konumundan genellikle birkaç km yakınında bir alanın gösterildiği tespit edilmiştir. Bu nedenle lokasyona ait verilerin değerlendirmesi yapılırken önemli yatırımların çevresine birer kilometre mesafe aralıkları ile daireler çizilerek konutun bu yatırımlara olan yaklaşık kuş uçuşu mesafe aralıkları belirlenmiştir.

Tablo: 3
Değişkenlerin Tanımı

| Değişken Adı | | Açıklama |
|-----------------------------|----|---------------------------------|
| Konutun Yapısal Özellikleri | 1 | M ² |
| | 2 | Oda Sayısı |
| | 3 | Bulunduğu Kat |
| | 4 | Banyo Sayısı |
| | 5 | Balkon |
| | 6 | Eşyalı |
| Bina Özellikleri | | Konut tipi |
| | 7 | Müstakil |
| | 8 | Apartman |
| | | Konut tipolojisi |
| | 9 | Nokta Blok Konut Dokusu |
| | 10 | Çizgi Blok Konut Dokusu |
| | | Isınma Şekli |
| | 11 | Kombi |
| | 12 | Merkezi |
| | 13 | Bina Yaşı |
| | 14 | Kat Sayısı |
| | 15 | Site |
| | 16 | Asansör |
| | 17 | Otopark |
| Konum Özellikleri | 18 | Kapalı Garaj |
| | 19 | Kamera Sistemi |
| | 20 | Akıllı Ev |
| | | Cephesi |
| | 21 | Güney |
| | 22 | Kuzey |
| | 23 | Doğu |
| | 24 | Batı |
| Konut Fiyatı (TL) | 25 | Atatürk Üniversitesi'ne Uzaklık |
| | 26 | Şehir Hastanesi'ne Uzaklık |
| | 27 | MNG AVM'ye Uzaklık |
| | 28 | Palandöken Dağı'na Uzaklık |
| Konut Fiyatı (TL) | 29 | Satılık Fiyatı |
| | 30 | Kiralık Fiyatı |

Çalışmada bağımlı değişken olan konut fiyatını etkileyen faktörlerin belirlenmesinde yarı logaritmik ve logaritmik modeller karşılaştırılmış, yarı logaritmik modelin açıklama gücünün daha yüksek olduğu görülmüştür. Bu nedenle yarı logaritmik (logaritmik doğrusal) regresyon modeli kullanılmıştır. Modelin seçilmesinin sebebi, fiyat üzerinde etkili olan faktörleri ve etki derecelerini ölçme temeline dayanması nedeniyle çalışmanın amacıyla örtüşmesidir. Hedonik çalışmaları kapsayan literatür taraması incelendiğinde de benzer şekilde en sık kullanılan fonksiyonel formun yarı logaritmik form olduğu görülmektedir (Afşar & Yılmazel, 2017). Çalışmada yarı-logaritmik regresyon modeli kullanılarak bağımsız değişkenlerin fiyat üzerindeki etkisi tahmin edilmiştir. Değişkenler arasındaki hata

bağımlılığının test edilmesi amacıyla Durbin-Watson analizi yapılmış, bağımlılığın olmadığı tespit edilmiştir (2,179). Çalışmanın daha ileriye götürülmesi için mekânsal ağırlık değerlerinin de hesaba katıldığı analizlerin yapılması önemlidir. Bu çalışmada çalışma alanına ait tutarlı enlem-boydam verilerinin elde edilememesi çalışmanın önemli bir kısıtını oluşturmuştur. Ancak çalışma alanında yer alan ilçelerin kentsel gelişim süreçleri ve mekânsal özelliklerinin birbirlerine göre farklılık göstermesi sebebiyle her bir ilçenin konut fiyatlarını etkileyen unsurlar ilçelere göre ayrı ayrı analiz edilmiştir.

Çalışma kapsamında toplanan her bir değişkene ait tanımlar Tablo 3'te yer almaktadır. Çalışmada, kiralık ve satılık konut fiyatlarına etki eden değişkenleri tespit etmek amacıyla Hedonik Fiyat Analizi yönteminden faydalanılmıştır. Hedonik fiyat analizinde ikiden fazla gruba ayrılan değişkenler modele doğrudan dahil edilememekte; bu değişkenlerin her biri kukla değişken olarak kodlanarak yeniden düzenlenmektedir. Çalışma kapsamında toplanan verilerden konut tipi, konut tipolojisi, cephesi ve ısınma şekli değişkenlerinin ikiden fazla grup içermesi sebebiyle bu değişkenlerin alt grupları kukla değişken olacak şekilde yeniden kodlanmıştır.

5. Alan Çalışması ve Değerlendirme

Kiralık ve satılık konutlarda değişkenlere ait açıklayıcı istatistikler Tablo 4 ve Tablo 5'te verilmiştir. Kiralık konut fiyatları değişkeni incelendiğinde veri içerisinde en düşük 400 TL kira fiyatı bulunurken en yüksek 3750 TL'ye çıkmaktadır. Ortalama kira fiyatlarına göre ilçeler değerlendirildiğinde ise kent merkezinin bulunduğu Yakutiye ilçesi en yüksek fiyata sahiptir. Genellikle müstakil konutların bulunduğu uydu yerleşim niteliğindeki Aziziye ilçesi ikinci sıradadır. Veride en çok karşılaşılan oda sayısının 4 oda olduğu, en çok karşılaşılan m² büyüklüğünün ise 120 m² olduğu anlaşılmaktadır.

Satılık konut verileri incelendiğinde ise, ortalama satılık konut fiyatının en düşük olduğu yer, kiralık konut fiyatlarının aksine Yakutiye ilçesidir. En yüksek satılık konut fiyatları ise Aziziye ilçesinde görülmektedir. Aziziye ilçesinde ortalama m² büyüklüğü de diğer ilçelere göre daha fazladır. Satılık konut veri setinde, Aziziye ilçesinde müstakil konutların ağırlıkta olması, Yakutiye ilçesinde ise daha eski konutların yer alması dikkat çekmektedir.

Tablo 3'te yer alan bağımsız değişkenlerin bağımlı değişken olan kiralık ve satılık konut fiyatlarını ne ölçüde açıklama gücüne sahip olduklarını tespit edebilmek için öncelikle değişkenlere adım adım regresyon analizi uygulanmış, analiz sonucunda en iyi sonuçları veren değişkenler belirlenmiştir. Sonraki aşamada değişkenler arasında korelasyon analizi yapılarak birbiriyle aralarında korelasyon ilişkisi bulunmayan değişkenler tespit edilmiştir. Korelasyon analizi sonuçlarına göre bütün ilçelerde ortak olarak m², oda sayısı ve banyo sayısı değişkenleri arasında çoklu bağlantı olduğu tespit edilmiştir. Ayrıca bina yaşı, ısınma tipi, otopark ve site değişkenleri arasında da benzer durum söz konusudur. Bu nedenle regresyon analizinde bu değişkenler ayrı ayrı analiz edilerek her ilçenin kendi fiyat değişkeni

için açıklama gücü en yüksek olan değişken, modele katılmıştır. İlçelere göre seçilen değişkenler Tablo 4 ve Tablo 5'te sunulmaktadır.

Tablo: 4
Kiralık Konutlarda Değişkenlere Ait Tanımlayıcı İstatistikler

| | Kiralık Fiyatı | | | M ² | | | Oda Sayısı | | |
|----------|----------------|------------|---------|----------------|------------|---------|------------|------------|---------|
| | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye |
| N | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Ortalama | 1462,98 | 1380,94 | 1390,91 | 150,79 | 156,79 | 136,59 | 3,87 | 3,92 | 3,27 |
| Medyan | 1400,00 | 1250,00 | 1500,00 | 155,00 | 140,00 | 147,50 | 4,00 | 4,00 | 4,00 |
| Mod | 1250 | 1250 | 650 | 120 | 120 | 120 | 4 | 4 | 4 |
| Minimum | 550 | 400 | 550 | 35 | 70 | 35 | 1 | 2 | 2 |
| Maksimum | 3750 | 3000 | 2500 | 380 | 350 | 200 | 7 | 6 | 6 |
| | Banyo sayısı | | | Bina Yaşı | | | Kat sayısı | | |
| | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye |
| N | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Ortalama | 1,40 | 1,51 | 1,27 | 12,54 | 13,23 | 10,00 | 5,90 | 5,21 | 3,41 |
| Medyan | 1,00 | 1,00 | 1,00 | 13,00 | 13,00 | 7,50 | 5,50 | 5,00 | 4,00 |
| Mod | 1 | 1 | 1 | 18 | 13 | 3 | 5 | 5 | 4 |
| Minimum | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 1 |
| Maksimum | 2 | 3 | 2 | 28 | 31 | 28 | 12 | 9 | 5 |

Tablo: 5
Satılık Konutlarda Değişkenlere Ait Tanımlayıcı İstatistikler

| | Satılık Fiyatı | | | M ² | | | Oda Sayısı | | |
|----------|----------------|------------|-----------|----------------|------------|---------|------------|------------|---------|
| | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye |
| N | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Ortalama | 343510,00 | 451941,18 | 520170,00 | 161,78 | 189,10 | 198,44 | 4,06 | 4,27 | 4,40 |
| Medyan | 316500,00 | 314000,00 | 382500,00 | 165,00 | 165,00 | 162,50 | 4,00 | 4,00 | 4,00 |
| Mod | 105000 | 225000 | 285000 | 165 | 155 | 160 | 4 | 4 | 4 |
| Minimum | 105000 | 101000 | 89000 | 90 | 95 | 100 | 2 | 3 | 3 |
| Maksimum | 875000 | 2300000 | 1850000 | 280 | 750 | 560 | 7 | 6 | 10 |
| | Banyo Sayısı | | | Bina Yaşı | | | Kat Sayısı | | |
| | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye | Yakutiye | Palandöken | Aziziye |
| N | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Ortalama | 1,76 | 1,65 | 1,94 | 7,50 | 10,33 | 4,40 | 5,78 | 5,69 | 3,38 |
| Medyan | 2,00 | 2,00 | 2,00 | 8,00 | 8,00 | 3,00 | 5,50 | 5,00 | 3,00 |
| Mod | 2 | 2 | 2 | 0 | 0 | 0 | 5 | 5 | 3 |
| Minimum | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 |
| Maksimum | 3 | 4 | 4 | 31 | 28 | 23 | 13 | 12 | 5 |

Değişkenlerin, konut fiyatı üzerindeki etkilerini yorumlamaya geçmeden önce modellerin güvenilirliği ve anlamlılığı değerlendirildiğinde T ve R² değerlerine göre güvenilir oldukları ve analize giren tüm değişkenlerin istatistiki olarak anlamlı (%5 anlamlılık düzeyinde) çıktığı görülmektedir.

Yakutiye ilçesinde modele giren bağımsız değişkenlerin bağımlı değişken olan kiralık konut fiyatındaki değişimin %77,1'ini (R²) açıkladığı anlaşılmaktadır (Tablo 6). Bağımsız değişkenlerden m², eşyalı olması, balkon bulunması, kapalı garaj bulunması değişkenleri kiralık konut fiyatıyla pozitif bir ilişkiye sahipken bina yaşı ve MNG Alışveriş Merkezi (AVM)'ne olan uzaklık negatif ilişkidir. Bir diğer deyişle, konutun büyüklüğü arttıkça konut fiyatları artmaktadır. Eşyalı olması, balkona sahip olması, kapalı garajının bulunması da konut fiyatlarını artıran bir etkiye sahiptir. Konutun yaşının artması ise kiralık konut fiyatlarını düşürmektedir. MNG AVM'ye yakın bölgelerde kiralık konut fiyatları artarken, uzaklaştıkça fiyatların düştüğü sonucuna varılmaktadır. Yakutiye ilçesinde Atatürk

Üniversitesi’ne olan uzaklıkla kiralık konut fiyatları arasında da anlamlı ve negatif bir ilişkinin varlığı tespit edilmiş; ancak MNG AVM’ye olan uzaklıkla aralarında korelasyon ilişkisi bulunması ve MNG AVM’ye olan uzaklığın kiralık konut fiyatını açıklama gücünün daha yüksek çıkması sebebiyle Atatürk Üniversitesi’ne olan uzaklık modele dahil edilmemiştir.

Tablo: 6
Kiralık Konutlar İçin Logaritmik Doğrusal Regresyon Analizi

| İlçe | Model | Katsayılar | | | R ² | Düzeltilmiş R ² |
|------------|-------------------------------|------------|--------|----------------------|----------------|----------------------------|
| | | B | t | Anlamlılıklar (sig.) | | |
| Yakutiye | (Sabit) | 7,174 | 42,949 | ,000 | ,798 | ,771 |
| | M ² | ,003 | 4,985 | ,000 | | |
| | Eşyalı | ,595 | 4,134 | ,000 | | |
| | Balkon | ,322 | 4,002 | ,000 | | |
| | Bina Yaşı | -,032 | -6,844 | ,000 | | |
| | Kapalı Garaj | ,010 | 2,126 | ,009 | | |
| | MNG AVM’ye Uzaklık | -,136 | -4,647 | ,000 | | |
| Palandöken | (Sabit) | 6,541 | 43,179 | ,000 | ,790 | ,772 |
| | M ² | ,004 | 7,123 | ,000 | | |
| | Eşyalı | ,354 | 2,799 | ,007 | | |
| | Bina Yaşı | -,020 | -3,438 | ,001 | | |
| | Konut Tipolojisi (Nokta Blok) | ,395 | 3,902 | ,000 | | |
| Aziziye | (Sabit) | 5,546 | 29,831 | ,000 | ,833 | ,815 |
| | M ² | ,011 | 7,740 | ,000 | | |
| | Eşyalı | ,332 | 2,916 | ,009 | | |

Çalışmada kullanılan logaritmik doğrusal regresyon modelinin katsayılarının yorumlanmasında sürekli değişkenler ve kesikli olan kukla değişkenler farklılık göstermektedir. Logaritmik doğrusal modellerde sürekli değişkenlerin bağımlı değişken üzerindeki etkisi değişkenlerin katsayı değerlerinin 100 ile çarpılmasıyla elde edilmektedir. Bu değer bağımsız değişkenin bağımlı değişken üzerinde meydana getireceği değişimin yüzde etkisini vermektedir. Kukla değişkenlerin bağımlı değişkenlere olan yüzde etkisi ise Halvorsen ve Palmquist (1980) yaklaşımına göre $(e^{\beta}-1)*100$ formülü kullanılarak hesaplanmaktadır.

Bu formüllere göre dönüştürülen katsayı değerleri incelendiğinde ise Yakutiye ilçesinde konutun eşyalı olmasının kiralık konut fiyatını %81,3 oranında artırdığı, fiyat üzerinde en çok etkiye sahip değişken olduğu görülmektedir. Onu takiben konutun balkonunun bulunması kiralık konut fiyatlarını %38 oranında artırırken kapalı garaja sahip olması %1 oranında artıran etkiye sahiptir. MNG AVM’ye olan uzaklığın artması ise konut fiyatlarını en fazla düşüren etkiye sahiptir, uzaklık arttıkça kiralık konut fiyatları %13,6 oranında azalmaktadır. Binanın yaşı arttıkça ise kiralık konut fiyatları %3,2 oranında azalmaktadır.

Palandöken ilçesinde üretilen hedonik model ile kiralık konut fiyatlarındaki değişimin %77,2’sinin açıklanabildiği görülmektedir. Kiralık konut fiyatı ile m² (%4), eşyalı olması (%42,5) ve nokta blok konut dokusu (%48,4) değişkenleri pozitif ilişkiye sahipken, bina yaşı (%2) negatif ilişkiye sahiptir. Palandöken ilçesinde diğer ilçelerden farklı olarak son yıllarda birçok kentte popüler hale gelen çok katlı, kendi içine kapalı konut siteleri mantığında üretilen ve çevresinden kopuk bir yapılaşma biçimi olan nokta blok dokusuna

sahip konutların ilçenin güneyine doğru yayıldığı ve bu yapılaşma tipindeki kiralık konut fiyatlarının da diğer konutlara göre fazla olduğu görülmüştür. İlçede önemli bir kamu yatırımı olan Şehir Hastanesi'ne olan uzaklığın ise kiralık konut fiyatlarıyla arasında istatistiksel olarak anlamlı bir ilişkinin bulunmadığı tespit edilmiştir. Palandöken Dağı'na olan uzaklık değişkeni ile nokta blok konut dokusu değişkeni arasında ise korelasyon ilişkisinin bulunduğu yapılan korelasyon analizinde anlaşılmıştır. Zaten ilçede Palandöken Dağı'nın güneyde bulunması ve nokta blok biçiminde yeni gelişen konut alanlarının da güneyde yer alması bu ilişkiyi doğrular niteliktedir. Bu nedenle kiralık konut fiyatlarını açıklama gücü daha yüksek çıkan nokta blok konut dokusu değişkeni modele dâhil edilmiştir. Konut dokusunun nokta blok olması kiralık konut fiyatını pozitif yönde en fazla etkileyen değişkendir. Konutun nokta blok olması kiralık konut fiyatını %48,4 oranında artırmaktadır. Kiralık konut fiyatlarıyla negatif ilişkiye sahip olan bina yaşı değişkeni incelendiğinde ise bina yaşının artmasının kiralık konut fiyatını %2 oranında düşürdüğü görülmektedir.

Aziziye ilçesinde ise genellikle müstakil tipi yapılaşma görülsede toplanan kiralık konut veri setinde müstakil konutların kiralık ilanlarına çok rastlanmamıştır; dolayısıyla bu değişkene ait anlamlı ve güvenilir bir sonuç elde edilememiştir. Aziziye ilçesinde konutun m² büyüklüğü ve eşyalı değişkeninin kiralık konut fiyatlarındaki değişimin %81,5'ini açıkladığı anlaşılmaktadır. İki değişken de kiralık konut fiyatları üzerinde artırıcı bir etkiye sahiptir. Konutun eşyalı olması kiralık konut fiyatlarını %39,4 oranında artırırken m² büyüklüğü %1,1 oranında artırmaktadır.

Tablo: 7
Satılık Konutlar İçin Logaritmik Doğrusal Regresyon Analizi

| İlçe | Model | Katsayılar | | | R ² | Düzeltilmiş R ² |
|------------|---------------------------|------------|--------|----------------------|----------------|----------------------------|
| | | B | t | Anlamlılıklar (sig.) | | |
| Yakutiye | (Sabit) | 11,181 | 49,023 | ,000 | ,766 | ,740 |
| | M ² | ,006 | 5,128 | ,000 | | |
| | Bina Yaşı | -,022 | -4,601 | ,000 | | |
| | Kapalı Garaj | ,440 | 2,623 | ,012 | | |
| | Cephesi (Doğu) | -,201 | -2,809 | ,007 | | |
| | Cephesi (Güney) | ,903 | 6,464 | ,000 | | |
| Palandöken | (Sabit) | 12,757 | 72,754 | ,000 | ,887 | ,874 |
| | M ² | ,002 | 5,894 | ,000 | | |
| | Site | ,158 | 2,003 | ,051 | | |
| | Kapalı Garaj | ,424 | 4,275 | ,000 | | |
| | Akıllı Ev | ,287 | 2,678 | ,010 | | |
| | Palandöken Dağına Uzaklık | -,322 | -5,429 | ,000 | | |
| Aziziye | (Sabit) | 11,870 | 75,448 | ,000 | ,870 | ,862 |
| | Oda Sayısı | ,270 | 6,935 | ,000 | | |
| | Bina Yaşı | -,045 | -7,798 | ,000 | | |
| | Konut Tipi (Müstakil) | ,687 | 4,986 | ,000 | | |

İlçeler, satılık konut fiyatlarına göre analiz edildiğinde (Tablo 7), Yakutiye ilçesi için üretilen hedonik modelin satılık konut fiyatlarındaki değişimin %74'ünü açıkladığı sonucuna varılmaktadır. Yakutiye ilçesinin merkezi iş alanını, kentteki önemli ticari ve kamusal kullanımları içinde bulundurması sebebiyle günlük kullanım yoğunluğunun fazla olması konutların otopark ihtiyacını artırmaktadır. Bu noktada konutlarda kapalı otoparkın varlığı satılık konut fiyatlarını %55,2 oranında artıran önemli bir değişken olmuştur. Ayrıca

ilçede bulunan konutların çoğunlukla eski olması ve yalıtımlarının bulunmaması Erzurum'un soğuk iklim koşullarıyla birleşince güney cephe değişkenini satılık konut fiyatlarını en fazla etkileyen değişken haline getirmektedir. Konutun güney cephede olması satılık konut fiyatlarını %147 oranında artırmaktadır. Doğu cephe değişkeni ise satılık konut fiyatlarını negatif yönde en fazla etkileyen değişkendir. Konutun doğu cephede bulunması satılık konut fiyatlarını %18,2 oranında düşürmektedir.

Palandöken ilçesinde ise bağımsız değişkenler satılık konut fiyatındaki değişimin %87,4'ünü açıklayabilmektedir. Konutun kapalı garaja sahip olması ve bölgede son yıllarda artan akıllı ev özellikleri satılık konut fiyatlarını en fazla etkileyen değişkenler olmuştur. Konutun kapalı garaja sahip olması satılık konut fiyatlarını %52,8 oranında, akıllı ev özelliklerine sahip olması ise %33,2 oranında artırmaktadır. Palandöken Dağı'na uzaklık arttıkça; yani kuzeye doğru gittikçe konut fiyatlarının azaldığı sonucuna varılmaktadır. Palandöken Dağı'na uzaklık arttıkça satılık konut fiyatları %32,2 oranında azalmaktadır.

Aziziye ilçesinde modele giren bağımsız değişkenlerin bağımlı değişken olan satılık konut fiyatındaki değişimin %86,2'sini açıkladığı görülmektedir. Konutun oda sayısının artması ve konut tipinin müstakil olması satılık konut fiyatlarını artıran bir etkiye sahipken bina yaşının artması fiyatı düşürmektedir. Konutun müstakil olmasının konut fiyatını %98,8 oranında artırdığı ve en fazla etkiye sahip değişken olduğu sonucuna varılmaktadır.

6. Sonuç

Erzurum'un merkez ilçeleri olan Yakutiye, Aziziye ve Palandöken ilçelerinde kiralık ve satılık konut fiyatlarını etkileyen faktörlerin belirlendiği bu çalışmada ilçelerin yerel dinamiklerine göre konut fiyatlarını etkileyen unsurların farklılaştığı anlaşılmıştır.

Çalışmada, Erzurum'un farklı yerel dinamiklere sahip ilçelerinde konut fiyatlarını etkileyen değişkenlerin tespit edilmesi, aynı zamanda bu bölgelerin farklılaşan kentsel gelişim ve konut yapılaşma özelliklerinin de ortaya konulmasını sağlamıştır. Çalışmanın önemli bir katkısı Erzurum'un bölgelere göre farklılaşan konut deseninin ve her bölgenin yerele özgü konut gelişim özellikleriyle ilişkili olarak konut fiyatlarında etkili değişkenlerin tespit edilmiş olmasıdır.

Kiralık konutlarda m² büyüklüğünün ve eşyalı olmasının üç ilçe için de fiyatı etkileyen ortak değişkenler olduğu gözlenmiştir. Kentin ilk gelişen bölgelerinden olan ve kent merkezini içinde barındıran Yakutiye ilçesi için konutlarda balkonun varlığı ve kapalı garajın bulunması kiralık konut fiyatlarının belirlenmesinde diğer ilçelerden farklılaşan önemli değişkenler olmuştur. Ayrıca Yakutiye ilçesinde kentin önemli ticari akslarından biri olan Terminal Caddesi'nde yer alan MNG AVM'ye olan uzaklık da kiralık konut fiyatlarını önemli ölçüde etkileyen bir diğer değişkendir. Yakutiye ilçesinde kiralık konut fiyatlarına pozitif yönde etki eden değişkenler m² büyüklüğü, eşyalı olması, balkonun bulunması, kapalı garajın varlığı iken, bina yaşı ve MNG AVM'ye olan uzaklık negatif yönde etki eden değişkenler olarak karşımıza çıkmaktadır. Palandöken ilçesinin, geçmişte kooperatifleşme

yoluyla üretilen çizgi blok ve avlu blok konut dokusuna sahip olması, son yıllarda yeni gelişen bölgelerin ise nokta blok konut dokusuna sahip olması bölgede konut tipolojisi açısından çeşitliliğe yol açmıştır. Palandöken ilçesinin bu özelliği, konut fiyatlarının belirlenmesinde konut tipolojisinin de etkili bir değişken olarak karşımıza çıkmasına sebep olmuş; bu yönüyle diğer ilçelerden farklılaşmasını sağlamıştır. Palandöken ilçesinde kiralık konut fiyatlarının konutun m² büyüklüğü, eşyalı olması ve nokta blok konut dokusuna sahip olmasıyla pozitif yönde ilişkili; binanın yaşıyla ise negatif yönde ilişkili olduğu sonucuna varılmıştır. Aziziye ilçesinde ise kiralık konut fiyatları, diğer ilçelerle benzer şekilde m² büyüklüğü ve konutun eşyalı olmasıyla pozitif yönde ilişkilidir.

Satılık konut fiyatlarında ise; kentin ilk yerleşim yerlerini içinde barındıran, bu nedenle diğer ilçelere göre nispeten daha eski yapıların bulunduğu Yakutiye ilçesindeki cephe özellikleri konut fiyatları üzerinde etkili değişkenler haline gelmiştir. Konutun güney cephede yer alması, satılık konut fiyatını pozitif yönde etkileyen bir değişken olarak karşımıza çıkmaktadır. Konutun doğu cephede olması ve binanın yaşı ise konut fiyatlarıyla negatif yönde ilişkili çıkmıştır. Son yıllarda kentin güneyine doğru yeni yapılaşmaların arttığı Palandöken ilçesinde satılık konut fiyatlarını pozitif yönde etkileyen değişkenler konutun akıllı ev özelliklerine sahip olması, kapalı garaja sahip olması, sitede bulunması ve m² büyüklüğü olarak belirlenmiştir. Palandöken Dağı'na uzaklık ise satılık konut fiyatlarını negatif yönde etkileyen değişken olarak gözlenmiştir. Uydu kent olarak gelişen, müstakil konutların ve son zamanlarda apartman tipi yapılaşmanın bulunduğu Aziziye ilçesinde konutun müstakil olmasının satılık konut fiyatının belirlenmesinde en etkili değişken olduğu sonucuna varılmıştır. Konutun müstakil olması ve oda sayısı satılık konut fiyatlarını pozitif yönde etkileyen değişkenler olarak görülürken binanın yaşı negatif yönde etkileyen değişken olarak tespit edilmiştir.

Genel olarak kiralık konut fiyatlarını açıklamada konutun m² büyüklüğü, bina yaşı gibi yapısal özellikleri düşük etkiye sahipken, satılık konut fiyatlarında bu değerlerin etkisi artmaktadır. Bu noktada konutun yapısal özelliklerinin satılık konut fiyatlarında daha etkili değişkenler olduğu; ancak kiralık konut fiyatlarının belirlenmesinde düşük etkiye sahip olduğu anlaşılmaktadır. Kiralık konutlarda konum özelliklerinden Atatürk Üniversitesi'ne veya MNG AVM'ye yakınlığın konut fiyatına etkili olduğu görülürken, satılık konutlarda bu tür büyük yatırımlara yakınlığı gösteren konuma ait özelliklerin konut fiyatına etkisi önemsizdir. Sonuç olarak Erzurum'da konut fiyatlarının belirlenmesinde konutun yapısal özellikleri daha çok satılık konut fiyatları üzerinde etkiliyken; büyük yatırımlara ve ticari kullanımlara yakınlığı gösteren konuma ait özelliklerin kiralık konut fiyatları üzerinde daha etkili olduğu anlaşılmıştır.

Bu çalışmada kiralık ve satılık konut fiyatına etki eden değişkenlerin tespiti, konut ilanlarından toplanan veriler ışığında yapılmıştır. Konut fiyatlarına etki eden sosyoekonomik değişkenlere ait verilerin yetersizliğinden dolayı bu değişkenler değerlendirmenin dışında bırakılmıştır. Sonraki çalışmalarda hanehalkı anketi uygulanarak Erzurum'un farklı ilçelerindeki sosyoekonomik durumun tespit edilmesinin, konut taleplerinin belirlenmesinin ve bölgelere göre farklılaşan konut taleplerinin bu çalışmada elde edilen değişkenlerle

benzer/farklılaşan yönlerinin ve sebeplerinin tartışılmasının bölge konut piyasasının daha iyi anlaşılmasına önemli ölçüde katkı sağlayacağı düşünülmektedir.

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Erken Modern Dönem Osmanlı Devleti ve Avrupa’da Enflasyon

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Inflation in the Early Modern Ottoman Empire and Europe

Abstract

This study investigates the rates and causes of price inflation in early modern Europe and the Ottomans. There are two leading causes of price inflation in this period. The first is the American silver, and the second is the debasements that states resorted to for revenue. Our study shows that debasements are the more important cause. Debasements have induced price increases ranging between two to five hundred-fold for different states. As for American silver, it has induced, at most, a four-fold increase in prices. Hence inflation was mainly caused by debasements and the underlying political factors.

Keywords : Price Revolution, Inflation, Debasement, Silver Standard.

JEL Classification Codes : N14, E31, E42.

Öz

Bu çalışma, Osmanlı Devleti ve diğer Avrupa devletleri için erken modern dönemde gerçekleşen fiyat enflasyonu oranlarını karşılaştırmakta ve enflasyonun sebeplerini incelemektedir. Bu dönemde gerçekleşen fiyat enflasyonunu açıklamada iki etken ön plana çıkar. İlk etken Amerika’da keşfedilen gümüş, ikinci etken ise devletlerin gelir elde etmek için başvurdukları tağşişlerdir. Çalışmamız bu iki etkenden daha önemli olanının tağşişler olduğunu gösterir. Eldeki veriler tağşişlerin farklı ülkeler için 2 ile 500 kat arasında değişen oranlarda fiyat artışlarına yol açtığını göstermektedir. Amerika’dan gelen gümüş ise fiyatları 4 kattan daha az artırmıştır. Dolayısıyla enflasyonun temel sebebi tağşişler ve tağşişlere yol açan siyasi sebeplerdir.

Anahtar Sözcükler : Fiyat Devrimi, Enflasyon, Tağşiş, Gümüş Standardı.

1. Giriş

Bu çalışmanın amacı, Osmanlı Devleti ve diğer Avrupa devletlerinde erken modern dönemde gerçekleşen enflasyon için önerilen farklı sebepleri değerlendirmek ve hangi sebebin daha açıklayıcı olduğunu ortaya koymaktır. Bu dönemde gerçekleşen enflasyonun sebep ve sonuçları, iktisat tarihi literatürünün en temel tartışma konuları arasındadır. Literatürde öne çıkan iki açıklama, enflasyona Amerika'dan gelen gümüşün ve devletlerin gelir elde etmek için başvurduğu taşışların yol açtığıdır. Öte yandan, literatürde yapılan çalışmalar, fiyat hareketlerini genellikle tek bir ülke için ele almış ve bu kısıtlı perspektif dolayısıyla bu tartışma konusunda birbiriyle çelişen sonuçlara ulaşmıştır.

Çalışmamızın katkısı, ilk defa olarak enflasyonun tarihini ve sebeplerini çok sayıda devlet ve çok uzun bir dönem için ele almasıdır. Bu amaçla çalışma yakın zamanda oluşturduğumuz Avrupa para tarihi serilerini (Karaman vd., 2020) farklı ülkeler için oluşturulmuş fiyat serileri ile bir araya getirmektedir. Çalışma yine bu karşılaştırmalı analiz çerçevesinde gümüş üretimi, dolaşımdaki para miktarı ve kişi başı reel gelir serilerini bir araya getirip bu değişkenler ile enflasyon arasındaki ilişkiyi incelemektedir.

Çalışmamız temel sonucu Avrupa genelinde enflasyona yol açan en önemli sebebin devletlerin gelir yaratmak için başvurduğu taşışlar olduğudur. Buna göre devletler 1500-1800 arası sıklıkla ve yüksek oranlarda taşışlara başvurmuşlardır. Bu taşışlar sonucunda devletlerin para birimleri ortak değer birimi olan gümüş karşısında kimi ülkelerde 2 kat kimi ülkelerde ise 500 katı aşan oranlarda değer kaybetmiş, bu değer kaybı da yaklaşık aynı oranda enflasyona yol açmıştır. Devletlerin taşış başvurma sıklığındaki farkları ise savaş sıklığı, vergi gelirleri, siyasi rejim gibi mali ve siyasi değişkenler belirlemiştir.

Elimizdeki veriler, literatürdeki diğer önemli açıklama olan Amerika'da keşfedilen gümüşün enflasyona katkı yaptığı savını da destekler. Öte yandan gümüşün etkisi taşışlara nazaran çok daha sınırlıdır. Gümüşün yol açtığı enflasyon büyük ölçüde Batı Avrupa ile sınırlı kalmış ve fiyatları dört kattan az artırmıştır. Gümüşün Doğu Avrupa devletlerindeki enflasyona etkisi ise çok daha azdır.

Yukarıda Avrupa'nın geneli için özetlenen sonuçlar, Osmanlı Devleti'nde gerçekleşen enflasyonu yorumlamaya da imkân sağlar. Osmanlı Devleti için enflasyon oranı 16. yüzyılda düşüktür, fakat 17. ve 18. yüzyıllarda artar ve Avrupa devletleri arasında en yüksek oranlardan birisine ulaşır. 17. ve 18. yüzyıllardaki bu yüksek enflasyon oranının temel sebebi, Osmanlı Devleti'nin başvurduğu taşışlar ve akçenin gümüş karşısında değer yitirmesidir. Eldeki veriler, bu dönemde Osmanlı Devleti'nin vergi gelirlerini artırmakta zorlandığını, taşışların olumsuz iktisadi etkilerinin göz ardı edildiğini ve bunun sonucunda savaş ve iç çatışma dönemlerinde devletin gelir elde etmek için taşışlara başvurulduğunu gösterir. Dolayısıyla, Osmanlı'daki fiyat artışları iç koşulların ve daha somut olarak, 17. ve 18. yüzyıldaki siyasi ve mali sorunların sonucu olarak değerlendirilebilir. Öte yandan, Amerikan gümüşünün Osmanlı fiyatları üzerindeki etkisinin diğer Doğu Avrupa

devletlerinde olduğu gibi sınırlı kaldığı gözlemlenmektedir. Dolayısıyla, Amerikan gümüşünün Osmanlı'da iktisadi ve mali bir kırılmaya yol açtığına dair elimizde delil yoktur.

Çalışmamız altı bölümden oluşmaktadır. İkinci bölümde, enflasyona sebep olan iki etken olan mal ve hizmetlerin gümüş cinsinden değer kazanması ile gümüşün para birimleri cinsinden değer kazanması arasındaki ayrım açıklanmış ve bu iki etkenin göreceli önemi konusundaki literatürdeki tartışmalar özetlenmiştir. Üçüncü bölümde veri serilerini oluşturmakta kullanılan kaynaklar ele alınmıştır. Dört, beş ve altıncı bölümlerde oluşturulan veri serileri incelenmiş ve yorumlanmıştır. Sonuç bölümünde ise çalışmanın bulguları özetlenmiştir.

2. Erken Modern Dönemde (16-18. Yüzyıl) Para Sistemleri ve Enflasyon

Bu bölümde erken modern dönemde Osmanlı ve Avrupa devletlerinde enflasyona yol açan iki temel etkeni tartışılacaktır. Bu amaçla, önce Amerika'dan gelen gümüş dolayısıyla mal ve hizmetlerin gümüş karşısında değer kazanması, sonra taşışlar dolayısıyla gümüşün para birimleri karşısında değer kazanması ele alınacaktır. Ayrıca, enflasyonda bu iki etkenden hangisinin daha önemli rol oynadığına dair literatürdeki tartışmalar özetlenecektir.

Erken modern dönemde enflasyon, iki alt endeks için gerçekleşen artış oranlarının toplamı olarak hesaplanabilir. İlk alt endeks, mal ve hizmetlerin gümüş cinsinden değeridir. İkinci alt endeks, gümüşün her ülkenin para birimi cinsinden değeridir. Bu iki alt endekste ki artış oranlarının toplamı, mal ve hizmetlerin para birimi karşısında ne kadar değer kazandığını, yani enflasyonu verir.

Enflasyona katkı veren ilk alt endeks, mal ve hizmetlerin gümüş cinsinden değeridir. Mal ve hizmetlerin gümüş cinsinden değerini takip etmek önemlidir, çünkü bu dönemde Avrupa devletlerinin para sistemleri gümüş standardındaydı. Daha açık ifadesiyle, akçe, pound, ruble gibi her ülkenin para birimi gümüş cinsinden belirli bir değere sahipti. Devletler para birimlerinin gümüş değerini bastıkları sikkelere koydukları gümüş miktarı ile belirliyordu. Örneğin Osmanlı Devleti, bastığı bir akçe nominal değerine sahip bir sikkeye 2 gram gümüş koyarsa, akçenin gümüş cinsinden değeri 2 gram oluyordu. Akçe gümüşe endeksli olduğu için, eğer mal ve hizmetlerin gümüş cinsinden değeri artarsa, bu akçe cinsinden değerlerinde de bire bir artışa yol açıyordu.

Enflasyona katkı veren ikinci alt endeks, gümüşün para birimleri karşısındaki değeri idi. İncelenen dönem boyunca, devletler mali sebeplerle taşış baş vurduğu, yani bastıkları sikkelere koydukları gümüş miktarını düşürdükleri için, gümüş para birimlerine karşı değer kazanma eğilimindeydi ve bu da enflasyona katkı yapıyordu. Yukarıda verilen örnekten devam edersek, Osmanlı Devleti'nin bastığı akçe sikkelerine koyduğu gümüş miktarını 2 gramdan 1 grama düşürdüğü bir durumda, gümüş akçe karşısında iki kat değer kazanmış oluyor, bu da kısa bir süre içinde mal ve hizmetlerin akçe cinsinden fiyatlarında yaklaşık iki kat artışa ve enflasyona yol açıyordu.

Erken modern dönem boyunca yaşanan enflasyonda yukarıda özetlenen iki sebepten hangisinin daha önemli rol oynadığı tartışmalıdır. Daha açık ifadesiyle enflasyona mal ve hizmetlerin gümüş karşısında değer kazanmasının mı yoksa gümüşün para birimleri karşısında değer kazanmasının mı yol açtığı tartışması 16. yüzyıla kadar geri gider. Bu yüzyılda yaşanan ve fiyat devrimi olarak adlandırılan yüksek enflasyonu Martín de Azpilcueta ve Jean Bodin, Amerika'dan gelen gümüş ile açıklarken, Jean de Malestroit devletlerin taşış başvurması ve para birimlerinin gümüş karşısında değer kaybetmesine bağlamıştır (Bodin, 1568; Malestroit, 1566; Grice-Hutchinson, 1952; Fisher, 1989). 20. yüzyılda ise, Earl Hamilton, fiyat artışlarına Amerikan gümüşünün yol açtığı tezini kantitatif verilere dayandırmış, bu artışların önemli sonuçları olduğunu öne sürmüş ve bu görüşleri Annales okuluna geliştirilmiştir (Hamilton, 1929; 1934; Braudel & Spooner, 1967; Spooner, 1972). Bu literatüre göre, erken modern dönemde para olarak gümüş sikkeler kullandığı için, Amerikan gümüşü dolaşımdaki para miktarını artırmış ve bu artış da gümüş cinsinden fiyatları yükseltmiştir. Gümüş Avrupa'ya Sevilla limanından girdiği için, fiyatlar önce İspanya'da, sonra kıtanın geri kalanında artmıştır (Frenkel & Johnson, 1976; Flynn, 1978). Bu fiyat artışları ise farklı toplumsal sınıflar arasındaki gelir dağılımını değiştirerek kapitalizme giden yolu açmıştır.

Osmanlı para sistemi de Avrupa para sistemleriyle örtüşen şekilde gelişmiştir ve gerçekleşen enflasyon için aynı ayırım ve tartışmalar geçerlidir. Erken modern dönem boyunca, Osmanlı para sistemi gümüş standardındaydı ve para birimi olan akçe aynı zamanda gümüş bir sikkedydi. Eldeki veriler, ilk akçenin Orhan Bey adına basıldığına işaret eder (Sultan, 1977). 17. yüzyıl sonunda akçe 120 akçeye denk gelecek şekilde basılmaya başlanan kuruşa devretti. Gümüş sikkelere ek olarak dönem bakım sikkeler de basıldı, fakat bu sikkeler küçük ölçekli alışverişlerde kullanıldı (Ölçer, 1975; Schaendlinger, 1973; Sahillioğlu, 1968).

Osmanlı Devleti'nde enflasyon üzerine için ilk kapsamlı çalışmayı yapan Barkan, Hamilton çizgisini takip ederek enflasyon için temel sebep olarak Amerikan gümüşünü göstermiştir (Barkan, 1970; Barkan, 1975). Barkan, 1490-1655 yılları için gümüş cinsinden bir fiyat endeksi oluşturmuş ve bu endeks ışığında, Avrupa'daki gümüş cinsinden fiyat artışlarının ticari ilişkiler yoluyla "aynı tempo ile" Osmanlı'ya sirayet ettiğini öne sürmüştür. Buna göre, Osmanlı'da 16. yüzyıl boyunca artan fiyatlar, 1606'da gümüş cinsinden en yüksek seviyeye ulaşmış, daha sonra ise düşüşe geçmiştir. Barkan, gümüşe ek olarak, akçe cinsinden fiyat endeksi de oluşturmuştur. Akçe endeksi, gümüş endeksine göre daha yüksek bir fiyat artışına işaret etmiştir. Bu farkın sebebi, özellikle 1586 yılında yapılan yüksek oranlı taşış sonucu, akçenin gümüş karşısında değer kaybetmesidir.

Barkan, fiyat artışlarının Osmanlı sosyal yapısı üzerindeki etkilerini de ele alır. Buna göre, Osmanlı'nın kendi kontrolü dışında gerçekleşen bu fiyat artışları 16. yüzyıl sonunda yaşanan iktisadi ve mali krizi tetiklemiştir. İktisadi olarak, Amerikan gümüşü, Batı Avrupa ve Osmanlı arasında gümüş cinsinden fiyat makasının açılmasına yol açmıştır. Bu makas, Batı Avrupa'da gelişen yeni ticari metotlar ve teknolojiler ile bir araya gelince, Osmanlı hammadde ihraç edip mamul mal ithal eden bir ekonomi durumuna düşmüş, yerli esnaf

üretim yapacak hammadde bulmakta zorlanmıştır. Mali olarak ise, akçe cinsinden sabitlenen vergiler, gerekli düzeltmeler yapılmayınca, fiyat artışlarının gerisinde kalmıştır. Yine bu dönemde, askeri teknolojideki gerçekleşen değişiklikler harcamaları artırdığı için 16. yüzyıl sonunda bütçe açıkları ortaya çıkmış, tımar sistemi çökmüş ve yerini olağanüstü vergilere ve iltizama bırakmıştır.

Fiyat devriminin Osmanlı Devleti üzerindeki etkileri için yapılan ikinci önemli çalışma ise Pamuk (2001)'dir. Pamuk, Barkan'a göre daha geniş kaynaklardan yararlanarak 1469-1914 yılları için yine hem gümüş ve hem de akçe cinsinden fiyat endeksleri oluşturur. Oluşturulan gümüş cinsinden fiyat endeksi, Barkan gümüş indeksine göre daha az, akçe fiyat endeksi ise, Barkan akçe indeksine göre daha yüksek bir fiyat artış oranına işaret eder. Dolayısıyla, Pamuk'a göre, Osmanlı'da enflasyonun temel sebebi, Amerikan gümüşü değil, tağışlardır.

Pamuk, fiyat artışlarının sonuçları konusunda ise Barkan'a göre daha ölçülü bir tablo çizer. Buna göre, Batı Avrupa ve Osmanlı arasında gümüş cinsinden fiyat makasını açıldıysa bile, bu makasın Osmanlı'da hammadde kıtlığına yol açması şüphelidir, çünkü 19. yüzyıla kadar Avrupa ile ticaret sınırlı kalmıştır. Ayrıca, 16. yüzyıl sonunda yaşanan krizin, Barkan'ın işaret ettiği türde iktisadi bir kırılmaya yol açtığını söylemek güçtür, çünkü, 18. yüzyılda, mamul mal üretimi tekrar artmaya ve Osmanlı ekonomisi tekrar genişlemeye başlamıştır. Osmanlı'nın yaşadığı mali sorunlar için ise, Pamuk (2001) ve Karaman ve Pamuk (2010), temel sebebin fiyat devrimi değil, askeri teknolojilerde meydana gelen değişiklikler ve artan askeri harcamalar olduğunu ve Osmanlı Devleti'nin bu değişimlere uyum sağlamakta geç kaldığını öne sürer.

3. Veri Setleri

Bu bölümde yukarıda özetlenen enflasyonun sebebi üzerine yapılan tartışmalara ışık tutmak amacıyla bir araya getirilen üç veri serisi hakkında bilgi verilecektir. Oluşturulan bu üç seri, mal ve hizmetlerin gümüş cinsinden değeri, gümüşün para birimi cinsinden değeri ve ikisinin toplamı olan mal ve hizmetlerin para birimi cinsinden değeridir.

İlk seri, mal ve hizmetlerin gümüş cinsinden değeridir. Bu endeks oluşturulurken erken modern dönem için yapılan çalışmalarda genel kabul gören Laspeyres yöntemi kullanılacaktır. Bu yöntemde önce sabit bir ürün sepeti oluşturulur. Daha sonra, fiyat endeksi oluşturmak için, sepetteki ürünlerin miktarları, her ülke ve her yıl için, fiyatlar ile çarpılır.

Çalışmamızda kullanacağımız sepet için başlangıç noktası Allen (2001) sepetidir. Bu sepet, erken modern dönemde yetişkin bir erkeğin bir yıllık ihtiyaçları göz önüne alarak

oluşturulmuştur. Sepette, günlük 1941 kalori enerji verecek miktarda gıdaya ek olarak ısınma ve kıyafet gibi temel ihtiyaçları karşılayacak ürünler bulunmaktadır¹.

Endeksler oluşturulurken karşılaşılan bazı temel zorluklar vardır. Zorluklardan bir tanesi, iklimsel ve kültürel farklardan dolayı, farklı ülkelerde farklı ürünler tüketilmesidir. Bu sorun dolayısıyla, Allen (2001) sepetinde, aynı enerjiyi verecek ve benzer ihtiyaçları karşılayacak şekilde, ülkelere özgü düzeltmelere gidilmiştir. Örneğin, güney Avrupa ülkeleri için sepete tereyağı yerine zeytinyağı dahil edilmiştir.

İkinci bir zorluk, tarihsel fiyat serilerindeki boşluklardır. Bu boşluklar, çoğunlukla, veri olan yıllar arasında fiyatların sabit bir hızda değiştiği varsayılarak doldurulmuştur. Bu yöntem yıllık değişikliklerin takip edilmesini zorlaştırır, fakat bu çalışmanın incelemeyi amaçladığı uzun dönemli fiyat hareketlerini etkilemez. Başvurulan ikinci bir yöntem ise, fiyat serisinde boşluk olan ürünler için, aynı ürünün coğrafi olarak yakın bölgelerdeki fiyatlarının kullanılmasıdır.

Oluşturulacak ikinci seri, gümüşün para birimleri karşısındaki değeri serisidir. Erken modern dönem boyunca bütün Avrupa devletleri için gümüş para birimi karşısında değer kazanmıştır. Bunun temel sebebi, devletlerin mali sıkıntı karşısında taşış başvuruları, yani bastıkları sikkelerdeki gümüş içeriğini düşürmeleridir. Sikke taşışlarına ek olarak, devletler yine mali sıkıntı dönemlerinde dolaşıma karşılıksız fiyat paralar sürmüşler, bu fiyat paralar gümüş karşısında değer kaybetmişler ve dolayısıyla gümüş para birimi karşısında değer kazanmıştır.

Oluşturacağımız üçüncü seri olan mal ve hizmetlerin para birimi cinsinden değeri, yani enflasyon serileri ise, yukarıda özetlenen iki serinin etkisinin toplamı olarak hesaplanacaktır. Örneğin mal ve hizmet fiyatlarının gümüş cinsinden 3 kat, gümüşün değerinin akçe cinsinden 2 kat arttığı bir senaryoda, mal ve hizmetlerin akçe cinsinden değeri 6 kat artmış olur ve bu da %500 enflasyona denk gelir.

Yukarıda özetlediğimiz üç seri 1500-1800 yılları ve İngiltere, Avusturya, Felemenk Cumhuriyeti, Fransa, Portekiz, İspanya, Polonya, Rusya, Almanya, İtalya ve Osmanlı İmparatorluğu için bir araya getirilmiştir. Gümüşün para karşısındaki değeri serileri için temel kaynak Karaman vd. (2020)'dir. Gümüş cinsinden fiyatlar için ise temel kaynak olan Allen (2001)'e ek olarak, Rusya için Mironov (2010), Felemenk Cumhuriyeti için Van Zanden ve van Leeuwen (2012), Avusturya için Cvreck (2013) ve Muhlpeck vd. (1979), İngiltere için Clark (2004), İspanya için Álvarez-Nogal ve Prados De La Escosura (2013) ve Losa ve Zarauz (2021), Fransa için Ridolfi (2017), Almanya için Pfister (2017) ve Portekiz için Palma ve Reis (2019) serilerinden yararlanılmıştır. Endekslerin karşılaştırılabilir olması için her devlet için başkent veya ekonomik olarak önde gelen şehirlerin fiyatları

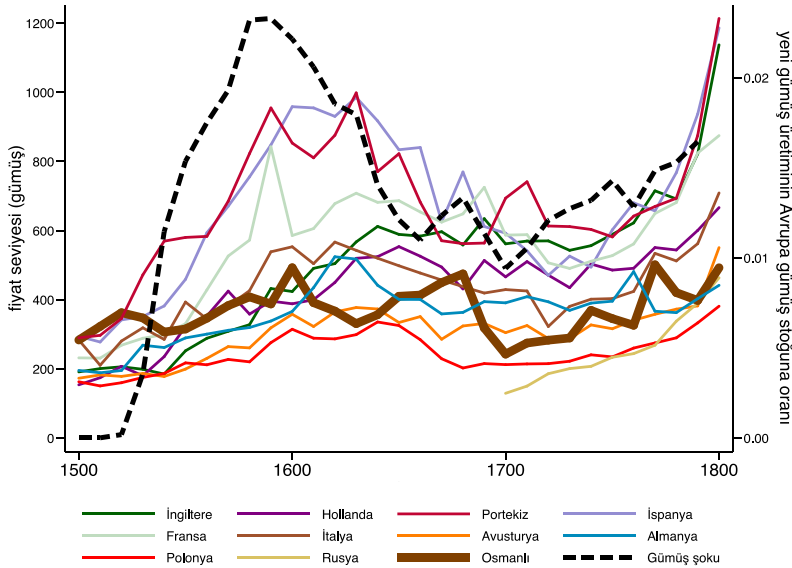
¹ Daha ayrıntılı olarak, sepette, 182 kg. ekmek, 52 litre bakliyat, 26 kg. et, 5.2 kg. tereyağı, 5.2 kg. peynir, 52 yumurta, 182 litre bira, 2.6 kg. sabun, 5 m. kumaş, 2.6 kg. mum, 2.6 kg. lamba yağı, ve 5 milyon BTU'luk kömür veya odun bulunmaktadır.

kullanılmıştır. Osmanlı fiyat endeksleri ise Pamuk (2001) ve Özmucur ve Pamuk (2002)'ye dayanır. Bu çalışmalar, Allen tüketim sepetinde, Osmanlı tüketim tercihleri ve fiyat verisi kısıtlarını göz önüne alarak ayarlamalara gitmiştir.

4. Mal ve Hizmetlerin Gümüş Cinsinden Değeri

Bu bölümün amacı Osmanlı Devleti ve diğer Avrupa devletleri için gümüş cinsinden fiyat hareketlerini incelemek ve bu hareketleri açıklamaktır. İlk olarak, Amerikan gümüşünün etkisi değerlendirilecektir. Bu amaçla 11 devlet için mal ve hizmetlerin gümüş cinsinden değeri, Amerikan gümüş üretimi ve para stoku serileri karşılaştırılacaktır. İkinci olarak, iktisadi gelişmişlik farklarının fiyatlara etkisi ele alınacaktır. Ulaşılan bulgular, Amerikan gümüşünün etkisini iki dalga halinde gösterdiğini ve Batı Avrupa devletleri için fiyat seviyesi ve para stoklarını artırdığını gösterir. Öte yandan, Amerikan gümüşünün Osmanlı Devleti ve diğer Doğu Avrupa devletleri üzerindeki etkisi sınırlıdır.

Şekil: 1
Gümüş Cinsinden Fiyat Seviyeleri ve Amerika'da Gümüş Üretimi



Şekil 1 Osmanlı ve diğer on Avrupa devleti için gümüş cinsinden fiyat serilerini gösterir. Grafiğin x eksenı 1500-1800 arası yıllar, soldaki y eksenı ise ortak tüketim sepetinin gram gümüş cinsinden fiyatını gösterir. Osmanlı fiyat endeksi koyu kahverengi renginde ve diğer ülke endekslerin göre daha kalın bir şekilde çizdirilmiştir. Son olarak, grafikteki kesik

siyah çizgi, aşağıda daha ayrıntılı şekilde tartışılacak olan gümüş şoku değişkenini gösterir ve değeri sağdaki y ekseninden okunabilir².

Şekil 1, Osmanlı Devleti için, ortak tüketim paketinin toplam maliyetinin 1500 yılında yaklaşık 280 gram gümüşten 1800 yılında yaklaşık 400 grama çıktığını, yani %40 arttığını gösterir. Bu rakamlar, üç yüz yıl için, düşük oranlı bir fiyat artışına işaret eder. Batı Avrupa devletlerinde ise daha yüksek oranlarda artışlar görülür. Gram gümüş cinsinden fiyat seviyesi İngiltere'de 190'dan 820'ye, Fransa'da 230'dan 820'ye, Hollanda'da 153'ten 600'e, İspanya'da 290'dan 930'a ve Portekiz'de 290'dan 870'e çıkmıştır. Batı Avrupa'daki bu hızlı artış sonucu, 1500 yılı itibarıyla Avrupa'nın en yüksek fiyat seviyelerinden birisine sahip olan Osmanlı Devleti'nde fiyatlar zaman içinde geriye düşmüştür. Kıtanın doğusuna gidildikçe Osmanlı'ya benzer şekilde daha düşük artış oranları görülür. İtalya fiyat seviyesi 280 gramdan 560 grama, Avusturya 170'ten 380'e, Almanya 200'den 400'e, Polonya ise 160'tan 330'a çıkmıştır.

Fiyat seviyelerinde gözlemlenen bu farklı artış oranları, Amerikan gümüşünün etkisi ile tutarlıdır. Gümüş Avrupa'ya İspanya'nın Sevilla limanından giriyor ve öncelikle Batı Avrupa ülkelerini etkiliyor, kıtanın geri kalanına ise ticaret yoluyla yayılıyordu. Dolayısıyla, gümüşün etkisinin Batı Avrupa'da daha güçlü olması, Doğu'ya daha az miktarda ve gecikmeyle yansımaları beklenir.

Şekil 1'in gösterdiği asıl ilginç nokta, Batı ve Doğu Avrupa arasında fiyat farkının açılması değil, açılan farkın büyüklüğüdür. Batı'daki fiyat seviyelerinin dönem dönem Doğu'nun dört katına kadar ulaştığı görülmektedir. Ayrıca, zaman içinde makasın kapanma eğiliminde olduğuna dair bir işaret de yoktur. Makasın bu büyüklüklere ulaşmasında, erken modern dönemde, ticaretin sınırlı kalması rol oynamış olabilir. Bu dönemde, uluslararası ticaretin dünya üretiminin %10'unun altında kaldığı düşünülmektedir (Estevadeordal vd., 2003). Sebep ne olursa olsun, Amerikan gümüşün Batı Avrupa fiyatları ve daha genel olarak ekonomileri üzerindeki etkisinin Osmanlı ve diğer Doğu devletlerine göre çok daha güçlü olduğu açıktır.

Şekil 1'nin işaret ettiği bir diğer nokta, gümüş cinsinden fiyat seviyelerinin doğrusal olarak artmadığıdır. Genel hatlarıyla, fiyat seviyeleri 1500 ve 1700 yılları civarında düşük, 1600 ve 1800 yılları civarında ise yüksek değerler olarak dalgalanmaktadır. Fiyat seviyesinin dip ve tepe yaptığı bu dönemler, bütün devletler için benzerlik gösterir. Fakat dalgalanmanın boyutları devletten devlete farklıdır. Osmanlı ve Doğu Avrupa fiyat serileri dar bir aralıkta dalgalanırken, Batı Avrupa ve özellikle İspanya ve Portekiz serilerinde büyük dalgalanmalar görülür.

Gözlemlenen bu dalgalanmalar, yine Amerikan gümüşünün etkisi çerçevesinde açıklanabilir. 1500 yılı itibarıyla, Avrupa gümüş para stoku 3600 ton civarında tahmin

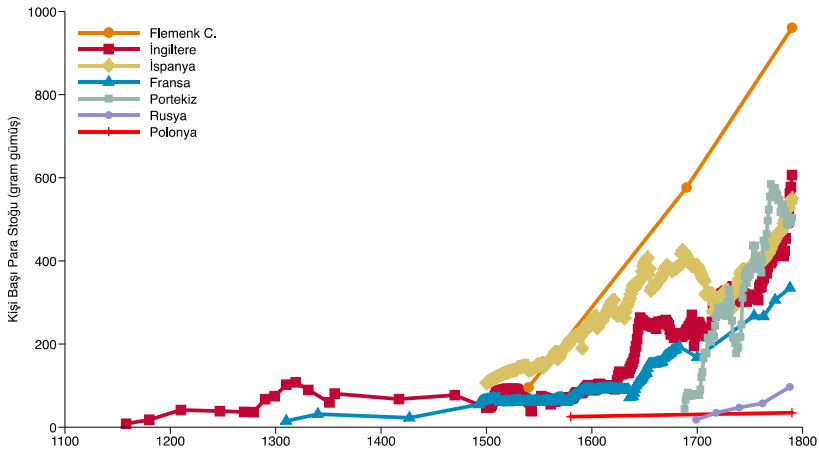
² Fiyat serileri bir önceki bölümde listelenen kaynaklara, gümüş şoku serileri ise Palma (2019) makalesine dayanarak oluşturulmuştur.

edilmektedir. Takip eden üç yüzyıl boyunca ise, Amerika'da yaklaşık 100.000 ton gümüş üretilmiş, bu gümüşün büyük kısmı Avrupa'ya ulaşmıştır (Barrett, 1990). Fakat Amerika'daki gümüş üretimi doğrusal bir seyir izlememiş, sırasıyla 1600 ve 1800 yılları civarında en yüksek seviyelerine ulaşan Potosi ve Meksika kaynaklı iki dalga halinde gerçekleşmiştir.

Şekil 1'deki gümüş şoku serileri (kesik siyah çizgi) üretimdeki dalgalanmaları gösterir. Gümüş şoku değişkeni, her yıl için, Amerika'daki gümüş üretimi Avrupa gümüş stokuna bölünerek hesaplanmıştır. Şeklin gösterdiği, gümüş üretiminin, 16. ve 18. yüzyıllar boyunca arttığı, 17. yüzyılda düştüğü ve dolayısıyla fiyat hareketleriyle örtüştüğüdür.

Amerikan gümüşünün Avrupa para sistemleri üzerindeki asimetric etkisini para stoku serilerinde de gözlemlemek mümkündür. Şekil 2, İngiltere, İspanya, Fransa, Portekiz, Felemenk Cumhuriyeti, Rusya ve Polonya için gram gümüş cinsinden kişi başı para stoku tahminlerini gösterir (Bonfatti vd., 2020). Şekle göre, Amerikan gümüşü Batı Avrupa'da para stoklarında yüksek oranlı artışlara yol açmıştır. 1500 yılı öncesi bütün devletler için 100 gramın altında olan kişi başı para stokları, 1800 yılı itibarıyla 300-1000 gram seviyelerine ulaşmıştır. Elimizde verileri olan Rusya ve Polonya gibi Doğu Avrupa ülkelerinde ise, 1800 yılında bile, kişi başı para stokları 100 gram gümüşün altındadır. Rusya para sistemi üzerine yapılan çalışmalar, Amerikan gümüşünün sınırlı miktarda ulaştığını, 18. yüzyıla kadar ticaret için takas ve kürk kullanımının yaygın olduğunu ve para stokunun ancak 18. yüzyılda yerel madenlerin açılmasıyla arttığını doğrular (Bonney, 1995; LeDonne, 1991; Danila, 2006; Kahan & Hellie, 1985).

Şekil: 2
Kişi Başı Para Stokları



Osmanlı Devleti için erken modern dönem para stoku serileri oluşturulmamıştır. Fakat para sistemin gelişimi hakkında bildiklerimiz Amerikan gümüşünün etkisinin sınırlı olduğuna ve dolaşımdaki para miktarının düşük kaldığına işaret eder (Sahillioğlu, 1958; Schaendlinger, 1973). Osmanlı para arzının 15. ve 16. yüzyıllarda Sırbistan ve Bosna gümüş madenlerinin üretimine dayanarak arttığı düşünülmektedir. 17. yüzyılda ise bu artış eğilimi tersine dönmüş, darphane sayısı 40'lardan bir kaç düşmüş, para üretimi azalmış ve yabancı sikke kullanımı yaygınlaşmıştır (Pamuk, 2000). Para sistemindeki bu çöküşte Balkan madenlerinin üretiminin azalması, Amerikan gümüşünden yeterince yararlanılmaması, doğudaki devletlerle ticari açıklar ve bu yüzyılda yaşanan siyasi krizin rol oynadığı düşünülmektedir. 18. yüzyılda para üretimi tekrar canlanmış, bu canlanmada Anadolu'da Gümüşhane, Keban ve Ergani ve Balkanlar'da Sidrekapsi ve Kratova madenlerindeki üretimi ve Anadolu'daki siyasi istikrar rol oynamıştır. Fakat bu artışa karşın, karşılaştırmalı olarak, Batı Avrupa ile para stoku makasının açılmaya devam etmiş olması muhtemeldir.

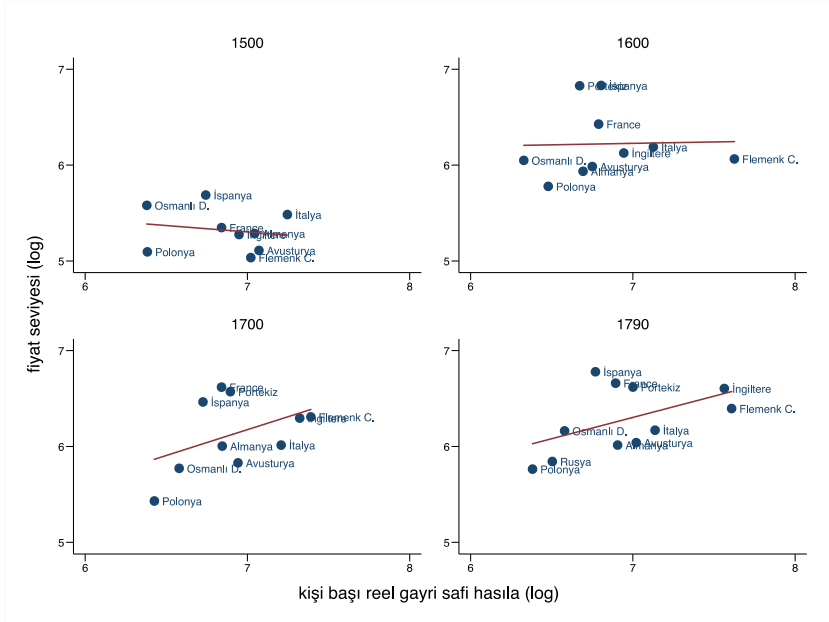
Erken modern dönem fiyat hareketleri için Amerikan gümüşüne alternatif olarak önerilen bir diğer açıklama iktisadi gelişmişlik farkları ve yol açtıkları Balassa-Samuelson etkisidir (Balassa, 1964; Samuelson, 1964). Balassa-Samuelson etkisine göre, bir ülkenin fiyat seviyesinin diğer ülkelere oranı, uluslararası ticareti yapılan ürünlerde verimlilik arttıkça artar, ticareti yapılmayan ürünlerde verimlilik arttıkça azalır. İktisadi gelişme sürecinde, verimlilik artışları, daha çok ticareti yapılan ürünlerde gerçekleşir. Dolayısıyla, iktisadi gelişmenin, daha hızlı fiyat artışlarına yol açması beklenir.

Balassa-Samuelson etkisinin erken modern dönem için bir değerlendirmesini Broadberry ve Gupta (2006) yapmıştır. Bu çalışmaya göre, bu dönemde, tahıllar ve diğer gıda ürünleri için ticaret imkânı sınırlı iken, tekstil ve lüks ürün ticareti giderek arttı. Dolayısıyla, Felemenk Cumhuriyeti ve İngiltere'de kaydedilen verimlilik artışları, bu devletlerin fiyat seviyesini Doğu Avrupa ve Uzak Doğu'dan daha hızlı artırdı.

Bu etkiyi ampirik olarak değerlendirmek için, Şekil 3, 1500, 1600, 1700 ve 1790 yılları için, fiyat seviyesi (y eksen) ve kişi başı reel gelir (x eksen) arasındaki ilişkiyi göstermektedir (Çürük vd., 2020). Şekil, gelir-fiyat seviyesi arasında zaman içinde güçlenen pozitif bir ilişkiye işaret eder. İlişkinin zaman içinde güçlenmesi, ticaret hacminin artması sebebiyle olabilir. Şekille ilgili bir soru işareti, hiçbir kontrol değişkeni kullanılmadığı için, bulunan pozitif ilişkinin diğer değişkenlerin etkileri kontrol edilince devam edip etmeyeceğidir. Fakat Çürük vd. (2020), diğer değişkenlerin etkileri göz önüne alındıktan sonra da pozitif ilişkinin devam ettiğini gösterir.

Şekil 3 iktisadi gelişmişlik farklarının fiyat hareketlerinde rol oynadığına işaret eder, fakat bu bulguyu temkinli yorumlamak gerekir. Sanayi devrimi öncesi, Osmanlı ve diğer Avrupa devletleri arasında gelişmişlik farkları sınırlıdır. Dolayısıyla, Balassa-Samuelson etkisi, tek başına, fiyat seviyelerinde gözlemlenen büyük farkları açıklamaz. Ayrıca, bu etki, ülkeler arasında açılan makas anlamaya yardım eder, fakat kıtanın bütününe etkileyen fiyat dalgalanmaları için bir açıklama getirmez.

Şekil: 3
Kişi Başı Reel Gelir ve Gümüş Cinsinden Fiyat Seviyesi İlişkisi



Bu bulgular ışığında, erken modern Osmanlı Devleti'nde gümüş cinsinden fiyat artış oranının sınırlı kaldığını söylenebilir. Batı Avrupa'da ise fiyatlar daha hızlı artmış ve Doğu Avrupa ile fiyat makası açılmıştır. Batı'daki bu artışta, asıl olarak Amerikan gümüşünün para stoku ve dolayısıyla fiyatlar üzerindeki asimetrik etkisi rol oynamış görülmektedir. İktisadi gelişmişlik farklarının rolü muhtemelen sınırlıdır.

5. Gümüşün Para Birimleri Karşısındaki Değeri

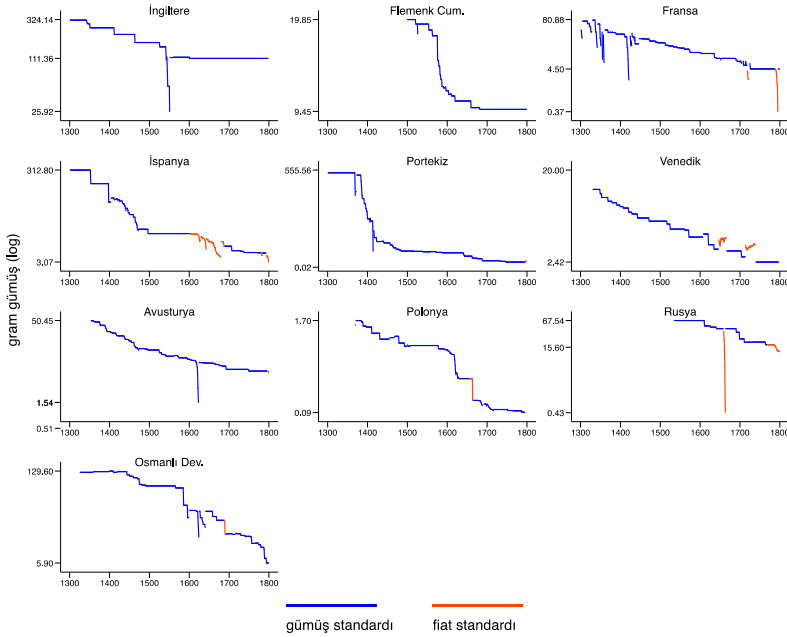
Bu bölümde enflasyona katkı yapan ikinci etken olan gümüşün farklı ülke para birimleri karşısında değer kazanması ele alınacaktır. Bu amaçla, önce her devlet için taşışlar sonucu para biriminin gümüş karşısında değerinde gerçekleşen düşüşler ve devletlerin taşış başvurma nedenleri tartışılacaktır. Ulaşılan bulgular, gümüşün para birimi karşısında bazı ülkelerde 2, bazı ülkelerde 500 katın üzerinde değer kazandığına, bunun sebebinin ise devletlerin taşış değişik derecelerde başvurması olduğuna işaret eder. Osmanlı özelinde ise, 17. yüzyıl başında ve 18. yüzyıl sonundaki siyasi ve mali kriz, taşışlara ve akçe cinsinden yüksek oranlı fiyat artışlarına yol açmış görülmektedir.

Erken modern dönem boyunca gümüşün para birimleri karşısında değer kazanmasının temel sebebi taşışlardır. İkinci bölümde tartışıldığı üzere, bu dönem boyunca para sistemleri gümüş standardındaydı ve para birimlerinin değeri belirli bir ağırlıkta

gümüşe eşitti. Fakat devletler, zaman içinde para biriminin gümüş cinsinden değerini değiştirebiliyordu. Bu değişiklik genellikle tağşiş, yani gümüş değerini düşürme yönünde oluyordu.

Şekil 4, akçe ve diğer para birimlerinin gümüş cinsinden değer serilerini özetler. Şekilde, x eksen 1300-1800 arasında yılları, y eksen ise para biriminin gram gümüş cinsinden değerini gösterir. Çizginin mavi olduğu yıllar, para sisteminin gümüş sikkeler üzerinden işlediği ve dolayısıyla tağşişin sikkelerin gümüş içeriğinin düşürülmesi yoluyla yapıldığı yıllardır. Kırmızı yıllar ise dolaşıma fiyat para sürülmesi yoluyla yapılan tağşişleri gösterir.

Şekil: 4
Para Birimlerinin Gümüş Cinsinden Değeri



Şekil 4’teki akçenin gümüş cinsinden değeri serileri Pamuk (2000) tarafından oluşturulmuştur. Bu seriler darphane kayıtları, günümüze kadar ulaşan sikkelerin gümüş içeriği ve diğer ülkelerin gümüş sikkeleri ile değişim kurları kullanılarak oluşturulmuştur. Diğer Avrupa ülkelerinin gümüş cinsinden değer serileri benzer yöntemler kullanan Karaman vd. (2020)’den alınmıştır.

Şekil, 1500 yılında 78,84 gram gümüş olan akçenin değerinin 1800 yılı itibarıyla 5,9 grama düştüğünü gösterir³. Bu değer düşüşü sadece Osmanlı'ya özgü değildir. Bütün devletlerin para birimleri gümüş karşısında farklı miktarlarda değer yitirmiştir.

Yine şekilden çıkan bir sonuç, tağşişlerin çoğunlukla devletlerin gümüş sikkelerin gümüş içeriklerini düşürmesi yoluyla olduğudur. İstisnai olarak, devletlerin fiyat para arzı yoluyla tağşiş yaptığı yıllar da vardır. Örneğin, İspanya, Polonya ve Rusya, 17. yüzyılda karşılıksız bakır para arzı yoluyla tağşişe başvurmuştur. 1688-1691 yıllarındaki Osmanlı bakır mangır arzı da aynı çerçevede değerlendirilebilir (Sahillioğlu, 1965; 1982). Ayrıca, Venedik 17 ve 18. yüzyılda giro para, Rusya, Fransa ve İspanya ise 18. yüzyıl sonlarında kağıt para arzıyla tağşişe başvurmuştur. Fakat bu tür fiyat para tağşişleri daha nadirdir.

Şekil 4'te göze çarpan diğer ilginç bir nokta da bazı yıllarda para birimi değerlerinin daha yüksek seviyelere sıçramasıdır. Bu sıçramalar devletlerin tağşiş sonucu değerini yitirmiş gümüş sikke ve fiyat paraları dolaşımdan çekmeleri ve yerlerine dolaşıma daha yüksek değerden yeni paralar sürmeleri yoluyla oluyordu. Bu işlem sırasında değeri düşmüş olan parayı elinde tutan halkın alım gücü kaybı telafi edilmiyordu. Bu açıdan, yapılan işlem, modern dönemde paradan sıfır atılması işlemiyle benzerlik gösterir. Bu sıçramaların etkisi göz önüne alınırsa aslında para birimlerinin gümüş karşısındaki değer kaybı Şekil 5'te görünenenden daha yüksektir.

Şekil 5'te Şekil 4'teki seriler tağşişe uğrayan paraların dolaşımdan çekilmesi sonucu oluşan yukarı sıçramaların etkisinden arındırılmıştır. Ayrıca, tağşiş oranlarının karşılaştırılmasına imkân sağlamak için farklı devletlerin para serileri tek bir şekilde bir araya getirilmiştir. Şekilde x eksenini, 1500-1800 arası yılları, y eksenini ise 1500 yılı değeri 1 olacak şekilde oluşturulan para biriminin gümüş cinsinden değeri endeksini gösterir.

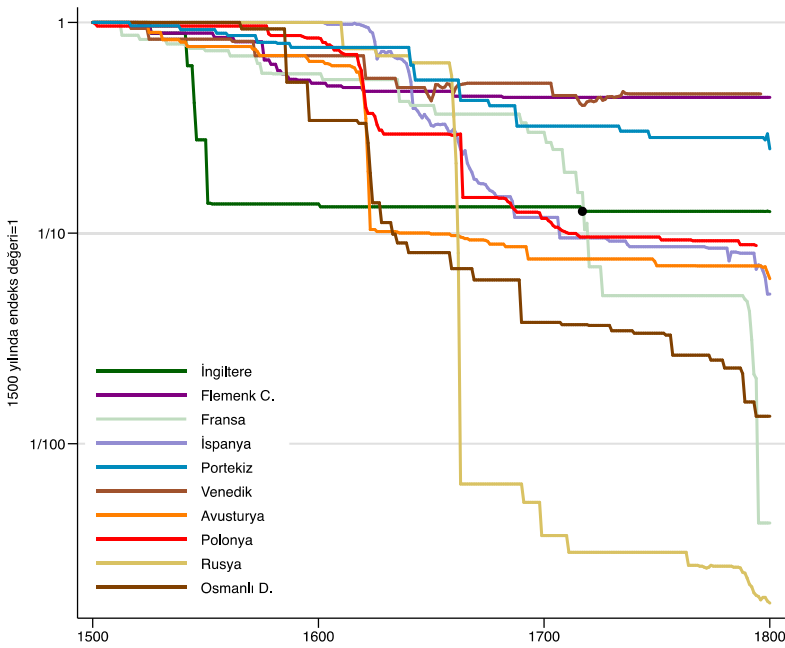
Şekil 5, tağşiş oranları açısından devletler arasında büyük farklara işaret eder. Bir uçta para biriminin gümüş cinsinden değeri Osmanlı'da yaklaşık 75'te bire, Fransa'da 240'ta bire, Rusya'da ise 570'te bire düşmüştür. Diğer uçta Venedik ve Felemenk Cumhuriyeti'nde para biriminin değeri yaklaşık yarısına, Portekiz'de ise dörtte birine düşmüştür. Bu oranları yorumlarken tağşişlerin olası etkileri konusunda temkinli olmak gerekir, çünkü halkın belli kesimleri yabancı para ve saf gümüş kullanımına geçerek tağşişlerden korunabiliyordu. Fakat her durumda, devletlerin tağşişe başvurma sıklığında büyük farklar olduğu açıktır.

Osmanlı serilerini tağşişlerin sebeplerini anlamak için değerlendirdiğimiz zaman siyasi ve mali açıklamalar öne çıkar (Karaman & Pamuk, 2016). Osmanlı tağşişleri 16. yüzyıl sonu, 17. yüzyılın ilk yarısı ve 18. yüzyıl sonunda yoğunlaştı. Bu dönemlerin ortak özelliği siyasi ve mali buhran dönemleri olmalarıydı. 16. yüzyıl sonunda doğuda Safeviler ile batıda ise Habsburglar ile girilen uzun ve sonuçsuz savaşlar merkezi hazine üzerinde büyük bir yük oluşturdu. Bu yükün bir sebebi de askeri teknolojilerde meydana gelen

³ Akçe, 1687'de yerini 120 akçeye eşit olan kuruşa bıraktığı için seri bu tarih sonrası kuruşun gümüş değerinin 1/120'sini takip eder.

değişiklikler sonucu ateşli silahlarla donatılmış merkez ordusunun öneminin artması ve ihtiyaçları kırsal kaynaklarla karşılanabilen sipahilerin öneminin azalmasıydı. 1550'lerde 13 bin civarında tahmin edilen yeniçeri sayısı 1600'lerde 38 bine yükseldi ve bu askerlere ödenmesi gereken nakit maaşlar mali baskıyı artırdı (İnalçık, 1980). 17. yüzyılın ilk yarısında ise Celali isyanları devletin Anadolu'daki hakimiyetini zayıflattı ve mali sorunları derinleştirdi (İnalçık, 1980; Faroqhi, 1994). 18. yüzyılın ilk yarısındaki barış döneminde istikrara kavuşan akçenin değeri 1768-1774 arası Rusya ve 1787-1792 arası Rusya ve Habsburglar ile gerçekleşen savaşların yarattığı mali baskıyla tekrar bozuldu (Cezar, 1986).

Şekil: 5
Para Birimlerinin Gümüş Cinsinden Değer Endeksi



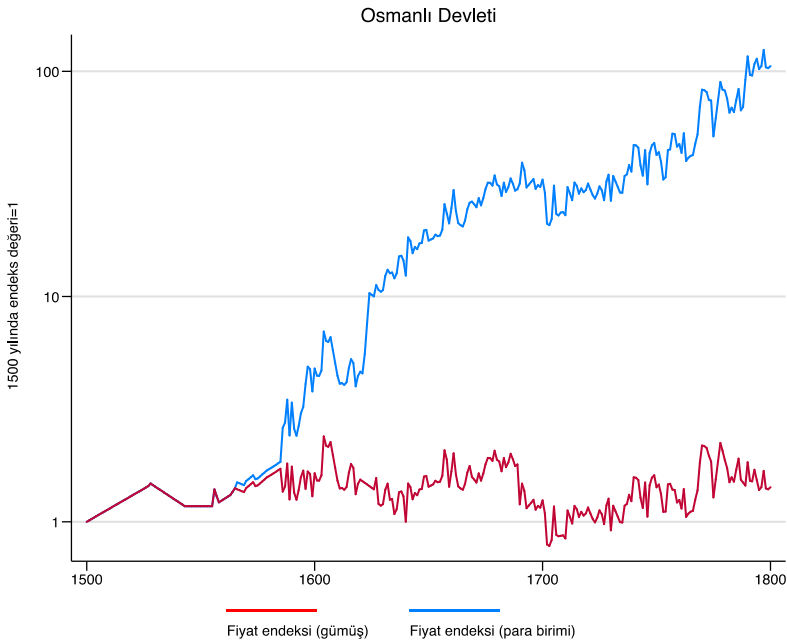
Tağışların sebepleri üzerine diğer Avrupa devletleri için yapılan çalışmalar da Osmanlı örneğine benzer şekilde mali ve siyasi açıklamaları destekler (Karaman vd., 2020). Eldeki verilere göre devletler bu dönemde taşışe gelir elde etmek amacıyla başvuruyorlardı. Dolayısıyla mali baskılar ve özellikle savaş taşışeleri tetikliyordu. Öte yandan, parlamentosu olan ülkeler taşışe daha az başvuruyordu, çünkü parlamentolar yıkıcı iktisadi etkileri olan taşışe karşı çıkıyordu. Vergi gelirlerinin etkisi ise daha karmaşıktı. Bir yandan, vergi geliri yüksek devletler taşış gelirine ihtiyaç duymuyor ve taşışe az başvuruyordu. Diğer yandan, vergi geliri düşük devletler para birimlerini dolaşımda tutmakta zorlandıkları için taşışten

gelir elde edemiyor ve yine taşışe az başvuruyordu. Dolayısıyla taşışe en çok vergi gelirleri orta seviyede olan ve dolayısıyla para birimlerini dolaşımda tutacak kadar güçlü, ama taşış gelirine ihtiyaç duyacak kadar güçsüz devletler başvuruyordu.

6. Para Birimi Cinsinden Toplam Enflasyon

Bu bölümde önceki iki bölümde ele alınan mal ve hizmetlerin gümüş cinsinden değer serileri ve gümüşün para birimi cinsinden değer serileri bir araya getirilerek toplam enflasyon oranları hesaplanacak ve enflasyonda her iki etkenin göreceli önemi değerlendirilecektir. Ulaşılan bulgular gerek Osmanlı Devleti gerekse çoğu Avrupa devleti için, enflasyona daha fazla katkı yapan bileşenin gümüşün para birimi karşısında değer kazanması yani taşışler olduğuna işaret eder.

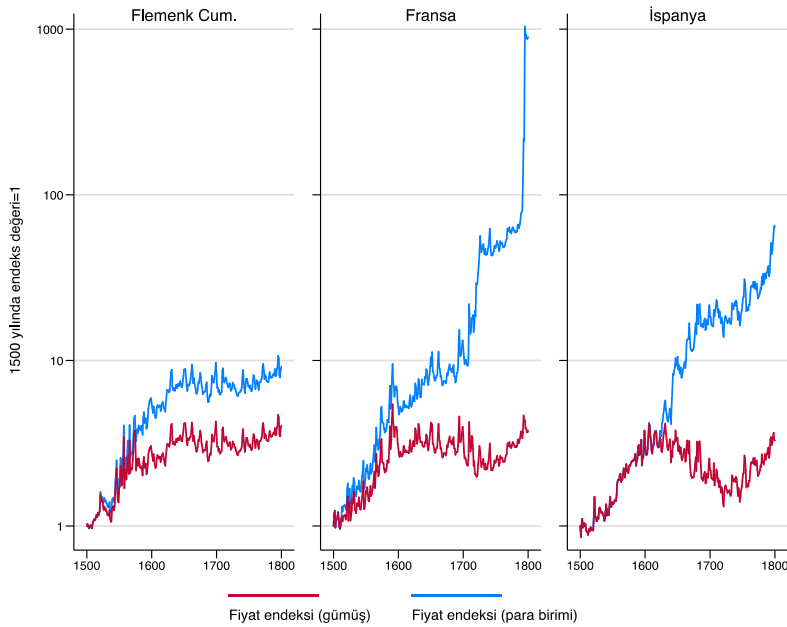
Şekil: 6
Osmanlı Devleti İçin Para Birimi ve Gümüş Cinsinden Fiyat Endeksleri



Osmanlı Devleti fiyat serileri Şekil 6'da özetlenmiştir. Şekilde Osmanlı Devleti'nin kendi para birimi, yani akçe cinsinden fiyat seviyesi endeksi mavi ile gösterilmiştir. Bu endeksi hesaplamak için, daha önce Şekil 2'de gösterilen gümüş cinsinden fiyat endeksi (kırmızı), Şekil 6'da gösterilen para biriminin gümüş cinsinden değer kaybı endeksi ile düzeltilmiştir.

Şekil 6 Osmanlı Devleti için akçe cinsinden fiyat artışının gümüş cinsinden fiyat artışından çok daha yüksek olduğunu gösterir. 1500-1800 arasında, gümüş cinsinden fiyatlar yaklaşık 280 gramdan 400 grama çıkarak, 1,4 kat artmıştır. Aynı dönemde, Şekil 6'da gösterildiği üzere, akçe gümüş karşısında yaklaşık 75 kat değer kaybetmiştir. Dolayısıyla, akçe cinsinden fiyatlar yaklaşık $1.4 \times 75 = 105$ kat artmıştır ve bu artışın büyük kısmı tağşişlerden kaynaklanmıştır.

Şekil: 7
Avrupa Devletleri İçin Para Birimleri ve Gümüş Cinsinden Fiyat Endeksleri



Şekil 7 ise aynı endeksleri önde gelen üç Avrupa devleti için göstermektedir. Bütün Avrupa devletleri tağşişe başvurmuştur ve dolayısıyla para birimleri cinsinden fiyat artışı (mavi) gümüş cinsinden fiyat artışından (kırmızı) daha yüksektir. Öte yandan, daha önce Şekil 5'te görüldüğü üzere, farklı devletler, tağşişe, farklı ölçülerde başvurmuştur ve dolayısıyla, para birimi ve gümüş cinsinden fiyat artışları arasındaki makas, farklı ölçülerde açılmıştır. İspanya ve Fransa gibi devletler, tağşişe çok başvurdukları için, para birimi cinsinden fiyat artışları sırasıyla 100 ve 1000 kata ulaşır ve gümüş cinsinden enflasyondan çok daha yüksektir. Felemenk Cumhuriyeti gibi devletler ise tağşişe az başvurmuştur ve dolayısıyla para birimi ve gümüş cinsinden enflasyon birbirine daha yakındır. Fakat Avrupa geneli için ortaya çıkan resim, enflasyonda tağşişlerin daha önemli bir rol oynadığıdır.

Sonuç olarak, elimizdeki bulgular Osmanlı Devleti için akçe cinsinden fiyat seviyesinin gümüş cinsinden fiyat seviyesinden çok daha hızlı arttığını gösterir. Bu hızlı artışın sebebi, Osmanlı Devleti'nin mali ve siyasi kriz dönemlerinde gelir elde etmek için tağşişe başvurması ve bu tağşişler sonucunda akçenin gümüş karşısında değer kaybetmesidir. Benzer şekilde, parlamentolar gibi tağşişleri engelleyecek kurumları olmayan ve mali sorunlarını çözmekte zorlanan devletler, tağşişe daha çok başvurmuş ve kendi para birimleri cinsinden yüksek enflasyonla karşı karşıya kalmıştır.

7. Sonuç

Bu çalışma erken modern dönemde Osmanlı ve diğer Avrupa devletlerindeki fiyat hareketlerini ele almaktadır. Elimizdeki veriler Avrupa genelinde gümüş cinsinden fiyat artışlarında belirleyici rolü Amerika'dan gelen gümüşün oynadığına işaret eder. Fakat bu artış büyük ölçüde Batı Avrupa ile sınırlı kalmış, Doğu'ya yansımaları sınırlı olmuştur. Devletlerin kendi para birimleri cinsinden fiyat hareketlerinde ise her devletin kendi mali ve siyasi koşulları ve bu koşullar sonucu gelir elde etmek için tağşişe başvurma sıklıkları belirleyici olmuştur.

Osmanlı Devleti ise diğer Doğu Avrupa devletleri gibi Amerikan gümüşünden sınırlı ölçüde yararlanmış ve bunun sonucunda gümüş cinsinden fiyat artış oranı düşük kalmıştır. Amerika'nın keşfinin ticaret ve teknoloji gibi alanlarda Batı Avrupa'da tetiklediği süreçler dolaylı olarak Osmanlı'yı etkilemiş olabilir. Fakat Amerikan gümüşünün Osmanlı'da gümüş cinsinden yüksek oranlı enflasyon yarattığı ve iktisadi ve sosyal kırılmalara yol açtığı tezi için güçlü bir delil yoktur.

Öte yandan, Osmanlı'da akçe cinsinden fiyat artışları Avrupa ortalamasının üzerindedir. Bu artışların sebebi, devletin 17 ve 18. yüzyıllarda vergi toplamada ve savaş masraflarını karşılamada karşılaştığı zorluklar, gelir elde etmek için tağşişlere başvurması ve tağşişler sonucu akçenin gümüş karşısında değer kaybetmesidir. Dolayısıyla, fiyat artışları, iktisadi ve siyasi krizin sebebi olmaktan çok, sonucu olarak değerlendirilebilir.

Daha genel olarak, çalışmamız, Osmanlı tarihini Avrupa tarihi çerçevesinde incelemenin önemine işaret eder. Ele aldığımız dönem boyunca, Osmanlı para sisteminin işleyişi ve geçirdiği evrim, diğer Avrupa devletleri ile örtüşen bir seyir izlemiştir. Benzer şekilde, fiyat hareketlerinin sebepleri, devletlerin tağşişe başvurma nedenleri, tağşişin fiyatlara etkisi gibi sorular, Osmanlı ve Avrupa devletleri için aynı kavramsal çerçevede anlaşılabilir. Dolayısıyla Osmanlı Devleti'ne özgü gibi görünen bazı sorular aslında Avrupa'nın bütünü için geçerlidir ve veri serilerini karşılaştırmalı bir biçimde incelemek bu soruları cevaplamaya katkı sağlar.

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Mavi Yakalı Çalışanların İşten Ayrılma Eğilimleri ve Psikolojik Sermaye İlişkisinde Çalışan İyi Olma Halinin Aracı Rolü: Mobilya Sektörü Üzerine Bir Alan Araştırması

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The Mediating Role of Employee Well-Being on Linkage Between Turnover Intention of Blue-Collar Employees and Psychological Capital: A Field Study in The Furniture Industry

Abstract

This study aims to determine the mediating role of employee well-being in the relationship between psychological capital and turnover intention. The hypotheses were tested by path analysis on the data from 163 blue collars. According to the study, there is a strong positive relationship between psychological capital and well-being. Psychological capital positively predicts subjective and psychological well-being but cannot directly predict workplace well-being. The turnover intention doesn't have a significant relationship with psychological capital, well-being, and its sub-dimensions, and the dimensions of well-being don't have a mediating effect. Turnover intention tends to decrease in married and highly educated employees.

Keywords : Turnover Intention, Employee Well-Being, Psychological Capital (PsyCap).

JEL Classification Codes : M12, M50, M51, M54.

Öz

Çalışmanın amacı; psikolojik sermaye ve işten ayrılma eğilimi ilişkisinde, çalışan iyi olma halinin aracı rolünün belirlenmesidir. Hipotezler 163 mavi yakalıdan toplanan veriye, yol analizi yapılarak test edilmiştir. Buna göre; psikolojik sermaye ile çalışan iyi olma hali arasında pozitif yönde, güçlü bir ilişki bulunmaktadır. Psikolojik sermaye, öznel ve psikolojik iyi olma halini pozitif yönde tahmin etmekte, iş yeri iyi olma halini doğrudan tahmin edememektedir. İşten ayrılma eğiliminin psikolojik sermaye, iyi olma hali ve alt boyutlarıyla anlamlı bir ilişkisinin olmadığı ve iyi olma hali boyutlarının aracı etkisinin bulunmadığı tespit edilmiştir. İşten ayrılma eğilimi, evli ve eğitim düzeyi yüksek çalışanlarda azalma eğilimi göstermektedir.

Anahtar Sözcükler : İşten Ayrılma Eğilimi, Çalışan İyi Olma Hali, Psikolojik Sermaye.

1. Giriş

Çalışan devir hızı ve çalışanları işten ayrılmaya götüren süreç ve faktörler; geçmişte ve günümüzde örgütlerin en çok araştırdıkları konuların başında gelmektedir. Çalışan devir hızındaki artış; işten ayrılan çalışanların yerini dolduracak yeni çalışanları işe almak, eğitmek ve tecrübe kazanmalarını beklemek için geçecek süre, harcanacak emek ve para dikkate alındığında, örgütsel verimliliği etkileyen başlıca unsurlardan biri haline gelmiştir. Ayrıca yetmişmiş ve nitelikli işgücünün kaybedilmesi ve buna bağlı olarak iş kalitesinde düşüş, işe alım maliyetlerinin yükselmesi ve örgüte insan kaynağı bulmada karşılaşılabilecek güçlükler, çalışanların işten ayrılma davranış ve niyetlerinin dikkatle irdelenmesini zorunlu hale getirmiştir (Ampomah & Cudjor, 2015).

Çalışan Devir Hızı, “bir kişinin belirli bir şirketteki işine son verilmesi” olarak tanımlanırken; işten ayrılma eğilimi veya niyeti ise, “örgütten ayrılmaya yönelik bilinçli ve kasıtlı bir isteklilik” olarak ifade edilmektedir (Tett & Meyer, 1993: 262). Alan yazınında; çalışan devir hızı yani işten ayrılma davranışı ile işten ayrılma eğilimi arasındaki ilişkiyi inceleyen çok sayıda çalışma bulunmaktadır. Steel ve Ovalle (1984) işten ayrılma eğilimini, işten ayrılma davranışının başlıca bilişsel öncülü olarak ifade etmektedir. Sun ve Wang (2017) tarafından yapılan çalışmada da yüksek düzeyde işten ayrılma eğiliminin, yüksek düzeyde çalışan devir hızına neden olduğu görülmekte ve işten ayrılma eğilimi, işten ayrılma davranışının geçerli bir göstergesi olarak kabul edilmektedir. İşten ayrılma eğiliminden, işten ayrılma davranışına giden yolu inceleyen bir başka çalışma ise Mobley (1977) tarafından gerçekleştirilmiştir. Mobley (1977)’in modeline göre; çalışanın işinde tatminsizlik yaşamaması, yeni iş arayışına neden olmakta, iş arayışı, işten ayrılma veya işe devam etme eğilimini oluşturmaktadır. İşten ayrılma veya işe devam etme eğilimi ise işten ayrılma veya işe devam etme davranışıyla sonuçlanmaktadır. Van der Heijden vd. (2018) işten ayrılma eğiliminin, çalışan devir hızının en doğrudan tahmin edicisi olarak kullanıldığını vurgulamakta ve işten ayrılma eğilimi ve işten ayrılma davranışı arasındaki bu ilişkiyi Fishbein ve Ajzen (1975) tarafından geliştirilen Planlı Davranış Teorisi (PDT) ile açıklamaktadır. Buna göre; bir bireyin eğilimi, kişinin belirli bir davranışta bulunma motivasyonunu özetleyen eylem planının bir göstergesi olarak kabul edilmektedir. Bu nedenle; insan kaynaklarının en önemli sorunlarından biri olan yüksek çalışan devir hızının ve çalışanların işten ayrılma davranışlarının sebeplerini araştırmaya yönelik çalışmalarda ve bu konuya ilişkin alan yazınında çoğunlukla işten ayrılma eğilimi ele alınmakta ve işten ayrılma eğilimini etkileyen faktörler incelenmektedir.

İşten ayrılma eğilimi bireysel, kurumsal ve ekonomik faktörlerden kaynaklanabilmektedir. Kurumsal ve ekonomik faktörlerin olası etkilerini göz ardı etmemekle birlikte, bu çalışma kapsamında işten ayrılma eğiliminin bireysel faktörler temelinde incelenmesi hedeflenmektedir. Bu çalışmanın temel amacını psikolojik sermayenin işten ayrılma eğilimi üzerindeki etkilerinin belirlenmesi ve bu ilişkide çalışan iyi olma halinin aracı rolünün incelenmesi oluşturmaktadır. En genel ifadeyle “Bir bireyin pozitif psikolojik durumundaki gelişmeyi” ifade eden psikolojik sermayenin (Luthans vd., 2007a: 3), bireysel bir değişken olarak, işten ayrılma eğilimini negatif yönde tahmin ettiğini

gösteren çalışmalar (örn. Avey vd., 2009; Erkuş & Fındıklı, 2013; Çelik, 2018; Zhao & Gao, 2014) olmakla birlikte, söz konusu değişkenin işten ayrılma eğilimi üzerindeki etkisinin nasıl gerçekleştiğine ilişkin çalışmalara alan yazınında rastlanamamıştır. Bu çalışmada, çalışanların kendilerini yetkin görme (öz yeterlilik algısı), iyimser, umutlu ve dayanıklı olma eğilimlerini yansıtan psikolojik sermayenin, onların iyi olma halleri üzerinde, çalışan iyi olma halinin de çalışanların işten ayrılma eğilimi üzerinde etkisi olacağı varsayılmaktadır. İş Talepleri-Kaynakları Modeli ve Stres ve Başa Çıkma Teorisinin temel alındığı bu çalışmada, psikolojik sermayenin işten ayrılma eğilimi üzerindeki etkisinde çalışan iyi olma halinin olası aracı rolü incelenerek alan yazınına katkıda bulunulması, psikolojik sermayeye ve etkilerine yönelik daha bütüncül bakış açısı sunulması amaçlanmaktadır. Ayrıca; araştırma bulgularının, yöneticilerin çalışanların iyi olma hallerine ve işten ayrılma eğilimlerine etki eden faktörleri daha iyi anlamasına ve söz konusu bakış açısıyla işten ayrılma eğilimini azaltacak politika ve eylemler belirlemesine yardımcı olacağı düşünülmektedir.

Bu araştırmanın alan yazınına bir diğer katkısı ise, insan kaynakları uygulamalarında ve yapılan araştırmalarda çoğu zaman göz ardı edilen mavi yakalı çalışanlara odaklanılmasıdır. Bayraktaroğlu vd. (2015) tarafından yapılan araştırma, mavi yakalıların özellikle yönetim ve organizasyon alanında ihmal edilmiş olduğuna ve akademik çalışmalarda bilinçli ya da bilinçsiz bir şekilde örneklem olarak tercih edilmediğine vurgu yapmaktadır. Iverson ve Roy (1994)’a göre; mavi yakalı çalışanlar, beyaz yakalı çalışanlardan daha farklı nedenlerle kendilerini işlerine ve örgütlerine bağlı hissetmektedir. Sverke vd. (2002) ise algılanan ekonomik bağımlılığın; mavi yakalı çalışanların iş güvenliğine ve istikrarına beyaz yakalılarından daha fazla değer vermelerine ve işyerindeki istikrarlılık sinyallerine daha fazla tepki göstermelerine yol açtığını ifade etmektedir (akt. Gottschalck vd., 2020: 3). Nitekim, yapılan çalışmalarda (örn. Schutte vd., 2010; Yenihan vd., 2014; Korunka vd., 2008) mavi yakalı çalışanların tükenmişlik, duygusal tükenme, iş stresi ve işten ayrılma eğilimlerinin aynı şirkette çalışan beyaz yakalı çalışanlara göre daha yüksek, onlara sunulan çalışma koşullarının ise daha kötü olduğu görülmektedir. Dolayısıyla; mavi yakalı çalışanların iyi olma hallerinin ve işten ayrılma eğilimi dinamiklerinin beyaz yakalı çalışanlardan daha farklı olması beklenmekte ve işten ayrılma mekanizmalarının anlaşılması büyük bir önem arz etmektedir.

2. Kavramsal Çerçeve

2.1. İşten Ayrılma Eğilimi ve Psikolojik Sermaye Kavramları

Takase (2010: 3) işten ayrılma eğilimini, “*çalışanların mevcut konumlarından gönüllü olarak ayrılmalarını içeren çok aşamalı bir süreç*” olarak tanımlamakta ve bu tür eğilimlerin, çalışanların kişisel eğilimlerine ve işe ilişkin içsel ve dışsal durumlara bağlı olarak ortaya çıkan olumsuz psikolojik tepkilerle tetiklenebileceğini ifade etmektedir. Alan yazınında bireysel faktörlerin çalışanların işten ayrılma eğilimleri üzerindeki etkisini inceleyen çok sayıda çalışma bulunmaktadır. Örneğin, Shah vd. (2010) tarafından yapılan araştırmaya göre sağlık sorunları, örgüte dair gerçekçi olmayan beklentiler, aileden uzakta

yaşamak, iş değiştirmekten keyif almak gibi bireysel faktörlerin, çalışanların işten ayrılma eğilimi üzerinde anlamlı etkileri bulunmaktadır. Babajide (2010) tarafından yapılan araştırmada da iş-aile yaşamı, bağlılık ve sağlık durumu gibi faktörlerin çalışanların işten ayrılma eğilimleri üzerindeki etkileri ortaya konmaktadır. Singh vd. (2014), Jeswani & Dave (2012) ve Ariyabuddhiphongs & Marican (2015) tarafından yapılan çalışmalar ise kişilik özelliklerinin çalışanların işten ayrılma eğilimleri üzerindeki anlamlı etkilerini vurgulamaktadır. Araştırmalarda (örn. Cho & Lewis, 2012; Akova vd., 2015) işten ayrılma eğiliminin, başta yaş, cinsiyet, medeni hal, kıdem ve tecrübe olmak üzere çalışanların demografik özellikleri ile de ilişkili olduğu görülmektedir.

Psikolojik sermaye kavramı son yıllarda tüm dünyayı etkisi altına alan “pozitif psikoloji” ve pozitif psikolojinin örgütlere yansımaları olan “pozitif örgütsel davranış” anlayışından doğmuştur. “Bir bireyin pozitif psikolojik durumundaki gelişmeyi” (Luthans vd., 2007a: 3) ifade eden psikolojik sermaye kavramı, öz-yeterlilik, iyimserlik, umut ve dayanıklılık olmak üzere 4 boyutla tanımlanmaktadır. Öz-yeterlilik boyutu; “zorlu görevlerde başarılı olmak için gereken çabayı göstermek ve sorumluluk üstlenmek için yeterli özgüvene sahip olmak”; iyimserlik, “şimdi ve gelecekte başarılı olacağına dair olumlu bir anlayışa sahip olmak”; umut, “hedefe giden yolda azimle yürümek ve gerektiğinde başarılı olabilmek için hedefe giden yolları yeniden yönlendirebilmek” ve son olarak dayanıklılık boyutu ise “zorluklar ve sorunlarla kuşatıldığında, başarıya ulaşabilmek için devam etmek, ayakta kalmak, kendini toparlamak ve hatta daha da ötesine geçebilmek” (Luthans, vd., 2007a: 3). Alt boyutlarıyla birlikte, psikolojik sermayenin genel olarak “çalışanların iş yerinde karşı karşıya kalacakları stres ve zorluklarla baş edebilmeleri için savaştıkları pozitif bir kaynak” işlevi gördüğünü söylemek mümkündür (Avey vd., 2009: 680).

2.2. Psikolojik Sermaye ve İşten Ayrılma Eğilimi Arasındaki İlişki: Teorik Çerçeve ve Yapılan Çalışmalar

Alan yazınında, psikolojik sermaye üzerine yapılmış olan çalışmalarda (örn. Arora & Dhiman, 2020; Jung & Jeong, 2018; Wen, 2020; Gang & Lee, 2015; Khajepour vd., 2016), psikolojik sermayenin, iş tatmini, örgütsel bağlılık ve işe adanmışlık gibi olumlu tutumlarla pozitif; örgütsel sinizm ve devamsızlık gibi olumsuz tutum ve davranışlarla negatif yönde ilişkili olduğu gösterilmiştir. Benzer biçimde, Avey vd. (2010b) tarafından yapılan araştırmada psikolojik sermayenin işten ayrılma eğilimi ve örgütsel sinizm gibi iş yerinde olumsuz etkiler yaratan davranışlar üzerinde ise olumsuz yönde etkili olduğu tespit edilmiştir. Kore’de yürütülen çalışmada (Yim vd., 2017) mesleki stres, işten ayrılma eğilimi ve psikolojik sermaye arasında anlamlı bir korelasyon olduğu; mesleki stres ile işten ayrılma eğilimi arasındaki ilişkide psikolojik sermayenin kısmi aracılık rolü oynadığı; psikolojik sermayenin işten ayrılma eğilimini etkilediği saptanmıştır. Gupta ve Shaheen (2017) ise; psikolojik sermayenin işten ayrılma eğiliminin uzak bir tahmin edicisi olduğunu ifade ederek, psikolojik sermayenin işe adanmışlık aracılığıyla işten ayrılma eğilimini dolaylı olarak etkilediğini göstermişlerdir.

Türkiye’de gerçekleştirilen çalışmalarda da psikolojik sermayenin işten ayrılma eğilimi üzerindeki etkisi vurgulanmaktadır. Erkuş ve Fındıklı (2013), psikolojik sermaye ile işten ayrılma eğilimi arasında negatif yönlü bir ilişki olduğunu tespit etmişlerdir. Ayrıca araştırmacılar psikolojik sermayenin alt boyutlarına ilişkin yaptıkları analizlerde, umut faktörü ile işten ayrılma eğilimi arasında da negatif yönde ilişki raporlamışlardır. Çetin ve Varoğlu (2015) yapmış oldukları araştırmada; psikolojik sermayenin işten ayrılma eğilimini azalttığını, algılanan performansı ve iş tatminini artırdığını, bununla birlikte psikolojik sermaye ile işten ayrılma eğilimi ilişkisinde iş tatmininin aracılık rolü üstlendiğini ortaya koymuşlardır.

Psikolojik sermaye ile işten ayrılma eğilimi arasındaki ilişkiyi ve bu ilişkide çalışan iyi olma halinin aracı rolünü açıklamada “İş Talepleri-Kaynakları Modeli”nin varsayımlarından yararlanılabileceği düşünülmektedir. Modele göre; kronik iş talepleri (örneğin aşırı iş yükü, duygusal talepler) çalışanların zihinsel ve fiziksel kaynaklarını tüketmekte, kaynakların azalması ya da yok olması duygusal tükenmeye ve sağlık sorunlarına yol açmaktadır. Ancak İş Talepleri-Kaynakları Modeli, sadece iş taleplerinin olumsuz etkilerinden söz etmemekte, yönetici/örgüt desteği, psikolojik sermaye ve dayanıklılık gibi sahip olunan kaynakların çalışanların moral ve motivasyonlarına katkı yaptığını, kronik iş taleplerinin çalışanlar üzerindeki olumsuz etkisini azalttığını belirtmektedir. Bir başka deyişle model, iş taleplerinin olumsuz etkilerine rağmen, iş kaynaklarının varlığının çalışanlarda işe bağlılık ve performansı artırabileceğini, sinizmi ve devamsızlığı azaltabileceğini öne sürmektedir (Bakker & Demerouti, 2007: 313).

İş Talepleri-Kaynakları Modeli çerçevesinde yüksek iş taleplerine karşılık, iş kaynaklarının yetersiz olması durumunda algılanacak bir dengesizliğin, çalışanların iyi olma hali üzerinde olumsuz etkiler doğurması beklenmektedir. İş taleplerine kıyasla, yeterli iş kaynağının mevcut olduğu hallerde ise çalışanların iyi olma hallerinde ve işe ilişkin tutum ve davranışlarında olumlu yönde etkiler görülebileceği varsayılmaktadır (Tims vd., 2013). Nitekim Grover vd. (2018) yaptıkları çalışmada, psikolojik sermayenin, çalışanların iyi olma hallerini ve işe adanmışlıklarını iş talepleri ve iş kaynakları algılarını biçimlendirerek olumlu yönde etkilediğini göstermişlerdir. Çalışmada, psikolojik sermayesi yüksek olan çalışanların iş taleplerini olumlu bir şekilde algıladıkları, söz konusu algıların ise iyi olma hallerini olumlu yönde etkilediği, işe adanmışlıklarını artırdığı saptanmıştır. Bu çalışmanın en önemli sonuçlarından biri psikolojik sermayenin, İş Talepleri-Kaynakları Modeli bakımından kişisel bir kaynak rolü üstlendiğinin vurgulanıyor olmasıdır. Bu bakımdan; psikolojik sermaye, İş Talepleri-Kaynakları Modeli çerçevesinde, çalışanların iş yerinde karşı karşıya kaldıkları yüksek talep ve beklentilere, iş çevresinden doğan hayal kırıklıklarına veya olumsuz tutum ve davranışlara karşı güçlü bir kaynak olarak değerlendirilebilmekte ve psikolojik sermayesi yüksek olan çalışanların, iyi olma hallerinin de yüksek olacağı ve işten ayrılma eğilimlerinin ise aynı şekilde azalacağı varsayılmaktadır. Bu kapsamda; psikolojik sermayenin işten ayrılma eğilimini negatif yönde ve anlamlı şekilde tahmin etmesi beklenmektedir.

Hipotez 1: Psikolojik sermaye işten ayrılma eğilimi üzerinde negatif yönde etkilidir.

Yukarıda öne sürülen hipotez, psikolojik sermayenin bireyleri iş yerinde yaşadıkları olumsuzluklara karşı koruyan bir kaynak olduğu ve söz konusu kaynağın bireylerde var olması durumunda onların işten ayrılma eğilimlerini azaltacağı varsayımıyla oluşturulmuştur. Bu varsayım çerçevesinde psikolojik sermayesi yüksek olan çalışanların, psikolojik sermayesi düşük olan çalışanlara kıyasla, sahip oldukları bu olumlu kaynak sayesinde olumsuzluklara karşı daha fazla dayanıklılık gösterecekleri, işten ayrılmaya yönelik istek ve eğilimlerinin daha az olacağı düşünülmektedir.

2.3. Psikolojik Sermaye ve Çalışan İyi Olma Hali Arasındaki İlişki: Teorik Çerçeve ve Yapılan Çalışmalar

Bu çalışmada, psikolojik sermaye-işten ayrılma eğilimi ilişkisinde çalışan iyi olma hali ve boyutlarının aracı rol üstlendiği varsayılmaktadır. Diener vd. (2003: 403) iyi olma halini; "*insanların yaşamlarına ilişkin duygusal ve bilişsel değerlendirmeleri*" olarak tanımlamakta ve genel olarak sıradan insanların mutluluk, huzur, tatmin ve yaşam doyumu dedikleri şeyleri içerdiğini iddia etmektedirler. İyi olma hali tanımları incelendiğinde, iyi olma halinin iki farklı yaklaşımla ele alındığı görülmektedir. Hedonik yaklaşımda, *yaşamda iyi olma hali* olarak da adlandırılan "özel iyi olma hali" vurgusu yapılarak, iyi olma hali tanımlanırken mutluluk, olumlu duygulanım, düşük olumsuz duygulanım ve yaşam doyumu gibi kavramlara atıfta bulunulmaktadır (Diener vd., 1999). Eudaimonik yaklaşımda ise, "psikolojik iyi olma hali" vurgusu yapılarak pozitif psikolojik işleyiş ve insani gelişmeden bahsedilmektedir. Buna göre psikolojik iyi olma hali; insani gelişimin ve varoluşsal meydan okumaların gerçekleştirilmesi olarak tanımlanmaktadır (Keyes vd., 2002: 1007). Bu çalışmada, çalışanların iyi olma halinin öznel ve psikolojik iyi olma boyutlarına ek olarak, iş yeri iyi olma boyutu da dikkate alınarak incelenmesi planlanmaktadır. Genel olarak çalışan iyi olma hali, "*iş gücünün fiziksel ve akli sağlığı olarak*" (Currie, 2001; akt. Baptiste, 2008: 291) kavramsallaştırılmakta, çalışanın işle ilgili yaşadığı olumlu duyguları ve iş tatminini içermektedir (Zheng vd., 2015: 638).

Psikolojik sermayesi yüksek olan çalışanların iyi olma hallerinin de yüksek olma eğilimi göstermesinde, psikolojik sermaye boyutlarının çalışana kattığı olumlu birtakım özelliklerin etkili olduğu düşünülmektedir. Buna göre; öz yeterliliği yüksek çalışanların, diğer çalışanlara kıyasla daha yüksek iç motivasyona sahip oldukları, bu yüzden hedefe ulaşmak için gereken çabayı gösterdikleri ve engellerle karşı karşıya kaldıklarında sebat ettikleri gözlemlenmektedir (Luthans vd., 2007a: 38). Psikolojik sermayenin bir diğer boyutu olan umudun ise, çalışanlara sağlam iradeleri ile zorlu hedefler belirleme ve onları gerçekleştirme becerisi sağladığı varsayılmaktadır. Aynı şekilde, iyimser çalışanların olumsuz olaylar veya istenmeyen durumlarla karşılaştıklarında bunun nedenlerini dışsal, geçici ve duruma özgü olarak nitelendirdikleri, başarısızlıklarını kişisel olarak algılamadıkları; bu yüzden, gelecekleri hakkında olumlu ve kendilerini güvende hissettikleri düşünülmektedir. Son olarak, dayanıklılığın ise, günümüzün belirsiz, değişken ve stresli iş yaşamında; çalışanlara zorluklarla baş edebilmeleri ve güç koşullarda ayakta kalabilmeleri için güç verdiği ve söz konusu çalışanların görevlerini azimle sürdürebilmesini sağladığı düşünülmektedir (Luthans vd., 2007a: 78).

Psikolojik sermaye ve çalışan iyi olma hali arasındaki ilişkinin, psikolojik sermayenin çalışanlara sağladığı olumlu özelliklerin yanı sıra, Lazarus ve Folkman (1984: 31-38) tarafından geliştirilen “Stres ve Başa Çıkma Teorisi” ile de açıklanması mümkündür. Buna göre; bir tehdit ile karşı karşıya kalan bir kişi öncelikle bu durumun ne olduğunu ve kendisi için ne anlama geldiğini çözmeye çalışmakta, sonrasında ise bu durumu düzeltebilmek ve stresle başa çıkabilmek için elindeki kaynakları değerlendirerek, stratejilerini oluşturmaktadır. Birincil ve ikincil değerlendirme sonrasında, bazen bireyler stresi ve stres yaratan faktörleri çevreden yeni bir bilgi alınması durumunda yeniden değerlendirebilmektedir. Yapılan değerlendirme sonrasında, bireyler stresi farklı şekillerde algılayabilmekte; sahip oldukları kaynaklara bağlı olarak, bazı bireyler için baş edilmesi kolay olan bir durum, diğerleri için başa çıkması imkânsız hale gelebilmektedir. Dolayısıyla; psikolojik sermayesi yüksek olan çalışanların, öznel, psikolojik ve iş yerinde iyi olma hallerinin benzer koşullar altındaki diğer çalışanlara göre daha yüksek olması, işten ayrılma eğilimi ve devamsızlık gibi örgütsel bakımdan olumsuz davranışları daha az sergilemeleri ve işe ilişkin olumlu tutum ve davranışlar geliştirerek, daha yüksek bir performans göstermeleri olasıdır. Umut, iyimserlik, öz-yeterlilik ve dayanıklılık boyutları ile “psikolojik sermaye”nin, çalışanları iş yaşamlarında ve özel hayatlarında karşı karşıya kalacakları stres, hayal kırıklıkları, başarısızlıklar, beklentilerinin karşılanmamasından doğan küskünlükler ve aynı şekilde örgüt içinde yaşanacak sorun ve sıkıntılarla baş ederek devam etmelerini sağlayan, içsel gücü sunacak bir kalkan vazifesi görmesi beklenmektedir. Nitekim, psikolojik sermayenin, çalışanların iyi olma halleri üzerindeki etkisini inceleyen çalışmalar (örn. Avey vd., 2010a; Hansen vd., 2015; Rabenu vd., 2017; Diržytė & Perminas, 2021) psikolojik sermayenin, iyi olma hali üzerinde olumlu yönde bir etkisi olduğunu göstermektedir. Kurt ve Demirbolat (2019) tarafından Türkiye’de gerçekleştirilen çalışmada da öğretmenlerin psikolojik sermaye algılarının iş tatminlerini ve psikolojik iyi olma düzeylerini olumlu yönde ve anlamlı şekilde etkilediği tespit edilmiştir.

Psikolojik sermayenin çalışanlara sağladığı özellikler ve Stres ve Başa Çıkma Teorisi dikkate alınarak, psikolojik sermayenin iyi olma halinin üç boyutunu pozitif yönde tahmin etmesi beklenmektedir:

Hipotez 2: Psikolojik sermaye çalışanların öznel iyi olma hallerinde pozitif yönde etkilidir.

Hipotez 3: Psikolojik sermaye çalışanların psikolojik iyi olma hallerinde pozitif yönde etkilidir.

Hipotez 4: Psikolojik sermaye çalışanların iş yeri iyi olma hallerinde pozitif yönde etkilidir.

Wright (2006: 118)’a göre 1920’lerle birlikte ortaya çıkan mutlu çalışan- üretken çalışan savı ile birlikte, işlerinden memnun ve iş yerlerinde mutlu çalışanların iş performansının daha yüksek ve işten ayrılma eğilimlerinin daha düşük olacağı düşüncesi öne çıkmaya başlamıştır. Nitekim, yapılan çalışmalar (örn. Warr, 1999; Taş vd., 2019; Wright & Bonett, 2007; Çankaya, 2020), çalışan iyi olma halinin, işten ayrılma eğilimini istatistiksel olarak anlamlı ve negatif yönde etkilediğini tespit etmişlerdir. Benzer biçimde,

Amin & Akbar (2013), çalışan iyi olma halinin bir alt boyutu olarak kabul edilen psikolojik iyi olma halinin, işten ayrılma eğilimini azalttığını saptamışlardır.

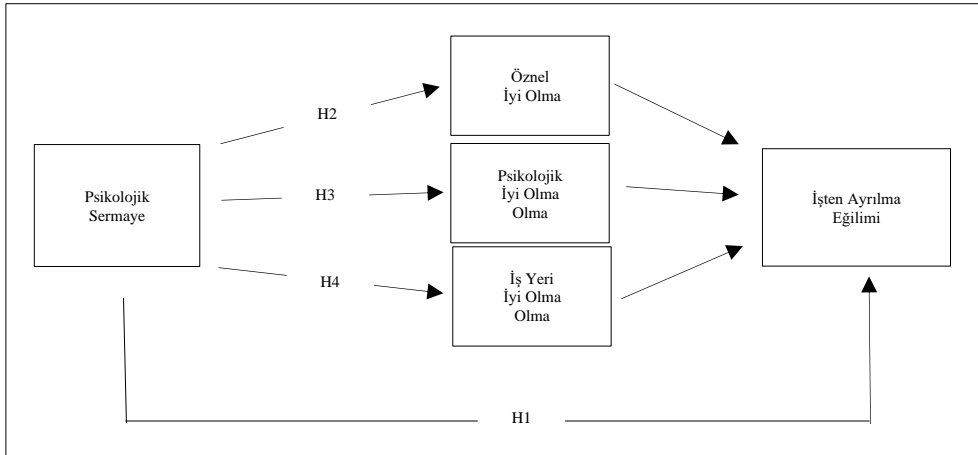
Psikolojik sermaye, çalışan iyi olma hali ve işten ayrılma eğilimi değişkenlerini bir arada ele alan Siu vd. (2005)'in çalışmasında, psikolojik sermayenin, işten ayrılma eğilimini iş yerinde iyi olma hali aracılığıyla olumsuz yönde etkilediği belirlenmiştir. Ancak, söz konusu çalışmada, öznel ve psikolojik iyi olma hali alt boyutlarına yer verilmediği, ayrıca iş yeri iyi olma halinin iş tatmini ve stres belirtileri dikkate alınarak ölçüldüğü görülmektedir. Siu vd. (2005)'in çalışmasından farklı olarak, bu çalışmada, iyi olma halinin üç boyutunun psikolojik sermaye-işten ayrılma eğilimi ilişkisinde aracı rolü İş-Talepleri Kaynakları Modeli ve Stres ve Başa Çıkma Teorisi temel alınarak varsayılmaktadır. Önerilen model Şekil 1'de yer almaktadır:

Hipotez 5: Psikolojik sermaye ile işten ayrılma eğilimi arasındaki negatif yönlü ilişkide öznel iyi olma hali aracı rolü üstlenmektedir. Psikolojik sermaye öznel iyi olma halini pozitif yönde, öznel iyi olma hali işten ayrılma eğilimini negatif yönde etkilemektedir.

Hipotez 6: Psikolojik sermaye ile işten ayrılma eğilimi arasındaki negatif yönlü ilişkide psikolojik iyi olma hali aracı rolü üstlenmektedir. Psikolojik sermaye psikolojik iyi olma halini pozitif yönde, psikolojik iyi olma hali işten ayrılma eğilimini negatif yönde etkilemektedir.

Hipotez 7: Psikolojik sermaye ile işten ayrılma eğilimi arasındaki negatif yönlü ilişkide iş yeri iyi olma hali aracı rolü üstlenmektedir. Psikolojik sermaye iş yeri iyi olma halini pozitif yönde, iş yeri iyi olma hali işten ayrılma eğilimini negatif yönde etkilemektedir.

Şekil: 1
Önerilen Model



Özetle, iyi olma halinin psikolojik sermaye-işten ayrılma ilişkisinde aracı rolünün olduğunu öne süren araştırma modelinde, psikolojik sermayenin çalışanların iş yerinde karşılaştıkları olumsuzluklara ve stres faktörlerine verdikleri tepkiyi etkileyen bir bireysel

farklılık değişkeni olduğu varsayılmaktadır. Psikolojik sermayenin hem iyi olma hali boyutlarının hem de işten ayrılma eğiliminin belirleyicisi olduğu varsayılan modelde, “Stres ve Başa Çıkma Teorisi”, “İş Talepleri Kaynakları Modeli” ve Mutlu Çalışan-Üretken Çalışan Hipotezi” temel alınmıştır. Bu çerçevede, öz yeterlilik algısı yüksek, umutlu, dayanıklı, iyimser çalışanların, olumsuz olay ve durumlardan daha az etkilenecekleri ve sahip oldukları psikolojik sermayenin iyi olma hallerini olumlu yönde etkileyeceği düşünülmektedir. Kendini gerçekleştirmiş hisseden, iş yerinde ve hayatta mutlu çalışanların ise, mutlu çalışan-üretken çalışan varsayımı gereğince işten ayrılma istek ve eğilimlerinin daha düşük olacağına inanılmaktadır.

3. Yöntem

3.1. Katılımcılar

Bu çalışma kapsamında veriler, Bursa-İnegöl’de faaliyet gösteren bir mobilya fabrikasında çalışan mavi yakalı çalışanlardan anket yöntemiyle toplanmıştır. Son yıllarda, mobilya sektöründe küçük ölçekli işletmelerin yanı sıra orta ve büyük ölçekli işletmelerin sayısı artmaya başlamıştır. Ancak T.C. Ticaret Bakanlığı’nın 2021 yılı Mobilya Sektör Raporuna göre; Türk mobilya endüstrisi, genelde çoğu geleneksel yöntemlerle çalışan atölye tipi, küçük ölçekli işletmelerin ağırlıkta olduğu bir görünüme sahiptir. Bu durum, çalışanların iş yerindeki sosyal ve ekonomik haklarını etkileyebilmektedir. Nitekim personel ücretlerinin çok düşük olması ve dolayısıyla iş gücü/ personel devir hızının yüksek olması, mobilya imalatı sektörünün başlıca sorunları arasında sıralanmaktadır (Orta Anadolu Kalkınma Ajansı, 2014). Verilerin mobilya imalatı sektörü çalışanlarından toplanmasının mavi yakalı çalışanların iş gücü devir oranlarının daha iyi anlaşılmasında ve sektörde gözlemlenen problemin giderilmesinde etkili olabileceği düşünülmektedir.

Veri toplama süreci başlamadan önce Hacettepe Üniversitesi Etik Komisyonu’ndan araştırmanın uygulanabilmesi için gerekli izin ve ilgili firmanın insan kaynakları biriminden veri toplanabilmesi için onay alınmıştır. Katılımcılardan araştırmanın amacı, kapsamı, araştırma sürecindeki haklarıyla ilgili bilgi veren gönüllü katılım formunu okumaları istenmiştir. Araştırmaya katılmaya gönüllü olan katılımcılardan kimlik belirtici bilgi istenmemiş, cevapların gizliliği konusunda kendilerine güvence verilmiştir. Gönüllü olan mavi yakalı çalışanların tamamına anket formu dağıtılarak tam sayım yöntemiyle veri toplanması hedeflenmiştir. Bu çerçevede dağıtılan 250 anket formundan, 163 tanesi geri dönmüştür (cevaplama oranı = %65). Katılımcıların büyük bir çoğunluğu 18 ile 45 yaşları arasında (n = 123, %75,5), evli (n = 111, %67,9), çocuksuz (n = 57, %35,4) ve erkektir (n = 98, %59,5). Katılımcıların önemli bir kısmının (n = 140, %85,9) lise veya daha alt düzeyde eğitime sahip olduğu; %45,6’sının (n = 67) eşinin çalıştığını saptanmıştır. Kurumda çalışma düzenleri ve süreleri incelendiğinde, çalışanların çoğunluğunun 1 ile 7 yıl arasında kıdemli oldukları (n = 95, %60,1) ve yalnızca 2 çalışanın yarı zamanlı olarak hizmet verdiği tespit edilmiştir. Çalışanların görev ve sorumlulukları ise dikişçiden, sünger yapıstırıcıya kadar çeşitli bir dağılım göstermektedir.

3.2. Kullanılan Ölçekler

Dört bölümden oluşan anket formunun birinci bölümünde katılımcıların demografik özelliklerine (yaş, cinsiyet, eğitim durumu, medeni hal, eşin çalışma durumu, çocuk sayısı, kıdem, görev, tam/yarı zamanlı çalışma) ilişkin sorular yer almaktadır. İkinci bölümde katılımcılardan işten ayrılma eğilimlerini, üçüncü bölümde psikolojik sermaye düzeylerini ve son bölümde ise iyi olma hallerini tespit etmeye yönelik sorulara yanıt vermeleri istenmiştir.

İşten Ayrılma Eğilimi Ölçeği: Bu çalışmada; Cammann vd. (1979) tarafından geliştirilen ve Mimaroglu (2008) tarafından Türkçe’ye uyarlanan 3 maddeli “İşten Ayrılma Eğilimi Ölçeği” kullanılmıştır. (“*Önümüzdeki bir sene içinde şu an çalıştığınız firma dışında bir firmada aktif olarak iş arama ihtimaliniz nedir?*”) Katılımcılar gelecek bir yıl içinde çalıştıkları işyerinden ayrılma niyetlerini 1’den 5’e kadar olan (1: Kesinlikle düşünmüyorum, 2: Düşünmüyorum, 3: Kararsızım, 4: Düşünüyorum, 5: Kesinlikle düşünüyorum) seçeneklerden birini işaretleyerek belirtmişlerdir. Ölçekten elde edilen yüksek puanlar, katılımcıların işten ayrılma eğiliminin yüksek olduğuna işaret etmektedir. Cammann vd. (1979, 1983) ölçeğin içsel tutarlılığının oldukça yüksek olduğunu tespit ederken (Cronbach $\alpha = 0,85$), Mimaroglu (2008) tez çalışmasında ölçeğin Türkçe uyarlamasının Cronbach alfa değerini 0,67 olarak raporlamıştır.

Psikolojik Sermaye Ölçeği: Psikolojik sermayenin ölçülmesinde Luthans vd. (2007b) tarafından geliştirilen Psikolojik Sermaye Ölçeği (Psychological Capital Questionnaire- PCQ)’nden yararlanılmıştır. Ölçek, psikolojik sermayenin dört alt boyutu olan umut, iyimserlik, dayanıklılık ve özyeterliliği 24 madde ile ölçmektedir. Bu çalışma kapsamında önerilen model dikkate alınarak, psikolojik sermayenin genel olarak ölçülmesi, katılımcıların alt boyutlara ilişkin değerlendirmelerinin dikkate alınmamasına karar verilmiştir. Katılımcılar ölçek maddelerine 6’lı Likert tipi ölçek kullanarak (1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Biraz katılmıyorum, 4: Biraz katılıyorum, 5: Katılıyorum, 6: Kesinlikle katılıyorum) cevap vermişlerdir. Ölçeğin yapısı gereği, yüksek puanlar, katılımcıların psikolojik sermayesinin yüksek olduğunu göstermektedir. Yapılan çalışmalarda, Psikolojik Sermaye Ölçeği’nin güvenilirliğinin oldukça yüksek olduğu görülmüştür [Avey vd. (2010b)’nin çalışmasında Cronbach $\alpha = 0,93$; Çetin ve Basım (2012)’in çalışmasında Cronbach $\alpha = 0,91$].

Çalışan İyi Olma Hali Ölçeği: Çalışanların iyi olma hallerinin ölçülmesinde Zheng vd. (2015) tarafından geliştirilmiş ve Türkçe uyarlaması Bayhan-Karapınar vd. (2020) tarafından yapılmış olan 18 maddeli Çalışan İyi Olma Hali Ölçeği’nden (Employee Wellbeing Scale) yararlanılmıştır. Ölçek yaşamda iyi olma hali olarak da bilinen öznel iyi olma (“*Hayatımdan memnunum*”), işyerinde iyi olma (“*İşimde gerçek mutluluğu buldum*”) ve psikolojik iyi olma hali (“*Günlük olayları iyi idare ederim*”) olmak üzere üç alt boyuttan oluşmakta ve her bir boyut 6 madde ile ölçülmektedir. Ölçekte katılımcılar cevaplarını 1: Kesinlikle Katılmıyorum’dan 7: Kesinlikle Katılıyorum’a uzanan 7’li Likert tipi değerlendirme ölçeğini kullanarak vermişlerdir. Ölçekten alınan yüksek puanlar,

katılımcıların öznel, psikolojik ve iş yeri iyi olma hallerinin yüksek olduğuna işaret etmektedir. Çalışan İyi Olma Hali Ölçeği'nin güvenilirlik katsayıları Zheng vd. (2015) tarafından yapılan çalışmada öznel, işyeri ve psikolojik iyi olma halleri için sırasıyla 0,87; 0,87 ve 0,84 olarak bulunurken, Bayhan-Karapınar vd. (2020) tarafından yapılan çalışmada aynı boyutlar için güvenilirlik katsayıları sırasıyla 0,89; 0,87 ve 0,82 olarak raporlanmıştır.

4. Hipotez Testi

Çalışan iyi olma halinin psikolojik sermaye ve işten ayrılma eğilimi arasındaki ilişkide aracı rolü test edilmeden önce, ölçeklerin faktör yapısı incelenmiş ve iç güvenilirlikleri tespit edilmiştir. Bu amaçla doğrulayıcı faktör analizi kullanılarak (AMOS 23; Arbuckle, 2014) öznel, psikolojik ve iş yeri iyi olma alt boyutlarının her birinin 6 soruyla ölçüldüğü ve söz konusu üç boyutun çalışan iyi olma üst boyutuyla ilişkili olduğunun varsayıldığı bir ölçüm modeli oluşturulmuştur. Yapılan ilk incelemelerde, modelin veri setine uyumunun kabul edilebilir düzeyde olmadığı görülmüştür ($\chi^2/df = 2,90$; RMSEA = ,11; CFI = ,91). Model-veri seti uyumsuzluğunun nedenleri düzeltme endekslerine bakılarak incelendiğinde, bazı hata terimlerinin birbiriyle ilişkili olduğu, bu hata terimlerinin ilişkili olmasına izin verildiğinde modelin veri setine uyumunun daha iyi olacağı tespit edilmiştir. Nitekim faktörlerin bağımsızlığı ilkesi göz önünde bulundurularak aynı boyutu ölçen maddelerin hata terimleri arasında kovaryans terimi eklendiğinde, modelin veri setine uyumunun kabul edilebilir düzeye yükseldiği görülmüştür ($\chi^2/df = 2,40$; RMSEA = ,08; CFI = ,95). Madde-boyut ilişkileri incelendiğinde on sekiz maddenin öznel, psikolojik ve iş yeri iyi olma alt boyutlarıyla ilişkilerinin istatistiksel olarak anlamlı olduğu tespit edilmiştir. Ayrıca öznel, psikolojik ve iş yeri iyi olma alt boyutlarının çalışan iyi olma hali üst boyutu tarafından tahmin edilebildiği, bir başka deyişle söz konusu üç boyutun çalışan iyi olma halinin genel olarak ölçülmesinde kullanılabileceği tespit edilmiştir.

Bu çalışma kapsamında, psikolojik sermayenin çalışan iyi olma hali ve işten ayrılma eğilimi üzerindeki etkisi genel olarak analiz edilmemekte, psikolojik sermayenin alt boyutları dikkate alınmamaktadır. Ancak alt boyutların psikolojik sermayeyle ilişkisini tespit etmek adına, çalışan iyi olma hali değişkeninde olduğu gibi ikinci düzeyden doğrulayıcı faktör analizi yapılmasına karar verilmiştir. Bu amaçla dayanıklılık, iyimserlik, özgüven ve umut boyutlarının altı soruyla ölçüldüğü bir model oluşturulmuş, söz konusu modelde dört alt boyutun psikolojik sermaye üst boyutuyla ilişkili olduğu varsayılmıştır. Yapılan ilk analizde, modelin veri setine uyumunun kabul edilebilir düzeyde olmadığı tespit edilmiştir ($\chi^2/df = 2,83$; RMSEA = ,11; CFI = ,87). Model-veri seti uyumsuzluğunun nedenleri incelendiğinde, iyimserlik boyutunu ölçen iki, dayanıklılık boyutunu ölçen bir maddenin söz konusu boyutlar tarafından istatistiksel olarak anlamlı bir şekilde tahmin edilemedikleri, bir başka deyişle bu boyutları ölçme konusunda üç maddenin yetersiz olduğu tespit edilmiştir. Söz konusu maddeler çıkarılıp, model tekrar test edildiğinde modelin veri setine uyumunun kısmen iyileştiği görülmüş ($\chi^2/df = 2,60$; RMSEA = ,07; CFI = ,91), kalan yirmi-bir maddenin hepsinin psikolojik sermayenin dört boyutuyla ilişkili olduğu saptanmıştır. Dört alt boyutun ise psikolojik sermaye boyutunun genel olarak ölçülmesinde kullanılabileceği tespit edilmiştir.

Faktör analizinden sonra güvenilirlik analizi yapılmış ve 21 maddeden oluşan psikolojik sermaye ölçeğinin iç tutarlılığının 0,97 olduğu tespit edilmiştir. Öznel, psikolojik ve iş yeri iyi olma hali boyutlarının iç tutarlılık katsayılarının ise sırayla 0,91; 0,94 ve 0,93 olduğu saptanmıştır. İşten ayrılma eğilimi için güvenilirlik analiz yapıldığında, negatif ifade içeren maddenin ("*İşten ayrılmak nadiren aklıma gelir*"), ölçeğin güvenilirliğini düşürdüğü saptanmıştır. Söz konusu madde atılınca, iki maddeyle işten ayrılma eğiliminin tutarlı bir şekilde ölçülebildiği sonucuna varılmıştır (Cronbach $\alpha = 0,81$). Güvenilirlik ve faktör analizi sonuçları dikkate alınarak, ilk önce katılımcıların ölçek maddelerine verdikleri yanıtların ortalaması alınarak değişken puanları hesaplanmıştır; daha sonra söz konusu değişken puanları arasındaki ilişkiler korelasyon katsayıları hesaplanarak incelenmiştir. Tablo 1'de görüldüğü gibi, psikolojik sermaye ile iyi olma ve iyi olmanın alt boyutları arasında pozitif yönde ve güçlü bir ilişki bulunmaktadır. Ancak beklenen aksine, işten ayrılma eğiliminin psikolojik sermaye, iyi olma hali ve iyi olma halinin alt boyutlarından hiçbirisiyle istatistiksel olarak anlamlı, doğrusal bir ilişkisi olmadığı görülmüştür. Bununla birlikte, işten ayrılma eğiliminin bazı demografik değişkenlerle ilişkili olduğu; evli ve eğitim düzeyi yüksek çalışanlarda, işten ayrılma niyetinin azalma eğilimi gösterdiği gözlemlenmiştir. Ayrıca, eşin çalışmasının işten ayrılma eğilimi üzerindeki etkisi, varyans analizi ile incelendiğinde, hiç evlenmeyen çalışanların (Ort = 3,06; SS = 1,17), eşi çalışmayan (Ort = 2,32; SS = 1,15) ve eşi çalışanlara (Ort = 2,11; SS = 0,96) kıyasla işten ayrılma eğilimlerinin yüksek olduğu ve söz konusu farklılığın istatistiksel olarak anlamlı olduğu görülmüştür ($F(2,137) = 10,42$; $p < ,05$).

Araştırmanın hipotezlerini test etmek için yol analizi yapılmış, bu amaçla psikolojik sermayenin iyi olma halinin alt boyutlarını; söz konusu alt boyutların da işten ayrılma eğilimini tahmin ettiği bir model belirlenmiştir. Ancak modelde öne sürülen aracılık ilişkisini test etmeden önce, aracı değişkenlerle (psikolojik, öznel ve iş yeri iyi olma hali) işten ayrılma eğilimi arasındaki öne sürülen ilişkiler modelden kaldırılmış; böylece psikolojik sermayenin işten ayrılma eğilimi üzerindeki doğrudan etkisi incelenmiştir. Hipotez 1'de ifade edilen aksine, psikolojik sermayenin işten ayrılma eğilimi üzerindeki doğrudan etkisinin istatistiksel olarak anlamlı olmadığı görülmüştür ($b = ,02$; $\beta = ,02$; $p > ,001$). Daha sonra, iyi olma halinin alt boyutlarının aracı rollerini test etmek amacıyla söz konusu üç boyutun işten ayrılma eğilimi üzerindeki etkisini gösteren yollar modele dâhil edilmiştir. Yapılan ilk incelemelerde modelin veri setine uyumunun iyi olmadığı görülmüştür (GFI = ,66; CFI = ,34; RMSEA = ,56). Modelde öne sürülen ilişkiler incelendiğinde, psikolojik sermayenin iyi olma halinin üç boyutuyla pozitif yönde ve istatistiksel olarak anlamlı ilişkilere sahip olduğu görülmüştür. Ancak psikolojik iyi olma ($b = -,07$; $\beta = -,09$; $p = ,49$), öznel iyi olma ($b = ,04$; $\beta = ,05$; $p = ,70$) ve iş yeri iyi olma halinin ($b = ,02$; $\beta = ,03$; $p = ,80$) işten ayrılmayı anlamlı bir şekilde tahmin etmediği tespit edilmiştir. Buna ek olarak, psikolojik sermayenin işten ayrılma eğilimi üzerindeki dolaylı etkisinin bootstrap analizi sonuçlarına göre anlamsız bulunması ($\beta = ,70$, CI [-0,14; 0,08]) nedeniyle, aracılık ilişkisi ile ilgili hipotezler (Hipotez 5, Hipotez 6, Hipotez 7) reddedilmiştir.

Düzeltilme endeksleri incelendiğinde, programın iyi olma hali boyutları arasında ilişkiler kurulmasını önerdikleri görülmüştür. Ölçeği geliştiren Zheng vd. (2015)'nin

raporladığı, iyi olma hali boyutlarının birbirleriyle güçlü ilişkilere sahip olduğunu gösteren korelasyon analizi sonuçları dikkate alınarak öznel iyi olma halinden psikolojik iyi olma hali ve işyeri iyi olma hali boyutlarına tanımlanması ampirik olarak uygun görülmüş ve programın önerdiği ilişkiler modele eklenerek gerekli düzeltmeler yapılmıştır. Gerekli düzeltmeler yapıldıktan sonra, modelin veri setine uyumunun kabul edilebilir düzeye geldiği saptanmıştır (GFI = ,93; CFI = ,87; RMSEA = ,08). Yeni model, ilk test edilenle karşılaştırıldığında, yeni modelin veri setine uyumunun daha iyi olduğu ki-kare fark testiyle de açıkça görülmüştür ($\Delta\chi^2 (2) = 162,5; p < ,05$). Ancak Tablo 2’den de görüleceği gibi, öznel iyi olma hali boyutundan iş yeri iyi olma hali boyutuna bir ilişki tanımlandığında, psikolojik sermayenin iş yeri iyi olma hali üzerindeki etkisinin istatistiksel olarak anlamsız hale geldiği görülmüştür. Psikolojik sermayenin öznel iyi olma hali, öznel iyi olma halinin iş yeri iyi olma hali üzerindeki etkisi dikkate alındığında, psikolojik sermayenin doğrudan olmasa bile, dolaylı yoldan (öznel iyi olma aracılığıyla) iş yeri iyi olma halini etkilediğini söylemek mümkündür.

5. Bulgular ve Tartışma

Bu çalışmada; psikolojik sermayenin, çalışan iyi olma halinin üç boyutu (öznel, psikolojik ve iş yeri iyi olma) ve işten ayrılma eğilimi üzerindeki etkileri ve psikolojik sermaye ile işten ayrılma eğilimi arasındaki ilişkide çalışan iyi olma hali boyutlarının aracı rolü incelenmiştir. Yol analizi sonuçları, Hipotez 2 ve Hipotez 3’te belirtildiği gibi psikolojik sermayenin öznel ve psikolojik iyi olma halini pozitif yönde etkilediğini, ancak Hipotez 4’te belirtilenin aksine iş yeri iyi olma halini doğrudan etkilemediğini göstermektedir. Ayrıca sonuçlar, psikolojik, öznel ve iş yeri iyi olma boyutlarının psikolojik sermaye işten ayrılma eğilimi arasındaki ilişkide aracı etkisinin bulunmadığına işaret etmektedir.

Araştırmanın başlıca bulgusu, psikolojik sermayenin öznel iyi olma hali ve psikolojik iyi olma hali başta olmak üzere çalışan iyi olma hali boyutları üzerindeki pozitif yönde anlamlı etkisinin ortaya konmasıdır. Buna göre; psikolojik sermayesi daha yüksek olan mavi yakalı çalışanların, öznel ve psikolojik iyi olma hallerinin, dolayısıyla genel olarak iyi olma hallerinin benzer koşullar altındaki diğer çalışanlara göre yüksek olduğu görülmüştür. Ayrıca, psikolojik sermayenin öznel iyi olma aracılığıyla, iş yeri iyi olma üzerinde de olumlu etkileri olduğu tespit edilmiştir. Dolayısıyla; bu çalışma, sonuçları itibarıyla Lazarus ve Folkman’ın Stres ve Başa Çıkma Teorisi ve alan yazınında yer alan önceki çalışmalarla (örn. Avey vd., 2010a; Hansen vd., 2015; Rabenu vd., 2017; Diržytė & Perminas, 2021) paralellik göstermektedir. Bu bulgular, aynı koşullar altındaki çalışanlardan bir kısmının iş yaşamlarında ve özel hayatlarında karşı karşıya kaldıkları olumsuz durumlarla diğer çalışanlara kıyasla daha iyi baş edebilmelerinde pozitif içsel güçlerinin diğer bir deyişle psikolojik sermayenin onlara kattığı olumlu birtakım özelliklerinin etkili olduğu görüşünü desteklemektedir. Warr (1999) çalışan iyi olma halini çalışanlarda geliştirilmek istenen olumlu tutum ve davranışlarla ilişkilendirmektedir. Bu bakımdan psikolojik sermayenin çalışan iyi olma hali ve boyutları üzerindeki anlamlı ve olumlu etkilerinin ortaya konulmasının önemli olduğu düşünülmektedir.

Ancak; bu araştırma kapsamında, psikolojik sermayenin doğrudan veya çalışan iyi olma hali boyutları aracılığıyla dolaylı olarak işten ayrılma eğilimi üzerinde anlamlı bir etkisi olduğu tespit edilememiştir. Bu durumun mavi yakalı çalışanların genellikle düşük ücretli işlerde faaliyet gösteriyor olmaları ve eğitim seviyelerinin beyaz yakalılara göre çoğunlukla daha düşük olması nedeniyle, işten ayrılma eğilimlerinin genel olarak ekonomik faktörden daha fazla etkilenmesinden kaynaklandığı düşünülmektedir. Ayrıca emek-yoğun sektörlerde işin yapısı gereği, örgütler ve işverenler yeni çalışanların temini ve işe alınması bakımından çok daha esnek hareket edebilme imkânı bulabilmektedir. Bu nedenle çalışanların işten ayrılma eğiliminin ve gönüllü olarak işten ayrılma davranışının söz konusu sektörlerde daha düşük olması ve işten ayrılma eğiliminin psikolojik sermaye gibi kişisel faktörlerden daha az etkilenmesi olasıdır. Ulutaş (2019), alternatif iş bulabilme algısı düşük olan çalışanlarda, işten ayrılma eğiliminin de aynı şekilde azalacağını vurgulamaktadır. İşten ayrıldığı takdirde yeni bir iş bulabilme ihtimalinin düşük olacağı inancına sahip ve iş bulamama korku ve stresi içindeki mavi yakalı bir çalışanın işten ayrılma eğiliminin düşük olması ve iş bırakma niyetinin psikolojik sermaye ve iyi olma hali gibi bireysel faktörlerden etkilenmemesi sonucu ortaya çıkabilmektedir. Nitekim alan yazınındaki bazı çalışmalar, mavi ve beyaz yakalı çalışanların işten ayrılma eğilimlerinin farklı faktörlerden etkilendiğini açıkça göstermektedir. Örneğin, Suyono vd. (2020) tarafından yapılan çalışmaya göre; mavi yakalı ve beyaz yakalı çalışanların işten ayrılma eğilimini etkileyen faktörler ve dolayısıyla çalışan devir hızını düşürmek amacıyla örgütler tarafından alınması gereken önlemler farklılık göstermektedir. Araştırmacılar, beyaz yakalı çalışanların işten ayrılma eğilimlerinin azaltılması için iş tatminlerini ve motivasyonlarını yükseltmeye yönelik insan kaynakları uygulamalarını önerirken; mavi yakalı çalışanlar için ise benzer işler için verilen ücretin üstünde yapılacak bir ödeme, iş yeri kazalarına karşı sigorta, emeklilik sigortası, yaşlılık garantisi gibi iş güvencesine yönelik önlemlerin alınmasının ve ekonomik koşulların iyileştirilmesinin etkili birer yöntem olacağını vurgulamaktadır.

İşten ayrılma eğiliminin, çalışanların iyi olma halleri ve psikolojik sermayelerinden etkilenmemesinde, ekonomik faktörlerin yanı sıra, demografik faktörlerin de rol oynayabileceği düşünülmektedir. Nitekim bu çalışmada yapılan ek analizlere göre; evli ve eğitim düzeyi yüksek çalışanların, işten ayrılma eğilimlerinin daha düşük olduğu saptanmıştır. Ayrıca; eşin çalışma durumunun, işten ayrılma eğilimi üzerindeki etkisi incelendiğinde, hiç evlenmeyen çalışanların işten ayrılma eğilimlerinin, eşi çalışmayan ve eşi çalışan mavi yakalıları kıyasla daha yüksek olduğu tespit edilmiştir. Evli çalışanların işten ayrılma eğilimlerinin daha düşük olması, alan yazınıyla da paralel olarak, artan sorumluluk duygusu ve ekonomik yükümlülükler ile birlikte beklenen bir durum olarak görülmektedir. Eğitim düzeyi daha yüksek olan mavi yakalıların işten ayrılma eğilimlerinin daha düşük olmasının ise aynı iş yerinde, yüksek eğitilmiş çalışanlara daha cazip imkânların ve daha iyi koşulların sunulmasından ve yüksek eğitilmiş çalışanların daha farklı pozisyonlarda ve farklı ekonomik koşullara ve özlük haklara sahip olarak istihdam ediliyor olmalarından kaynaklanabileceği değerlendirilmektedir. Karacaoğlu (2015) tarafından yürütülen çalışmada bekârların evlilere göre iş güvencesizliği ve işten ayrılma niyeti ortalamalarının daha yüksek olduğu tespit edilmiştir. Yine aynı çalışmada, çalışanların

eğitim düzeyi düştükçe, iş güvencesizliği algılarının ve işten ayrılma eğilimlerinin arttığı sonucuna ulaşılmış ve bu durum daha düşük niteliğe sahip çalışanların, daha yüksek düzeyde eğitim alanlar karşısında kendilerini daha yetersiz olarak algılıyor olmalarına bağlanmıştır. Ayrıca; Boz-Semerci (2018) tarafından yapılan çalışmada da iş güvencesizliği algısının ve ebeveynlik rolünden doğan yüksek sorumluluk duygusunun, çalışanların yeniden iş bulamama kaygısını artırdığı ve riskli davranışlardan kaçınarak, işten ayrılma davranışı gösterememelerine neden olduğu vurgulanmaktadır. Bu çalışma ve önceki çalışmaların bulguları değerlendirildiğinde, mavi yakalı çalışanların işten ayrılma niyetlerinde iyi olma hali ya da psikolojik sermaye gibi psikolojik temelli faktörlerden çok, ekonomik ve demografik faktörlerin etkili olduğunu söylemek mümkündür.

6. Çalışmanın Kısıtları

Çalışmanın başlıca kısıtı veri toplanması ve örneklem büyüklüğü ile ilişkilidir. Çalışma imalat sektöründe faaliyet gösteren tek bir örgütte, görece küçük bir örneklemle ve yalnızca mavi yakalı çalışanlardan toplanan verilerle yapılmıştır. Örneklem büyüklüğü, niteliği ve örneklem seçiminde kullanılan yöntem nedeniyle araştırmada elde edilen bulguların genellenebilirliği oldukça kısıtlıdır. Gelecekte yapılacak çalışmalarda, farklı sektörlerden ve örgütlerden seçilecek örneklemlemlerle modelin tekrar test edilmesi önerilmektedir. Ayrıca beyaz yakalı çalışanlardan da veri toplanması suretiyle, mavi yakalı çalışanlar ile beyaz yakalı çalışanların iyi olma halleri ve işten ayrılma eğilimlerine ilişkin farklı algı ve tutumlarının incelenmesinin ve karşılaştırma yapılmasının faydalı olacağı düşünülmektedir.

Bu çalışmanın bir diğer kısıtı, verilerin belirli bir zaman aralığında anket yöntemiyle elde edilmesidir. Podsakoff, MacKenzie, Lee ve Podsakoff'a (2003) göre, belirli bir katılımcı grubundan tek bir zamanda ve tek bir yöntemle toplanan veriler, değişkenler arasındaki ilişkilerin olduklarından daha güçlü olarak tespit edilmesine yol açabilmektedir. Bu çalışmada, ortak yöntem varyansı hatası denilen söz konusu problemin, sonuçlar üzerinde etkili olup olmadığını belirlemek amacıyla, Harman Tek Faktör testi uygulanmıştır. Elde edilen sonuçlar, ölçek maddelerindeki varyansın çoğunluğunu açıklayan genel bir faktörün bulunmadığını göstermekte, dolayısıyla kullanılan veri toplama yönteminin elde edilen sonuçlar üzerindeki etkisinin kısıtlı olduğuna işaret etmektedir. Ancak daha sonra yapılacak çalışmalarda, aynı katılımcılardan farklı yöntemler (anket, görüşme, gözlem) kullanılarak ya da değişkenlerle ilgili değerlendirmelerin farklı zaman aralıklarında toplanarak verilerin elde edilmesi önerilmektedir.

Araştırmanın bir diğer kısıtı, çalışmanın verisinin, sadece katılımcıların kendi ifadelerini yansıttığıdır. Katılımcıların verdikleri cevaplarla gerçek tutum ve davranışları arasında tutarsızlık olması mümkündür. Dolayısıyla sonraki çalışmalarda verinin gözlem ve görüşme gibi farklı yöntemler kullanılarak toplanarak öz-raporlamanın olası etkilerinin saptanması ya da önlenmesi önerilmektedir. Son olarak, araştırmada sadece psikolojik sermaye ve çalışan iyi olma hali boyutlarının etkisinin dikkate alınması, işten ayrılma eğilimi üzerinde etkisi olabilecek alternatif işlerin varlığı ve ekonomik faktörler gibi diğer

değişkenlerin dikkate alınmaması önemli bir kısıt oluşturmaktadır. Gelecekte yapılacak çalışmalarda, işten ayrılma eğilimiyle ilişkili olduğu daha önceki araştırmalarla tespit edilen alternatif işlerin varlığı gibi değişkenlerin düzenleyici ya da kontrol değişkeni olarak dikkate alınmaları önerilmektedir.

7. Öneriler ve Sonuç

Bu çalışmanın insan kaynakları uygulamaları bakımından görece ihmal edilmiş olan mavi yakalı çalışanların psikolojik sermaye düzeylerinin ve iyi olma hallerinin incelenmesi, işten ayrılma eğilimlerini belirleyen faktörlerin ele alınması ve iş gücü devir oranlarının daha iyi anlaşılması bakımından alan yazınına katkı sağlayacağı düşünülmektedir. Çalışma bulgularından hareketle, yöneticilere ve insan kaynakları personeline önerilerde bulunulması mümkündür. Çalışan iyi olma halinin, çalışanların işe ilişkin tutum ve davranışlarını olumlu etkilediğine ve üretkenlik karşıtı iş davranışlarını azalttığına ilişkin olarak önceki çalışmalarda elde edilen bulgular dikkate alındığında, bu çalışmada psikolojik sermayenin çalışan iyi olma hali üzerindeki olumlu etkisinin tespit edilmesinin, insan kaynakları uygulamaları bakımından yol gösterici olacağı düşünülmektedir. Bu bağlamda insan kaynakları yöneticilerinin, adayların psikolojik sermaye düzeylerini ölçerek psikolojik sermayesi yüksek adayları işe alımlarda tercih etmesi önerilmektedir. Ayrıca psikolojik sermayenin geliştirilebilen bir özellik olduğu göz önünde bulundurularak, özellikle psikolojik sermayesi düşük düzeyde olan çalışanlara yönelik eğitim programlarının düzenlenmesi tavsiye edilmektedir.

Araştırma sonuçları; mavi yakalı çalışanların işten ayrılma eğilimleri üzerinde psikolojik sermaye düzeyleri ve iyi olma halleri gibi içsel faktörlerin anlamlı olarak etkili olmadığını ve işten ayrılma eğilimlerinin, eşin çalışma durumu, eğitim düzeyi ve medeni hal gibi demografik faktörlerden etkilendiğini göstermektedir. Daha önce de vurgulandığı üzere, evli mavi yakalılarda, iyi olma hallerinden bağımsız olarak işten ayrılma niyeti azalma eğilimindedir ve bu sonucun artan sorumluluk duygusundan kaynaklandığı düşünülmektedir. Bu nedenle; yöneticilerin, iyi olma halleri düşük olmakla birlikte, ekonomik yükümlülükler ve sorumluluk duygusu gibi nedenlerle, işten ayrılma eğilimi gösteremeyen mavi yakalı çalışanlarının işe ilişkin olumlu tutum ve davranış geliştirmelerine yönelik olarak ihtiyaç duydukları iş güvencesini ve ekonomik desteği sağlamalarında yarar görülmektedir.

Ayrıca; eğitim düzeyi yüksek çalışanlarda, işten ayrılma niyetinin azalma eğilimi gösterdiği tespit edilmektedir. Bu durum mavi yakalı çalışanların eğitim ihtiyaçlarının doğru şekilde belirlenerek, şirket içi ve dışı eğitim imkânlarının artırılmasının ve mavi yakalı çalışanlara yönelik insan kaynakları uygulamaları geliştirilmesinin önemine işaret etmektedir. Çalışanlara yönelik eğitim programlarının, işten ayrılma eğilimlerinin azalmasının yanı sıra mavi yakalı çalışanların yetiştirilmesi, geliştirilmesi ve işe ilişkin olumlu tutum, davranış ve motivasyonlarının artırılması bakımından da işletmelere katkı sağlayacağı düşünülmektedir.

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Tablo: 1
Tanımlayıcı İstatistikler

| | Ort | SS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---------------------------|------|------|--------|-------|-------|--------|--------|------|------|------------|------------|------------|------------|------------|------------|
| 1. Yaş | -- | -- | -- | | | | | | | | | | | | |
| 2. Cinsiyet | -- | -- | ,29** | -- | | | | | | | | | | | |
| 3. Eğitim | -- | -- | ,27** | ,14 | -- | | | | | | | | | | |
| 4. Medeni Hal | -- | -- | ,57** | ,19* | ,18* | -- | | | | | | | | | |
| 5. Eş Çalışma | -- | -- | -,32** | -,03 | -,09 | -,75** | -- | | | | | | | | |
| 6. Çocuk Sayısı | -- | -- | ,63** | ,16* | ,20* | ,73** | -,46** | -- | | | | | | | |
| 7. Çalışma Düzeni | -- | -- | -,06 | ,03 | ,09 | ,04 | -,02 | ,08 | -- | | | | | | |
| 8. Psikolojik Sermaye | 4,50 | 1,68 | ,01 | -,07 | ,21** | ,05 | ,03 | ,01 | -,05 | ,97 | | | | | |
| 9. Özel İyi Olma | 4,84 | 1,54 | ,14 | ,16 | ,07 | ,09 | ,12 | ,11 | -,15 | ,38** | ,91 | | | | |
| 10. Psikolojik İyi Olma | 5,18 | 1,52 | ,10 | ,18* | ,12 | ,07 | ,06 | ,06 | -,02 | ,57** | ,67** | ,94 | | | |
| 11. İşyeri İyi Olma | 4,66 | 1,52 | ,20 | ,28** | ,11 | ,10 | ,14 | ,18* | -,01 | ,36** | ,72** | ,72** | ,93 | | |
| 12. İyi Olma Hali | 4,89 | 1,36 | ,16* | ,23** | ,11 | ,11 | ,10 | ,15 | -,08 | ,49** | ,89** | ,89** | ,91** | ,96 | |
| 12. İşten Ayrılma Eğilimi | 2,54 | 1,18 | -,20* | -,06 | -,13 | -,27** | ,33** | -,16 | ,07 | ,03 | ,03 | -,01 | ,02 | ,02 | ,81 |

Not: Yaş: 1: 18-25; 2: 26-35; 3: 36-45; 4: 46-55; 5: 56+; Cinsiyet: 1: Kadın, 2: Erkek; Eğitim: 1: Lise, 2: Lisans, 3: Yüksek Lisans, 4: Doktora; 5: Diğer; Medeni Hal: 1: Bekâr, 2: Evli; Eş Çalışma: 1: Çalışıyor, 2: Çalışmıyor, 3: Hiç evlenmedim; Çocuk Sayısı: 0: Çocukum yok, 1: 1 çocuk, 2: 2 çocuk; 3: Üç çocuk; 4: 4 çocuk ve fazlası; Çalışma Düzeni: 1: Yarı Zamanlı, 2: Tam Zamanlı; Psikolojik Sermaye: 1: Kesinlikle Katılmıyorum; 6: Kesinlikle Katılıyorum; İyi Olma Hali: 1: Kesinlikle Katılmıyorum; 7: Kesinlikle Katılıyorum; İşten Ayrılma Eğilimi: 1: Kesinlikle Katılmıyorum; 5: Kesinlikle Katılıyorum. **Tabloda koyu renkle yazılanlar değişkenlerin Cronbach Alpha değerleridir.**

*: $p < ,05$; **: $p < ,01$

Tablo: 2
İyi Olma Halinin Psikolojik Sermaye-İşten Ayrılma Eğilimi İlişkisinde Aracı Rolü: Yol Analizi Sonuçları

| Model | b | SH (b) | β | p değeri | GA (alt) | GA (üst) |
|---|----------|--------|------------------|----------|----------|----------|
| Aracılık İlişkilerinin Olmadığı Model | | | | | | |
| P.Ser→İAE | ,02 | ,08 | ,02 | ,81 | -,11 | ,15 |
| Aracılık İlişkilerinin Tanımlandığı Model | | | | | | |
| P.Ser→PIO | ,49 | ,08 | ,37 | < ,001 | ,33 | ,66 |
| P.Ser→ÖİO | ,50 | ,10 | ,38 | < ,001 | ,31 | ,66 |
| P.Ser→İİO | ,13 | ,08 | ,10 | ,09 | ,01 | ,26 |
| P.Ser→İAE | ,04 | ,10 | ,04 | ,70 | -,12 | ,23 |
| PIO→İAE | -,07 | ,10 | -,09 | ,49 | -,25 | ,11 |
| ÖİO→İAE | ,04 | ,10 | ,05 | ,70 | -,13 | ,21 |
| İİO→İAE | ,02 | ,09 | ,03 | ,80 | -,15 | ,21 |
| ÖİO→PIO | ,52 | ,06 | ,53 | < ,001 | ,39 | ,65 |
| ÖİO→İİO | ,68 | ,06 | ,69 | < ,001 | ,56 | ,78 |
| Dolaylı Etki (Bootstrap sonuçları) | Boot (b) | SH(b) | Boot (β) | p değeri | GA (alt) | GA (üst) |
| P.Ser→PIO,ÖİO,İİO→İAE | -,02 | ,07 | ,08 | ,70 | -,14 | ,08 |

Not: P. Ser: Psikolojik Sermaye; PIO: Psikolojik İyi Olma; ÖİO: Özel İyi Olma; İİO: İşyeri İyi Olma; İAE: İşten Ayrılma Eğilimi; SH: Standart Hata; GA: Güven Aralığı, Boot (b): Bootstrapping standardize olmayan regresyon katsayısı; Boot (β): Bootstrapping standardize regresyon katsayısı.

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Seilmiř Makroekonomik Deęiřkenler ve Beklenti Endekslerinin BİST 100 Endeksi Üzerine Etkisi

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The Effect of Selected Macroeconomic Variables and Expectation Indices on the BIST 100 Index

Abstract

In this study, the macroeconomic factors and expectation indices affecting the BIST 100 index have been examined. The optimum Autoregressive Distributed Lag (ARDL) model has been created by utilising the Python programming language (Python) using the ARDL method. As a result of the analysis, it has been determined that long-term variables such as United States dollar Turkish lira parity (USD/TRY), Economic Confidence Index (EGE), and Consumer Price Index (TÜFE) are correlated in the positive direction with the dependent variable BIST 100 index and in the negative direction with the 5-Year Bond Interest (FAİZ) and Volatility Index (VIX) variables. In contrast, Brent petrol United States dollar parity (BRENT) is not statistically significant.

Keywords : BIST 100, Macroeconomic Variables, Expectation Index, ARDL
Cointegration Testing, Python Programming Language.

JEL Classification Codes : E44, D84, C52.

Öz

Bu alıřmada BİST 100 endeksini etkileyen makroekonomik faktörler ve beklenti endeksleri incelenmiř olup Otoregresif Daęıtılmıř Gecikme (ARDL) metodu kullanılarak Python programlama dili (Python) ile optimum ARDL modeli oluřturulmuřtur. Analiz sonucunda uzun dönemli Amerikan doları Türk lirası paritesi (USD/TRY), Ekonomik Güven Endeksi (EGE), Tüketici Fiyat Endeksi (TÜFE) deęiřkelerinin baęımlı deęiřken BİST 100 endeksi ile iliřkileri pozitif, 5 Yıllık Tahvil Faizi (FAİZ) ve oynaklık endeksi (VIX) deęiřkeni ile negatif yönde iken Brent petrol Amerikan doları paritesi (BRENT) deęiřkeninin istatistiksel olarak anlamlı olmadığı tespit edilmiřtir.

Anahtar Sözcükler : BİST 100, Makroekonomik Deęiřkenler, Beklenti Endeksi, ARDL
Eřbütünleřme Testi, Python Programlama Dili.

1. Giriş

Finansal piyasaların gelişmesi için gerek politika yapımcıların gerekse finansal aktörlerin, dünya ekonomisinde artan küreselleşme hareketlerini doğru takip ederek rekabetçiliği göz ardı etmeyen yeni politika ve finansal araçlar geliştirmesi gerekmektedir. Tarihsel süreç içinde ekonomi felsefesinin zamanla değiştiği ve piyasaya müdahale eden devlet anlayışı ile ilerleyen Keynesyen yaklaşım, özellikle 1970 ve 1980 yılları arasında yaşanan petrol krizleri sebebi ile yerini finansal piyasalarda serbestliği öneren Neo Klasik yaklaşıma bırakmıştır. Söz konusu durumda para ve sermaye piyasalarının gelişmişliği yanında, finansal serbestleşme ile iç kaynakların yanında dış kaynaklarında dikkate alınması gerekliliği ortaya çıkmıştır. Böylesi bir ekonomik ve finansal ortamda yatırımcının risk ve getiriye dikkate alan yatırım kararlarında sadece finansal göstergeler değil, aynı zamanda ülke özelinde değişen makroekonomik göstergeler ve psikolojik olarak karar vermeyi etkileyen beklenti ya da güven göstergelerini dikkatli analiz etmesi gereklidir. Örneğin, para politikası kapsamında merkez bankaları tarafından uygulanan kısa vadeli faiz artışının ülkeye sermaye girişini artırması beklenirken, finansal dolarizasyonu ve kamu borcu yüksek enflasyonist bir ortamda bu beklentinin aksine sonuçlar oluşmaktadır (Pınar & Erdal, 2013: 80). Daha açık bir ifade ile aşırı borçlu ülkenin faiz artışı ile kredi risk derecesi artmakta ve sermaye girişi yerine sermaye kaçışı oluşabilmekte hatta ülke parası değer kaybedebilmektedir. O halde uygulanacak finansal politikalar ve alınacak yatırım kararlarında, ülkenin içsel değişkenlerini kapsayan kredi riski, faiz oranı riski, politik risk, likidite riski ve son olarak da döviz kuru riski önem arz etmektedir. Benzer şekilde finansal piyasalar özelinde borsada işlem gören şirketlerin değer değişimleri de söz konusu pek çok riske bağlı olarak değişmektedir.

Pay senetleri piyasası ülkenin ekonomik durumunu gösteren bir barometre niteliğinde olup özellikle gelişmiş ülkelerde bu durum daha da geçerli olmaktadır (Usul vd., 2017: 686). Keza, böylesi önemli bir gösterge dikkate alınırken, fiyat değişimlerini etkileyen makroekonomik faktörler yanında işletmeler özelinde yatırımcı kararını etkileyip duyarlılığı değiştiren psikolojik unsurlar da araştırmalara konu olmaktadır. Üretici ve tüketicilerin genel ekonomik durum hakkında dikkate aldıkları göstergelerden biri de Türkiye İstatistik Kurumu (TÜİK) tarafından hesaplanan ekonomik güven endeksidir. Reel piyasalarda meydana gelen değer değişimlerinin borsada işlem gören şirketler üzerindeki etkisi söz konusu güven faktörü dikkate alınarak değerlendirilebilmektedir. Finansal piyasalara yönelik yatırımcı duyarlılığını ölçen beklenti endekslerinden biri ise Whaley (1993)'in varlık piyasalarında korku endeksi olarak ifade ettiği ABD S&P500 opsiyon fiyatlarından elde edilen Volatility Index (VIX)'dir. Bu endeks yatırımcıların yatırım yapmalarında çekimser kalmaları, diğer bir değişle artan endişeleri durumunda artmakta iken borsa belirsizliğini ölçmede kullanılan göstergelerden biridir.

Borsada şirket değerlerini etkilediği düşünülen diğer göstergeler arasında, makroekonomik değişimleri temsil eden enflasyon, büyüme ve döviz kurları gelmektedir. Enflasyon ve borsa arasındaki ilişkinin yönü hakkında teorik pek çok tartışma olmasına rağmen görüş birliğine varılamadığı görülmektedir. Bai (2014) çalışmasında söz konusu iki

değişken arasındaki ilişkiyi üç farklı teori ile açıklamış olup bunlardan ilki Fisher Etkisi’dir. Fisher etkisine göre ekonomide reel ve parasal sektörler birbirinden bağımsız hareket etmektedir. Hipotez finansal piyasalara uyarlandığında ise enflasyon oranlarındaki artış ve pay senedi getirilerinin aynı oranda arttığı görülmektedir. Enflasyon ve borsa arasındaki ilişkiyi açıklayan ikinci teori Kevin ve Perry (1998)’e ait oynaklık hipotezi olarak adlandırılmaktadır. Fisher etkisinin tersi olarak bu hipotez, yüksek enflasyon oranlarının borsadaki yatırımcıların karını büyük ölçüde azalttığını öne sürmekte olup enflasyon sebebi ile artan riskin belirsizliği artıracağına ve bu durumun pay senedi getirilerinin düşmesine yol açtığını öne sürmektedir. Son teori değişkenlik hipotezi olup söz konusu hipoteze tıpkı oynaklık hipotezinde olduğu gibi enflasyonun, pay senedi getirilerini doğrudan etkilediğini belirtmektedir. Bu görüşü destekler nitelikte Feldstein (1980) çalışmasında enflasyonun amortisman maliyetleri ve sermaye kazançları üzerinde olumsuz etki yaparak pay senedi fiyatlarını düşürdüğünü savunmaktadır.

Bir finansal varlığın bugünkü fiyatı gelecekteki fiyata yönelik öngörülere ve ikame finansal varlıkların değer değişikliklerine bağlıdır. Daha açık bir ifade ile beklentiler ve göstergeler doğrultusunda ikamesi daha cazip hale gelen bir menkul varlığa ilişkin talep düşecektir. Keza artan faiz oranları nedeniyle tahviller daha cazip yatırım aracı haline gelip pay senedine olan talep azalacak ve fiyatlarında azalma meydana gelecektir (Krugman & Wells, 2013: 279).

Firmaların temel amacı bugünkü değerlerini en yüksek seviyeye çıkarmak olup bu amaçla özellikle piyasa değerinin belirlenmesinde pay senedi getirilerinin hesaplanmasına dikkat edilmektedir. Getiri hesaplama da ise kur riski önem arz etmektedir. Pay senedi fiyatları ve döviz kuru arasındaki ilişkide görüş birliği bulunmamakla birlikte hem beklenti hem de firma ve ülke yapılarına göre farklı sonuçlar ortaya çıkmaktadır. Benzer şekilde Suriani et al. (2015) çalışmalarında firmaların piyasa değeri ve pay senedi fiyatları ile döviz kuru dalgalanmalarının pek çok değişkenden etkilenmekle birlikte döviz kuru belirleyicisi üzerinde görüş birliği olmadığını iddia etmektedirler. Diğer yandan çalışmaya göre finansal teori, firmanın değerinin döviz kurları ve faiz oranlarından etkilenmesi gerektiğini açıklamakla birlikte, yukarı ve aşağı kur hareketleri firmaların pay senedi fiyatlarını belirleyebilmektedir. Söz konusu iki gösterge arasında pozitif ilişki bulunduğu dair görüşlerde, en genel teori kur artışının artan ulusal pay senetleri ve fiyatları üzerinedir. Diğer yandan ulusal paranın değer kaybetmesi anlamına gelen yüksek kur ile firmaların ihracat seviyeleri artmakta ve dolayısıyla firma değeri artabilmektedir. Ters durumda ise özellikle hammadde ithalatına dayalı ihracat yapan firmalar için ise, kur artışı ile yurtiçi maliyetler artmakta ve bu durumda firma kârlılığı azalabilmektedir. Bu mekanizmayı açıklar şekilde Dornbusch ve Fischer (1980) öncelikle, döviz kurlarındaki değişimlerin uluslararası rekabet gücünü ve ticaret dengelerini etkilediğini ve böylece reel gelir ve üretimi etkilediğini öne süren “akış odaklı” döviz kuru modellerini önermektedir. Genel olarak firmaların gelecekteki nakit akışlarının bugünkü değerleri olarak yorumlanan pay senedi fiyatları, kur değişikliklerine tepki göstermekte ve gelecekteki gelirler, faiz oranlarındaki yenilikler, mevcut yatırım ve tüketim kararları arasında bağlantı oluşturmaktadır.

Kur değişimi yerine pay senedi fiyat değişimlerinin etkisi, ilişkinin yönünü değiştirebilmektedir. Branson (1983) ve Frankel (1983), döviz kurlarını pay senedi gibi varlıklara olan arz ve talebi eşit olarak gören “pay senedi odaklı” döviz kuru modellerini geliştirmişlerdir. Bu yaklaşım, sermaye hesabına önemli bir rol vererek döviz kuru dinamiklerini belirler. Finansal varlıkların değerleri, gelecekteki nakit akışlarının bugünkü değerleri ile belirlendiğinden, fiyat hareketlerinde göreceli döviz değerlerine ilişkin beklentiler önemli bir rol oynamaktadır. Bu nedenle, pay senedi fiyatlarındaki yenilikler döviz kuru dinamiklerini etkileyebilir veya bunlardan etkilenebilmektedir. Örneğin, pay senedi fiyatındaki artış beklentisi yabancı yatırımcının ulusal varlıklara olan talebini artırabilmekte ve bu durumda ulusal para değer kazanıp kur düşmektedir. Böyle bir durumda pay senetleri ve kur arasındaki ilişkinin yönü pozitif olarak değişmektedir. Söz konusu teoriyi destekler nitelikte Yılmaz ve Güzel (2021) çalışmalarında, pay senedi fiyatından döviz kuruna nedensellik ilişkisinin geçerli olduğunu tespit etmişlerdir. Buna göre pay senedi fiyatlarındaki artış, yatırımcının servetini artırırken para talebinin artmasına neden olmaktadır. Para talebindeki artış, yerli para biriminin döviz karşısında değer kazanmasına neden olarak yatırımcıların daha fazla pay senedi satın almak için döviz cinsinden varlıklarını satmalarına neden olmaktadır. Değişkenler arasına faiz eklendiğinde mekanizma farklı şekilde işlemektedir. Buna göre yerli yatırımcılar, varlık fiyatlarında artış olduğunda iç piyasaya daha fazla yatırım yapmakta ve bu da yerel para birimine olan talebi artırmakta iken yabancı varlıkların satış davranışını da pozitif etkileyebilmektedir. “Yerel para birimi talebindeki artış, faiz oranlarının yükselmesine neden olacak ve sonuçta yabancı yatırımcıları yatırım yapmaya ve maksimum fayda elde etmeye yönlendirecektir (Suriani et al., 2015: 385).

Şirket kârlılıklarını ve dolayısıyla pay senetleri fiyatlarını etkilediği düşünülen diğer bir değişken petrol fiyatlarıdır. Özellikle petrol ihracatçısı bir ülke için artan petrol fiyatları maliyeti artıracığından kârlılığı azaltabilme ihtimali oluşmakta ve firma kârlılığını önemli ölçüde değiştirebilmektedir.

Bu çalışmada pay senedi piyasasının temel göstergesi olan BİST 100 endeksini etkilediği düşünülen temel bazı makroekonomik göstergeler ve beklentilere yön veren güven endekslerinin borsa şirket fiyatlarına etkisi incelenmiştir. Çalışma beş bölüme ayrılmıştır. İlk bölümde çalışmanın konusu, kapsamı, önemi ve amacı geniş kapsamda belirtilmiştir. İkinci bölümde ise benzer çalışmaların yer aldığı yurtiçi ve yurtdışı çalışmalara ve çalışmaların genel özetini gösteren tablolara yer verilmiştir. Üçüncü bölümde çalışmanın veri seti ve veri setinin uygun olduğu modelden bahsedilmiştir. Dördüncü bölümde çalışmanın bulgularına yer verilirken, son olarak beşinci bölümde ise yapılan analizler sonucu elde edilen bulgular eşliğinde değerlendirme yapılarak çalışma tamamlanmıştır. Yine çalışmada makroekonomik ve güven endekslerinin BİST 100 endeksi fiyatlanmasında etkisinin olup olmadığı tespit edilmiş ve etkinlik gösteren makroekonomik faktörlerin pay senedi fiyatı üzerindeki yönü analiz edilmiştir. Çalışmanın diğer çalışmalardan farkı hem makroekonomik hem de psikolojik faktörlerin bir arada değerlendirilmiş olup borsa şirket fiyatlarına uyarlanmasıdır.

2. Önceki Çalışmalar

Pay senedi fiyat hareketlerindeki değişim, yatırımcılar açısından pozisyon belirlemede önemlidir. Pay senedi fiyatının değişiminde çeşitli faktörler rol oynamakta ve makroekonomik göstergeler ise bu faktörlerden biridir. Makroekonomik göstergelerin borsa üzerindeki etkilerini araştıran literatürde yurtiçi ve yurtdışı olmak üzere çeşitli çalışmalar bulunmaktadır. Bu çalışmalardan bazıları enflasyon oranları, faiz oranları ve döviz kuru gibi makroekonomik faktörleri incelerken, bazı çalışmalar ise bu göstergelere ek olarak korku endeksi ve güven endeksi gibi psikolojik faktörler, siyasi ve piyasa dışı vb. faktörleri de incelemiştir. Bazı çalışmalarda ise tek bir borsa analizi yerine çeşitli borsa endeksleri veya ülke borsaları üzerinde analizler yapılmıştır. Söz konusu çalışmalara ilişkin bilgiler aşağıda özetlenmekte olup kullanılan yöntem ve değişkenlere yönelik detaylar Ek 1'de verilmektedir.

2.1. Yurtiçi Çalışmalar

Albeni ve Demir (2005) çalışmalarında, makroekonomik faktörlerin mali sektör pay senedi fiyatı üzerindeki etkisini araştırmak için çok sayıda makroekonomik göstergesi incelemişler ve en etkili göstergeleri belirlemeye çalışmışlardır. Sonuçlarda mali sektör pay senedi fiyatının mevduat faiz oranları, Alman markı, uluslararası portföy yatırımları ve altın fiyatlarından %88 oranında etkilendiği tespit edilmiştir. Altın fiyatları pozitif etkiye sahip iken mevduat faiz oranı, Alman markı ve uluslararası portföy yatırımlarının negatif bir etkiye sahip olduğu sonucuna ulaşılmıştır. Albayrak, Öztürk ve Tüylüoğlu (2012) ise Albeni ve Demir (2005) gibi makroekonomik göstergelerin yanı sıra portföy yatırımlarının da pay senedi fiyatı üzerinde etkili olduğunu savunmuşlardır. Çalışmalarında 2015-2012 dönemi haftalık verileri kullanarak Prais-Winston Regresyon analizi uygulamış ve analiz sonucunda BİST 100 endeksi üzerinde ABD dolarının negatif yönde, altın fiyatlarının ve yabancı portföy yatırımlarının ise pozitif yönde etkili olduğu sonucuna varmışlardır. Poyraz ve Tepeli (2015) çalışmalarında çoklu regresyon modelinin yanı sıra korelasyon analizi ve Granger Nedensellik testlerini kullanarak borsa üzerinde etkili olan makroekonomik değişkenleri tespit etmeyi amaçlamışlardır. Çalışmalarında hazine bonusu faiz oranları ile BİST 100 endeksi arasında çift yönlü negatif ilişki olduğu ve döviz kurunun da negatif yönde etkilediği sonucuna varılmıştır. Bunun yanında para arzı ve sanayi üretim endeksinin de pozitif etkili olduğu tespit edilmiştir. Altınbaş, Kutay ve Akkaya (2015) ise çalışmalarında döviz kuru için benzer sonuçlara ulaşmış ancak sanayi endeksi ve döviz kurunun tek yönlü etkiye sahip olduğu tespit edilmiştir. Ayrıca BİST 100'ün yalnızca petrol değişkeni için Granger nedenselliğine sahip olduğu görülmüştür. Yeşildağ (2021) çalışmasında işsizlik oranını da eklemiş ancak BİST 100 endeksi fiyatı ile bir ilişki olmadığı sonucuna ulaşmaktadır.

Uçan, Güzel ve Acar (2017) diğer çalışmalardan farklı makroekonomik göstergelerde döviz olarak ABD dolarının yanı sıra Euro kurunu da çalışmalara dahil etmişlerdir. Dolar kuru için literatürden farklı sonuçlar elde edilmiş ve ilişkinin pozitif olduğu sonucuna

ulaşmıştır. Bununla beraber petrol fiyatlarının ve emisyon hacminin BİST 100 üzerinde pozitif ilişki rastlanırken TÜFE ve Euro için negatif ilişkinin varlığı rapor edilmiştir.

Alper ve Kara (2017) BİST Sınai endeksi getirisi üzerinde çalışmış ve diğer göstergelere ek dış ticaret dengesini de analiz sürecine dahil etmişlerdir. Bu bağlamda 2003:01-2017:02 dönemi verilerini etki-tepki analizi ve varyans ayrıştırma analizi yardımıyla incelemektedirler. Çalışma sonucunda sınai endeksinin etkilendiği makroekonomik göstergeler altın fiyatları, dış ticaret dengesi, sanayi üretim endeksi ve faiz oranı olarak tespit edilmiştir. Ancak enflasyon oranı, para arzı ve reel petrol fiyatlarının getiri üzerinde etkili olmadığı sonucuna ulaşılmıştır. Özer, Kaya ve Özer (2011) de çalışmalarında, dış dış ticaret dengesi, faiz oranı ve diğer çalışmadan farklı olarak enflasyon oranının BİST 100 endeksi üzerinde etkili olduğu sonucuna ulaşırlarken BİST 100 endeksinden M1 para arzı, sanayi üretim endeksi ve altın fiyatına doğru tek yönlü bir nedensellik ilişkisi olduğu sonucuna ulaşmışlardır.

Sadeghzadeh ve Elmas (2018) çalışmalarında Türkiye'deki makroekonomik göstergelerin yanı sıra ABD, İngiltere, Japonya, Avrupa ve Çin'in borsa endeksi ve faiz oranlarını da gösterge olarak kullanmışlardır. Bununla birlikte psikolojik faktörler olan korku endeksi, güven endeksi ve CDS primini de çalışmalarına dahil etmişlerdir. Aynı zamanda diğer çalışmalardan farklı olarak BİST endeksi yerine BİST'de işlem gören 130 firmanın getirileri üzerine ampirik bir çalışma yapılmıştır. Çalışmada panel veri analizi kullanılmıştır. Analizler sonucunda psikolojik faktörlerin özellikle korku endeksi ve CDS priminin getiri üzerinde negatif bir etkiye sahip olduğu belirlenmiştir. Köse ve Akkaya (2016) ise çalışmalarında T.C. Merkez Bankası Reel Kesim Güven Endeksi ve borsa arasındaki ilişkiyi inceleyerek yatırımcı beklenti ve endişelerinin pay senedi getirileri üzerinde etkisi bulunduğunu tespit etmişlerdir. Uzun ve Güngör (2017) 50 ülkenin aylık verilerini kullanarak oluşturdukları çalışmalarında, ülkeleri gelişmiş, gelişmekte olan ve az gelişmiş olarak üç gruba ayırmışlardır. Analiz sonuçlarında gelişmiş ülkelerin borsa endeksleri ile enflasyon, sanayi üretim endeksi, faiz oranı, para arzı ve döviz kuru değişkenleri arasında uzun dönemli ilişki tespit etmişlerdir. Az gelişmiş ülkelerde ise endeks ve faiz oranı arasında çift yönlü, sanayi üretim endeksi ve para arzı arasında tek yönlü nedensellik ilişkisi bulunmuşlardır.

Koyuncu (2018) da yaptığı çalışma sonucunda diğer çalışmalara benzer olarak faiz oranının BİST üzerinde negatif, sanayi üretim endeksinin ise pozitif etkili olduğu bulgusuna ulaşmıştır. Durmuş, Yılmaz ve Şahin (2019) makroekonomik göstergelerin etkisini BİST Bankacılık endeksi ve Mali endeks getirileri üzerinde incelemeye almıştır. Çalışmada 2006:05-2018:10 dönemine ait veriler kullanarak ilişkiyi VAR (Vector Autoregressive) analiziyle test etmiştir. Enflasyon oranının negatif yönde en etkili olan değişken olduğu sonucuna ulaşılmıştır. Kendirli ve Çankaya (2016) da çalışmalarında bankacılık endeksi üzerine çalışmışlar, ancak enflasyon ve döviz kurunun %5 anlamlılık düzeyinde bankacılık endeksi ile bir nedensellik ve eşbütünleşme ilişkisi içinde olmadığı sonucuna ulaşmışlardır.

Şekeroğlu, Uçan ve Acar (2019) çalışmasında spesifik olarak enflasyon ve dış ticaret açığını incelemeye almıştır. BİST 100 endeksi getirisiyle olan ilişkiyi test etmek için Johansen ve Gregory & Hansen Eşbütünleşme testlerinden yararlanmıştır. Çalışma sonucunda ise BİST 100 endeksi getirileriyle enflasyon ve dış ticaret açığı arasında uzun dönemli pozitif bir ilişki olduğu yani eşbütünleşik olduğu sonucuna varılmıştır. Şekeroğlu vd. (2019) gibi Sandal, Çemrek ve Yıldız (2017), BİST 100 endeksi üzerindeki ilişkiyi test etmede iki gösterge kullanmıştır. Bağımsız değişken olarak ham petrol ve altın fiyatı kullanılarak oluşturulan analizde sadece altın fiyatlarından BİST 100 endeksine doğru tek yönlü bir ilişki olduğu sonucuna ulaşılmıştır. Sarıtaş, Kılıç ve Nazlıoğlu (2021) ise çalışmasında risk göstergesi olan CDS primini ve Kredi Derecelendirme Notunu incelemiştir. Çalışmada ARDL modelini kullanmış ve BİST 100 ile risk göstergeleri arasında negatif bir ilişki olduğu sonucuna ulaşmıştır.

Fattah ve Kocabıyık (2020), diğer çalışmalardan farklı olarak çalışmasında seçilmiş makroekonomik göstergelerin Türkiye'nin BİST 100 endeksi ile ABD'nin S&P500 endeksi üzerindeki etkilerini incelemiş ve iki ülke arasında karşılaştırma yapmıştır. Çalışmada yapısal kırılmaları dikkate alan Lee Strazicich birim kök testi uygulanmış ve değişkenler arasındaki nedensellik ilişkisini test edebilmek için Toda-Yamamoto Nedensellik analizi uygulanmıştır. Çalışmanın bulgularına göre BİST 100 endeksi ile para arzı ve döviz kuru arasında çift yönlü bir nedensellik ilişkisi varken, tüketici fiyat endeksinden BİST 100 endeksine tek yönlü bir ilişki vardır. Ancak sanayi üretim endeksi, altın ve petrol fiyatıyla bir ilişki bulunamamıştır. S&P500 endeksi için ise para arzından S&P500 endeksine doğru tek yönlü bir nedensellik ilişkisi olduğu sonucuna ulaşılmıştır.

Altuntaş ve Ersoy (2021) TCMB Tüketici Güven Endeksi, Bloomberg HT Tüketici Güven Endeksi ve VIX Endeksi ile BİST 100 Endeksi arasındaki ilişkiyi inceledikleri çalışmalarında BİST 100 Endeksi ile Bloomberg HT Tüketici Güven Endeksi ve VIX Endeksi arasında eşbütünleşme ilişkisi tespit ederlerken BİST 100 Endeksi ile TCMB Tüketici Güven Endeksi arasında eşbütünleşme ilişkisi bulamamışlardır. Diğer yandan nedensellik analiz sonuçları, BİST 100 Endeksinden tüketici güven endeksine ve VIX Endeksinden ise BİST 100 Endeksine doğru tek yönlü nedensellik ilişkisi olduğunu göstermektedir.

2.2. Yurtdışı Çalışmalar

Makroekonomik göstergelerin borsa üzerindeki etkisini araştırmada literatürde yurtdışı çeşitli çalışmalar yer almaktadır. Kyereboah-Coleman ve Agyire-Tettey (2008), göstergelerin Gana pay senedi piyasası performansını nasıl etkilediği yönünde çalışma yapmışlardır. Çalışmada pay senedi piyasası yatırım aracı olarak görülmekten ziyade borç tedarik aracı olarak ele alınmıştır. Göstergelerin de borç tedarik aracı üzerinde nasıl bir etkiye sahip olduğunu araştırarak ülkenin yatırım potansiyelini belirlemeyi amaçlamışlardır.

Al-Shami ve Ibrahim (2013), makroekonomik göstergeleri Kuveyt borsası üzerinde Ocak 2001-Aralık 2010 dönemi aylık verilerle VAR modeliyle incelemiştir. Sonuçlara göre

pay senedi getirisi üzerinde 1 aylık dönemde faiz oranı negatif etkiliyken enflasyon, para arzı ve petrol fiyatı pozitif etkilidir. 2 aylık döneme bakıldığında ise tersi bir sonuç elde edilmekte ve faiz oranı pozitif etkiliyken; enflasyon, para arzı ve petrol fiyatı negatif etkili olduğu sonucuna ulaşılmıştır.

Ullah, Islam, Alam ve Khan (2017), makroekonomik göstergeleri SAARC (South Asian Association For Regional Co-Operation) ülkelerinin borsa performansı üzerinde incelemiştir. Çalışmalarında 2005-2015 dönemi yıllık veriler kullanılmış ve analiz için OLS çoklu regresyon modeli kullanılmıştır. Çalışmanın bulgularında ise döviz kuru, döviz rezervi ve faiz oranının SAARC ülke borsaları üzerinde olumlu bir etki olduğu ancak enflasyon ve para arzının borsa performansının istatistiksel olarak anlamlı olmadığı sonucuna ulaşılmıştır. Ayrıca verilerin eksik olması sebebiyle Afganistan ve Butan çalışmaya dahil edilmemiştir. Czapkiewicz, Jamer ve Landmesser (2018), da sabit bir borsa üzerinde çalışmaktan ziyade G6 ülkelerinin (Almanya, İngiltere, Fransa, İtalya İspanya ve Polonya) finansal piyasaları arasındaki ilişkide makroekonomik göstergelerin rolünü analiz etmeyi amaçlamışlardır. Çalışmada Polonya baz ülke olarak alınmış ve diğer G5 ülke piyasaları arasındaki ilişkiyi açıklamaya çalışmışlardır. Çalışmanın amacı farklı piyasalar arasındaki bağımlı etkileri tespit ederek çeşitlendirmeyi artırmaktır. Çalışmanın sonucunda ise özellikle işsizlik oranının Polonya ile diğer piyasalar arasındaki karşılıklı bağımlılığı etkilediği sonucuna varılmıştır.

Literatürde makroekonomik faktörler yanında VIX Endeksinin pay senedi getirileri ve piyasa oynaklığı üzerine etkisinin incelendiği çalışmalarda yer almaktadır. Bu çalışmalardan Ruan (2018) Çin ekonomisi üzerine yaptığı çalışmada piyasa oynaklığının (VIX endeksi) borsa üzerindeki etkisi araştırmakta ve daha sonra birçok ülkenin pay senedi endeksini verileri ampirik olarak analiz etmektedir. Ampirik sonuçlar VIX endeksinin borsalar üzerinde önemli bir etkiye sahip olduğunu göstermektedir.

Qadan vd. (2019) ABD üzerine yaptıkları çalışmalarında 1990-2016 VIX ve pay senedi getirileri arasındaki ilişkiyi incelemişlerdir. VIX'teki bir artış ya da düşüşün oynaklık ile gelecekteki getiriler arasında negatif ya da pozitif bir ilişki içinde olduğunu tespit etmişlerdir. Benzer şekilde Kang, Maitra, Dash ve Brooks (2019) hisse senetleri, emtialar, tahviller ve VIX piyasaları arasındaki ilişkiyi inceledikleri çalışmalarında yer alan analiz sonuçları gelişmekte olan pay senedi piyasalarının VIX'deki değişimden doğrudan etkilendiğini göstermektedir. VIX yanında psikolojik faktörlerden güven endekslerinin pay senedi üzerine etkilerinin incelendiği çalışmalardan Jansen ve Nahuys'in (2003) 11 Avrupa ülkesini kapsayan çalışmasında söz konusu iki değişken arasında bir eşbütünleşme ilişkisi tespit edememişen ABD ekonomisi üzerine yapılan Brown ve Cliff (2004) ve Wang, Keswani ve Taylor (2006)'a ait çalışmalarda hem güçlü ilişki hem de nedensellik ilişkisi tespit edilmiştir.

3. Veri Seti ve Yöntem

3.1. Veri Seti

Bu çalışma 01:2010-08:2021 dönemini kapsayan aylık verilerden oluşmaktadır. Çalışmada bağımlı değişken olarak BİST 100 Endeksi kullanılmıştır. 140 gözlem biriminden oluşan veri seti Türkiye Cumhuriyet Merkez Bankası (TCMB), Türkiye İstatistik Kurumu (TÜİK), MATRIKS Bilgi Dağıtım Hizmetleri ve investing.com adresinden alınarak derlenmiştir. Analizlerde kullanılan değişkenlere ait tanımlar ve verilerin elde edildiği kaynaklar Tablo 1’de yer almaktadır.

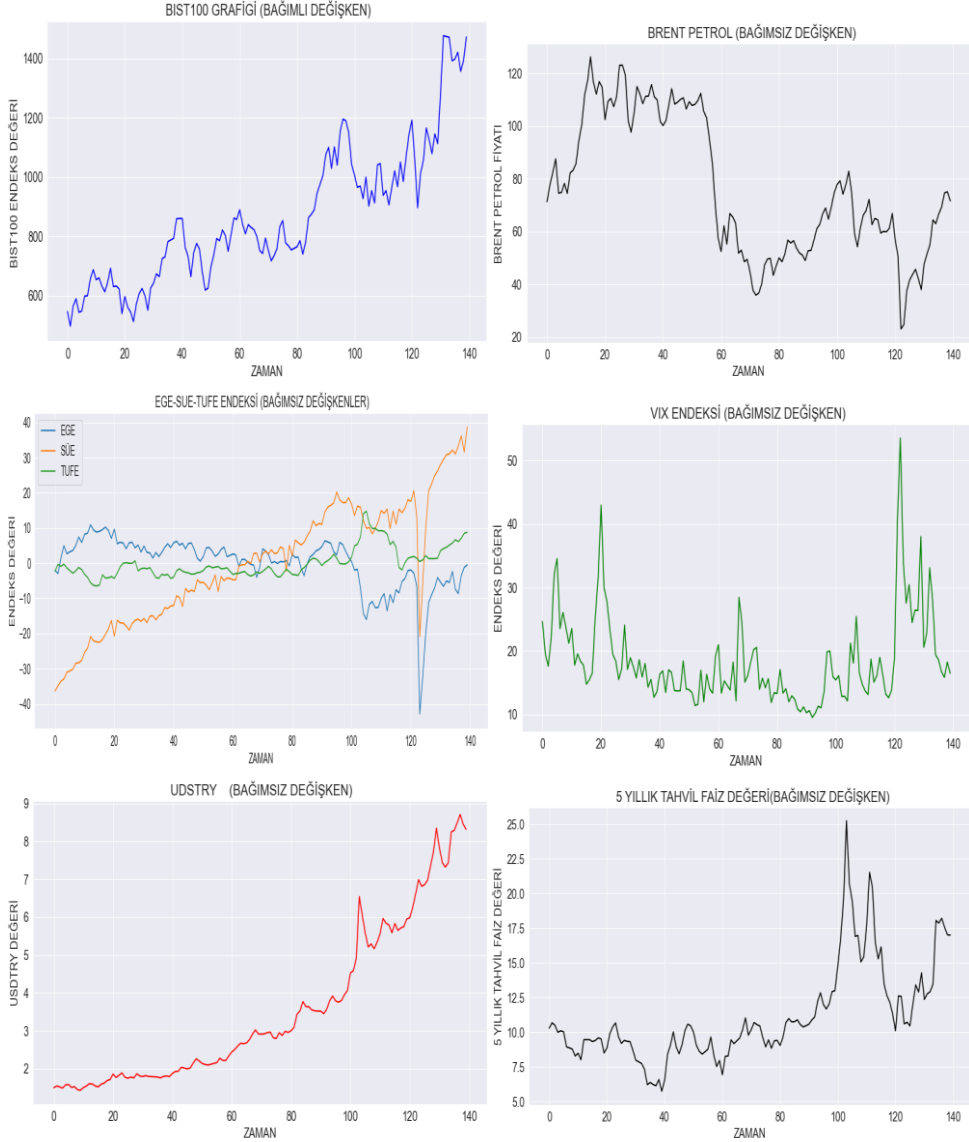
Tablo: 1
Değişken Tanımları ve Kaynak

| Değişkenler | Değişken Tanımları | Kaynak |
|-------------|---------------------------------------|---------------|
| BİST 100 | Borsa İstanbul 100 Endeksi | MATRIKS |
| VIX | Korku Endeksi | investing.com |
| USDTRY | Dolar/TL kuru | MATRIKS |
| EGE | Ekonomik Güven Endeksi | TÜİK |
| SUE | Sanayi Üretim Endeksi | TÜİK |
| FAİZ | 5 Yıl Vadeli Devlet Tahvil Faiz Oranı | investing.com |
| TÜFE | Tüketici Fiyat Endeksi | TCMB |
| BRENT | Brent Petrol | MATRIKS |

Ekonomik Güven Endeksinde mevsimsel etkilerden arındırılmış veriler kullanılmıştır. Döviz kuru göstergesi olarak USD/TRY rakamları kullanılmıştır. BİST 100 Endeksi, VIX, BRENT ve USD/TRY verileri kapanış fiyatları alınarak çalışmaya dahil edilmiştir. Büyüme oranları için Mevsim ve takvim etkisinden arındırılmış Sanayi Üretim Endeksinin bir önceki yılın aynı ayına göre yüzde değişim oranları şeklindeki veriler kullanılmış olup tüm değişkenlerin verileri aylık frekanslı olarak kullanılmıştır. Analizlerde Python programlama dili ve Eviews-10 paket programından yararlanılmıştır.

Bağımlı ve bağımsız değişkenlere ait tüm gözlemlerin aylık bazdaki değişimleri Grafik 1’de gösterilmiştir. Değişkenlerin grafikleri incelendiğinde BİST 100 endeksi ile USDTRY değişkeni arasında pozitif, Brent petrol ile negatif bir ilişki görülürken, diğer değişkenler arasında bu şekilde belirgin bir etkileşim görülmemektedir. Tüm değişkenlerin BİST 100 endeksi üzerindeki ilişkisini açıklamak için ARDL modeli yapılmıştır.

Grafik: 1 Tüm Değişkenlere Ait Grafikler



3.2. Yöntem

3.2.1. Birim Kök Testi

Bir zaman serileri analizinde ekonometrik olarak model kurulması gerekmektedir. Model seçimi yaparken hangi ekonometrik modelin kullanılacağını tespit edebilmek için, önce her bir değişkenin serilerinin kaçınıcı dereceden durağan olup olmadığı test edilmelidir. Modelin doğru seçilmesi, sahte regresyon probleminin oluşmasını engeller. Durağanlık testi grafik ve korelogram yöntemiyle tespit edilebileceği gibi birim kök testi ile de yapılmaktadır (Granger & Newbold, 1974). Bu çalışmada değişkenlerin durağanlığını test etmek için birim kök testi yöntemi kullanılmıştır.

Değişkenlerin durağanlığını test etmek için birçok birim kök testi olmakla birlikte bu çalışmada Dickey-Fuller (ADF) (1979) ve Phillips-Perron (PP) (1988) birim kök testi yöntemi kullanılmıştır. Bu testlere göre göre üç farklı denklem geliştirilmiş ve bu denklemlere göre serilerin durağan olup olmadığı incelenmiştir. Bunlar sırasıyla sabitsiz ve trendsiz model, sabitli ve trendsiz model ve son olarak da sabitli ve trendli modeldir.

ADF ve PP Birim Kök testine göre;

H_0 Boş hipotezi \rightarrow Zaman serisinde birim kök vardır. Seri durağan değildir.

H_1 Karşıt hipotez \rightarrow Zaman serisinde birim kök yoktur. Seri durağandır.

Birim kök testi sonuçlarının t istatistik değerleri MacKinnon (1996) kritik değerler ile (%1, %5, %10 anlamlılık düzeyine göre) karşılaştırılır.

$|t| > \text{Kritik değerler} \rightarrow H_0$ Hipotezi reddedilir. Karşıt hipotez kabul edilir, seri durağandır.

$|t| < \text{Kritik değerler} \rightarrow H_0$ Hipotezi kabul edilir. Seride birim kök vardır.

3.2.2. ARDL Sınır Testi (Autoregressive Distributed Lag Bound Test)

ARDL Sınır testinin uygulanabilmesi için modeldeki bağımlı değişkenin birinci farkında durağan, bağımsız değişkenlerin bazıları seviyede ve diğer bağımsız değişkenlerin ise birinci farkında durağan olmalıdır. Ekonometrik analizlerden biri olan Gecikmesi Dağıtılmış Otoregresif Sınır Testi (ARDL) modelinde serilerin I(1) veya I(0) olup olmadığına bakılmaksızın uzun dönemli ilişkinin varlığı incelenir (Pesaran & Shin, 1999). Böylelikle ARDL sınır testi yaklaşımla farklı düzeyde durağan değişkenler arasında eşbütünleşme ilişkisi sınanabilmektedir (Pesaran, 2001: 290). Bu bilgilerin ışığında ve yapılan birim kök testinin sonucundan yola çıkılarak, bu çalışmada değişkenler arasındaki kısa ve uzun dönemli ilişkiyi test edebilmek amacıyla ARDL Sınır testi yöntemi kullanılmasına karar verilmiştir.

Modelin eşbütünleşme ilişkisinin test edildiği matematiksel denklem şu şekildedir:

$$\Delta BİST_t = a_0 + \sum_{i=1}^p a_{1i} \Delta BİST_{t-1} + \sum_{i=0}^p a_{2i} \Delta VIX_{t-1} + \sum_{i=0}^p a_{3i} \Delta USDTRY_{t-1} +$$

$$\begin{aligned} & \sum_{i=0}^p a_{4i} \Delta TUF E_{t-1} + \sum_{i=0}^p a_{5i} \Delta FAİZ_{t-1} + \sum_{i=0}^p a_{6i} \Delta EGE_{t-1} + \sum_{i=0}^p a_{7i} \Delta SUE_{t-1} + \\ & \sum_{i=0}^p a_{8i} \Delta BRENT_{t-1} + a_8 BİST_{t-1} + a_9 VIX_{t-1} + a_{10} USDTRY_{t-1} + a_{11} TUF E_{t-1} + \\ & a_{12} FAİZ_{t-1} + a_{13} EGE_{t-1} + a_{14} SUE_{t-1} + a_{15} BRENT_{t-1} + \varepsilon_t \end{aligned} \quad (1)$$

Denklem 1’de Δ simgesi serilerin birinci dereceden farkını gösterirken, p ise serilerin gecikme uzunluğunu göstermektedir. BİST 100 endeksi modelin bağımlı değişkenini, diğer değişkenler ise modelin bağımsız değişkenini oluşturmaktadır. Eşbütünleşme testi sonucunda hesaplanan F istatistiği, modelin alt $I(0)$ ve üst sınır $I(1)$ kritik değerlerini aşması durumunda değişkenler arasında eşbütünleşme ilişkisi vardır sonucuna ulaşılır. Daha sonra bağımlı ve bağımsız değişkenler arasındaki uzun dönemli ilişki test edilir.

Bu ilişkiyi test etmede kullanılan matematiksel denklem ise şu şekildedir:

$$\begin{aligned} \Delta BİST_t &= a_0 + \sum_{i=1}^p a_{1i} \Delta BİST_{t-1} + \sum_{i=0}^q a_{2i} \Delta VIX_{t-1} + \sum_{i=0}^m a_{3i} \Delta USDTRY_{t-1} + \\ & \sum_{i=0}^n a_{4i} \Delta TUF E_{t-1} + \sum_{i=0}^k a_{5i} \Delta FAİZ_{t-1} + \sum_{i=0}^l a_{6i} \Delta EGE_{t-1} + \sum_{i=0}^r a_{7i} \Delta SUE_{t-1} + \\ & \sum_{i=0}^r a_{8i} \Delta BRENT_{t-1} + \varepsilon_t \end{aligned} \quad (2)$$

Denklem 2’de eşbütünleşme modelinden farklı olarak değişkenlerin gecikme uzunlukları farklılık göstermektedir. Değişkenlerin gecikme uzunluklarına göre uzun dönemli model testi uygulanarak sonuçlar anlamlılık düzeyine göre değerlendirilir. Son olarak değişkenlerin kısa dönemli ilişkisi test edilir.

Kısa dönemli ilişki denklemi şu şekildedir:

$$\begin{aligned} \Delta BİST_t &= a_0 + \sum_{i=1}^p a_{1i} \Delta BİST_{t-1} + \sum_{i=0}^q a_{2i} \Delta VIX_{t-1} + \sum_{i=0}^m a_{3i} \Delta USDTRY_{t-1} + \\ & \sum_{i=0}^n a_{4i} \Delta TUF E_{t-1} + \sum_{i=0}^k a_{5i} \Delta FAİZ_{t-1} + \sum_{i=0}^l a_{6i} \Delta EGE_{t-1} + \\ & \sum_{i=0}^r a_{7i} \Delta SUE_{t-1} + \sum_{i=0}^l a_{8i} \Delta BRENT_{t-1} + \beta ECT_{t-1} \varepsilon_t \end{aligned} \quad (3)$$

Denklem 3’te ECT Hata Düzeltme Terimini, β ise Hata Düzeltme Teriminin katsayısını göstermektedir. Bu katsayı kısa dönemde oluşan sapmaların uzun dönemde dengeye ulaştığını gösterir. Kısa dönemde katsayıların yorumlanabilmesi için β katsayısının %5 anlamlılık düzeyinde ve negatif işaretli olması gerekir.

3.2.3. Ortalama Mutlak Yüzde Hata (OMYH)

$$OMYH = \frac{100\%}{n} \sum_{t=1}^n \frac{|X_t - Y_t|}{X_t}$$

$$OMH = \frac{\sum_{t=1}^n |X_t - Y_t|}{n}$$

$n = \text{Veri Sayı}$

$X_t = \text{Gerçekleşen Veriler}$

$$Y_t = \text{Regresyon Sonuçları} \quad (4)$$

Regresyon denklemlerinin başarısı ortalama kareler hatası veya ortalama mutlak yüzde hatası gibi performans kriterleri ile ölçülür. Bu çalışmada ortalama mutlak yüzde hatası kriteri kullanılmıştır. Formüldeki n veri sayısını X_t , t zamanındaki gerçekleşen değeri ve Y_t ise t zamanındaki regresyon sonuçlarını göstermektedir. Formülde öncelikle gerçekleşen değer ile regresyon sonucu çıkarılarak toplam değer bulunur. Sonuç negatif olabileceği gibi pozitifte olabilir. Bu yüzden mutlak değeri alınır. Elde edilen sonuç zaman serisindeki veri sayısına bölünerek 100 ile çarpılır. Böylece tahmin değerinin gerçek değerden % kaç saptığı bulunur.

4. Bulgular

Bu çalışmada kullanılacak ekonometrik modeli seçebilmek için ADF ve PP birim kök testi uygulanmıştır. Birim kök testi sonuçları seviyede ve birinci farkta durağan olma durumuna göre Tablo 2’de verilmiştir.

Tablo: 2
Birim Kök Testi Sonuçları

| Değişkenler | Seviye I(0) | | Birinci Fark I(1) | |
|-----------------|------------------------|-----------------------|------------------------|-----------------------|
| | ADF Sabitli ve Trendli | PP Sabitli ve Trendli | ADF Sabitli ve Trendli | PP Sabitli ve Trendli |
| BİST 100 | -2,839 | -2,951 | -11,763** | -15,771** |
| VIX | -4,842* | -4,814* | -13,219 | -20,584 |
| USDTRY | -1,531 | -1,03 | -10,786** | -17,236** |
| TÜFE | -3,343 | -2,686 | -8,743** | -8,937** |
| FAİZ | -2,966 | -2,988 | -10,601** | -10,698** |
| EGE | -4,635* | -4,573* | -11,702 | -14,272 |
| SUE | -4,528* | -4,423* | -12,308 | -16,482 |
| BRENT | -2,458 | -2,383 | -9,579** | -9,417** |
| Kritik Değerler | 1% | | -4,026 | |
| | 5% | | -3,443 | |
| | 10% | | -3,146 | |

(MacKinnon kritik değerleri dikkate alınarak anlamlılık düzeyleri belirlenmiştir. Maksimum gecikme uzunluğu otomatik olarak alınmıştır. %5 anlamlılık düzeyinde *, seviyede ** ise birinci farkta durağanlığı temsil etmektedir).

ADF test sonuçlarına göre bağımlı değişken olan BİST 100 endeksinin seviyede t değerleri mutlak değer olarak %5 anlamlılık düzeyinde $I(0)$ kritik değerlerden küçüktür. Bu durum H_0 Hipotezinin kabul edildiğini, yani birim kökün varlığını gösterir. Birinci farkı $I(1)$ alındığında ise t değerlerinin mutlak değerleri kritik değerlerden yüksektir. Yani H_0 Hipotezi reddedilir ve serilerin $I(1)$ düzeyinde durağan olduğu sonucuna ulaşılır. Aynı şekilde bağımsız değişken olarak USDTRY, FAİZ, BRENT ve TÜFE %5 anlamlılık düzeyinde seviyede birim kök içerirken birinci farkı alındığında durağan hale gelmektedir. Diğer bağımlı değişkenlerden EGE, SUE ve VIX ise seviyede t değerlerinin mutlak değeri kritik değerden büyüktür. Aynı şekilde PP birim kök testi sonuçları da ADF birim kök testi sonuçlarını destekler niteliktedir. Böylece serilerin farklı düzeylerde durağan olduğu sonucuna ulaşılmış ve ayrıca serilerin ikinci farkta $I(2)$ durağan olmadığı anlaşılarak değişkenler arasındaki ilişkiyi test etmede en uygun modelin ARDL modeli olduğu anlaşılmıştır. Modelin gecikme uzunluğu otomatik olarak belirlenmiş ve bilgi kriteri olarak Akaike Bilgi Kriteri (AIC) seçilmiştir.

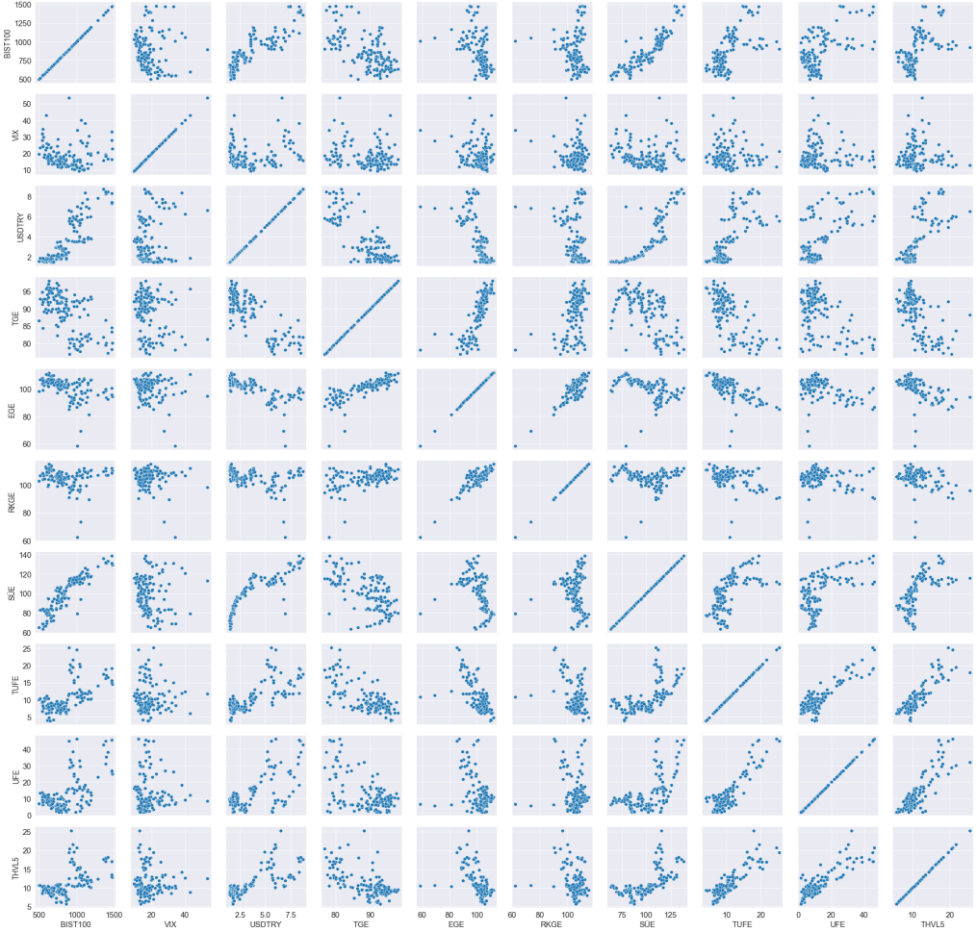
Python programlama dili kullanılarak yapılan ADRL modelinde, optimal sonuç için bağımsız değişkenlerden bir kısmı otomatik olarak modelden çıkarılmış ve en uygun ARDL modeli (1, 0, 1, 3, 1, 0,1) olarak belirlenmiştir. BİST 100 endeksi ve BİST 100 değişkeninin regresyon denklemi ilişkisi Grafik 2’de gösterilmiştir. Python ile ulaşılan modelde BİST 100 değişkeninin regresyon denklemi ile BİST 100 endeksinin gerçekleşen değeri karşılaştırıldığında ortalama mutlak hata yüzdesi %3,985’tir. SUE bağımsız değişkenini içeren modelde, BİST 100 değişkeninin regresyon denkleminin BİST 100 endeksinin gerçekleşen değeriyle karşılaştırıldığında ortalama mutlak hata yüzdesi 4,1378 bulunmaktadır. Bu da SUE içermeyen modelin daha iyi olduğu sonucunu göstermektedir.

Grafik: 2
BİST 100 Endeksi ve Regresyon Modeli



USDTRY bağımsız değişkeni çıkartıldığında ise Python modele SUE bağımsız değişkenini dahil etmektedir. Bunun sebebini anlamak için Python yardımıyla çiftler arasındaki ilişkiyi gösteren grafiği oluşturularak, bağımsız ve bağımlı tüm değişkenlerin birbiriyle ilişkisi Grafik 3’te incelenmiştir. BİST 100 bağımlı değişkeninin Kur ve büyüme arasındaki doğrusal ilişkisi, bu iki değişkenin modeldeki tahmin gücünün fazla olduğunu göstermektedir. Söz konusu durumda modelin tahmin gücü zayıflayabilmektedir. Bu modelde sonucu fazla etkilemese de farklı modellerde benzer değişkenlerin aynı modelde yer alması analiz sonucunu çok daha fazla etkileyebilmektedir.

Grafik: 3
Tüm Değişkenlere Ait İlişki Grafikleri



Grafik 3’te USDTRY ve SUE değişkeninin doğrusal olarak BİST 100 ile ilişkisi olduğu gözükmekte ve etki katsayısının yüksek olduğu düşünülmektedir. USDTRY ve SUE’nin de ilişkisine bakıldığında iki değişkeni birbiriyle doğrusal ilişkisi gözükmektedir. Bu da optimal model de neden bir tanesinin olduğunu izah etmektedir. BİST 100 endeksinin yine VIX, EGE ve RKGE ile ilişkisi gözükmekte olup, doğrusal olmamasından dolayı, katsayısının USDTRY kadar yüksek olmayacağı söylenebilir. EGE ile Reel Kesim Güven Endeksi (RGKE) arasındaki ilişki de yine SUE ve USDTRY gibi doğrusal ilişki gözükmekte, bu da optimal modelde EGE olduğundan RGKE değişkenine gerek duyulmadığını izah etmektedir. Tüketici Güven Endeksi (TGE) değişkeni de RGKE ile aynı

durumdadır. TÜFE ve üretici fiyat endeksi (ÜFE) ile de doğrusal bir ilişki bulunmaktadır. Bu da optimum modelde sadece ÜFE veya TÜFE değişkenlerden birinin olabileceğini göstermektedir. Grafik incelendiğinde optimal model ile uyumludur.

Seçilen modelin eşbütünleşme içerip içermediğini test edebilmek için yapılan F istatistiğine ait sonuçlar Tablo 3’te verilmiştir.

Tablo: 3
Eşbütünleşme Testi Sonuçları

| F-Bounds Testi | | | | |
|------------------|-------|-------------------|----------------|----------------|
| Test İstatistiği | | Anlamlılık Düzeyi | Alt Sınır I(0) | Üst Sınır I(1) |
| F-İstatistiği | 8,718 | 10% | 2,088 | 3,103 |
| K | 6 | 5% | 2,431 | 3,518 |
| | | 1% | 3,173 | 4,485 |

Yapılan sınır testi sonucuna göre F istatistiği alt sınır I(0) ve üst sınır I(1) değerlerinden büyüktür. Bu sonuç söz konusu değişkenler arasında eşbütünleşmenin olduğunu göstermektedir. ARDL modelinin geçerliliğini test etmek için tanısallık testleri yapılmıştır. Test sonuçları Tablo 4’te yer almaktadır.

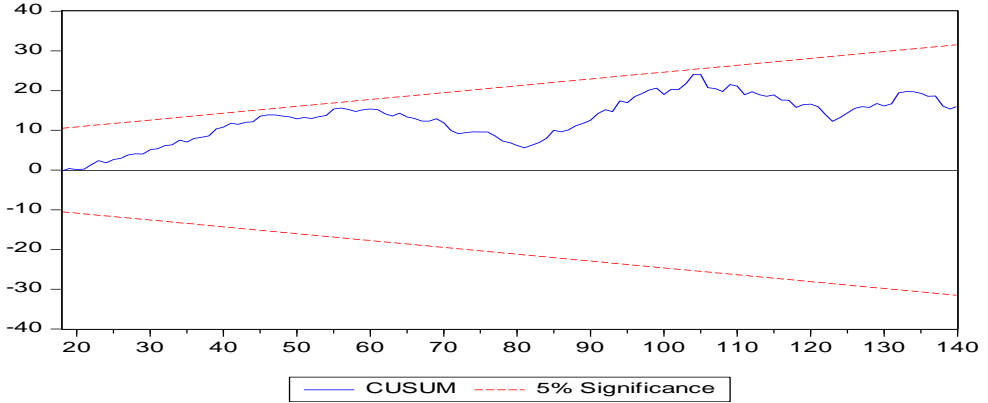
LM testi otokorelasyon sorunu olup olmadığını göstermektedir. Kurulan modele göre olasılık değeri $> 0,05$ olduğu için otokorelasyon sorununun olmadığı söylenebilir. Aynı şekilde model sonucunda değişen varyans problemi de yoktur. Jargue - Bera Testi serilerin normal dağıldığını gösterirken Ramsey Reset Testi ise model kurma hatasının olmadığını göstermektedir. Yine otokorelasyon probleminin olup olmadığını gösteren diğer bir tanısallık testi Durbin-Watson (DW) olup DW değerinin 2’ye yakın bir değer alması modelde otokorelasyon olmadığını göstermektedir.

Tablo: 4
Tanısallık Testleri ve Sonuçları

| Tanısallık Testleri | Olasılık Değerleri |
|-----------------------|--------------------|
| LM Testi | 0,812 |
| Değişen varyans Testi | 0,963 |
| Jargue - Bera | 0,877 |
| Ramsey Reset | 0,207 |
| Durbin-Watson | 1,906 |

ARDL modelinin kararlılığını gösteren daha açık bir ifade ile değişkenlere ilişkin yapısal kırılmanın varlığını belirlemek için CUSUM (cumulative sum) test sonuçlarından yararlanılmaktadır. Eğer, CUSUM istatistik değeri %5 anlamlılık düzeyinde kritik sınırlar içerisinde (iki çizgi arasında) kalıyorsa, ARDL modelindeki katsayıların istikrarlı olduğunu ifade eden H_0 hipotezi kabul edilecektir (Bahmani Oskooee, Ng, 2002: 25). Model sonucuna göre CUSUM testi sonucu Grafik 4’te verilmiş olup ARDL sınır testi katsayılarının kritik değer içerisinde olduğu yani katsayıların istikrarlı olduğu sonucuna ulaşılmaktadır.

Grafik: 4
Cusum Testi



Tablo 5’te Akaike bilgi kriterine göre oluşturulan ARDL model katsayıları yer almaktadır. Hata düzeltme modeli diğer tanımsal testlerden farklı olarak olasılık değeri $< 0,05$ olmalıdır. Aynı zamanda 1’den küçük ve “eksi” bir değer almalıdır. Hata Düzeltme modeli kısa dönemde meydana gelen sapmaların ne kadar süre ile düzeltildiğini ifade etmektedir (Uyar-Bozdağlıoğlu, 2007). Model sonucuna göre değişkenler arasındaki uzun dönemli bir sapma bir sonraki dönemde yaklaşık %28 oranında birbirine tekrar yaklaşıyor demektir. Yani kısa dönemde oluşan sapmanın sonraki dönemlerde dengeye ulaştığı sonucuna ulaşılır.

Tablo: 5
ARDL Sınır Testi Uzun ve Kısa Dönem Sonuçları

| ARDL Uzun Dönem Katsayıları (1, 0, 1, 3, 1, 0, 1) | | | | |
|---|----------|----------|---------------|-----------------|
| Değişkenler | Katsayı | St. Hata | t-İstatistiği | Olasılık Değeri |
| VIX | -11.581 | 2.397 | -4.831 | 0.000* |
| USDTRY | 177.356 | 16.151 | 10.981 | 0.000* |
| EGE | 13.842 | 3.760 | 3.681 | 0.000* |
| TÜFE | 23.143 | 8.768 | 2.639 | 0.009* |
| FAİZ | -53.122 | 10.903 | -4.872 | 0.000* |
| BRENT | -0.829 | 0.703 | -1.178 | 0.241 |
| C | -516.653 | 412.070 | -1.254 | 0.212 |

ARDL Kısa Dönem Katsayıları (1, 0, 1, 3, 1, 0, 1)

| Değişkenler | Katsayı | St Hata | t-İstatistiği | Olasılık Değeri |
|--------------|---------|---------|---------------|-----------------|
| D(USDTRY) | -12,499 | 18,352 | -0,681 | 0,497 |
| D(EGE) | -0,098 | 0,939 | -0,104 | 0,917 |
| D(EGE(-1)) | -1,009 | 0,917 | -1,101 | 0,273 |
| D(EGE(-2)) | -2,723 | 0,918 | -2,966 | 0,004* |
| D(TÜFE) | -0,954 | 2,97 | -0,321 | 0,749 |
| D(BRENT) | 1,575 | 0,595 | 2,646 | 0,009* |
| CointEq(-1)* | -0,275 | 0,032 | -8,585 | 0 |

* %1, ** %5 anlamlılık düzeyini göstermektedir.

Modelin uzun dönem katsayılarına göre %5 anlamlılık düzeyinde VIX ve FAİZ oranı BİST 100 üzerinde negatif ilişkiye sahip olup VIX endeksindeki 1 birimlik bir artış BİST 100 endeksinin yaklaşık 12 birimlik azalışa sebep olmaktadır. Aynı şekilde tahvil FAİZ oranındaki bir birimlik bir artış (azalış) BİST 100 endeksinde yaklaşık 53 birim azalışa (artışa) sebep olmaktadır. USDTRY, TÜFE ve EGE %5 anlamlılık düzeyinde BİST 100 Endeksi ile pozitif ilişkiye sahiptir. BRENT ise istatistiksel olarak anlamlı değildir. Kısa dönemli ilişki testi sonuçlarına göre sadece BRENT ve EGE(-2) %5 anlamlılık düzeyine sahiptir. BRENT'teki bir birimlik artış (azalışa) BİST 100 Endeksinde yaklaşık 1,5 birim artışa (azalışa) sebep olurken, EGE (-2)'deki bir birimlik artış (azalış) ise BİST 100 Endeksinde yaklaşık 3 birimlik azalışa (artışa) sebep olmaktadır. Diğer değişkenler ise istatistiksel olarak %5 anlamlılık düzeyine sahip değildir. Elde edilen bulgular doğrultusunda psikolojik faktörler olan korku ve güven endekslerindeki değişimlerin borsa üzerinde etkili olduğu söylenebilmektedir. Diğer yandan farklı makroekonomik göstergelerin borsa üzerinde oluşturduğu etkinin yönü farklılaşmaktadır. Söz gelimi faiz oranlarındaki artış borsayı negatif etkilerken bu durum borsada şirketlere yapılan yatırımlar yerine alternatif araçların kullanıldığına işaret etmektedir.

5. Sonuç

Pay senedi piyasasındaki fiyat değişimlerinin hangi faktörlerden etkilendiği hem yatırımcılar hem de firmalar tarafından her geçen gün daha da önemli hale gelmiştir. Bu fiyat hareketliliğinin sadece ekonomik faktörlerden değil, aynı zamanda psikolojik faktörlerden de kaynaklı olabileceği düşünülmüştür. Finansal liberalleşme süreci ve bununla birlikte yaşanan ekonomik ve siyasi krizler bazı makroekonomik göstergelere olan önemi artırmıştır. Bu çalışmada Türkiye borsasının temel göstergesi olarak kullanılan BİST 100 Endeksinin etkilediği düşünülen bazı makroekonomik faktörler ele alınmıştır. Değişkenlere birim kök testi uygulanmış ve modele ait tanınal test sonuçları değerlendirilerek model kurmada bir sorun olmadığı sonucuna ulaşılmıştır. ARDL sınır testi modeliyle değişkenler arasında uzun dönemli ilişkinin kısa dönemli ilişkiye göre daha güçlü olduğu tespit edilmiştir. Modele birçok değişken dahil edilmiş ve Python ile yapılan çalışma da bağımsız değişkenler program tarafından elenmiş olup optimum model bulunmuştur. Python çıktılarına göre optimum modelde USDTRY, TÜFE, EGE, FAİZ, VIX değişkenleri ile çalışmaya devam edilmiştir. Python modelinde, bazı değişkenlerin modele dahil edilmemesi söz konusu değişkenlerin BİST 100'e etkisinin olmadığı anlamına gelmemektedir. Örneğin, SUE bağımsız değişkeni USDTRY gibi çok etkili bir değişken olmasına rağmen, model oluşturulurken diğer değişkenlerle beraber olan kombinasyonda tahmin gücünü azalttığı için Python programı modele dahil etmemiştir. ADRL modelleri kurulurken Python programından faydalanılması optimal modele ulaşılmasında çok önemlidir.

Bulgulara göre, tüm değişkenler %5 anlamlılık düzeyinde değerlendirildiğinde USDTRY, TÜFE ve EGE BİST 100 endeksi üzerinde uzun dönemde pozitif yönde etkili iken, VIX ve FAİZ değişkeni negatif yönde etkili olduğu bulunmuş, BRENT değişkeni ile anlamlı sonuçlara ulaşılamamıştır. Elde edilen sonuçlar önceki çalışmalar ile karşılaştırılarak değerlendirilmiştir.

2015 ve öncesi yıllarda yapılan çalışmalara bakıldığında Omağ (2009), Albayrak vd. (2012), Poyraz ve Tepeli (2015), BİST 100 endeksi ile dolar kuru arasında negatif ilişki olduğu sonucuna ulaşılırken, Uçan vd. (2017), Fattah ve Kocabıyık, (2020) tarafından yapılan güncel çalışmalar ise tersi ilişki olduğu sonucunu elde etmiştir. Çalışmanın bulguları güncel çalışmaları destekler nitelikte olup BİST 100 endeksi ile dolar kuru arasında uzun dönemde pozitif ilişki olduğu tespit edilmiştir. Ancak kısa dönem katsayıları %5 anlamlılık düzeyinde olmadığından ilişki yorumlanamamıştır. Grafik 1’de USDTRY ve BİST 100 değişkenlerinin grafikleri incelendiğinde iki değişkeninde pozitif yönde etkileşim içinde olduğu görülmektedir, bu da elde edilen sonuçları destekler niteliktedir. Dolar kurunun değer kazanmasıyla BİST 100 endeksindeki hisse senetlerinin dolar bazında ucuz kalması sebebi ile yatırımcılar için BİST 100 hisse senetleri cazip hale gelmekte ve artan talep fiyatların yükselmesine sebebiyet verdiği düşünülmektedir. Dolar kurunun ihracata olumlu etkisi, ekonomiye olumlu yansımakta olup bu da BİST 100 hisse senetlerine güveni artırmaktadır. Bu sonuçlar Branson (1983) ve Frankel (1983), döviz kurlarını hisse senedi gibi varlıklara olan arz ve talebi eşit olarak gören “hisse senedi odaklı” döviz kuru modelleri ile uyumludur. Geliştirmişlerdir. Ayrıca geçmiş yıllarda dolarların satılıp hisse senedine yatırım yapılması, hisse senedinde. Dolar kurunun artışı, aynı zamanda enflasyon artışına sebebiyet vermekte bu da hisse senedi fiyatlarında yükselişe sebebiyet verdiği düşünülmektedir.

Enflasyon göstergesi olarak analiz edilen TÜFE değişkenine bakıldığında ise sonuçlar Koyuncu (2018), Şekeroğlu vd. (2019), Fattah ve Kocabıyık (2020) çalışmalarıyla tutarlı sonuçlar elde edilmiş olup TÜFE değişkeninin BİST 100 endeksini pozitif yönde etkilediği görülmektedir. Enflasyondaki artışın tasarruf sahiplerinin birikimlerinin değerini azaltacağından diğer alternatif yatırım araçları, faiz gibi yeterli seviyede cazip olmadığına, yatırımcılar değer kaybını önlemek için BİST 100 endeksine yönelme eğiliminde olabilmektedir. Aynı şekilde pay senedinin değeri hesaplandığında, satış kârlılık gibi bilanço verilerinin enflasyonla paralel arttığı için pay senedinin değeri de enflasyon oranıyla TL bazında artmaktadır. Bu reel anlamda bir artış olmasa da fiyat olarak artışa sebebiyet vermektedir.

EGE değişkeninin BİST 100 endeksini pozitif etkilemesi, tasarruf sahiplerinin artan ekonomik güven ile üretim ve buna bağlı olarak tüketimin artacağını ve neticesinde şirket kârlılıklarının olumlu yönde etkileyecek olması, endeks fiyatına olumlu yansımaktadır. Ayrıca, yatırımcıların ekonomiye güvenmesi, şirket kârlılıklarının yükseleceğine ve dolayısıyla temettü gelirlerin artacağına inancının artması pay senetlerinin değerini de olumlu etkilemektedir. Şirket kârlılığının artacağı inancı pay senedinin değerinin de yükseleceği anlamına geldiği için, yatırımcılar piyasada alıcı pozisyonuna girmektedir.

VIX ve FAİZ değişkeni BİST 100 endeksini negatif yönde etkilemektedir. Elde edilen sonuçlar Sadeghzadeh vd. (2018) ve Yeşildağ (2021) tarafından yapılan çalışmayla tutarlıdır. Tahviller yatırımcılar açısından görece risksiz varlıklardır. Bu yüzden tahvil faizinin artması hem ekonomide sıkıntıların olduğunu göstermekle beraber, yatırımcılar açısından pay senedi piyasasına göre daha cazip olabilmektedir. VIX korku endeksinin artması özellikle pay senetleri piyasasındaki endişeleri gösterdiği için yatırımcılar pay

senedinden uzaklaşarak, pay senetlerine göre daha az riskli olan altın, tahvil gibi varlıklara yönelmektedirler. Bu çalışmada elde edilen sonuçlar değerlendirildiğinde makroekonomik göstergelerin BİST 100 üzerinde etkisi açıkça anlaşılmaktadır. Yatırımcıların, makroekonomik göstergeleri takip ederek daha etkin bir portföy oluşturmaları mümkün olup BİST 100 endeksinin yönünü tahmin edebilecekleri düşünülmektedir.

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EKLER

Ek: 1 Tanımlayıcı İstatistikler

| YAZAR(LAR) | SEÇİLEN BORSA ENDEKSİ | DEĞİŞKENLER | VERİ SETİ VE EKONOMETRİK YÖNTEM | SONUÇLAR |
|--|----------------------------|--|--|---|
| Albeni & Demir (2005) | Mali Sektör Endeksi | Çeşitli makroekonomik faktörler | (1991-2000) Çok Değişkenli Doğrusal Regresyon Modeli | Mali sektör endeksi altın fiyatlarıyla pozitif, Mevduat faiz oranı, Uluslararası portföy yatırımları, Alman markı ile negatif bir ilişki bulunmuştur. |
| Kyereboah-Coleman & Agyire-Tettey (2008) | Gana Hisse Senedi Piyasası | Mevduat faiz oranı, Enflasyon oranı | (1991-2005) Eşbütünleşme Testleri ve Hata düzeltme modeli | Çalışma bulguları makroekonomik göstergelerin Gana hisse senedi piyasasını olumsuz etkilediği sonucuna varılmıştır. |
| Özer vd. (2011) | BİST 100 Endeksi | Faiz Oranı, Para Arzı, Dış Ticaret Dengesi, Sanayi Üretim Endeksi, Altın Fiyatları, Döviz Kuru ve Tüketici Fiyat Endeksi | (1996-2009) En Küçük Kareler Tahmin Yöntemi, Johansen-Juselius Eşbütünleşme Testi, Granger Nedensellik Testi ve VEC modelleri | Hisse senetleri fiyatları ile fiyat endeksi, faiz oranı, para arzı, dış ticaret dengesi ve sanayi üretim endeksi değişkenleri arasında uzun dönemli bir ilişkinin varlığını göstermektedir. |
| Albayrak vd. (2012) | BİST 100 Endeksi | Mevduat faiz oranı, TL/ABD dolar kuru ve 1 ons altının Londra satış fiyatı | (2005-2012) Prais-Winstone Regresyon modeli | BİST 100 Endeksinin altın ve Yabancı portföy yatırımları ile pozitif, dolar kuru ile negatif bir ilişki olduğu sonucuna ulaşılmıştır. |
| Al-Shami & Ibrahim (2013) | Kuveyt Borsası | Enflasyon, faiz oranı, para arzı, petrol fiyatları ve işsizlik oranı | (2001-2010) VAR Modeli | 1 aylık dönemde faiz oranı negatif etkiliyken enflasyon, para arzı ve petrol fiyatı pozitif etkilidir. 2 aylık döneme bakıldığında ise tersi bir sonuç elde edilmekte ve faiz oranı pozitif etkiliyken enflasyon, para arzı ve petrol fiyatı negatif etkili olduğu sonucuna ulaşılmıştır. |
| Poyraz & Tepeli (2015) | BİST 100 Endeksi | Enflasyon, Para arzı, Döviz sepeti, Altın fiyatları, Hazine bonosu faiz oranı ve Sanayi üretim endeksi | (12.1995-11.2011) Çoklu Regresyon Modeli, Korelasyon Analizi ve Granger Nedensellik Testleri | BİST 100 Endeksinin para arzı, sanayi üretim endeksi ile pozitif, Hazine bonosu faiz oranları ve Döviz kuru ile negatif ilişki bulunmuştur. |
| Altınbaş vd. (2015) | BİST 100 Endeksi | Enflasyon, faiz oranı, döviz kuru, sanayi üretim endeksi ve petrol fiyatları | (2003-2012) Çok faktörlü regresyon modeli, Johansen eş bütünsleşme testi, VAR modeli, Granger nedensellik testi | Sanayi üretim endeksinin ve döviz kurunun BİST 100'deki değişimlerin tahmin edilmesinde kullanılabileceği ancak tersinin geçerli olmadığı, BİST 100'ün yalnızca petrol değişkeni için Granger nedenselliğine sahip olduğu görülmüştür. |
| Kendirli & Çankaya (2016) | BİST Bankacılık Endeksi | Döviz kuru, tüketici fiyatları endeksi | (2009-2015) Johansen Eşbütünleşme Testi ve Granger Nedensellik Testi | Çalışma sonucunda Bankacılık Endeksi ile değişkenler arasında %5 anlamlılık düzeyinde bir ilişki bulunamamıştır. |
| Uçan vd. (2017) | BİST 100 Endeksi | Tüketici fiyat endeksi, Amerikan doları, Euro, emisyon hacmi ve petrol fiyatı | (2005-2016) Johansen Eşbütünleşme Testi | BİST 100 endeksinin dolar, emisyon hacmi ve petrol fiyatları ile pozitif, Euro ve TÜFE endeksi ile negatif ilişkide olduğu saptanmıştır. |
| Uzun & Güngör (2017) | 50 Ülke Borsa Endeksi | Enflasyon, sanayi üretim endeksi, döviz kuru, faiz oranı ve para arzı | (2004-2013) Panel Nedensellik Analizi | Gelişmiş ülke borsa endeksi ile enflasyon, sanayi üretim endeksi, faiz oranı, para arzı ve döviz kuru arasında uzun dönemli ilişki gözlemlenmiş, az gelişmiş ülkelerde ise, borsa ve faiz oranı arasında çift yönlü, borsa ile sanayi üretim endeksi ve para arzı arasında tek yönlü nedensellik vardır. Borsa ile döviz kuru arasında ise üç ülke grubunda da nedensellik ilişkisi tespit edilememiştir. |
| Sandal vd. (2017) | BİST 100 Endeksi | Altın ve Ham petrol fiyatları | (2005-2015) Engle-Granger ve Johansen Eşbütünleşme Testleri, Granger Nedensellik Testi | Sadece altın fiyatlarından BİST 100 endeksinde doğru tek yönlü bir ilişki olduğu sonucuna ulaşılmıştır. |

| | | | | |
|----------------------------|--|--|--|--|
| Ullah et al. (2017) | SAARC (South Asian Association For Regional Co-Operation) ülkelerinin borsa performansı | Döviz kuru, Döviz Rezervi, faiz oranı, Enflasyon ve Para arzı | (2005-2015) OLS Çoklu Regresyon Modeli | Döviz kuru, döviz rezervi ve faiz oranının SAARC ülke borsaları üzerinde olumlu bir etki olduğu ancak enflasyon ve para arzının borsa performansının istatistiksel olarak anlamlı olmadığı sonucuna ulaşılmıştır |
| Alper & Kara (2017) | BİST Sınai Endeksi | Döviz kuru, faiz, enflasyon, altın fiyatları, para arzı, petrol fiyatları, dış ticaret dengesi ve sanayi üretim endeksi | (2003-2017) Etki-Tepki Analizi ve Varyans Ayrıştırma Analizi | Altın fiyatları, dış ticaret dengesi, sanayi üretim endeksi ve faiz oranı endeks getirisi üzerinde etkili iken, enflasyon, para arzı, petrol fiyatları reel hisse senedi getirilerindeki değişimleri açıklamada anlamlı sonuçlar elde edilememiştir. |
| Sadeghzadeh & Elmas (2018) | Borsada kesintisiz işlem görmüş 130 firma hisse senedi getirisi | Türkiye ve ABD, Avrupa, İngiltere, Japonya, Çin bazı makroekonomik göstergeleri | (2000-2017) Dinamik panel veri analizi, Zaman serisi analiz yöntemleri | Hisse senedi getirilerini etkileyen faktörler VIX korku endeksi, tüketici güven endeksi ve BİST işlem miktarı olduğu saptanmıştır. |
| Czapkiewicz et al. (2018) | G6 ülkelerinin (Almanya, İngiltere, Fransa, İtalya İspanya ve Polonya) finansal piyasaları | İşsizlik oranı, TÜFE, uzun vadeli faiz oranı ve sanayi üretimi | (2006-2017) (TVTMP) Markov Anahtarlama Kopula Modeli | Polonya baz ülke olarak alınmış ve diğer G5 ülkenin makroekonomik değişkenleri baz ülkeye ait değişkenler ile arasındaki ilişki araştırılmıştır. |
| Koyuncu (2018) | BİST 100 Endeksi | Enflasyon oranları, faiz oranları, sanayi üretim endeksi ve reel ekonomik büyüme | (1988-2016) DF-GİS birim kök testi, eşbütünleşme testleri ve FMOLS ve DOLS regresyon analizleri | BİST 100 endeksinin Enflasyon ve sanayi üretim endeksi ile pozitif, faiz oranları ve reel ekonomik büyümenin ile negatif ilişkili olduğu sonucuna ulaşılmıştır. |
| Durmuş vd. (2019) | BİST Banka Endeksi ve BİST Mali Endeksi Getirileri | Bankalarca uygulanan ortalama mevduat faiz oranı, dolar kuru, euro kuru, enflasyon oranı ve altın fiyatları | (2006-2018) VAR modeli | Endeks getirileri ile enflasyon oranı, mevduat faiz oranı, altın fiyatı ve euro negatif, dolar kuru ise pozitif bir ilişkiye sahiptir. |
| Şekeroğlu vd. (2019) | BİST 100 Endeksi | Enflasyon ve Dış ticaret açığı | (2004-2017) Johansen Eşbütünleşme Testi, Gregory&Hansen Eşbütünleşme Testi, VAR Modeli | Enflasyon ve Dış ticaret açığı uzun dönemde BİST 100 endeksiyle birlikte hareket ettiği sonucuna ulaşılmıştır. |
| Fattah & Kocabıyık (2020) | BİST 100 Endeksi, S&P500 Endeksi | Para arzı, döviz kuru, tüketici fiyat endeksi, ithalatın ihracatı karşılama oranı, faiz oranı, sanayi üretim endeksi, petrol ve altın fiyatı | (2010-2019) Lee Strazicich birim kök testi, Toda-Yamamoto Nedensellik analizi ve Etki-Tepki analizi | BİST 100 endeksi ile para arzı ve döviz kuru arasında çift yönlü, tüketici fiyat endeksinde BİST 100 endeksinde tek yönlü bir ilişki vardır. Ancak sanayi üretim endeksi, altın ve petrol fiyatıyla bir ilişki bulunamamıştır. S&P500 endeksi için ise sadece para arzıyla tek yönlü (para arzı → S&P500 endeksi) bir ilişki olduğu sonucuna ulaşılmıştır. |
| Sarıtaş vd. (2021) | BİST 100 Endeksi | CDS ve Kredi derecelendirme notları | (2010-2020) ARDL Sınır Testi Yaklaşımı | BİST 100 Endeksis ile risk göstergeleri arasında negatif bir ilişki olduğu sonucuna ulaşılmıştır. |
| Yeşildağ (2021) | BİST 100 Endeksi | Altın, faiz, işsizlik ve para arzı | (2009-2019) ARDL Sınır Testi | Faiz oranları BİST 100 fiyatlarını negatif, para arzı ise pozitif yönde etkilemektedir. Altın fiyatları ve işsizlik oranı ile hisse fiyatları arasında herhangi bir anlamlı ilişki bulunamamıştır. |

Ekonomik Güvenlik ve Toplumsal Güvenlik Bağlamında Uluslararası Göçün Güvenlikleştirilmesi: Fransa “Ulusal Cephe” Partisi Örneği¹

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Securitisation of International Migration in the Context of Economic and Societal Security: The Case of the “Front National” Party of France²

Abstract

The phenomenon of international migration, which was encouraged by many European countries in the past to meet their workforce needs, as of the end of the 1990s, has been increasingly considered as an international security problem posing a threat to the national, societal and economic security of both the international system and developed and developing countries, and has become a subject securitized by far-right parties. Especially after the September 11, 2001 terrorist attack, the immigration and anti-immigrant sentiments and actions were concentrated in the Western world in general, and Europe in particular, reaching a pinnacle during the Arab Spring. Far-right parties have risen in response to migration and anti-immigration discourses, securitizing international migration by claiming that immigrants disrupt European society's homogeneity, and increase integration problems, unemployment, and crime rates. In this study, in which the securitization of international migration on a socio-economic and political basis within the framework of far-right parties in Europe is examined through the example of the Front National Party in France, it is concluded that immigration will continue to be securitized in Western European countries where the far-right is on the rise.

Keywords : International Migration, Securitization Theory, Far Right, Front National Party, Economic and Societal Security.

JEL Classification Codes : H8, I3, Z0, Z18, Z19.

Öz

Geçmişte pek çok Avrupa ülkesi tarafından iş gücü ihtiyacını karşılamak amacıyla teşvik edilen uluslararası göç olgusu, 1990'lı yılların sonu itibarıyla, giderek hem uluslararası sistemin hem de gelişmiş ve gelişmekte olan ülkelerin ulusal, toplumsal ve ekonomik güvenliğine tehdit oluşturan bir uluslararası güvenlik sorunu olarak ele alınmaya başlanmış ve aşırı sağ partiler tarafından güvenlikleştirilen bir konu olmuştur. Özellikle 11 Eylül 2001 terör saldırı sonrasında genel olarak Batı dünyasında özel olarak da Avrupa'da yoğunlaşan göç ve göçmen karşıtı söylemler ve politikalar, Arap

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² This study was derived from the master's thesis of Şeyma Uzun entitled “Securitisation of International Migration Within the Frame of Far-Right Parties in Europe: France and Hungary Examples” in Karadeniz Technical University, Institute of Social Sciences, 2021.

Baharı sürecinde zirve noktasına taşınmıştır. Göç ve göçmen karşıtlığı üzerinden yükselişe geçen aşırı sağ partiler, göçmenlerin Avrupa toplumunun homojen yapısını bozduğu, işsizliği ve suç oranlarını artırdığı şeklindeki söylemler vasıtasıyla uluslararası göçü ekonomik, toplumsal ve ulusal güvenlik bağlamında güvenlileştirilmektedirler. Avrupa’daki aşırı sağ partiler çerçevesinde sosyoekonomik ve siyasal temelde uluslararası göçün güvenlileştirilmesinin Fransa’daki Ulusal Cephe Partisi örneği üzerinden incelendiği bu çalışmada, aşırı sağın yükselişte olduğu Batı Avrupa ülkelerinde göçün yakın gelecekte de güvenlileştirilmeye devam edeceği sonucuna ulaşılmıştır.

Anahtar Sözcükler : Uluslararası Göç, Güvenikleştirme Teorisi, Aşırı Sağ, Ulusal Cephe Partisi, Ekonomik ve Toplumsal Güvenlik.

1. Giriş

Soğuk Savaş’ın sona ermesiyle birlikte uluslararası sistemde yaşanan değişim ve dönüşüm güvenlik kavramının eleştirel ve alternatif güvenlik yaklaşımlarıyla birlikte Kopenhag Okulu’nun “*Güvenikleştirme Teorisi*”nin de katkısıyla genişletilmesine ve derinleştirilmesine yol açarken; güvenlik olgusunu da dar ve askeri güvenlikle sınırlı kalıbindan çıkartarak, daha önceki dönemlerde devletlerin öncelikli ilgi alanlarına girmeyen “*alçak politika*” (low politics) alanındaki konuların da “*yüksek politika*” (high politics) alanındaki konular kadar önemli olmasını sağlayacak bir süreci başlatmıştır. Uluslararası göç olgusu da bu dönüşümün örneklerinden birisini teşkil etmesi açısından önem taşımaktadır. Önceleri siyasal alanının dışında olan uluslararası göç olgusu Soğuk Savaş sonrası karar alma süreçlerinde siyasal alanın içerisine dahil edilerek önce siyasallaştırılmış, ardından güvenlileştirilmiştir. Bu şekilde Soğuk Savaş sonrası uluslararası göç olgusu giderek hem uluslararası sistemin hem de gelişmiş ve gelişmekte olan ülkelerin ulusal, toplumsal ve ekonomik güvenliğine tehdit oluşturan hayati bir güvenlik sorunu olarak ele alınmaya başlanmıştır.

Soğuk Savaş sonrası dönemde uluslararası göç hareketleri eskiye kıyasla daha iyi imkânlara ulaşabilme arzusundan ziyade, zorunlu bir şekilde yasadışı göçmen, sığınmacı ya da mülteci akınları biçiminde Avrupa’ya yönelik olarak oluşum göstermektedir. Özellikle, 1990’lı yılların sonu itibarıyla Avrupa’ya yoğun bir şekilde düzensiz göç akışı gerçekleşmektedir. Başlangıçta pek çok Avrupa ülkesi tarafından işgücü ihtiyacını karşılamak amacıyla teşvik edilen uluslararası göç, zaman geçtikçe ülkelerin ulusal, toplumsal ve ekonomik güvenliğe karşı potansiyel bir tehdit olarak görülmeye başlanmıştır. Şöyle ki, İkinci Dünya Savaşı’nın yaralarını sarmak ve ekonomik kalkınmayı güçlendirmek amacıyla 1950’li ve 1960’lı yıllarda Fransa, Almanya ve Hollanda gibi Avrupa ülkeleri işgücü ihtiyacından hareketle uluslararası göçe izin veren, hatta teşvik eden politikalar izlemişlerdir. Bu dönemde, yasadışı göç sorununun daha kısıtlayıcı göç politikalarının oluşturulmasını önemli ölçüde haklı çıkardığı bugünkü durumun aksine, savaş sonrası göçmenlerin yasal statüsü bazı ülkelerde politik olarak daha az hassaslık içeriyordu. Bu durum, Avrupa ülkelerinin göçmenlerin durumunu düzenlemeye ve normalleştirmeye çalışmadığı anlamına gelmese de Avrupa’da göçmenlerin yasal statüleriyle ilgili tartışmalar 1980’lerden bu yana sahip olduğu önem ve çakışımara sahip değildi. 1970’lerde

uluslararası göç Avrupa’da giderek artan bir şekilde kamuyu ilgilendiren bir konu haline gelse de bu dönemde dahi göç politikası Avrupa entegrasyon sürecinde merkezi bir konu niteliği taşımamıştır. Ancak, 1980’lerin ortalarından itibaren bu durum değişmeye başlayarak, sığınmacılığı ekonomik göç için alternatif bir yol olarak sunmaya başlamasıyla uluslararası göç giderek daha fazla politize olmaya başlamış ve Soğuk Savaş sonrasında da Avrupa’da hükümetlerarası forumlarda önemli bir konu haline gelmiştir. Nihayet, 21. yüzyılın başında Avrupa Birliği’nin (AB) politikaları da uluslararası göç alanında bir dizi politika öncelikleri içermeye başlamıştır (Huysmans, 2006: 65-67). Bütün bu gelişmeler sonucunda Avrupa ülkeleri tarafından uygulanan politikalar, söz konusu uluslararası göç hareketlerini hem kara hem de deniz güzergâhları üzerinden engelleyecek şekilde oluşturulmaya başlanmıştır.

Diğer taraftan, uluslararası göç olgusu Avrupa’daki aşırı sağ partiler tarafından giderek güvenlikleştirilerek, özellikle toplumsal ve ekonomik güvenliğin en önemli meselelerinden biri haline getirilmiştir. Aşırı sağ partiler zaman içerisinde uluslararası göçe yönelik olumsuz tutumlarını haklı göstermek amacıyla bir dizi ekonomik, sosyal, politik ve kültürel argümanlar inşa etmişlerdir. Bu argümanlar arasında en popüler olanları, göçmenlerin ücretler üzerinde aşağı yönlü bir baskı uygulayarak yerli nüfus arasında işsizliği artırdığı, göç edenlerin yüksek doğum oranlarına sahip olmalarının ise demografik yapıyı bozarak ulusal kimlik için potansiyel bir tehdit oluşturduğu şeklindedir. Özellikle, 11 Eylül 2001 terör saldırıları sonrasında aşırı sağ partiler tarafından yoğun bir şekilde güvenlikleştirilmeye başlanan uluslararası göç olgusu, “*tehdit altındayız*” mesajı ile Avrupa ülkelerindeki güvensizliğin temel nedeni olarak alımlayıcı kitlelere sunulmuştur (Tekin-Oğuzlar, 2019: 1254; Akçapar-Köşer, 2012: 564-565). 11 Eylül saldırılarının yarattığı İslamofobi dalgasının ardından, Müslümanlar Batı medeniyetine yönelik en ciddi tehdidi oluşturan göçmen grup olarak görülmekte, en yabancı ve asimile edilmesi en zor olanı şeklinde alımlayıcı kitlelere sunulmaktadır. Bu durum, Batı dünyasında bir anlamda Samuel P. Huntington’un “Medeniyetler Çatışması” tezine de bir örnek oluşturmaktadır. Bu çerçevede, Avrupa’da göç ve göçmen karşıtlığı üzerinden seçmen desteği açısından yükselişe geçen aşırı sağ partiler, göçmenlerin Avrupa toplumunun homojen yapısını bozduğu, işsizliği ve suç oranlarını artırdığı şeklindeki yaygın olan söylemler vasıtasıyla uluslararası göçü toplumsal ve ekonomik güvenlik bağlamında güvenlikleştirirken, söz konusu sorunlardan rahatsızlık duyan kitleleri de kendi bünyelerine katmayı başarmaktadırlar.

2010 yılında başlayan Arap Baharı’nın tetiklediği mülteci krizi sonrasında Avrupa ülkelerine yönelen göç dalgasıyla birlikte uluslararası göçün aşırı sağ partiler tarafından güvenlikleştirilmesi zirve noktasına ulaşmıştır. Mülteci kriziyle birlikte 2015 yılı içerisinde göçmenlerin en çok sığınma başvurusunda bulundukları ülkeler sırasıyla Almanya, Macaristan, İsveç, Avusturya, İtalya ve Fransa olmuştur. Bu gelişmeyle bağlantılı olarak Almanya’da “*Almanya için Alternatif Partisi*”, İsviçre’de “*İsviçre Halk Partisi*”, Macaristan’da “*Fidesz*” ve “*Jobbik*” partileri, İtalya’da “*Kuzey Ligi*” ve son olarak Fransa’da “*Ulusal Cephe*” partileri söylemlerini göçmen karşıtlığı üzerinden inşa etmekte ve sürdürmektedirler. Bu çerçevede, özellikle seçim süreçlerinde aşırı sağ partilerin

gündemindeki en popüler konu genel itibariyle uluslararası göç ve göçmenler, özele indirgendğinde de sığınmacı ve mültecilere yönelik karşıt görüşlerden oluşmaktadır.

Bu çalışmada, Avrupa’daki aşırı sağ partiler çerçevesinde sosyolojik ve siyasal bir eylem olarak uluslararası göçün güvenikleştirilmesi Fransa’da “*Ulusal Cephe Partisi*” örneği üzerinden incelenmiştir. Uluslararası göçün güvenikleştirilmesinde Fransa’nın Batı Avrupa’daki durumu, başarılı sayılabilecek bir güvenikleştirme örneğini temsil etmesi bakımından incelenmeye değer bir konudur. Bu çerçevede, Fransa örneği çalışmada vaka analizi ve betimleyici yöntemle ele alınarak, “*Ulusal Cephe Partisi*”nin özellikle 2015 ve 2017 yıllarını kapsayan dönemlerindeki söylemleri temelinde, uluslararası göçü güvenikleştirirken göç ve göçmen karşıtı söyleminde kullanmış olduğu “*toplumsal güvenlik*”, “*ekonomik güvenlik*” ve hatta “*ulusal güvenlik*” temaları ve bu güvenikleştirmenin siyasal ve toplumsal süreçlere ne şekilde yansıdığı teorik ve ampirik bir zeminde ortaya konulmaya çalışılmıştır.

2. Güvenikleştirme Teorisi

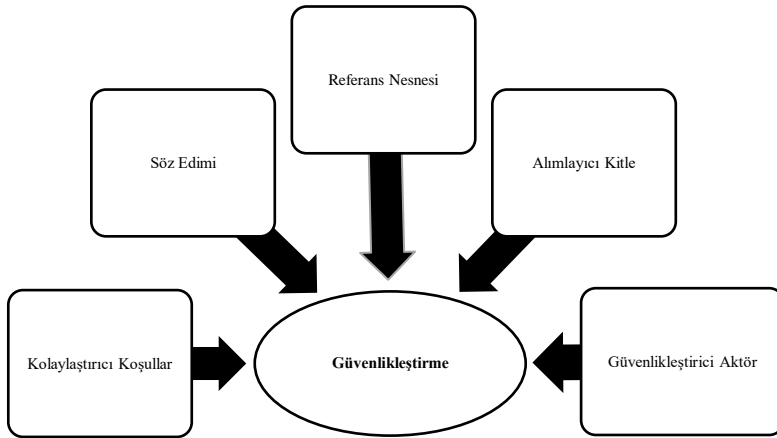
Güvenlik kavramının tanımlanmasında zorluklar bulunduğu dikkat çeken Kopenhag Okulu’na göre, kendi içlerinde meydana gelen güvenlik sorunları bulunmamaktadır. Diğer bir deyişle, sadece güvenikleştirici aktör olarak nitelendirilen bazı aktörlerin konuşma eylemleri aracılığıyla inşa edilen güvenlik sorunları söz konusudur. Güvenikleştirici aktör, öncelikle belirli bir konuyu bir güvenlik sorunu, bir tehdit olarak çerçevelendirmekte ve onu siyasal alana taşımaktadır. Sonrasında ise bu sorunu güvenlik alanına taşımakta ve söz konusu tehditle mücadele edebilmek ve onu etkisizleştirmek için olağanüstü yöntemler kullanma konusunda özel bir hak iddia etmektedir. Burada önemli olan husus güvenikleştirici aktör tarafından acil müdahale gerektiren bir varoluşsal tehdidin belirlenmesidir. Bununla birlikte bu sorunu bir alımlayıcı kitleye kabul ettirebilmektir (Buzan vd., 1998: 27).

“*Güvenikleştirme Teorisi*”, ilk kez Ole Wæver (1995) tarafından *Securitization and Desecuritization* adlı çalışmada ortaya atılmış ve tarihsel süreç içerisinde Kopenhag Okulu mensuplarının geliştirdikleri “*Sektörel Güvenlik*” ve “*Bölgesel Güvenlik Kompleksi*” teorilerine de temel oluşturan popüler bir teori haline gelmiştir. Güvenikleştirme Teorisi, güvenlik kavramını İnşacılık (Konstrüktivizm) yaklaşımının bakış açısıyla özneler arası bir olgu olarak kavramsallaştırmaktadır (Rumelili & Karadağ, 2017: 73). Başka bir deyişle, bir sorun sahip olduğu belli özellikler sebebiyle değil, güvenlik sorunu olarak görüldüğü, lanse edildiği ve anlamlandırıldığı için güvenlik sorunu haline getirilmektedir. Kopenhag Okulu’na göre, yaşamsal tehdit oluşturduğu iddia edilen meseleler özü itibariyle subjektiflik taşımaktadır. Tehdit algısı ise güvenliğe tehdit oluşturan şey üzerindeki hem ortak anlayışa hem de ortak kabule dayanmaktadır (Buzan vd., 1998: 23).

Güvenikleştirme Teorisi, belirli bir sorunun bir güvenlik sorunu haline nasıl dönüştüğünün anlaşılması hususunda yol gösterici olmaktadır. Herhangi bir sorun, siyasal alanın dışındayken devletin ilgi alanına girmemektedir. Dolayısıyla, herhangi bir şekilde

kamusal tartışmaların ve kararların konusu içinde de yer almamaktadır. Siyasal alanın dışında olan bir sorunun siyasal alana dahil olması sorunun siyasallaşarak kamu politikasının bir parçası haline gelmesiyle ancak mümkün olmaktadır. Bu, hükümetin bu sorunla ilgili belirli kararlar alması, gerekli kaynak aktarımını yaptıktan sonra toplumu da ilgilendiren bir boyut kazanmasıyla gerçekleşmektedir. Siyasal alana giren sorun, ardından güvenlik alanına dahil olarak yani güvenikleştirilerek geniş bir yelpaze içinde yer alabilmektedir. Sorunun güvenlik alanına girmesi yani güvenikleştirilmesi ise alımlayıcı kitleye söz konusu sorunun acil ve olağanüstü önlemlerin alınmasını gerekli kılacak varoluşsal bir tehdit olarak sunulmasıyla gerçekleşmektedir. Bu açıdan güvenikleştirme, siyasallaştırma sürecinin aşırı bir ucuna karşılık gelen bir tür “aşırı siyasallaştırma”dır. Zira, normal bir konu önce kamu politikasına dâhil edilerek siyasallaştırılmakta, sonrasında ise varoluşsal bir tehdit unsuru olarak sunulurken güvenikleştirilmektedir (Buzan vd., 1998: 23).

Şekil: 1
Güvenikleştirme Teorisinin Temel Unsurları



Kaynak: Buzan vd., 1998: 23-45'ten uyarlanmıştır.

Güvenikleştirme Teorisini daha iyi anlayabilmek için, Şekil 1’de de gösterildiği üzere bu teoriyle bağlantılı olan temel kavramlarından “güvenikleştirici aktör”, “referans nesnesi”, “alımlayıcı kitle”, “söz edimi” ve “kolaylaştırıcı koşullar”ın ne anlama geldiğini incelemek gerekmektedir.

i) Güvenikleştirici aktör (Securitizing actor): Kopenhag Okulu, güvenikleştirici aktörü bir referans nesnesinin varlığına yönelik varoluşsal bir tehdit olduğu söyleminde bulunan ve sorunları güvenikleştiren birim olarak tanımlamaktadır. Alımlayıcı kitle üzerinde etkisi olan güvenikleştirici aktör, aynı zamanda bir konuyu güvenikleştirme kapasitesi bulunan önemli bir siyasi özne konumundadır (Buzan vd., 1998: 40). Güvenikleştirici aktör, sahip olduğu siyasi otoriteyle bir meseleyi güvenlik alanına taşımaktadır. Aynı zamanda alımlayıcı kitleden günlük siyasi süreçlerde uygulanması

mümkün olmayacak olağanüstü uygulamaları kullanma hakkını talep edebilmektedir. Güvenlikleştirici aktörler kategorisinde siyasi liderler, hükümetler, bürokrasi, lobiler, baskı grupları ve siyasal partiler yer almaktadır (Buzan vd., 1998: 36-40). Güvenlikleştirme eyleminin gerçekleştirilmesi aşamasında elbette ki hükümetler ve siyasi elitler, hedef kitleleri etkileme ve olağanüstü önlemlerin uygulamaya sokulması hususlarında diğer güvenlikleştirici aktörlere kıyasla daha avantajlı bir konuma sahip olmaktadır (Emmers, 2017: 134).

ii) Referans nesnesi (Referent object): Referans nesneleri varoluşsal olarak tehdit altında görülen ve hayatta kalmak için meşru bir hak iddiasına sahip olan şeyleri temsil etmektedir (Buzan vd., 1998: 36). Referans nesneleri hem bireyler hem de gruplar (mülteciler, insan hakları ihlali mağdurları vb.) olabilmektedir. Aynı zamanda meşru var olma iddiasında bulunabilen ve varlıkları görünüşte tehdit edilebilen mesele alanları da (ulusal egemenlik, çevre, ekonomi vb.) referans nesnesi olabilmektedir (Emmers, 2017: 134).

iii) Alımlayıcı kitle (Audience): Alımlayıcı kitle, güvenlikleştirici aktörün varoluşsal tehdit olarak sunduğu güvenlik sorununu kabul ettirmeye çalıştığı topluluktur. Kopenhag Okulu’nun alımlayıcı kitle üzerindeki görüşleri kesinlik taşımamaktadır. Buzan ve Wæver, alımlayıcı kitlenin her zaman için halk veya insanlardan oluşmak zorunda olmadığını söylemektedir (Buzan & Wæver, 2003: 26). Alımlayıcı kitle ülkelerin yönetim sistemlerine göre farklılık göstermektedir. Eğer güvenlikleştirme eylemi demokratik olmayan sistemlere mensup ülkelerde gerçekleştiriliyorsa alımlayıcı kitle siyasal elitlerle sınırlandırılmaktadır. Buna karşılık demokratik ülkelerde ise alımlayıcı kitle halk adına karar veren parlamento olmaktadır. Otoriter sistemlerde ise alımlayıcı kitle daha özele indirgenmiş bir diktatör, cunta ya da kriz komitesi olabilmektedir (Gromes & Bonacker, 2007: 7).

iv) Konuşma eylemi/Söz edimi (Speech act): “*Güvenlikleştirme Teorisi*”nin temelini söz edimi kuramı oluşturmaktadır (Buzan vd., 1998: 25). Kopenhag Okulu’nun konuşma eylemi yaklaşımını geliştirmesinde John L. Austin’in “*Söz Edimi Kuramı*” etkili olmuştur. Austin, dilin işlevini meselelerin doğru ya da yanlış betimlenmesiyle sınırlandırmanın yanlış olduğunu dile getirmektedir. Bu şekildeki bir tutumun dilin bir eylemin hayata geçirilmesindeki gücünü görmezden gelmek anlamına geldiğini düşünmektedir. Bu yüzden de dili edimsel bir yapı olarak görmek, bir şeyi söylemenin o şeyin yapılması anlamına geldiğini savunmaktadır (Rumelili & Karadağ, 2017: 73). İki aşamadan oluşan güvenlikleştirme sürecinde söz edimi çok önemli bir yere sahiptir. Konuşma eylemi, belli bir meselenin güvenliğe karşı oluşturduğu yaşamsal tehdidin söylemsel temsili olarak tanımlanmaktadır. Kopenhag Okulu’na göre güvenlikleştirme sürecinin başlangıç noktasını konuşma eylemi oluşturmaktadır. Konuşma eylemi vasıtasıyla bir mesele gerçek anlamda yaşamsal bir tehdit oluşturup oluşturmadığına bakılmaksızın bir güvenlik sorununa dönüştürülebilmektedir (Emmers, 2017: 137).

v) Kolaylaştırıcı koşullar (Facilitating conditions): Kolaylaştırıcı koşullar iç ve dış koşullar olmak üzere ikiye ayrılmaktadır. İç koşullar güvenlik grameri olarak

adlandırılmaktadır. Güvenikleştirici aktör, alımlayıcı kitleyi söz edimiyle daha kolay ikna edebilmek için meselenin varoluşsal bir tehdit oluşturduğunu, olağanüstü önlemlerin alınmasından başka bir çıkış yolunun olmadığı şeklindeki dramatik bir dil ile destekleyen ifadeler kullanmaktadır. Dış koşullar ise, söz ediminde bulunan güvenikleştirici aktörün sosyal konumundan ve tehdide ilişkin tarihsel koşullardan oluşmaktadır. Aktörün sosyal konumu, söz ediminin hedef kitle tarafından benimsenmesinde etkili olabilecek otoriteye sahip olmasını ifade etmektedir. Tehditle bağlantılı olan tarihsel koşullar ise objektif olarak var olduğu kabul edilen gerçek bir tehdit olması açısından söz ediminin başarılı olmasına katkı sunabilmektedir. Kopenhag Okulu, Güvenikleştirme Teorisi’nin başarıya ulaşmasında söz ediminin kolaylaştırıcı koşullar tarafından desteklenmesi gerektiğini düşünmektedir (Buzan vd., 1998: 32-33).

2.1. İki Aşamalı Güvenikleştirme Süreci

Kopenhag Okulu, bir meselenin nasıl ve ne zaman güvenliğe yönelik yaşamsal bir tehdit olarak görüldüğünü ve eyleme geçildiğini açıklamak için iki aşamalı bir güvenikleştirme sürecinden bahsetmektedir. Güvenikleştirme sürecinin ilk aşaması güvenikleştirici aktör tarafından belli meselelerin, kişilerin ya da varlıkların referans nesnelere yaşamsal tehdit olarak sunulmasıyla başlamaktadır. Güvenikleştirmenin ilk aşaması, devletin yanı sıra sendikalar ve halk hareketleri gibi devlet dışı aktörler tarafından da gerçekleştirilebilmektedir. Devlet dışı aktörler, güvenikleştirme yaklaşımında önemli oyuncular olarak görülmektedir. Fakat güvenikleştirme eylemi genellikle imtiyazlı konumlarını fırsata çevirebilen devlet veya onun elitleri olan güvenikleştirici aktörün gücü ve etkisine dayanmaktadır. Bu ilk adımın bir güvenikleştirme eylemine dönüşmesi ya da dönüşmemesi ise güvenikleştirici aktörün söz edimini başarılı bir şekilde kullanmasına ve kitleleri etkileyebilme becerisine bağlıdır (Emmers, 2017: 133-134).

Güvenikleştirme sürecinin ikinci aşamasında güvenikleştirici aktör, referans nesnesinin varlığına yönelik tehdit olduğu yönündeki söylemini kolaylaştırıcı koşullar vasıtasıyla alımlayıcı kitleye bir güvenlik sorunu olarak kabul ettirmeye çalışmaktadır. Eğer alımlayıcı kitle, söz konusu meseleyi bir güvenlik sorunu olarak kabul eder ve bu tehdidin bir an evvel bertaraf edilmesi için olağanüstü önlemlerin uygulanmasını kabul ederse, güvenikleştirme başarılı bir şekilde gerçekleştirilmiş olmaktadır. Fakat alımlayıcı kitlenin, varlığa yönelik tehdit olarak inşa edilen söz edimine ikna olmaması ve olağanüstü önlemlerin alınmasına rıza göstermemesi durumunda güvenikleştirme gerçekleşmemekte, söz konusu mesele bir güvenlik sorunu olarak nitelendirilememektedir (Açıkmeşe-Akgül, 2018: 252; Buzan vd., 1998: 24-25; Emmers, 2017: 134).

Sonuç itibarıyla güvenikleştirme süreci bir güvenikleştirici aktörün öncelikle güvenlik dilini kullanarak referans nesnesinin varlığına yönelik yaşamsal bir tehdidin var olduğuna yönelik bir söz ediminde bulunmasıyla başlamaktadır. Güvenikleştirici aktör söz ediminin alımlayıcı kitle tarafından bir güvenlik sorunu olarak kabul edilmesi için kolaylaştırıcı koşulların yardımıyla acil önlemlerin benimsenmesini talep etmektedir. Bu aşamada önemli olan husus güvenikleştirici aktörün söylemini alımlayıcı kitleyi ikna

edecek şekilde kullanmasıdır. Başarılı bir güvenikleştirme süreci için, alımlayıcı kitlenin söz konusu sorunu referans nesnesinin varlığına yönelik bir tehdit olarak kabul etmesi gerekmektedir. Normal siyasi süreçler, sadece başarılı güvenikleştirme eylemlerinde tehdide karşı koyma aşamasında yetersiz görülmektedir. Bu yüzden, Kopenhag Okulu güvenikleştirme eyleminin başarısını hedef kitlenin söz konusu söylemi kabul etmesine dayandırmaktadır (Emmers, 2017: 136). Görüldüğü üzere güvenikleştirme eylemi siyasi bir kararı ve bu kararın etrafında şekillenen siyasi eylemden kaynaklanan sonuçları kapsamaktadır. Başarılı bir güvenikleştirmenin kaderini güvenikleştiren aktör değil, alımlayıcı kitlenin söz edimini kabul etmesi belirlemektedir. Alımlayıcı kitlenin ikna edilmesiyle birlikte, güvenliğe tehdit oluşturan sorunun aciliyetle ortadan kaldırılması gerektiğine inanılmaktadır. Aynı zamanda alımlayıcı kitle tarafından alınacak olağanüstü önlemler kabul edilmektedir. Bu sayede de olağan siyaset mekanizmalarının dışına çıkılabilmektedir (Booth, 2021: 207).

2.2. Toplumsal Güvenlik Sektöründe Güvenikleştirme

Toplumsal güvenlik sektörü güvenikleştirme teorisinin kimlik alanına uygulanmasıyla ortaya çıkmıştır. Bu açıdan toplumsal güvenlik, kimliğin güvenliği ile yakından ilişkilidir. Kimlik kavramı güvenlik çalışmaları alanına ilk kez Barry Buzan, Ole Wæver ve Jaap De Wilde'nin (1998) birlikte kaleme aldıkları *Security: A New Framework for Analysis* isimli eserle girmiştir. Söz konusu çalışmada güvenliğin kimlik ile olan bağlantısı toplumsal güvenlik sektörü kapsamında ele alınmıştır. Ayrıca meselelerin çözümünde kimlik, ayırt edici bir rol üstlenmiştir (Buzan vd., 1998: 119-140). Toplumsal güvenlik sektörünün merkezi kavramını kimlik teşkil etmektedir.

Herhangi bir topluluğun bir gelişmeyi ya da bir durumu kendi varlığına diğer bir deyişle kimliğine yöneltilmiş bir tehdit unsuru olarak tanımlamasıyla birlikte toplumsal güvensizlik oluşmaktadır. Toplumsal güvenlik kavramının tanımı uluslar göz önüne alınarak yapılamamaktadır. Bu kavram devletten bağımsız bir şekilde kendi kendini yeniden üretebilen ve devamlılığını sağlayabilen büyük kimlik grupları olarak tanımlanabilmektedir. Bu grupların kapsamına nelerin girdiği hususu ise zaman ve mekâna göre değişim göstermektedir. Günümüzde Avrupa temelinde bu gruplar yaygınlıkla ulusal özellik taşımaktadır. Fakat diğer bölgelerde dini, etnik ya da ırksal gruplar söz konusu olabilmektedir. Bu açılardan toplumsal güvenlik kavramı kolektif kimlik güvenliği anlamına gelmektedir (Wæver, 2008: 155).

Toplumsal güvenlik sektörünün güvenlik çalışmaları içinde yükselişe geçmesinin nedeni özellikle Soğuk Savaş sonrası dönemde akademik alanda kimliğe, kültüre ve inşacı yaklaşıma olan yöneliştir. Soğuk Savaş sonrası dönemde etnik çatışmaların yoğunlaşmasıyla birlikte bu çatışmaları analiz edebilecek kategorilerin güvenlik çalışmalarında henüz yer almaması bu yükselişte etkili olmuştur. Özellikle eski Yugoslavya'da meydana gelen etnik temelli çatışmaların eski Sovyet coğrafyasına sıçrayabilme ihtimaline dayanan korku bu kavramın Kopenhag Okulu tarafından geliştirilmesine ve analiz edilmesine neden olmuştur (Wæver, 2008: 158). Kopenhag Okulu'nun bakış açısına göre toplumsal güvenlik, hem

güvenliğin beş sektöründen birisini oluşturmaktadır hem de “*Güvenleştirme Teorisi*” kapsamında varlığı tehdit altında olan referans nesnesini temsil etmektedir. Örneğin, göçmenlerin toplumsal barışa tehdit olarak gösterildiği söz ediminde referans nesnesi toplum olarak sunulmaktadır. Göçün güvenlik ile olan ilişkisi göz önüne alındığında güvenlikleştirme adımıyla devletten ziyade toplum referans nesnesi olarak kabul edilmektedir. Bu şekilde toplumsal güvenlik, bir güvenlik konusu olarak inşa edilmektedir (Rumelili & Karadağ, 2017: 76).

Güvenleştirme süreci ulusal kimliğin referans nesnesi olarak sunulmasıyla başlamaktadır. Ulusal kimliğin güvenleştirilmesi için ise öncelikle bir tehdide ihtiyaç duyulmaktadır (Çiçekçi, 2012: 78-79). Toplumsal güvenlik gündemi, farklı dönemlerde ve bölgelerde farklı aktörler tarafından belirlenmektedir. Weaver’a (2008: 158-159) göre toplumsal güvenliğe tehdit olarak görülen en yaygın konular dört başlık altında toplanmaktadır:

i) Göç: Kimlik üzerinden inşa edilen güvenlikleştirme eyleminde genellikle tehdit, söz konusu ulusun almış olduğu göç olarak gösterilmektedir. X halkının, Y halkı tarafından istila edildiği veya Y halkı yüzünden homojen yapıdaki toplumsal değerlerini kaybettiği iddia edilmektedir. Aynı zamanda X topluluğunun nüfusunun bir kısmının “*öteki*” olarak nitelendirilen diğerleri (Y halkı) tarafından oluşması, X kimliğinde değişimlere sebep olarak gösterilmektedir. Bu durumun farklılıklar yaratacağı ve bu yüzden de artık X halkının eski varlığını sürdüremeyeceği şeklinde sunularak güvenlikleştirme süreci tamamlanmaya çalışılmaktadır.

ii) Yatay rekabet: X halkı ülkede yaşamaya devam etmesine rağmen, komşu kültür olan Y’nin öne çıkan kültürel ve dilsel etkileri nedeniyle X halkının yaşam şekilleri değişime uğrayacaktır.

iii) Dikey rekabet: İnsanlar kendilerini belirli bir süre sonra X olarak görmeyi bırakacaktır. Bunun sebebi ya bir entegrasyon projesi (örneğin Yugoslavya, AB) ya da ayrılıkçı bölgeselci bir projenin (örneğin, Quebec, Katalon, Kürt) varlığına dayanmaktadır. Bu projeler insanları daha geniş ya da daha dar kimliklere doğru çekmektedir.

iv) Doğal afet, savaş, veba, açlık nedeniyle veya soykırım politikaları sebebiyle nüfusun azalması da olası bir dördüncü konuyu teşkil etmektedir.

Huysmans’a (2006: 51) göre ise göçün toplumsal güvenlik sektöründe güvenleştirilmesi varoluşsal olarak birbiriyle ilişkili olan iki aşamalı bir süreç şeklinde gerçekleşmektedir: İlk olarak, göç bir siyasi birimin bağımsız kimliğini ve işlevsel özerkliğini varoluşsal olarak tehlikeye atan olaylara ve gelişmelere dönüştürülmektedir. İkinci olarak, güvenlikleştirme sürecinde göçün özerk bir siyasi bütünlük olan toplumu tehlikeye sürüklediği iddia edilmektedir. Göçün güvenleştirilmesi bu şekilde siyasi bir güvensizlik topluluğu yaratmaktadır. Özetle toplumsal güvenlik kavramı toplumun bekasına yönelik bir tehdit algısıyla ortaya çıkmaktadır. Toplumun “*biz*” kimliğini ve bu kimliğin

devamlılığını tehdit ettiği düşünülen meseleler özellikle de göç meselesi güvenikleştirmenin kapsamına dahil edilmektedir. “Biz” kimliğini tehlikeye atacak bir mesele, güvenikleştirici aktörün bunu bir güvenlik tehdidi olarak sunmasına zemin hazırlamaktadır (Buzan vd., 1998: 119-120).

2.3. Ekonomik Güvenlik Sektöründe Güvenikleştirme

“*Ekonomi(k)*” kavramı, en genel anlamıyla, mal ve hizmetlerin üretimi, dağıtımı, mübadelesi ve tüketimiyle ilgili insan faaliyetlerini ifade eder. Güvenliğin alışılmamış tehdit durumlarıyla ilişkilendirilmesinden hareketle, ekonomik güvenliğin insan eylemlerinde ve bunların yer aldığı bağlamlarda (toplum, devlet, uluslararası, küresel) ortaya çıkan tehdit durumlarını kapsadığı sonucuna varılabilir (Mesjasz, 2008: 128). Ekonomik güvenlik olgusunun Uluslararası İlişkiler ile Güvenlik Çalışmaları, Barış Araştırmaları gibi bağlantılı alanlara girmesiyle, bu sektöre ilgili tartışmalar sadece devlet-merkezli ekonomik güvenlik üzerine olmaktan çıkarak toplumsal ve bireysel düzeyde de yürütülmeye başlanmıştır. Böylece sosyoekonomik temelde yaşam koşulları toplum ve birey güvenliğinin temel bir unsuru olarak gündeme gelmiştir (Mesjasz, 2008: 126). Soğuk Savaş döneminin ve iki kutuplu uluslararası sisteminin sona ermesinin ortaya çıkardığı sonuçlar ve küreselleşmenin ivmesini artırması, özellikle gelişmekte olan ülkelerde birey ve toplum yaşamının ekonomik boyutları ile güvenlik olgusu arasında güçlü bağlantılar olduğunu daha belirgin bir şekilde gündeme getirmiştir. Dolayısıyla, ekonominin güvende olup olmaması ülkelerin ekonomileri için ağır bir bedele neden olabilir ki, bu sadece fiziksel varlıklar ve altyapılarla sınırlı olmayıp, uzun vadede istihdam, finansal piyasalar, iş sürekliliği vb. konular üzerindeki etkileri de içermektedir (Smith, 2010: 206). Bununla birlikte, ekonomik güvenlik kavramının tanımı ve kapsamı konusunda literatürde tam bir uzlaşma bulunduğu söylenemez. Çünkü ekonomik güvenlik sektörüyle ilgili olarak farklı analiz düzeyleri söz konusudur. Smith’e (2010: 207) göre, ekonomik güvenlik sektöründe bireysel düzeye odaklanma bireylerin, hanelerin, firmaların yaşanabilir ekonomik imkânlarını ve geçim kaynaklarını dikkate almayı gerektirirken; ulusal düzeye odaklanma, ülkelerin ekonomik refahını ve rekabet gücünü dikkate almayı gerektirecektir. Uluslararası düzeye odaklanma durumunda ise küresel kurumları, firmaları ve ağları dikkate almak gerekecektir.

Cable’ye (1995: 306-307) göre, ekonomik güvenlik kavramının kayganlığı, onu küresel sorunlara genişletme girişimleriyle daha da artmaktadır. Kavramın tanımının, kullanım amacına bağlı olarak atıfta bulunacağı olgulara ve durumlara göre değişebileceğinden hareket eden Cable, kavram için dört farklı tanım çerçevesi ortaya koymaktadır: Birincisi, ekonomik güvenlik, en açık biçimde, bir ülkenin kendini savunma kabiliyetini doğrudan etkileyen ticaret ve yatırım yönlerine atıfta bulunabilir (silah veya ilgili teknolojileri edinme özgürlüğü, askeri teçhizat tedarikinin güvenilirliği veya silahlarda teknolojik avantaj elde eden düşman tehditleri). İkincisi, ekonomik güvenlik, saldırganlık veya savunma amacıyla kullanılan ekonomik politika araçlarına atıfta bulunabilir (ticaret ve yatırım boykotları, enerji kaynaklarının kısıtlanması/enerji arzı güvenliği). Üçüncüsü, ekonomik güvenlik, bir ülkenin göreceli askeri kapasitenin veya güç projeksiyonunun, nispeten zayıf ekonomik performans tarafından zayıflatılabileceğine ve bunun da bir

ekonomik politika tepkisi gerektirdiğine atıfta bulunabilir (Uluslararası güç dengesinde bu göreceli düşüş korkusu, güç dengesinin önde gelen devletleri arasında bir ekonomik savaş durumunu varsayan jeo-ekonomiye olan mevcut ilgiyi beslemektedir). Son olarak, daha gevşek bir çerçevede ekonomik güvenlik, küresel ekonomik, sosyal ve ekolojik istikrarsızlık korkusuna atıfta bulunabilir.

Munteanu ve Tamoşiūnienė’ya (2015: 597-598) göre ise, ekonomik güvenlik kategorik olarak iki ana ayrım çerçevesinde incelenmelidir. Buna göre, ekonomik güvenlik kavramını tanımlamada hem mikro (Anglo-Sakson Yaklaşımı kümesi) hem de makro düzeyde (Asya Yaklaşımı kümesi) ele alan yaklaşımlardan bahsedilebilir. Ekonomik güvenlik kavramını mikro düzeyde ele alan yaklaşımlar (“*Amerikan Yaklaşımı*” ve “*Uluslararası Çalışma Örgütü (ILO) Yaklaşımı*”), ekonomik güvenliği bireyin şu anda ve öngörülebilir bir gelecekte belirli bir yaşam standardını sürdürmesini sağlayacak istikrarlı gelirlerin ve diğer kaynakların sağlanması olarak tanımlanmakta ve bunun sürekliliği üzerine odaklanmaktadır. Ekonomik güvenlik kavramını makro düzeyde ele alan yaklaşımlardan biri olan “*Rusya Yaklaşımı*”, ekonomik güvenliği ulusal güvenliği ve refahı sağlayan ekonomik koşulların varlığı ve sürdürülmesi temelinde incelerken; “*Lino Briguglio Yaklaşımı*” ise, ekonomik sürdürülebilirlik temelinde ekonomik güvenliği küresel ekonomik yapı içerisinde dışa açıklık derecesi, ihracat ve ithalat bağımlılığı gibi ölçütler çerçevesinde ülkelerin dış şoklara ve krizlere dayanıklılık durumlarına göre incelemektedir.

Küreselleşmenin ve karmaşık karşılıklı bağımlılığın ulaştığı düzey göz önüne alındığında, Soğuk Savaş sonrası dönemde devletlere yönelik tehditlerin bileşiminin daha gizli, daha muğlak ve daha karmaşık bir şekilde ortaya çıktığı söylenebilir ki, bu sebeple, ekonomik güvenlik sektöründe tehditler bağlamında sebep-sonuç ilişkilerinin belirlenmesinin -güvenliğin diğer sektörlerine nazaran- daha zor olduğu görülmektedir. Herhangi bir piyasa ekonomisi sisteminin doğasında bir dereceye kadar güvensizlik vardır. Ancak, güvenlik servislerinin katılımını gerektirecek şekilde izole edilebilecek bazı güvensizlik unsurları da vardır. Potansiyel tehditler arasında uluslararası suç örgütleri, porno tacirleri, uyuşturucu kaçakçıları, zehirli atık taşıyıcıları, plütonyum satıcıları yer almaktadır. Ne var ki, böylesi bir yasadışı ekonomik faaliyetler listesinden bir küresel güvenlik gündemi oluşturmak şöyle dursun, ulusal bir güvenlik gündemi yaratmak bile zordur. Çünkü, bu tür yasadışı ekonomik faaliyetlerin hepsi her yerde yasa dışı değildir. Bazı ülkelerdeki bazı yasadışı ekonomik faaliyetlerin ulusal güvenliği tehdit etmek şöyle dursun, hiçbir zararı ya da zarardan çok yararı vardır (tüketim mallarının kaçakçılığı, döviz arbitrajı, yasadışı göç). Farklı toplumların, diğerlerinin yanı sıra uyuşturucu, pornografi ve silah sahipliği konusunda farklı tolerans seviyeleri vardır. Bu gerçekliklerin yanında, ekonomik güvenlik kavramını küresel yoksulluk, nüfus artışı, küresel ısınma ve uluslararası bankacılık sisteminin istikrarına kadar genişletmek, belki de kavramı yönetilemez hale getirmektedir (Cable, 1995: 307-308).

Soğuk Savaş sonrası dönemde ulusal güvenliğin temel bileşenlerinden biri olan ekonomik güvenlik, devletin bütünlüğü ve sürdürülebilirliğinin yanı sıra, bireylerin özgürlüğü, toplumun refahı ve güvenliğinin de destekçisi konumunu da gelmiştir. Ekonomi

sektöründeki güvenikleştirme sorunsalını ele alırken devlet düzeyinde güvenikleştirme süreci, hedef kitle seçmen topluluğunu tatmin etse de toplum, birey ve uluslararası sistem düzeyinde de tehdit edilen referans nesneleri ortaya çıkarmaktadır. Bu açıdan ekonomi sektöründeki güvenikleştirme sürecinin çok boyutlu bir özelliğe sahip olduğu söylenebilir (Turgutluoğlu, 2017: 132). Ekonomi sektöründeki güvenikleştirme, iki analiz düzeyini gerekli kılar. İlk düzey, farklı aktörlerin (kuruluşlar ve bireyler) tüm iktisadi faaliyetlerinin sistemsel (siyasal, toplumsal, ekonomik ve kültürel) bağlamıdır. Açık bir şekilde ilk düzeyle bağlantı içinde olan ikinci analiz düzeyi, tüm aktörlerle (referans özneleriyle) ilgili tehdit ve hassasiyetlerle ilgilidir (Mesjasz, 2008: 136). Toplumsal bağlamda ekonomik güvenlik, bireylere ve ailelere, toplumlarına ekonomik, politik, sosyal, kültürel açılardan vakar ile katılabilecekleri yeterli düzeyde kaynaklar sunacak garantili ve istikrarlı bir yaşam düzeyini ifade etmektedir (Mesjasz, 2008: 143).

Uluslararası göçün bir devletin ulusal çıkarlarına ve güvenliğine tehdit oluşturduğu tartışmalarının odak noktalarından biri de devletin ekonomisi üzerindeki etkisidir. Uluslararası göçün hem ev sahibi ülke hem de menşei ülke üzerinde önemli ekonomik etkileri olduğu yadsınamaz. Uluslararası göçün bir ülke için ekonomik avantajları ve dezavantajları olsa da güvenliğin tanımının ekonomik sektörü de kapsayacak şekilde genişletilmesi kamuoylarının dikkatlerini uluslararası göçün neden olduğu ekonomik zorluklara da yönelterek, onun bir güvenlik sorunu olarak etiketlenmesi sonucunu doğurmuştur. Böylelikle, ekonomik göçmenlerin yanı sıra mülteciler ve sığınmacılar da bir ülkenin ekonomik güvenliğini tehdit ettiği düşünülen sükeler arasında yer almışlardır (Tallmeister, 2013: 2).

Gerek devlet düzeyinde gerekse toplum düzeyinde mevcut veya olası ekonomik problemlerin kaynağı olarak göçmenlerin gösterilmesi, göç karşıtı söylemin önemli bir parçasıdır ve aşırı sağ partilerin savları arasında kendine en geniş yer bulan temalardandır (Mandacı & Özerim, 2013: 115). Kamuoyları genellikle göçmenlerin ücretleri düşürdüğü ve mevcut işlerini ellerinden alarak ekonomik sorunlara katkıda bulunduğı fikrini desteklemektedir. Bu argüman genellikle kısıtlayıcı ve dışlayıcı göçmenlik politikalarını haklı çıkarmak için kullanılmaktadır (Somerville & Sumption, 2009: 3). Benzer şekilde, göçmenlerin, özellikle mültecilerin ve sığınmacıların, kabul eden ülkenin sosyal güvenlik ve refah sistemine yönelik tehditler oluşturduğu ileri sürülmektedir. Bu çerçevede, mülteciler ve sığınmacılar, ev sahibi ülkenin refah düzeyini gayri meşru bir şekilde sömüren vurguncular ve beleşçiler olarak imlenip, ülkenin refah düzeyinin göçmen akınını sürdüremez olduğu ileri sürülmektedir (Tallmeister, 2013: 3). Aşırı sağ partilerin göçmenler üzerinden ve ekonomik kaygıları kullanarak yürüttükleri bu politika, "*refah şovenizmi*" kavramı ile tanımlanabilir. Refah şovenizmine dayalı bakış açısı, refah hizmetlerinin sadece ülkenin kendi vatandaşlarına yönelik olmasını talep eder. Refah şovenizminin güncel söylemde güç ve ağırlık kazanması, Avrupa'da refah devleti anlayışının dönüşümü kapsamında çok daha rahat anlaşılabilir ve bu dönüşümün uluslararası göç açısından rolü önemlidir. Göçmenler, mülteciler ve azınlıklara karşı yürütülen bu politikaların özüne ekonomik paylaşım kavgası yerleştirildiğı görülmektedir (Mandacı & Özerim, 2013: 116). Bu çerçevede, göç alan toplumlarda, Weiner'in da (1992-1993: 114) dikkat çektiğı gibi,

göçmen işçilere ve mültecilere yönelik refah devleti hizmetleri, genellikle yerel toplulukta kızgınlık yaratırken; göçmenlerin yalnızca yerli vatandaşların işlerini elinden almakla kalmayıp aynı zamanda sosyal yardımları da aldıklarına dair yaygın bir inanç vardır (Huysmans, 2006: 78).

Genel olarak değerlendirildiğinde ekonomik güvenlik temasına ilişkin güvenlikleştirme -bir dizi mali ve finansal güvenlik konularını da kapsayacak şekilde-, ağırlıklı olarak istihdam piyasasına tehdit oluşturma, refah devleti ve sosyal güvenlik yapısına tehdit yaratma, yasadışı göçmenlerin çalışması, doğrudan değil dolaylı vergilendirme, sosyal damping, sosyal güvenliğe katkıda bulunmama, aileleriyle birlikte sağlık masrafları yaratma, göçmen çocuklarının eğitim masrafları, hükümetin mültecilere yaptığı harcamalar, yerlilerin istihdam piyasasında öncelikle tercih edilmesi, göçmenlere giden yardımların yaşlı, hasta ve işsizlere yönlendirilmesi ve aile birleşmelerine ilişkin tezler etrafında şekillenmektedir (Mandacı & Özerim, 2013: 116). Sonuç olarak, Avrupa’da aşırı sağ partilerin yürüttüğü uluslararası göç karşıtı tüm tartışmaların ardında göç politikalarından çok Avrupa’da yeni sosyal devlet modelinin ve refah devletinin küreselleşme bağlamında yeniden tanımlanması sürecindeki sancıların yatmakta olduğu görülmektedir. Aslında uluslararası göç bu tartışmalarda bir mücadele alanı olarak örnek olay işlevi görmektedir. Zira, üretim şekillerinin uğradığı dönüşüme bağlı olarak küreselleşmenin sosyal devlet modelini ve refah devleti anlayışını tartışmaya açmasının ortaya çıkardığı sonuçlar, birçok politika gibi göç politikalarının ve entegrasyon stratejilerinin de yeniden tanımlanması gerekmiştir. Fakat bu tanımlamayı yapabilmek açısından ulusal ve ulus üstü düzeydeki farklılıklar, Avrupa ülkelerinde göç konusunda radikal karşıt seslerin yükselmesine de zemin hazırlamaktadır. Bu kapsamda aşırı sağ partiler, bu farklılık ve zayıflıklardan yararlanarak seçmen kitlelerini tüm Avrupa’da göçün entegrasyon yöntemi ile yönetişiminin başarısız olduğuna dair bir yargıyı yaratıp yaygınlaştırmaya çalışmaktadırlar (Mandacı & Özerim, 2013: 126-127).

3. “Aşırı Sağ” Olgusu

Literatürde aşırı sağın temel ideolojisinin neyi kapsadığına yönelik kesin bir görüş birliği bulunmamaktadır. Cas Mudde (2002: 1-24) aşırı sağ partilerle ilgili olarak literatürde 26 farklı tanım ve 58 farklı ideolojik özellik tanımlandığını ortaya koymuştur. Son yıllarda aşırı sağ üzerine yapılan çalışmalar bu kavramı popülizm, milliyetçilik ve radikalizm-aşırıçılık temelinde sınıflandırmakta, özellikle de anti-demokrasi, milliyetçilik, ırkçılık, zenofobi ve güçlü devlet vurgusu üzerinden ele almaktadır (Golder, 2016: 478). Keza, aşırı sağ olgusu, farklı akademisyenler tarafından, “aşırı sağ”, “radikal sağ”, “popülist radikal sağ”, “neo-popülist sağ” ve “göçmen karşıtı” olmak üzere farklı şekillerde adlandırılmaktadır (Berning, 2017: 16).

Bazı yazarlara göre aşırı sağ tanımlamak başlı başına bir problem teşkil etmektedir (Taş, 1999: 76). Fakat en kısa şekilde aşırı sağ, sosyal adalet karşıtı bir politikaya sahip olan, yabancı düşmanlığıyla birlikte ırkçılığı benimseyen, etnik azınlıkların topluma entegrasyonunu engelleyen nitelikteki küçük ya da büyük nitelikteki partileri kapsayan

hareket anlamına gelmektedir. Aşırı sağ partiler benimsemiş oldukları ideolojileri itibarıyla ya radikal ya da aşırılık yanlısı özellikler taşımaktadır. Radikalizm, siyasal ve ekonomik sistemin bir reform sürecinden geçmesini gerekli görmektedir. Fakat açık bir şekilde demokrasi biçimlerinin ortadan kaldırılmasını talep etmemekte, liberal demokrasinin ise genel anayasal parametrelerini kabul etmektedir. İkinci Dünya Savaşı sonrası uzlaşmanın, refah devletinin ve savaş sonrası geleneksel siyasi partilerin sosyoekonomik ve sosyokültürel normlarını söylemleriyle birlikte eleştirmektedir. Radikalizm, siyasal sistemde liberal demokrasilerin ve mevcut anayasal düzenin sınırlarına kapalı bir şekilde meydan okuyan partileri ifade etmektedir. Bu noktada aşırılık yanlısı sağ partiler farklılık göstermekte ve açık bir şekilde demokrasi karşıtı tutumlarıyla ön plana çıkmaktadırlar (Golder, 2016: 478; Zaslove, 2004: 113-114). Guibernau'ya (2010: 4) göre yeni aşırı sağ hareketler birleştirici ve homojen bir yapıda olmayıp, iki savaş arası dönemdeki faşizme ve sanayi sonrası dönemde kendini göstermeye başlayan aşırı sağ politikalara bağlılık gösteren partileri kapsamaktadır.

Yeni aşırı sağ partiler önceki dönemlerde varlık gösteren radikal sağ oluşumlardan bazı açılardan farklılık göstermektedir. Bu farklardan en önemlisi yeni aşırı sağın anayasal çerçeve içinde hareket etmekte olmasıdır. Liberal demokrasinin ortadan kaldırılmasını ya da yerine faşist veya otoriter rejimlerin getirilmesini istemeyen, radikal sağ gruplardan oluşan bir hareketi ifade etmektedir. Yeni aşırı sağ, demokrasiye her ne kadar karşı olmasa da demokrasinin mevcut işleyişini büyük ölçüde eleştirmektedir. Farklı tarzdaki bir etnik milliyetçiliği savunarak popülist söylemler kullanmaktadır. Yeni aşırı sağın siyasal gündeminin en popüler konusunu göç ve göçmenlere karşı olan muhalefeti oluşturmaktadır. Göçe, özellikle de Müslüman ve siyahi kişileri kapsayan göç hareketlerine karşı çıkmaktadır. Küreselleşme süreci tüm hızıyla devam ederken, bu sürece paralel bir şekilde pek çok Avrupa ülkesinde göçmen sayısı büyük bir artış göstermesi, aşırı sağ partiler tarafından göçmenlerin göç ettikleri ülkelerdeki güvencesiz işler ve geçim kaynakları için büyük bir tehdit olarak yansıtılmalarına neden olmaktadır. Aynı zamanda aşırı sağ partiler göçmenlerin ulusal kültür ve kimliklere karşı da tehdit oluşturdukları yönündeki söylemlerde bulunmaktadır. Bu tarz söylemler Avrupa toplumlarındaki yabancılara yönelik düşmanlık hislerini beslemektedir.

Tablo: 1
Avrupa'da Aşırı Sağ Partilerin Genel Özellikleri

| | |
|------------------------------------|--|
| Tehdit olarak tanımlananlar | <ul style="list-style-type: none">• (Müslüman) göçmenler, sığınmacılar, etnik / dini azınlıklar• Siyasi, ekonomik ve kültürel seçkinler• AB prosedürleri, yapıları ve bürokratları |
| Çözüm seçenekleri | <ul style="list-style-type: none">• Göçü durdurmak• Daha katı göçmenlik yasaları ve refah devleti yardımlarının uygulanması• Sabıka kaydı olan veya entegre olmak istemeyen göçmenlerin sınır dışı edilmesi• Daha fazla AB entegrasyonunu ve daha fazla mali transferleri durdurmak |
| Temel siyasi yönelim | <ul style="list-style-type: none">• Yabancı düşmanı, göçmen karşıtı, düzen karşıtı, elitizm karşıtı |
| İletişim tarzı | <ul style="list-style-type: none">• Alarmist, gürültücü, dışlayıcı, aşırı basitleştirilmiş, tabu yıkıcı, kasıtlı olarak yanıltıcı, fırsatçı, çatışmacı (onlara karşı biz) |
| Parti içi örgütlenme | <ul style="list-style-type: none">• Halkın kendisiyle özdeşleştiği bir liderlik figürü tarafından yönetilir veya ona göre uyarlanır• Yukarıdan aşağıya karar verme |

Kaynak: Grabow & Hartleb, 2014: 18.

Aşırı sağ partilerin ideolojik konuları ve tezleri şu şekilde (bkz. Tablo 1) özetlenebilir:

- i) Egemen etnik topluluk ile birlikte güçlü bir devleti (devlet baskısı ve militarizm de dahil olmak üzere) destekleyen etnik milliyetçi anlayış,
- ii) “Biz” olarak nitelendirilen baskın etnik veya dini grup ile “onlar” olarak ötekileştirilen diğer gruplar arasındaki bölünmeye dayalı dışlayıcılık anlayışı,
- iii) Yabancılar, göçmenlere, Müslümanlara vb. yönelik korku, nefret veya saldırganlık içeren yabancı düşmanlığı,
- iv) Çoğulcu demokrasiye ve onun temel değerlerine düşmanlık ile beslenen anti-demokratik karakter,
- v) Baskıcı devlet iktidarını, elitizmi, hoşgörüsüzlüğü ve otoriterliği desteklemek,
- vi) Geleneksel ahlaki ve dini değerleri modern, çoğulcu topluma karşı gelişi teşvik etmek için kötüye kullanmak,
- vii) Devletin refah hizmetleri ve sosyal politikalarından sadece baskın etnik gruptaki insanların yararlanması gerektiği fikrini yani “*refah şovenizmi*”ni vurgulamak (Gowland vd.’den akt. Gündüz-Yeşilyurt, 2010: 39).

3.1. Fransa’da Aşırı Sağ: Ulusal Cephe

Ulusal Cephe (FN / Front National), 1972 yılında François Duprat, François Brigneau ve Jean Marie Le Pen tarafından kurulmuştur. Partinin liderliğini 1972 yılından 2011 yılına kadar Jean Marie Le Pen yapmıştır. Jean Marie Le Pen’in liderliği boyunca parti göçmen karşıtı, yabancı düşmanı, Yahudi karşıtı, ırkçı ve homofobik, söylemleriyle öne çıkarak popülerlik kazanmıştır. Parti, kuruluşundan itibaren göçmen karşıtı bir tutum içerisinde var olmuştur. Fransız toplumunda etno-kültürel ve dinsel çeşitliliğe neden olan göçün tamamen durdurulmasına yönelik amacını göçmen karşıtı söylemleriyle ön plana çıkartmıştır (Bektaş, 2019: 96-97).

Ulusal Cephe, 1980’li yıllara gelinceye kadar yapılan seçimlerde zaman zaman dibe vurmuş zaman zaman da yükselerek başarılar elde etmiştir. Özellikle 1979 Avrupa Parlamentosu seçimlerinde parti başarısız olmuştur. Ardından 1981 yılında parti adaylarının zorunlu olan 500 imzayı toplayamamaları üzerine Ulusal Cephe 1981 yılındaki genel seçimlerden %0,4 oy alarak yeniden başarısız olmuştur. 1982 ile 1983 yıllarını kapsayan dönem ise Ulusal Cephe’nin yükselişinin başlangıç noktası olarak kabul edilmektedir. Ulusal Cephe, 1984 Avrupa seçimlerinden %11 oy alarak adeta bir oy patlaması yaşamıştır. Bununla birlikte 1984 yılında göçü durdurma ve binlerce Afrikalı göçmenin sınır dışı edilmesine yönelik bir seçim kampanyasıyla birlikte Paris’in batısındaki Dreux’deki belediye seçimlerini de kazanmıştır. Parti 1985 yılındaki bölgesel seçimlerden %8,8 oy

almıştır. 1986 yılındaki genel seçimden ise %9,6 oranında oy alarak siyasal arenadaki yerini kanıtlamıştır. Jean Marie Le Pen, 1988 yılındaki cumhurbaşkanlığı seçimlerinde ise %14,38 oy oranıyla Fransa'da aşırı sağın oy rekorunu kırmıştır (Vardar, 2004: 137). 1990'lı yıllar Ulusal Cephe'nin tam anlamıyla Fransız siyasetinde önemli bir güç haline geldiği dönemi kapsamı açısından önem teşkil etmektedir. Çünkü 1990'lı yıllarda işçi göçmenler yerine mültecilerin sayısındaki artış, yani göçmen kategorisinin değişime uğraması, Fransız kamuoyundaki göçmenlere yönelik tedirginliği artırmıştır. Ulusal Cephe'nin göçmen karşıtı tutumu ise bu gelişmeyle bağlantılı olarak oy oranının artmasına olanak sağlamıştır. Ulusal Cephe'nin aldığı oy oranı 1995 başkanlık ve 1997 parlamento seçimlerinde %15'e kadar yükselmiştir. Ulusal Cephe, 1998 yılında bölge konseylerinde 275 sandalye hakkı elde etmiştir (Swyngedouw & Ivaldi, 2001: 2).

Tablo: 2

"Ulusal Cephe"nin 1974-2017 Yılları Arasındaki Cumhurbaşkanlığı Seçim Sonuçları

| | Oy Oranı (%) | Kayıtlı Seçmenler (%) | Oylar | Çekimser Seçmenler (%) |
|---------------|--------------|-----------------------|------------|------------------------|
| 1974 | 0,75 | 0,62 | 190.921 | 15,77 |
| 1988 | 14,38 | 11,47 | 4.376.742 | 18,65 |
| 1995 | 15,00 | 11,42 | 4.571.138 | 21,62 |
| 2002 (1. tur) | 16,86 | 11,66 | 4.804.703 | 28,40 |
| 2002 (2. tur) | 17,79 | 13,41 | 5.525.906 | 20,29 |
| 2007 | 10,44 | 8,62 | 3.834.530 | 16,23 |
| 2012 | 17,90 | 13,95 | 6.421.426 | 20,52 |
| 2017 (1. tur) | 21,30 | 16,14 | 7.678.491 | 22,23 |
| 2017 (2. tur) | 33,90 | 22,36 | 10.638.475 | 25,44 |

Kaynak: Mondon, 2014: 304; Ministère de l'Intérieur, 2017.

Marine Le Pen, hukuk fakültesini bitirdikten sonra politikaya atılmaya ve babasının yolundan yürümeye karar vermiştir. Ulusal Cephe'ye ilk olarak 1993 yılındaki yerel seçimlerde katılmıştır. 1998 yılında Ulusal Cephe'nin hukuk bürosunun başına geçmiştir. 2011 yılında babasından parti liderliğini devralmıştır. Çoğu kişinin başaramaz gözüyle baktığı partiyi olumsuz ve itici imajından kurtarmak için kendi politikalarını hayata geçirmeye başlamıştır. Marine Le Pen, babası Jean Marie Le Pen'den 2011 yılında parti liderliğini devraldıktan sonraki üç yıllık kısa bir zaman aralığında Ulusal Cephe'yi babasından daha başarılı bir konuma yükseltmiştir. Avrupa'nın, aşırı sağ partiler arasında aşırı ırkçı ideolojisi nedeniyle en çok korktuğu parti olan Ulusal Cephe'yi Fransa'da birinci parti konumuna taşımıştır. Marine Le Pen, ilk başarısını 2012 yılındaki cumhurbaşkanlığı seçimlerinde %18 oy alarak elde etmiştir. 2014 yılında yapılan yerel seçimlerde ise partiden 11 belediye başkanı çıkartmayı başararak babasının oy potansiyelini aşmıştır. Ardından Avrupa Parlamento seçimlerinde Ulusal Cephe'yi ülkenin birinci partisi yaparak, babasının elde etmeyi başaramadığı bir zafere daha ulaşmıştır (BBC News, 2014).

Marine Le Pen, babası Jean Marie Le Pen'in Ulusal Cephe'ye liderlik yaptığı dönemde hâkim olan kutuplaştırıcı ve ayrıştırıcı anti-semitik söylemini terk etmiştir. Bu söylemin yerine ekonomik, toplumsal ve kültürel sorunları göçmen karşıtlığı üzerine inşa ettiği daha yumuşak bir söylem tercih etmiştir. İki lider arasındaki en temel farklılık Marine Le Pen'in ayrıştırıcı konuları ele almaktan kaçınmasıdır. Çünkü savaşın ne olduğu konusunda bir fikre sahip olmayan Fransa'daki 18-24 yaş arası grupta bu söylemin bir

karşılığı bulunmamaktadır. İşsizlik ve göç ilgilerini çeken en önemli konulardır. Marine Le Pen, bunun farkında olduğu için partiyi klasik söylemlerin dışına çıkartarak daha geniş kitleleri mobilize etmeye çalışmaktadır (Cigainero, 2017).

Tablo: 3
Jean-Marie Le Pen ile Marine Le Pen’in Söylemlerinin Karşılaştırılması

| Jean-Marie Le Pen | Marine Le Pen | Ortak Söylemler |
|---|---|---|
| <ul style="list-style-type: none">• Yabancı düşmanlığı• Anti-Semitizm• Gelenekselcilik• Hristiyan ahlakına hitap• Eşcinsellik karşıtlığı• Komünizm karşıtlığı• Yasa ve Düzen:<ul style="list-style-type: none">i) İdam cezasının geri getirilmesi çağrısı• İkinci Dünya Savaşı ve Fransız sömürge savaşlarına atfı• Anavatanla ilgili referanslar | <ul style="list-style-type: none">• Kaba sözlerle şekillenen muhalif dil kullanımı• Açık, kısa ve basit mesajlar• Referandum yoluyla doğrudan demokrasi çağrısı• Seçmenlerin sağduyusuna hitap• Tartışmalı ifadelerin yumuşatılarak tonlanması:<ul style="list-style-type: none">i) Avrupa Şüpheliğiii) Yahudi düşmanlığıiii) Göçmen karşıtlığıiv) Dışlayıcılıkv) İdam cezası• Laikliğe artan referans• Demokrasiye artan referans• Fransız Cumhuriyeti’nin geleneksel değerlerinin savunucusu olma iddiası• Ulusal egemenliği yeniden kurma çağrısı• Cumhuriyet değerleriyle bağdaşmadığı iddiasıyla çok kültürlülüğe ve İslam’a saldırı• Kontrollü göç için çağrı• Artan [milliyetçi] ekonomik söylem (AB, Avrupa Merkez Bankası ve Euro karşıtlığı) Küreselleşme karşıtlığı | <ul style="list-style-type: none">• Krizleri fırsat çevirmek• İdeolojiden vazgeçmek (ne sağ ne de sol olduğunu iddia etmemek)• Düşman yaratmak• Milliyetçilik• Göç karşıtlığı• Güvensizliğe odaklanmak• Fransız kimliğini öne çıkartmak ve değerinin eskisine kıyasla azaldığını iddia etmek• Ulusal önceliği ısrarla talep etmek• Liyakat temelli vatandaşlığa kabul |

Kaynak: McGregor, 2018: 69-70.

Marine Le Pen, yetersiz ekonomi bilgisini ise kendilerini “küreselleşmenin kaybedenleri”³ olarak tanımlayan kitleleri mutlu edecek söylemlerle güçlendirmeye çalışmıştır. Fransa’da yaşayan göçmenleri ve Fransa’ya gelmekte olan göç akınına ülkedeki işsizliğin temel nedeni olarak sunmuştur. Böylelikle Fransa’daki işsizlerin ve kriz altında ezilen işçilerin ilgisini çekerek partinin oy oranının artmasına katkı sağlamıştır. Yabancıların sosyal yardım almasına ve oy kullanmasına karşı çıkmıştır. Bütün bunlara ek olarak sınırların kapatılması ve yasa dışı göçmenlerin sınır dışı edilmesini destekleyecek nitelikteki söylemleriyle daha geniş kitlelere hitap edebilmiştir (Uzun, 2021: 80).

Marine Le Pen, 2018 yılında ise Ulusal Cephe’nin aşırı sağcı geçmişini geride bırakmak için partinin yeni ismini “Ulusal Birlik” (Rassemblement National) olarak değiştirmiştir. Marine Le Pen’e göre Ulusal Cephe ismi kimsenin görmezden gelemeyeceği başarılı ve onur dolu bir geçmişe sahiptir. Fakat bu ismin Fransa’daki bazı grupların partiyi oy vermesini engelleyen ve geçmişle bağlantılı olan psikolojik bir etkisi söz konusudur. Marine Le Pen, Ulusal Birlik isminin partinin geleneksel tabanı dışındaki seçmenlere de hitap edecek nitelikte olduğunu iddia etmektedir (Sputnik Türkiye, 2018). Çünkü partinin

³ “Küreselleşmenin kaybedenleri” deyimi, sosyoekonomik olarak küreselleşmenin faydalarından yararlanamayan, düşük vasıflı işlerde çalışan, düşük gelirli, yüksek eğitilmiş olmayan ve siyasete ve siyasi kurumlara güvensiz kesimleri ifade etmek için kullanılmaktadır. Sosyoekonomik sorunlar için bir suçlu arama eğiliminde olan bu kesimler popülist görüşlerde kendilerine ait öğeler bularak, korumacı politikaları desteklemeye yönelmekte ve aşırılıklarına rağmen popülist ve aşırı sağ partilere oy vermeyi tercih etmektedirler (Eren, 2017; Gitmez, 2020: 3-4).

eski adında geçen “*cephe*” (front) kavramı bir çatışmayı ifade ederken, yeni ismi çatışma değil “*birlik*” mesajı vermektedir. Marine Le Pen, bu değişiklik vasıtasıyla partinin Fransa toplumundaki daha geniş kitlelere erişebileceğini, geçmişle olan bağlantılarından ve insanların gözündeki önyargılarından da kurtulacağını düşünmektedir (Amerika’nın Sesi, 2018).

4. Fransa’da Uluslararası Göçün Güvenikleştirilmesi

4.1. Ulusal Cephe’nin Göç Karşısı Söyleminde Toplumsal Güvenlik Teması

Uluslararası göçün toplumsal güvenlik bağlamında bir güvenlik tehdidi yarattığı yönündeki söylem, güvenikleştirici aktör tarafından alımlayıcı kitleye genellikle göçmenlerin ev sahibi ülkenin etnik, kültürel, dini ve dilsel yapısını değiştiren ya da değiştirme kapasitesine sahip olan toplumsal bir tehdit olarak lanse edilmektedir. Bu söylemde ulusal topluluğun hayatta kalmasının önündeki en büyük içsel ve dışsal tehdidi göç teşkil etmektedir. Bu bağlamda güvenikleştirici aktör konumunda olan Marine Le Pen alımlayıcı kitle konumundaki Fransız kamuoyunun göç konusundaki algısını değiştirmek istemektedir. Göçü bir güvenlik tehdidi olarak sunmak için ise göçmen karşıtı söylemlerini toplumsal güvenlik teması üzerine inşa etmektedir. Özellikle Müslüman ülkelerden gelen göçmenler Fransa’nın kültürel homojenliği ve sosyal bütünlüğü için bir tehdit olarak yansıtılmaktadır. Çok kültürlülük karşıtlığı, Ulusal Cephe tarafından uluslararası göçün güvenikleştirilmesinde toplumsal güvenlik ile ilişkilendirilmektedir. Ayrıca çok kültürlülükle bağlantılı olan göçmenlerin asimilasyonu sorunu da Marine Le Pen’in endişeleri arasındadır. Ulusal Cephe, göçmenlerin topluma entegrasyonu yerine asimilasyona tabi tutulmalarını tercih etmektedir. Bunun nedeni ise Ulusal Cephe’nin kuruluşundan itibaren entegrasyonun çatışmalar yaratan çok kültürlü bir topluma yol açtığını iddia etmesinden kaynaklanmaktadır (Bektaş, 2019: 115). Marine Le Pen’in 2016 yılındaki konuşmasına bakıldığında bu düşünce yapısı net bir şekilde ortaya çıkmaktadır:

“Uzun yıllar boyunca Fransız anayasasında var olan ulusun bağımsızlığı ve Fransa’nın bölünmez bir cumhuriyet olduğu ilkelerini savunduk. Şu anda ise çok kültürlülüğe karşı savaşıyoruz. Çünkü çok kültürlülüğün toplumda çatışmalara yol açtığına inanmaktayız ve artık Fransa’da var olmayan laik, demokratik ve sosyal bir Cumhuriyet için savaşıyoruz” (BBC News, 2016).

Marine Le Pen’in söyleminde “çok kültürlülük” karşıtı vurgunun hâkim olduğu görülmektedir. Toplumsal parçalanmanın bir nedeni olarak sunulan çok kültürlülük Marine Le Pen tarafından Fransa’nın etnik, kültürel, dini, dilsel ve laik yapısını değiştirebilecek kapasitedeki toplumsal bir tehdit olarak yansıtılmaktadır. Bu şekilde toplumda çok kültürlülüğe karşıtlık teşvik edilmektedir (Martins, 2012: 82). Marine Le Pen, vatanseverlik kavramının Fransız siyasetinden her geçen gün daha fazla silindiğini iddia etmektedir. Ayrıca Fransız dili ve kültürünün göçmenlerin asimilasyona karşı direnciyle seyreltilmediği inancına sahiptir. Babası gibi Marine Le Pen de göçmenlerin Fransız kültürünü ve dilini tam olarak benimsemeleri için yabancı kültürleri ve dillerini tamamen terk etmesi gerektiği

yönündeki asimilasyoncu görüşünü takip etmektedir. Ulusal Cephe lideri, artık Fransa’daki göçmenler arasında uygun asimilasyonun gerçekleşmediğine inandığını şu sözleriyle dile getirmektedir: “*Eskiden göçmenler Fransa’ya gelirlerdi ve topluma karışıyorlardı. Fransız dilini ve geleneklerini benimsenlerdi. Fakat şimdi tüm topluluklar, kendi kodları ve gelenekleriyle yönetilen Fransa içinde yaşamaktalar*” (Martins, 2012: 87).

Bu söylemde, Ulusal Cephe Fransa’nın mevcut entegrasyon politikalarını etkili olmayan bir göçmen entegrasyonu yaklaşımı olarak eleştirmektedir. Bu söylem aynı zamanda Ulusal Cephe’nin göçmenlerin asimilasyonu için hâlihazırda Fransa’da uygulanandan daha klasik ve daha sert bir yaklaşımın benimsenmesi arzusunu taşıdığını göstermektedir.

Marine Le Pen’in 2012 yılındaki seçimler öncesinde yaptığı aşağıdaki konuşmasında ise çok kültürlülük karşıtlığı göze çarpmaktadır. Aynı zamanda göçmenlerin sahip olduğu kültürel normların Fransız geleneklerine giderek daha fazla dayatıldığı iddiası söz konusudur. Fransız vatandaşlarının helal yemek, cinsiyet ayrımı ve dini yasalar dahil olmak üzere kendi kültürel normlarına uygun olmayan uygulamaları göçmen nüfusun kültürel ihtiyaçlarına göre uyarlamak zorunda bırakılmalarından rahatsız olduğuna dikkat çekilmektedir. Ayrıca göçmenlerin kültürel normlarının Fransız toplumuna dayatılmasından da Fransız Hükümeti’nin politikaları sorumlu tutulmaktadır:

“Bir ülkeye geldiğinizde onun kanunlarına, değerlerine, kurallarına, kodlarına ve geleneklerine uymanız gerektiğine inanıyorum. Tüm istediğim bu, ama ne yazık ki Fransız Hükümeti’nin politikaları bunu yansıtmıyor. Laik okullarda helal yemeklerin dayatılmasını istemiyorum. Fransız yüzme havuzlarında ayrı cinsiyetler için ayrı saatler olmasını istemiyorum. Fransız Medeni Kanunu’nun dini yasalara uygun olarak uyarlanmasını istemiyorum. Bu kadar basit.” (Martins, 2012: 82).

Nitekim, Marine Le Pen’in bu düşüncesini destekler nitelikteki 2014 yılında sarf ettiği “*Okul menülerinde dini farklılıklara göre özel istekleri kabul edemeyiz. Dinin kamu yaşamına girmesi için hiçbir neden yok*” (Hürriyet, 2014) şeklindeki sözleri, Fransa’daki okullarda Müslüman öğrenciler için satılmakta olan domuz eti içermeyen menüleri laiklik ilkesinin ihlali ile ilişkilendirmesinin bir örneğini teşkil etmektedir. 2018 yılına gelindiğinde Marine Le Pen’in rahatsız olduğu bu durum, Ulusal Cephe’nin belediye başkanlığını yürüttüğü Beaucuire şehrindeki okul kantinlerinde Müslüman öğrenciler için satılmakta olan domuz içermeyen menülerin kaldırılmasıyla bir söz edimi olmaktan çıkartılarak hayata geçirilmiştir. Diğer bir deyişle yerel politika düzeyinde fiili bir güvenikleştirme eylemi ortaya konulmuştur (Özcan, 2018).

Mülteci krizinin başlangıcından itibaren Marine Le Pen, göç ile terörist saldırıların artışı arasında doğrudan bağlantılar kurmuştur. Paris’teki saldırılardan önce bile, Ulusal Cephe sürekli olarak göç ve İslami köktendincilik arasındaki ilişkiyi ön plana alacak şekilde söylemlerde bulunmuştur. Bu çerçevede Ulusal Cephe, göç ve göçmenler ile çeşitli toplumsal ve güvenlik sorunları arasında doğrudan ve tartışmalı bağlantılar kurmaktadır.

Marine Le Pen’in aşağıdaki konuşması, “*gettolar*” ve “*etnik gruplar arası çatışma*” gibi kavramlar ve radikal İslam ile olan bağlantısı üzerinden değerlendirilmiştir. Bununla birlikte bu konuşma Marine Le Pen’in göçü Fransız ulusal kimliğine yönelik tehdit algısı ile bir güvenlik meselesi olarak gördüğünü göstermektedir:

“Kontrolsüz göç, artık yeni Fransızları asimile edemeyen bir Cumhuriyet için gerilim kaynağıdır. Gettolar, etnik gruplar arası çatışmalar, topluluk talepleri ve siyasi dini provokasyonlar, ulusal kimliğimizi baltalayan ve bununla birlikte giderek görünür hale gelen İslamlaşmayı da beraberinde getiren kitlesel göçün doğrudan sonuçlarıdır.” (Sweet, 2017: 40).

Marine Le Pen’in göçmen karşıtı söyleminde İslam, Müslüman olan göçmenler ile ilişkilendirilerek uluslararası göçün güvenlikleştirilmesinde kullanılmaktadır. Aynı zamanda Fransa’da “*biz*” kimliğinin tanımı için “*öteki*” olarak inşa edilmektedir. Marine Le Pen, İslam karşıtı söyleminde “İslami köktendinciliğe” karşı mücadeleye vurgu yapmaktadır. Ayrıca İslami köktendinciliğin sadece Fransız ulusal güvenliği ve iç istikrarına yönelik bir tehdit olmadığını belirtmektedir. Aynı zamanda Fransız kültürünün, Fransız yaşam tarzının ve laikliğin düşmanı olduğunu iddia etmektedir. Marine Le Pen’in 2015 yılında Oxford Üniversitesi’nde yaptığı aşağıdaki konuşmasında bu yöndeki vurgular dikkat çekicidir:

“Bugün karşı karşıya olduğumuz terörizm totaliter bir ideolojinin, orta çağın, belirsizliğin ve insanlık dışılığın hizmetindedir: İslami köktendincilik. Özgürlüklerin ve insan haklarının yurdu olan Fransa, kendi topraklarında İslami köktendinciliğin saldırısına uğramıştır. Bu ideoloji silahlıdır: İslamcı teröristleri eğitmekte ve harekete geçirmekte; uluslararası cihatçılığı finanse etmekte ve dini fanatizmi körüklemektedir. Bunlar 7, 8 ve 9 Ocak 2015’te Paris’e saldıran insanlar. (...) Bize ait olan ve nefret ettikleri her şeyi Fransa’da yok etmeye geliyorlar: özgürlüğümüzü, yaşam tarzımızı, kültürümüzü ve laikliğimizi.” (OxfordUnion, 2015).

Marine Le Pen, 2017’deki cumhurbaşkanlığı seçim kampanyası sırasında göç ve İslam karşıtı söylemlerini sık sık dile getirmiştir. Medeniyetlerinin göç tehdidi altında olduğu konusunda Fransız toplumunu uyarmış ve Fransız yaşam tarzını korumak için göçü durduracağını sözünü vermiştir. Fransa’nın Müslüman nüfusunu açıkça hedef alan konuşmasında aşağıdaki sözleri dile getirmiştir:

“Fransa’da istediğimiz zaman şarap içeriz. Fransa’da kadınları peçe takmaya zorlamayız çünkü onlar saf değildir. (...) Fransa’da kimin Fransız olmayı hak ettiğine biz karar veririz. (...) Burası bizim evimiz. Fransızlar kendi ülkelerinde kendilerini yabancı hissediyor. (...) Çünkü göçmenlerden, yasadışı olanlardan bile daha az hakları var. (...) Fransızlar, kendilerine ait olmayan adetlere ve kanunlara tabi olmadan Fransa’da Fransızlar gibi yaşamak istiyorlar. (...) Fransa ulusal kimliğine, yani en derin varlığına, kendisini yaşatma hakkına sahiptir” (Agnew & Chassany, 2017).

Marine Le Pen yukarıdaki söyleminde bir güvenlikleştirici aktör olarak tüm Fransız halkı adına konuşma yetkisini kendisinde görmektedir. Müslümanların kültürel farklılıklarını tolere etmeyeceklerini söylemlerinde tekrarlamaktadır. Bu farklılıkları Fransız toplumunun değer yargılarına varoluşsal bir tehdit olarak inşa etmektedir. Dahası, tehditkâr bir mizaçla “*onlara*” karşı kolektif bir “*biz*” anlayışını harekete geçirmektedir. Yukarıdaki söylemler de Marine Le Pen’in bir güvenlikleştirici aktör olarak rolünü ne şekilde üstlendiğini daha somut bir şekilde göstermektedir (Dimitrov, 2019: 25).

Fransa’da 2015 ve 2017 yılları arasını kapsayan dönemde İŞİD ile bağlantılı olan pek çok İslamcı terör saldırısı meydana gelmiştir. Yaklaşık 240 kişinin hayatını kaybetmesi göçmen karşıtı olan Ulusal Cephe’nin güvenlik konusunu seçim kampanyasının merkezine koymasına zemin hazırlamıştır. 2017 cumhurbaşkanlığı seçimlerinde Marine Le Pen, 2015 yılında Fransa’da gerçekleştirilen terör olaylarını göçmenlik karşıtı politikası için bir sıçrama tahtası olarak kullanmıştır:

“(…) Üzerimize ağır gelen ciddi terör tehdidiyle, tehlikeyi temsil edenleri sınır dışı edebilmek için kimin içeri gireceğini kontrol edebilmeliyiz. (...) Cumhurbaşkanı olduğumda Fransa’yı AB’den ve sınırları olmayan Schengen bölgesinden çıkartacağım. Hükümet, Fransız vatandaşlarına yabancılardan daha az hak vermektedir. (...) Sizi koruyacağım. Cumhurbaşkanı olarak ilk önlemim Fransa’nın sınırlarını eski haline geri getirmek olacaktır. Burası bizim evimiz! (...) Kitlesele göç, Fransa için bir fırsat değil, Fransa için bir trajedidir” (Dearden, 2017a).

Sonuç olarak, Marine Le Pen toplumsal güvenliği ön plana aldığı göç karşıtı söylemini Fransız ulusal kimliği ve kültürünün homojen yapısının bozulacağı endişesi üzerine inşa etmektedir. Bu anlamda mevcut güvenlik tehdidi geleneksel askeri anlamda Fransız devletine yönelik değildir. Aksine Fransız kültürüne ve etnik yapısına yöneliktir. Esasında toplumsal güvenlik temasıyla Fransız kimliğinin hayatta kalmasına ve yaşatılmasına dikkat çekilmektedir. Marine Le Pen göçmen karşıtı söyleminde özellikle Müslüman göçmenleri Fransız kültürünün homojenliğine, ulusal kimliğine, cumhuriyetçi değerlerine, laikliğine ve ulusal güvenliğine tehdit olarak göstermektedir. Böylelikle de halihazırda Fransız toplumunda var olan Fransız yaşam tarzının yok olması yönündeki korkuyu çok kültürlülük karşıtlığıyla şekillendirmektedir. Marine Le Pen’in söylemlerinde Müslüman göçmenleri ve İslam’ı hedef alması kültürel ırkçılık bağlamında değerlendirilebilir. Marine Le Pen bu şekilde Müslümanlara ve İslam’a karşı yeni-ırkçı bir söylemi dile getirmektedir. Bu durum ise Fransız toplumunda göçmenlere karşı şiddet eğilimlerini ve ırkçılık hareketlerini teşvik etmektedir. Özellikle de İslam karşıtı saldırıları artırmaktadır. Yapılan son araştırmaya göre Fransa’da 2019 yılında Müslümanlara yönelik 154 saldırı gerçekleştirilirken; bu sayı 2020 yılında 235’e yükselerek %53 artmıştır (Özcan, 2021).

4.2. Ulusal Cephe’nin Göç Karşıtı Söyleminde Ekonomik Güvenlik Teması

Aşırı sağ partiler tarafından uluslararası göçün güvenlikleştirilmesinde göçmenler, ev sahibi ülkelerin üzerinde taşıdığı mevcut sosyopolitik ve ekonomik sorunların nedeni olarak gösterilmektedir. Yani bir nevi “*günah keçisi*” olarak ilan edilmektedirler. Dolayısıyla ev sahibi topluma güvenlikleştirici aktör tarafından ekonomik ve mali bir yük olarak sunulan göçmenler, göçmen karşıtı söylemler aracılığıyla toplum tarafından ev sahibi devletin refah sistemine yönelik bir tehdit olarak görülmektedir. Ulusal Cephe’nin göç karşıtı söylemlerinde de Fransız toplumunun göçmenlere karşı ekonomik güvenlik kaygılarını ön plana çıkartacak nitelikteki bir tema söz konusudur (Bektaş, 2019: 119).

Baba Jean Marie Le Pen göçmen entegrasyonunun “*eşit iş fırsatı*” gibi çok kültürlülük politikaları aracılığıyla göçmen emeğini Fransız vatandaşlarının çalışmalarına göre öncelikli hale getirdiği için reddetmiştir. Ulusal Cephe’nin “*İki milyon göçmen, işsiz kalan iki milyon Fransız’ın nedenidir*” şeklindeki açıklamasında görüldüğü gibi, Jean Marie Le Pen göç, küreselleşme ve çok kültürlülük politikalarının yerli Fransız vatandaşları için sosyal ve ekonomik olumsuzluklar ve kayıplar yarattığını iddia etmektedir. Söz konusu kriz senaryosunu Fransız toplumuna dayatmaya çalışmaktadır. Bu söylem tekniği, “*düşman*” ve “*kriz*” yaratma olgularıyla inşa edilen korkuyu Fransız vatandaşlarının günlük endişelerine bağlamaktadır. Jean Marie Le Pen’in bu tür sosyoekonomik kaygılara çözümü ise “*ulusal tercih*” politikasının uygulanmasıdır. Ayrıca Fransız vatandaşının işgücü, eğitim, konut ve sağlık hizmetlerinin yanı sıra sosyal hayatın her alanında öncelikli hale getirilmesidir (Martins, 2012: 81). Aynı şekilde Marine Le Pen’in de babası Jean Marie Le Pen gibi göçün çok kültürlü politikalara geçişin, sosyal ve ekonomik fırsatlar bağlamında Fransız vatandaşlarının günlük yaşamlarını olumsuz etkilediğine dair endişelerini taşımaya devam etmekte olduğu söylenilebilir. Örneğin, Marine Le Pen, babasıyla benzer bir şekilde çok kültürlü pozitif ayrımcılık kavramları ve eşit iş fırsatı politikalarının yerli Fransız vatandaşlarını kendi toplumlarında dezavantajlı konuma düşürdüğünü savunmaktadır. Marine Le Pen 2011 yılında Russia Today’e verdiği bir röportajda, bu endişelerini şu şekilde dile getirmiştir:

“Bugün, tüm işletmeler, özellikle büyük olanlar, başka kültürlerden veya farklı kökene sahip kişilerin işe alınmasını öngören bir tüzük imzaladı; bu, Fransız kökenli fakir bir Fransız’ın, diğerlerinin gerisinde kalacağı anlamına gelmektedir. Bunun Cumhuriyetçi eşitlik ilkesinin ihlali olduğuna inanmaktayım. Bir kişinin sırf ten rengi, kökeni veya inancı nedeniyle işe alınması gerektiği konusunda anlaşmak, Fransa’nın temel değerleriyle mutlak bir çelişki içermektedir. Bu, yabancısız bir Fransız vatandaşından daha yüksek bir istihdam şansına sahip olduğunuz anlamına gelmektedir. (...) Sonuç olarak, Fransızlar kendi ülkelerinde ayrımcılığa uğramaktadırlar” (Russia Today, 2011).

Görüldüğü üzere, Marine Le Pen, göçmenleri Fransız refah sistemine ve toplumuna mali bir yük olarak sunmaktadır. 2015 yılındaki söyleminde de bunu görebilmek mümkündür: “*Göç, Fransa’daki kitlesel işsizliği daha da kötüleştiriyor. 6,1 milyon işsiz ve*

9 milyon insan yoksulluk içinde yaşarken, Fransa artık yeni göçmen alabilecek kapasiteye sahip değil.” (OxfordUnion, 2015).

Marine Le Pen, 2017 cumhurbaşkanlığı seçimi öncesinde Le Monde gazetesine verdiği röportajda, “*Yabancı çalışanlar için tüm yeni sözleşmelere ek bir vergi yoluyla istihdamda ulusal öncelik uygulayacağız*” (Dearden, 2017b) şeklindeki söylemiyle yabancı çalışanların işe alınmasını önlemek için yeni bir vergi uygulaması getireceğinin sözünü vermiştir. Marine Le Pen, bu şekildeki bir tedbirin işverenleri ulusal öncelik ilkesini uygulamaya zorlayacağına ve ekonomik istihdam olanaklarından göçmenlerin yerine Fransız vatandaşlarının yararlanabileceğini iddia etmiştir. Aynı zamanda bu iddiasıyla birlikte toplumda söz konusu olan ekonomik endişelere hitap etmiştir.

Marine Le Pen 2016 yılında BBC’de yaptığı aşağıdaki konuşmasında Fransa’daki barınma, sağlık hizmetleri, işsizlik yardımları, iş olanakları gibi sosyal hizmetlerin dağılımının “*ulusal öncelik*” baz alınarak yapılması gerektiğini ortaya koymaktadır:

“Fransa’yı bölen şey, göçmenlerin kitleler halinde gelişidir. Büyük bir adaletsizlik hissi yaratan şey ise, sokaklarda binlerce evsiz insanın olması ve onlara herhangi bir konut veremeyeceğimizi söylememize rağmen göçmenler için on binlerce ev bulabilmemizdir. Bir Fransız lider olarak benim sorumluluğum, her şeyden önce kendi halkımın refahı, güvenliği hakkında düşünmek olmalıdır” (BBC News, 2016).

Ona göre Fransız Hükümeti’nin sunmuş olduğu hizmetlerden göçmenler değil ulusal vatandaşlar ayrıcalıklı bir şekilde yararlanmalıdır. Marine Le Pen, ekonomik güvenliği vurguladığı bu tarz söylemleriyle (Avrupa’daki diğer aşırı sağ partilerin de sıklıkla kendi ülkelerinde yaptıkları gibi) esasında Fransız toplumu içinde kendisini küreselleşmenin kaybedenleri olarak gören ve hükümete karşı güveni sarsılmış olan kitlelere hitap etmek ve onları etkilemeye çalışmaktadır.

Güvenikleştirici aktör konumundaki Marine Le Pen, göçü Fransız toplumunun kültürüne, kimliğine ve değer yargılarına varoluşsal bir tehdit olarak alımlayıcı kitle konumundaki Fransız toplumuna sunmaktadır. Bu şekilde uluslararası göçü Fransa’da güvenikleştirmektedir. Fransa’da yaklaşık beş milyona yakın Müslüman yaşamasına rağmen, Marine Le Pen “*İslam’ın tüm çeşitlerine, pratiğine, yayılışına savaş açıyorum. İslam’ı tüm yönleriyle yasaklamak istiyorum*” (Millî Gazete, 2021) gibi pek çok İslam karşıtı söylemde bulunmaktadır. Marine Le Pen’in İslam karşıtı söylemleri Fransız toplumunda karşılık bulmaktadır. Yapılan son anket sonuçları, Marine Le Pen’in 2022 cumhurbaşkanlığı seçimleri için oy oranını giderek artırdığını göstermektedir. Anket sonucuna göre Ulusal Cephe’nin Fransız kamuoyundaki desteği %26 iken rakibi Macron’un %24 oranında desteği söz konusudur. Bu oranlardan hareketle güvenikleştirici aktör konumunda olan Marine Le Pen’in alımlayıcı kitleyi etkisi altına alarak kabul sağladığı sonucuna da varabilmek mümkündür.

4.3. Ulusal Cephe’nin Göç Karşıtı Söyleminde Ulusal Güvenlik Teması

Ulusal Cephe’nin göçmen karşıtı söyleminde ulusal güvenlik teması Marine Le Pen’in AB karşıtı söylemleriyle yakından ilişkilidir. AB üyesi olan Fransa’nın, AB’nin göç politikalarına uymak zorunda olması Ulusal Cephe’nin ana endişelerinden birisini teşkil etmektedir. Marine Le Pen, egemen bir devlet olarak Fransa’nın topraklarına kimlerin girebileceği ve sınırları dışında kimlerin kalması gerektiği gibi sınır kontrolüyle ilgili temel kuralları AB’den bağımsız bir şekilde belirlemesi gerektiğini savunmaktadır. Göçün bir ulusal güvenlik sorunu teşkil ettiğine yönelik söylemlerini AB karşıtlığı üzerinden şekillendirmektedir. Başka bir deyişle, Marine Le Pen göçü Avrupa şüphecilliği temelinde sınır denetimi ile ilişkilendirerek Fransız toplumunun ilgisine sunmaktadır. Göçün Fransız toplumu üzerindeki olumsuz etkilerinden ancak sınırların kontrolünün AB’den geri alınarak sağlanabileceğine inanmaktadır. Marine Le Pen’in 2015 yılında Charlie Hebdo saldırılarından sonra Oxford Üniversitesi’nde gerçekleştirdiği konuşmasında sarf ettiği şu sözler bunun yansımaları açıkça göstermektedir:

“Sınırlarımızın kontrolünü ve komutasını yeniden elde etmeliyiz. İnsanların ve malların serbest dolaşımı doğması, Avrupa Birliği liderlerinin zihninde o kadar güçlü bir şekilde yer edinmiştir ki, ulusal sınır kontrolü fikri bile onlar tarafından bir sapkınlık olarak kabul edilmektedir. Ancak sınırlar cihatçılıktan ilk korunma şeklimizi oluşturmaktadır. (...) Dünyadaki ülkelerin %95’inin kendilerini korumak, kontrol etmek ve topraklarına kimlerin girebileceğine karar vermek için sınırları vardır. Sınırlar yoksa, devlet yoktur, güvenlik yoktur, egemenlik yoktur, bağımsızlık ve özgürlük yoktur!” (OxfordUnion, 2015).

Marine Le Pen’e göre Schengen Anlaşması teröristlerin Fransa’nın ulusal sınırlarında özgürce hareket etmesine olanak sağlamaktadır. Marine Le Pen’in, aynı konuşmasındaki şu sözlerinden de görülebileceği gibi, AB’yi AB sınırlarını etkin bir şekilde korumamakla suçlamaktadır:

“Ulus devletlerin dağılmasını kendisine hedef olarak seçen teknokratik bir Avrupa Birliği. (...) Her yıl, Balkanlar’dan gelen tonlarca silah, onları durdurmak için gerçek bir engel olmadan Fransız topraklarına giriyor ve yüzlerce cihatçı Avrupa’da engel olmadan dolaşıyor. Beş kişiyi öldüren cihatçı Amedy Coulibaly’nin makineli tüfeği Belçika’dan geçti. Arkadaşı ve suç ortağı Hayat Boumeddiene, İspanya üzerinden sorunsuz bir şekilde Suriye’ye kaçabildi. Bunlar, ulusal hükümetlerin Brüksel’in emirlerine boyun eğmelerinin sonuçlarıdır. AB, tamamen açık sınırlar dayatmasıyla bizi zayıflatıyor. (...) Daha az personel, daha az ekipman, düşük performans. Ulusal sınırlarımız olsaydı, 9 Ocak’ta öldürülen köktendinci teröristlerden en az birinde olduğu gibi, Suriye’de savaşıma veya Yemen’de eğitim almaya gittikten sonra, Fransız topraklarına giren teröristlerin çoğunu muhtemelen durdurabilirdik” (OxfordUnion, 2015).

Marine Le Pen söylemlerinde yalnızca Fransa’ya yeni gelen göçmenleri değil aynı zamanda ülkede doğan ikinci ve üçüncü nesil göçmen Fransa vatandaşlarını da güvenikleştirmektedir. Bu insanları terörist saldırılar gerçekleştirme potansiyeli taşıyan

tehlikeli saldırganlar olarak tasvir etmektedir. AB’yi sınırların güvenliğini sağlayamadığı gerekçesiyle eleştirmektedir. Ortaya çıkan sınır güvenliği zafiyetinin teröristler tarafından kullanıldığını, göçmen rotaları vasıtasıyla Fransa’ya gelerek ülkede terör saldırıları gerçekleştirdiklerini savunmaktadır. Burada vurgulanması gereken husus teröristleri İslami köktendincilik ile ilişkilendirmesidir. Marine Le Pen, göçmen karşıtı söylemini Müslümanlık ile teröristlik arasında kurduğu bağlantı üzerinden inşa etmektedir. Fransız toplumuna ulusal ve toplumsal güvenliğe tehlike oluşturduğu şeklinde sunmaktadır. Bu hususlar, Marine Le Pen’in 2016 yılında BBC’ye verdiği röportajında sarf ettiği şu sözlerinde kolaylıkla gözlemlenebilir:

“İslami köktendincilerin saldırıları kısmen burada doğan Fransızlar tarafından gerçekleştirildi. Göçmenlerin yanına gizlice giren İslam devleti askerlerine de sahip olmak zorunda mıyız? (...) Bataclan’a yapılan korkunç saldırıyı düşünün, teröristlerden üçü göçmen rotalarını kullanarak buraya gelmişlerdi. Fransa’da başa çıkmamız gereken bir İslami köktendincilik sorununuz var. (...) Bu ciddi soruna göçmenlerle birlikte gelen teröristleri de eklemek istemiyoruz” (BBC News, 2016).

Marine Le Pen, göçmenleri Fransa topraklarında serbest bir şekilde dolaşan teröristler olarak tasvir etmektedir. Ayrıca onları Fransız toplumunun güvenliğine yönelik oluşturduğu tehdit dışında kamu sağlığı sorunlarının nedeni olarak da öne çıkarmaktadır. Marine Le Pen, Mart 2016’da Marsilya’da yaptığı konuşma sırasında göçmenlerin Fransa’nın güvenliğine yönelik oluşturduğu tehdidi şu sözleriyle dile getirmiştir: “*Göçmenler şimdi çevremizde, tren istasyonlarında veya gecekondü mahallelerinde dolaşıyorlar, bu Fransa’nın çok büyük güvenlik ve kamu sağlığı sorunlarının nedeni. (...) Artık terörizme alışıyorduk*” (Dimitrov, 2019: 25-26).

Bir güvenikleştirici aktör olarak Marine Le Pen’e göre göçün ortaya çıkardığı varoluşsal tehdidin üstesinden gelebilecek olağanüstü önlemler ise Fransa’nın kendi sınırları üzerindeki kontrolü geri almasıdır. Marine Le Pen, Fransa’nın sınırlarının kontrolünü geri almasına yönelik söyleminde her zaman mevcut bir argüman olarak sınırların yeniden kurulmasına olan bağlılığını dile getirmektedir. Ona göre, sınır kontrolü devletin egemenliğinin temel bileşenlerinden birini kapsamaktadır ve kontrolsüz göç ile terörizmin durdurulmasında hayati bir rol oynamaktadır. Kendi sınırları üzerindeki kontrolü geri alma söylemi “*sınırlar olmadan, koruma veya güvenlik yoktur*” şeklinde Marine Le Pen tarafından dile getirilmektedir (Dimitrov, 2019: 26).

5. Sonuç

Uluslararası göç olgusu 1973 Petrol Krizi’ne kadar Batı Avrupa ülkelerinde bir güvenlik tehdidi olarak görülmemiş, aksine İkinci Dünya Savaşı sonrası dönemde Avrupa ülkelerinin refah seviyelerinin artmasıyla birlikte iş gücüne duyulan ihtiyaç göçmenler aracılığıyla karşılanmıştır. Göçmenler yaşadıkları ülkelerde misafir işçi olarak kabul edilmişlerdir. Zaman içerisinde işgücüne duyulan ihtiyacın azalmasıyla birlikte bir gün mutlaka kaynak ülkelere geri dönecekleri düşünülmüştür. Bu sebepten ötürü de göç ve

göçmenlik ulusal ya da siyasal açıdan bir problem teşkil etmemiştir. Ancak 1973 Petrol Krizi'yle birlikte dünya çapında küresel bir ekonomik bunalımın yaşanması, ülkelerin refah düzeylerini derinden etkilerken; göçmenlerin sanılanın aksine kalıcı olduklarının anlaşılması üzerine uluslararası göç olgusu güvenikleştirilmeye başlanmıştır. Eşzamanlı olarak da Avrupa'daki aşırı sağ parti ve hareketler de bu dönemde ortaya çıkmaya başlamışlardır.

Esas itibarıyla uluslararası göç, 11 Eylül 2001 terör saldırılarıyla birlikte birincil derece öneme sahip politika alanı olarak ulusal güvenlik bağlamında değerlendirilmeye başlanan bir güvenlik sorunu haline gelmiştir. Göç ve göçmen karşıtlığı 11 Eylül öncesi dönemde daha çok ekonomik, politik, milliyetçi ve normatif kaygılar tarafından şekillendirilmiştir. 11 Eylül terör saldırılarıyla birlikte terörizm ile Müslüman göçmenler ilişkili hale getirildiği için, göç aşırı sağ partiler tarafından ülkelerin ulusal, toplumsal ve ekonomik güvenliklerine yönelik potansiyel bir tehdit olarak sunulmaya başlanmıştır. 11 Eylül terör saldırılarıyla görünürlük kazanan ve eylemlerini kesintisiz bir şekilde Avrupa ülkelerinde artırmaya devam ettiren terör saldırıları da ulusal güvenlik, ulusal kimlik, toplumsal uyum ve vatandaşlık gibi kavramların ülkeler ve toplumlar nezdinde daha fazla tartışılmasına zemin hazırlamıştır. Bu ortamda, pek çok aşırı sağ parti genel olarak göçmenlerin ülke içi suç oranlarını artırdığı, refah devletinin imkânlarını kötüye kullandığı ve göçmenlerin topluma uyum sağlayamadığı şeklinde söylemler geliştirmişlerdir. Özel olarak da söylemlerini İslam karşıtlığı ve Müslüman göçmenlerle ilgili ötekileştirici tutumlar üzerine inşa etmişlerdir. Bu hususa parti programlarında öncelikli konular arasında yer vermeye başlamışlardır. Bu çerçevede, göçün güvenikleştirilmesi, çoğunlukla kısıtlayıcı göç ve sığınma önlemlerinin alınmasına ve ilgili devletlerde daha sıkı sınır kontrollerinin uygulamaya sokulmasına neden olmaktadır.

Göçün güvenikleştirilmesine ilişkin literatür gözden geçirildiğinde ulusal, bölgesel ve uluslararası düzeyde farklı güvenikleştirme aktörlerinin (siyasal elitler, hükümet, devlet temsilcisi, siyasi partiler, toplum, ordu) söylemleri aracılığıyla göçün güvenikleştirilebileceği görülmektedir. Bu çerçevede, çalışmada incelenen ulusal düzeydeki vaka örneklerinden Fransa'daki güvenikleştirici aktörün aşırı sağ muhalefet partisi olan Ulusal Cephe olduğu sonucuna varılmıştır. Ulusal Cephe'nin aşırı sağ parti olarak uluslararası göçü güvenikleştirme sürecine bakıldığında, Fransa'daki aşırı sağ geçmişin eskiye dayandığı görülmektedir. Dolayısıyla, uluslararası göçün Fransa'da Ulusal Cephe tarafından güvenikleştirilmesi yeni bir gelişme değildir. Bu durum partinin kurulduğu 1972 yılından parti liderliğinde değişimin yaşandığı 2011 yılına dek Anti-semitik, ırkçı, göç karşıtı, yabancı düşmanı söylemler üzerinden şekillenmiştir. Marine Le Pen'in 2011 yılında Ulusal Cephe'nin liderliğine gelmesiyle birlikte, parti aşırı ve ırkçı söylemlerinden uzaklaştırılarak her ne kadar yeni bir imaja kavuşturulmak istense de göç ve çok kültürlülük karşıtı, yabancı düşmanı görüşlerini sunmaya devam etmektedir. Ulusal Cephe eski dönemde farklı olarak anti-Semitizm yerine İslam karşıtı söylemler inşa etmektedir. Bu şekilde Müslüman göçmenleri bir güvenlik tehdidi olarak hedef göstererek Fransa'daki ve Avrupa'daki İslamofobiyi yaymaktadır. Diğer bir deyişle, Ulusal Cephe yeni döneminde göç karşıtlığını Müslüman göçmenlere ve İslam'a karşı kültürel açıdan ırkçı bir söylemle dile getirmektedir.

Fransa örneğinde göçün güvenikleştirilmesi konusunda belirtilmesi gereken bir diğer husus Ulusal Cephe'nin muhalif bir aşırı sağ parti olması sebebiyle sahip olduğu sınırlı imkânlar ölçüsünde ancak uluslararası göçü güvenikleştirebilmesidir. Bu sonuç, hükümetlerin (iktidardaki partilerin) güvenikleştirme eyleminin gerçekleştirilmesinde hedef kitleleri etkileme ve olağanüstü önlemlerin uygulamaya sokulması hususlarında diğer güvenikleştirici aktörlerden (muhalifet partilerinden) daha avantajlı bir konuma sahip olduğu savını desteklemesi açısından önemlidir.

Fransa'da aşırı sağın temsilcisi olan Marine Le Pen'in göç karşıtı söyleminde öne çıkan hususlar göçmenlerin hem ekonomik sorunlar yarattığı hem de Fransız kimliği ve ulusal güvenliğine yönelik tehditler oluşturduğu yönündedir. Marine Le Pen'in konuşmalarından yapılan analiz sonucunda göç karşıtı söylemlerinde, göçü sınır kontrolü, terörizm ve suçla ilişkilendiren ulusal güvenlik temalarının hâkim olduğu ve söylemlerinin merkezini İslami köktendincilik oluşturduğu görülmektedir. Marine Le Pen, İslam'ı, Fransız ulusal kimliği ile kültürünün düşmanı olarak yansıtmaktadır. Bu çerçevede, kitlesel göçü uluslarının sosyopolitik bütünlüğünü bozan olumsuz bir gelişme olarak tasvir ederek, aynı zamanda durdurulması, kontrol edilmesi, sınır dışı edilmesi gereken bir tehdit olarak inşa etmektedir. Bu inşa sürecinde, Avrupa'daki aşırı sağ partilerin göçmen karşıtı söylemlerinin ortak bir özelliği olan toplumsal güvenlik temasında ulusal kimlik ve kültür referans nesnelerini oluşturmaktadır. Bu nedenle de göçmenlerin Fransız kültürüne asimilasyonu Ulusal Cephe'nin göç söyleminde çok önemli bir rol oynamaktadır. Ulusal Cephe, Müslümanların, Fransız toplumuna asimile olmadığını, direndiğini ve uluslarının homojenliğine ve ulusal kimliğine tehdit oluşturduğunu iddia etmektedir. Bütün bu çerçevede dahilinde Ulusal Cephe ve lideri Marine Le Pen, Fransız ulusal kimliği ve kültürü üzerine inşa ettiği söylemleriyle kültürlerinin ve kimliklerinin homojenliğinin İslam tehdidinin altında olduğu anlatısını Fransız toplumuna sunarak göçü toplumsal güvenlik temelinde güvenikleştirmektedir.

Sonuç olarak, uluslararası göçün Müslüman kimliği üzerinden güvenikleştirilmesi, göçmenlerin Fransız toplumundan dışlanmalarının ve ötekileştirilmelerinin yolunu açmaktadır. Bu durum ise göçmenlerin entegrasyonlarını daha da zorlaştırmaktadır. Bu sonuç, aynı zamanda göçmenlere karşı şiddet eğilimlerini ve ırkçılık hareketlerini teşvik etmekte, özellikle Avrupa'daki İslam karşıtı saldırıları artırmaktadır. Ulusal Cephe Partisi'nin göçmenlere yönelik sert tutumuna rağmen Fransız toplumu nezdinde azımsanmayacak ölçüde kabul görmesi ve oylarını her geçen gün daha da artırması, aşırı sağın yükselişte olduğu Batı Avrupa ülkelerinde göçün yakın gelecekte de bir güvenlik sorunu olmaya ve güvenikleştirilmeye devam edeceğini göstermektedir. Uluslararası toplumun 21. yüzyılda giderek artan ve çeşitlenen güvenlik sorunları da bu sürece daha da fazla ivme kazandıracak gibi görünmektedir.

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Temel Makroekonomik Faktörler ve Nüfusun İşsizliğe Etkileri: OECD Ülkeleri Üzerine Panel Veri Analizi

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The Effects of Macroeconomic Factors and Population on Unemployment: Panel Data Analysis on OECD Countries

Abstract

The study aims to investigate the effect of the macroeconomic factors of inflation, public size, investment, openness, and labour market regulations, and the effect of demographic factors of population size on unemployment dimensions. The unemployment dimensions of total unemployment, youth unemployment, female unemployment, educated unemployment and long-term unemployment dimensions were handled in this study. Panel data analysis was applied based on panel data of study variables of OECD member countries for the period of 2010-2018. The aim of the study was tried to be executed by panel regression analysis, which is one of the panel data analyses. As a result of the panel regression analysis, it was determined that openness, public size, investment, inflation, labour market regulations and the population had a statistically significant effect on all dimensions of unemployment.

Keywords : Unemployment, Inflation, Public Size, Investment, Openness, Labour Market Regulations, Population.

JEL Classification Codes : E20, E24.

Öz

Çalışmanın amacı, işsizlik boyutları üzerinde makroekonomik faktörlerden enflasyon, kamu büyüklüğü, yatırım, dışa açıklık, işgücü piyasası düzenlemeleri ve demografik faktörlerden nüfusun etkisini araştırmaktır. Çalışmada işsizliğin; toplam işsizlik, genç işsizlik, kadın işsizlik, eğitilmiş işsizlik ve uzun dönem işsizlik boyutları ele alınmıştır. OECD üyesi ülkelerin 2010-2018 dönemine ait çalışma değişkenleri panel verilerine dayalı panel veri analizi uygulanmıştır. Panel veri analizlerinden biri olan panel regresyon analiziyle çalışmanın amacı gerçekleştirilmeye çalışılmıştır. Panel regresyon analizi sonucunda dışa açıklık, kamu büyüklüğü, yatırım, enflasyon, işgücü piyasası düzenlemeleri ve nüfusun işsizliğin tüm boyutları üzerinde birlikte istatistiksel olarak anlamlı etkisinin olduğu belirlenmiştir.

Anahtar Sözcükler : İşsizlik, Enflasyon, Kamu Büyüklüğü, Yatırım, Dışa Açıklık, İşgücü Piyasası Düzenlemeleri, Nüfus.

1. Giriş

İşsizlik, gelişmiş ve gelişmekte olan ülkeler için toplumsal, ekonomik, psikolojik ve politik açıdan yıkımlara yol açabilen ve gelir dağılımının bozulmasına neden olabilen bir sorundur. Geçmişte olduğu gibi günümüzde de ülkelerin ortak sorunlarından biri işsizliktir. İşsizlik, ülkelerin ekonomik ve sosyal kalkınmasını olumsuz etkilemektedir (Himali, 2020: 113). Çalışmak istediği halde iş bulamamak, insan yaşamı üzerinde önemli etkiler doğurmaktadır. Bu etkiler yalnızca işsiz olan bireyin yaşamı üzerinde etkili olmakla kalmayıp toplum ve ekonomi üzerinde de ciddi sorunlara yol açmaktadır. Birey ve toplum üzerinde olumsuz etkisi bulunan işsizlik sorununun ortadan kaldırılmak istenmesi, birey ve toplum üzerine mikro ve makro maliyetler yüklemesinden kaynaklanmaktadır (Işığışık, 2018: 81). İşsizlik bireylerin gelirlerini azaltarak bireyin kendisini ve ailesini doğrudan etkilemektedir. Bireylerin işsizlik sebebiyle gelirlerinin azalmasının kişisel maliyeti toplumları çeşitli yönlerden etkilemektedir. Bu etkiler şöyledir (Dixon, 1992: 3): i) *Tasarruf ve Yatırımların Azalması*: İşsiz kalan bireylerin gelirleri tüketiminden daha hızlı düştüğü için bireyler tasarruf ve yatırım yapmayı azaltırlar. ii) *Vergi Gelirlerinde Azalma*: Bireylerin gelirlerinin azalması sonucunda toplam harcamalarının azalması vergi gelirlerini azaltmaktadır. iii) *Devlet Harcamalarının Artması*: Devlet tarafından işsiz kalan bireylerin sosyal ve güvenlik refahının sağlanması, kamu hizmetlerinin özellikle de sağlık, barınma ve toplum hizmetlerine yönelik yapılan harcamaları artırmaktadır.

Gerek toplum gerekse birey üzerinde olumsuz etkisi bulunan işsizliğin farklı tanımları bulunmaktadır. İşsizlik üretim faktörlerinden biri olan emek faktörünün etkin ve verimli bir şekilde kullanılamamasıdır (Bozdağlıoğlu, 2008: 46). Dünya Bankası işsiz kişilerin standart tanımını işini kaybetmiş veya kendi isteğiyle işten ayrılmış kişiler de dâhil olmak üzere, işi olmayan, yakın geçmişte iş arayan ve şu anda çalışmaya hazır olan kişiler olarak belirtmiştir. İş aramayan ancak gelecekteki bir iş için düzenlemeleri olan kişiler de işsiz sayılmaktadır (WB, 2022).

Politika tartışmalarında, basında ve ülkelerin ekonomik ve kalkınma düzeylerinin tespit edilmesinde büyük öneme sahip olan işsizlik oranı işsizlerin, iş gücüne oranıdır. İşsizlik oranı, piyasa koşullarının ve ekonomideki performansın en yaygın göstergelerindendir. Ekonominin genel durumu ve ekonomi politikasının başarısı veya başarısızlığı için özet bir istatistiktir (Murphy & Topel, 1997: 295). İşsizlik oranı, işi olmayan ancak iş arayan ve çalışmaya hazır olanların işgücü içindeki payını ifade eden iktisadi bir gösterge olup işgücünün yüzdesi olarak işsizlerin sayısı ile ölçülmektedir. İşgücü arzının yetersiz kullanımının bir ölçüsüdür.

İşgücü belirleyicilerinin etkileri işsizlik boyutlarında farklılık gösterebilmektedir. İşsizlik oranı ne farklı cinsiyetteki bireyler ne de farklı yaş grupları arasında eşit dağılmamaktadır. Gençler ve kadınlar en yüksek işsizlik oranlarına sahiptirler (Altuzarra, 2015: 110-111). Neoklasik işgücü piyasası teorisi tarafından önerilen hipotez, daha yüksek işsizliğin esas olarak tam istihdama ulaşmanın önünde bir engel teşkil eden daha katı işgücü piyasası kurallarının varlığından kaynaklandığıdır (OECD, 1994; Lazear, 1990: Aktaran:

Liotti, 2022). Bununla birlikte yapılan bazı çalışmalar örneğin Liotti (2022) çalışması işgücü piyasası esnekliğinin genç işsizliğinde bir düşüşe yol açmadığını belirlemiştir.

Yaygın bir olgu olarak uzun süreli, genç ve kadın işsizlik başta Uluslararası Çalışma Örgütü (ILO), Ekonomik İşbirliği ve Kalkınma Örgütü (OECD), Birleşmiş Milletler ve Dünya Bankası olmak üzere uluslararası kuruluşlar tarafından en çok tartışılan konular arasında yer almaktadır. Uzun süreli, genç ve kadın işsizlik oranlarındaki artışlar işgücü piyasasının etkinliğinde bozulmaya işaret etmektedir (Bell & Blanchflower, 2015). Gençlerde artan ileri eğitim düzeyi seviyeleri lisans ve lisansüstü eğitilmiş bireyler arzında artış ileri eğitim düzeyine sahip bireylerin iş bulma olanaklarında da kısıtlamalar yaşamalarına yol açmakta olduğundan üzerinde ehemmiyetle durulması gereken işsizlik boyutlarından birini oluşturmaktadır.

Araştırmalarda işsizliğin farklı boyutları değerlendirmelere alınabilmektedir. İşsizliğin farklı boyutlarına göre etki eden faktörlerin düzeyleri de farklılık gösterebilmektedir. Farklılıkları belirleyebilmek amacıyla genel (toplam) işsizlik ile birlikte genç, kadın, eğitilmiş ve uzun dönem işsizliği üzerinde durulmak istenen işsizlik göstergeleri olarak çalışmaya dâhil edilmiştir.

Uzun süreli işsizlik, bir yıl veya daha uzun süredir işsiz olan aktif olarak iş arayan bireyleri içermektedir. Uzun süreli işsizlik dönemleri, özellikle gelir kaybı ve istihdam edilebilirliğin azalması gibi birçok istenmeyen etkiyi beraberinde getirmektedir. İşsizlik dönemlerinin süresini azaltmak, genel işsizliği azaltmak için birçok stratejide kilit bir unsurdur (ILO, 2022). Başarısız bir iş arama, işsizleri iş bulamayacakları konusunda ikna edebilir ve onları daha sonraki girişimlerden vazgeçirebilir, sosyal statüsünü ve maddi statüsünü koruyamamasına, kendine güvenin kaybolmasına yol açabilir (Grzenda, 2019: 1563).

Genç işsizliği, aktif olarak iş arayan 15-24 yaş arasındaki gençlerin işsizliğidir. Genç işsizlik oranları birçok gelişmekte olan ve gelişmiş ülkede genel işsizlik oranlarının üzerindedir. Belirgin bir şekilde, gençlerin işsiz kalma olasılığı yetişkinlere kıyasla üç kat daha fazladır. Bu kısmen, giriş seviyesi işlere başvururken sınırlı iş deneyimlerinin aleyhlerine sayılmasından kaynaklanmaktadır (ILO, 2020: 13). Yüksek genç işsizliği oranları, gençlerin potansiyellerini tam olarak kullanamadıkları anlamında birçok ülkede önemli bir ekonomik kayba işaret ediyor. Suç oranlarındaki artış ve sosyal dışlanma sorunları genç işsizliğin toplumsal maliyeti olarak değerlendirilebilir (Fomenko, 2020). Gençler piyasanın talep ettiği gerekli beceri ve deneyimden yoksun oldukları için yetişkinlere göre dezavantajlı bir konumdadırlar (Pellegrini, 2019).

Uzun süre iş bulamayan genç işsizler hayatlarının çeşitli alanlarında önemli (olumsuz) sonuçları olması muhtemeldir. Psikolojik olarak acı çekebilir, daha düşük düzeyde güven ve özgüven yaşayabilir, özsaygıda azalma, karamsarlık, geleceğe yönelik umutsuzluk ve sağlık sorunları yaşayabilir (Hammer, 1993; Herman, 2007; Winefield, 1997), sosyal izolasyonla ve dışlanmayla karşı karşıya kalabilirler (Hammer, 2003a;

Paugam, 2006; Schnapper, 1981). İşgücü piyasasından dışlanmak, gençlerin siyasi hayatını da etkileyerek gençleri siyasetten çekilmeye ya da tam tersine protesto benzeri faaliyetlerde bulunmaya itebilir (Giugni vd., 2021).

Eğitimli işsizlik oranı işsiz olan ileri eğitim düzeyine sahip işgücünün yüzdesidir. İleri eğitim, Uluslararası Standart Eğitim Sınıflandırması 2011’e göre kısa dönem yükseköğrenimi, lisans derecesi veya eşdeğeri eğitim seviyesini, lisansüstü derecesi veya eşdeğeri eğitim seviyesini içermektedir (WB, 2022). Birçok çalışmada, mezunların işgücü piyasasındaki iş dünyasıyla yeterince donatılamamasındaki en büyük suçlunun eğitim olduğu tespit edilmiştir. Bu nedenle Rabten (2014), özellikle gelişmekte olan ülkelerde yüksek eğitim kazanımının istihdamda düşüşe geçtiğini ileri sürmüştür. Eğitim ve öğretim sisteminin gençleri beceri, deneyim, tutum ve ilk elden bilgiyle ilgili iş dünyasına yeterince hazırlamadığını da sözlerine ekledi. Benzer vakalar Anh ve diğerleri (2005) ve Velletta ve Kuang (2011) tarafından da rapor edilmiştir. Dolayısıyla, doğal yapısal işsizliğin kendi içinde eğitim açığını ortaya koyduğu sonucuna varılabilir. Bu tür yapısal işsizlik gelişmekte olan ekonomilerde yaygındır (Tangtipongkul & Wangmo, 2017: 31-32).

Gençler arasında artan eğitim seviyeleri memnuniyetle karşılanmakla birlikte yüksek eğitimli genç bireyler için iş fırsatları işgücü piyasaları tarafından karşılanamamaktadır. Artan mezun arzını dengelemek için iş fırsatlarının genişletilmesini teşvik eden politika önlemleri gereklidir. Güçlü bir politika yanıtı gerektiren diğer zorluklar arasında işgücü piyasasında devam eden cinsiyet eşitsizlikleri söz konusudur (ILO, 2020: 16).

Kadınlar, çalışma hayatları boyunca insana yakışır işe erişim konusunda önemli engellerle karşılaşmaktadır. Dünyanın birçok bölgesinde, erkeklerle kıyasla, kadınların işsiz kalma olasılığı daha yüksektir, işgücüne katılma şansları olduğunda ise genellikle daha düşük kaliteli işleri kabul etmek zorunda kalmaktadırlar. Ücretsiz bakım ve ev işlerinin kadın ve erkek, aile ve toplum arasında eşit olmayan dağılımı, işgücüne katılmada cinsiyet eşitsizliklerinin önemli bir belirleyicisidir. Kadınlar küresel düzeyde erkeklerden daha yüksek işsizlik riskiyle karşı karşıya kalmaya devam etmektedir (ILO, 2016: xi).

Entegre bir politika çerçevesi makro, orta ve mikro düzeyde müdahaleleri içermelidir. Örneğin, üretkenliği artırırken inovasyonu teşvik etmek ve yeni sektörlerde istihdam yaratmada yatırımı teşvik etmek için makroekonomik ve sektörel politikalar gereklidir (ILO, 2020: 17). İşsizliği etkileyen makroekonomik değişkenler bakımından değerlendirmeler yapılabilir. Çalışmada işsizlik üzerinde etkisi olan temel makroekonomik değişkenlerden enflasyon, kamu büyüklüğü, yatırım, dış açıklık ve işgücü piyasası düzenlemeleri Kovacı vd. (2018a) çalışmasını takiben dâhil edilmiştir. Nüfus değişkeni Felbermayr vd. (2011), Gozgor (2014) ve Kovacı vd. (2018a) çalışmalarını takiben dâhil edilmiştir. Nüfus değişkeni ülkelerin pazar büyüklüğünün güçlü, karşılaştırmalı bir ölçüsünü sağlamaktadır (Gozgor, 2014: 1022). Makroekonomik göstergelerin ve nüfusun birlikte işsizlik boyutları üzerindeki etkisi araştırılmaya çalışılarak literatüre katkı sağlanması amaçlanmıştır.

Makroekonomide olumsuz etkileri olan işsizlik ve fiyatlar genel düzeyindeki artış olan enflasyon, bir ülkenin gelir düzeyini, yatırımcıların yatırım yapma kararını ve çalışanlar arasında gelir dağılımının nasıl yapılacağı gibi birçok faktörü etkilemektedir. Ekonomi alanının en büyük problemlerinden olan işsizlik ve enflasyonun sonucu olarak istihdamda düşme ve ekonomide durgunluk görülmektedir (Kılınç, 2013: 93). Ekonomi politikasına yön vermek isteyenler için işsizlik ve enflasyon arasındaki ilişkinin varlığı ve yönü önem arz etmektedir. İşsizliğin ve enflasyonun düşük olması istenir (Akiş, 2020: 405-6). 1950'lerin sonlarında ve 1960'larda, birçok istatistiksel çalışmada, çok sayıda ülke ve zaman diliminde enflasyon ve işsizlik verileri incelenmiş ve çoğu durumda enflasyon ve işsizlik arasında negatif ilişki olduğu belirlenmiştir. İşsizlik ile enflasyon arasındaki negatif ilişki Phillips eğrisi olarak bilinir. Phillips eğrisine göre işsizlik yüksek olduğunda enflasyon düşük, işsizlik düşük olduğunda enflasyon yüksek olma eğilimindedir (Abel vd., 2008: 442). Phillips (1958), İngiltere'de 1861'den 1958'e kadar olan süreçteki enflasyon ve işsizliği incelemiş ve belirlediği grafik ve denklemle işsizlik ile enflasyon arasında değişmeyen negatif ilişki olduğunu tespit etmiştir. Phillips (1958) çalışmasında, işsizlik oranı ile parasal ücretlerdeki değişim arasında ters yönlü ve istikrarlı bir ilişki olduğunu belirtmiştir (Adebowale, 2015: 16).

İktisat literatüründe sıklıkla tartışılan bir konu işsizlik ve kamu büyüklüğü arasındaki ilişkidir. Bu ilişki ülkeler için ekonomik ve politik açıdan önem arz etmektedir (Bölükbaş, 2018: 1). İşsizlik ve kamu büyüklüğü arasındaki ilişkiyi ilk inceleyenlerin başında Abrams (1999) gelmektedir. Abrams işsizlik ile kamu büyüklüğü arasında ilişki olma olasılığının yüksek olduğunu öne sürmüştür (Bayraktar, 2017: 104). Feldmann (2006) sanayileşmiş ülkelerde kamu büyüklüğünün işsizliği olumsuz etkilediğini, eğer ülkelerde işsizliğin azaltılması isteniyorsa kamuda küçülmeye gidilmesi gerektiğini öne sürmüştür. Wang ve Abrams (2011) kamu büyüklüğü arttıkça işsizlik oranının artış gösterdiğini belirtmiştir. Kamu büyüklüğü arttıkça işsizliğin mutlaka artacağı söylenemez, hükümetlerin bütçelerini tahsis etme durumuna bağlı olarak kamu büyüklüğünün işsizlik üzerinde etkisi değişebilir (Bayraktar, 2017: 104).

Literatürde işsizlik ile kamu harcamaları arasındaki ilişki iki tür yaklaşımla ortaya konmaktadır. Klasik yaklaşıma göre devletin piyasaya müdahalede bulunmak amacıyla yaptığı kamu harcamaları sonucunda, kaynak dağılımı bozulacak, büyüme engellenecek, piyasa fiyatları yükselecek, üretim azalacak, enflasyon ve işsizlik artacaktır (Özügurlu, 2005: 72). Keynesyen yaklaşım, devletin piyasayı canlandırmak için yaptığı kamu harcamasının talebi artırdığını istihdam sağladığını ve işsizliği önleyebildiğini savunmaktadır (Kanca & Bayrak, 2015: 58). Keynesyen yaklaşımına göre işsizlik ile kamu harcamaları arasında negatif yönde bir ilişki vardır (Sağdıç & Yıldız, 2020: 215).

İşsizlik ile ilişkisi bulunan makroekonomik faktörlerden birisi de yatırımdır. Yatırım kâr elde etmek amacıyla elde bulunan ekonomik değişkenlerin belirlenen amaç doğrultusunda değerlendirilmesi şeklinde tanımlanabilir. Yatırım harcamaları kamu harcamaları ve özel harcamalar şeklinde ikiye ayrılmaktadır. Yatırım bireyler, firmalar ya da devlet tarafından gerçekleştirilmektedir (Bektaş, 2020: 2). İşsizlik sorunu temel olarak

bir yatırımdır. Gerekli düzeyde kabul edilebilir iş yaratabilmek için hem sabit sermaye hem de eğitim ve öğretimde önemli yatırımlar yapılması gerektiği savunulmaktadır (Rowthorn, 1995: 38). Yetersiz yatırım, nüfus artışına kıyasla daha yavaş sermaye birikimi ve daha yavaş istihdam artışına yol açan yatırım anlamına gelmektedir (Monastiriotis, 2006: 30).

Dışa açıklık işsizlikle ilişkili olan makroekonomik faktörlerden biridir. Dışa açıklık kavramının küreselleşme olgusundan sonra ortaya çıktığı söylenebilir (Saçık, 2008: 526). Dışa açıklık ülkelerin diğer ülkelere olan bağımlılığını, içe veya dışa yönelik ne tür bir ekonomi politikası benimsediklerini, benimsenen ekonomik politikalardan en önemlisinin neler olduğunu ve diğer ülkelerle olan ticari ilişkinin boyutunu gösteren bir kavramdır (Şahbaz vd., 2016: 1107). Dışa açıklık farklı ülkelerin pazarlarının birleşmesi olarak ifade edilebilir (Özyıldız vd., 2018: 337). Literatürde ülkelerin dışa açılmasıyla emek verimliliğinde yaşanan değişimlerin, işsizlik oranını da değiştireceğinden bahsedilmektedir. Emek verimliliğindeki değişimlerin işsizlik oranını etkileme boyutu ülkelerin gelişmiş ya da gelişmemiş olma durumuna göre farklılık göstermektedir (Ekinci vd., 2017: 47). Literatürde işsizlik ile dışa açıklık arasında ters yönlü ilişki olduğunu belirleyen çalışmalar (örn. Gozgor, 2014; Ercan & Kılıç, 2019; Felbermayr vd., 2009) ile dışa açıklığın işsizlik üzerinde etkisinin belirsiz olduğunu belirten çalışmalar vardır (örn. Yılmaz & Altay, 2016; Bassanini & Duval, 2006; Zribi vd., 2014).

İşgücü piyasası düzenlemeleri işsizlikle ilişkili olan makroekonomik faktörlerden biridir. İstihdam ve işsizlik işgücü piyasasının en önemli iki göstergesidir. Bu iki gösterge hem toplumlar hem de ekonominin işleyişi hakkında önemli bilgiler sunmaktadır (Tansel, 2012: 20). İşgücü piyasasını, işgücü arzının ve işgücü talebinin alışveriş işlemini gerçekleştirmek için buluştukları ortam olarak tanımlamak mümkündür. İşgücü piyasasında iş gücü arzını oluşturanlar çalışma isteği olup çalışmak isteyenler, iş gücü talebini oluşturanlar ise işverenlerdir. İş gücü piyasası iş arayanlara uygun nitelikte iş bulmayı, işverene ise işe uygun işgücü bulma olanağı sunmaktadır (Uzunca, 2019: 10).

İşgücü piyasası düzenlemeleri gelişmiş ve gelişmekte olan ülkelere göre farklılık göstermektedir (Bayar, 2019: 13). İşgücü piyasası düzenlemeleri aktif ve pasif işgücü piyasası düzenlemeleri olarak ikiye ayrılmaktadır. Aktif işgücü piyasası düzenlemeleri devletin işsizlikle mücadele etmek için yeni iş alanları oluşturarak işgücü arzını ve talebini dengede tutmak amacıyla yaptığı politikalardır (Korkmaz & Mahiroğulları, 2007: 90). Pasif işgücü piyasası düzenlemeleri ise işsizlik sonucunda bireylerde oluşabilecek sosyal sorunları engellemeye yönelik, işsiz olan bireylerin kendisinin ve ailesinin gereksinimlerini karşılayacak ekonomik güvence sağlayan politikalardır (İşığöç, 2012: 26). Aktif işgücü piyasası düzenlemeleri; mesleki eğitim ile ilgili kurslar, toplum yararı için yapılan programlar, işbaşı eğitim programları, girişimcilik eğitim programları iken; pasif işgücü piyasası düzenlemeleri ise işsizlik sigortası fonu, kıdem tazminatı, ücret garanti fonu ve kısa çalışma ödeneğidir (Bayraktar & Yaşarlar, 2017: 2).

Dünya ekonomik özgürlük endeksi işgücü piyasası düzenlemelerinin bir göstergesidir. İşgücü piyasa düzenlemeleri; asgari ücret ve işe alma düzenlemeleri, işten

çıkarma düzenlemeleri, işten çıkarmanın zorunlu maliyeti, çalışma saati düzenlemeleri, zorunlu askerlik alt göstergelerine sahiptir. Dünya ekonomik özgürlük endeksi ve alt bileşen değerlerinin yüksek olması daha esnek işgücü piyasası düzenlemelerini ve düşük olması daha katı işgücü piyasası düzenlemelerinin olması anlamına gelmektedir (Gwartney vd., 2015; Aktaran: Kovacı vd., 2018a). İşgücü piyasası düzenlemelerine ilişkin veri için Fraser Enstitüsü'nün Dünyanın Ekonomik Özgürlüğü Endeksini kullanan çalışmalardan bazıları Feldmann (2009a), Bernal-Verdugo vd. (2012), Zribi vd. (2014), Rafi (2017) yayınlarıdır.

Literatürde işgücü piyasası düzenlemelerindeki esnekliğin işsizliği azalttığı sonucuna ulaşan çalışmalar (örn. Bassanini & Duval, 2006; Bande & Karanassou, 2009; Rafi, 2015; Bayar, 2019) bulunmaktadır. Ayrıca, işgücü piyasası düzenlemeleri ile işsizlik arasında herhangi bir ilişki olmadığı sonucuna ulaşan çalışmalar (Ahmed & Aljane, 2014; Hardoy, 2005) da bulunmaktadır.

Çalışmada işgücü piyasası düzenlemelerini temsilen dünya ekonomik özgürlük endeksi kullanılmıştır. Dünya ekonomik özgürlüğü endeksi ilk olarak Gwartney vd. (1996) tarafından hazırlanan bir endekstir (Hall & Lawson, 2014: 1). Dünya ekonomik özgürlüğü endeksi 2000 yılına kadar beşer yıllık hazırlanırken 2000 yılından sonra yıllık olarak hazırlanmaya başlanmıştır (Tunçsiper & Biçen, 2014: 29). Dünya ekonomik özgürlüğünde yayınlanan endeks, ülkelerin politika ve kurumlarının ekonomik özgürlüğü ne ölçüde desteklediğini ölçen bir endekstir (Gwartney vd., 2020: 5). Endeks özgürlük derecesini beş ana alanda ölçmektedir. Bu alanlar; devletin büyüklüğü, güçlü paraya geçiş, yasal yapı ve mülkiyet haklarının korunması, kredi, emek ve iş çevrimleri düzenlemeleri ve dış ticaret özgürlüğü şeklindedir (Yenipazarlı, 2009: 26-27).

Demografik değişken olarak nüfusun işsizlik üzerinde etkileri araştırma konuları içinde yer almaktadır. Dünya nüfusunun artış göstermesi bir taraftan sınırlı olan doğal kaynakların yok olmasına sebep olurken diğer taraftan ülkeler için askeri, siyasi ve işgücü gibi nedenlerden dolayı önem arz etmektedir (Doğan, 2011: 293). Ülkelerdeki aşırı nüfus, nüfusun artış göstermemesi ya da azalması işsizliği farklı boyutlarda etkiliyor olabilir. Literatüre göre nüfus artışının, çalışan nüfusun arttığı göz önüne alındığında işsizlikle doğrudan ilişkisi olması gerektiğidir. Nüfus artışı, işgücü piyasasına yönelik işgücü arzında bir artış anlamına gelecek, bu da talebin üzerinde fazla işgücü arzına neden olacaktır. Bu durum, ülkedeki kalıcı işsizlik durumunu kolaylaştıracaktır (Maijama vd., 2019: 81). Literatürde nüfusun işsizlik üzerindeki etkisi üzerine çeşitli görüşler vardır. Literatürde nüfus ile işsizlik arasındaki ilişkiyi ele alan bazı çalışmalar Felbermayr vd. (2011) ve Gozgor (2014) çalışmalarıdır. Kentsel sistem modelleri gibi neo-klasik çerçeveler, daha yüksek nüfusun işsizliği artırabileceğini; aksine, yeni ekonomik coğrafya modelleri gibi yeni ticaret teorileri, daha fazla nüfus ve ticaret açıklığının daha düşük bir işsizlik oranı sağladığını ima etmektedir (Gozgor, 2014).

Çalışmada işsizlik boyutları üzerinde temel makroekonomik faktörler ve nüfusun etkisi olduğu öne sürülmüştür. Yöntem olarak panel veri analizi uygulanmasına karar verilmiştir. İşsizlik boyutları üzerinde makroekonomik göstergeleri ve nüfusun etkisini

belirlemede panel regresyon modelleri oluşturulmuştur. Panel veri olarak OECD¹ üyesi ülkelerin 2010-2018 dönemine ait çalışma değişkenleri verileri kullanılmıştır.

Çoğu işgücü piyasası düzenlemesi yalnızca ülke düzeyinde mevcuttur ve bu da mikro analiz için sınırlı kapsam ile sonuçlanır. İşgücü piyasası düzenlemeleri ve ekonomi üzerindeki etkilerine ilişkin analizlerin çoğu ise makroekonomik düzeyde gerçekleşir ve ülkeler arası karşılaştırmaları içerir. Literatür, OECD gibi ülke grupları üzerinden incelemeler yapmak ve ülkeler arasındaki değişkenliği karşılaştırmak için panel veri tahminlerini kullanır (Rafi, 2017: 13). Çalışmada makroekonomik düzeyde inceleme yapılması amaçlanmıştır. Aşağıda yer alan literatür incelemelerinden makroekonomik göstergelerin ve nüfusun işsizlik üzerine etkisinin araştırılmasında ülke düzeyinde veya farklı ülke gruplarında araştırmalar yürütüldüğü görülmektedir. Bu çalışmada farklı yapısal özelliğe sahip OECD ülkeleri dikkate alınarak değişkenler arasındaki etki yapısı genelleştirilmesi amaçlanmıştır. Gelişmiş ve gelişmekte olan ülkeler grubunu kapsayarak genelleştirme yapılmasına imkân tanıyor olabilir görüşü doğrultusunda OECD ülkeleri çalışma kapsamına alınmıştır. Çalışma verileri Dünya Bankası ve OECD veri tabanlarından alınmıştır. Verilerin analizlerinde Eviews 10 ve Stata 13 paket programlarından yararlanılmıştır. Grafik çizimleri IBM SPSS 24 paket programında yapılmıştır.

Çalışmanın ikinci bölümünde toplam işsizlik ile bağımsız değişkenler olan işgücü piyasası düzenlemeleri, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfus arasındaki ilişkilerin dağılım grafikleri incelenmiştir. Üçüncü bölümde literatür incelemeleri; dördüncü bölümde çalışmanın veri seti, hipotezleri ve modelleri; beşinci bölümde bulgular yer almıştır. Sonuç bölümünde araştırmada ulaşılan bulgular değerlendirilerek yorumlanmıştır.

2. Toplam İşsizlik ile Bağımsız Değişkenler Arası İlişki Yapısı Dağılımı

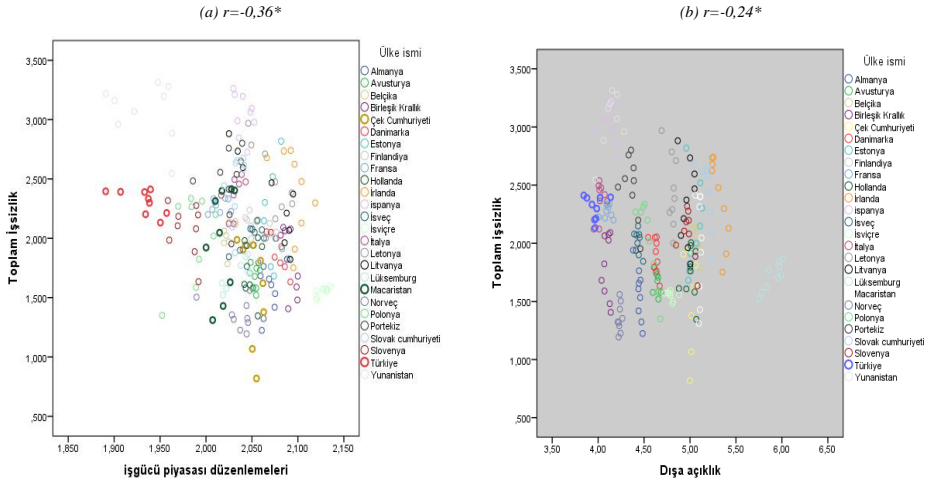
İşsizlik boyutları ile bağımsız değişkenler olan işgücü piyasası düzenlemeleri, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfus arasındaki ilişkilerin dağılımları incelenebilir. Temel çerçevede toplam işsizlik ile bağımsız değişkenler arasındaki ilişkilerin dağılımları görselleştirilmeye çalışılmıştır. 2010-2018 dönemi ait 9 yıllık tüm çalışma değişken bilgilerine ulaşılan OECD ülkeleri çalışmaya dâhil edilmiştir. Tüm bilgilerin olduğu 26 OECD ülkesi Avusturya, Belçika, İsviçre, Çek Cumhuriyeti, Almanya, Estonya, Finlandiya, Danimarka, İspanya, Fransa, Birleşik Krallık, Yunanistan, Macaristan, İrlanda, İtalya, Letonya, Litvanya, Lüksemburg, Hollanda, İsveç, Portekiz, Norveç, Polonya, Slovak

¹ OECD, II. Dünya Savaşı sonrasında daha kaliteli yaşam koşulları için politikalar geliştirmeye çalışan uluslararası bir örgüttür. 1961 yılında Paris'te kurulan OECD'de amaç, insan yaşamını doğrudan ya da dolaylı bir şekilde etkileyen konularla ilgilenmekte ve herkes için refahı, eşitliği sağlayacak politikalar geliştirmek olarak belirlenmiştir (TCKTB, 2021). OECD'ye üye 38 ülke vardır. Bu ülkeler: Türkiye, Amerika Birleşik Devletleri (ABD), Avusturya, Avustralya, Belçika, Kolombiya, Çek Cumhuriyeti, Danimarka, Kanada, Şili, Estonya, Finlandiya, Yunanistan, Fransa, Almanya, İzlanda, Macaristan, İrlanda, İsrail, İsveç, İtalya, Birleşik Krallık, İsviçre, Japonya, Litvanya, Lüksemburg, Kore, Letonya, Meksika, Hollanda, Polonya, Norveç, Yeni Zelanda, Portekiz, Slovenya, İspanya ve Slovakya'dır.

Cumhuriyeti, Slovenya ve Türkiye'dir. Dağılımlar Grafik 1, Grafik 2 ve Grafik 3'te sunulmuş ve incelenmeye çalışılmıştır.

Grafik 1'de 9 yıllık veride (a) dağılımı için toplam işsizlik ile işgücü piyasası düzenlemeleri arasında $r = -0,36$ 'lık anlamlı negatif ilişki olduğu bilgisi yer almaktadır. Dağılım (serpme diyagramı) incelendiğinde yıllara göre olan veri yapısının ters yönlü (negatif eğimli) bir elips² şeklinde olduğu gözlemlenebilmektedir. Toplam işsizlik ile işgücü piyasası düzenlemeleri arasında 0,36'lık anlamlı (istatistiksel olarak anlamlı) negatif ilişki olduğu belirlenmiştir. Bazı ülkeler düzeyinde yorum yapılacak olursa örneğin; Türkiye, Çek Cumhuriyeti, İspanya için değişkenler arasında negatif ilişki ve bir elips yapısı gözlemlenebilmektedir. Grafik 1'de (b) dağılımı incelendiğinde (a) dağılım grafiğine kıyasla daha az ilişki olduğu gözlemlenebilmektedir. Toplam işsizlik ile dışa açıklık arasında Polonya için aynı yönlü, Türkiye ve bazı ülkeler için ters yönlü ilişki gözlemleniyorken bazı ülkeler için dışa açıklık değerlerinin genel olarak çok değişmediği buna karşılık toplam işsizlik değerlerinin daha değişken olduğu gözlemlenebilmektedir. Toplam işsizlik ile dışa açıklık arasında 0,24'lük anlamlı negatif ilişki olduğu belirlenmiştir.

Grafik: 1
İşgücü Piyasası Düzenlemeleri ve Dışa Açıklık ile Toplam İşsizlik Arasındaki İlişki Dağılımı

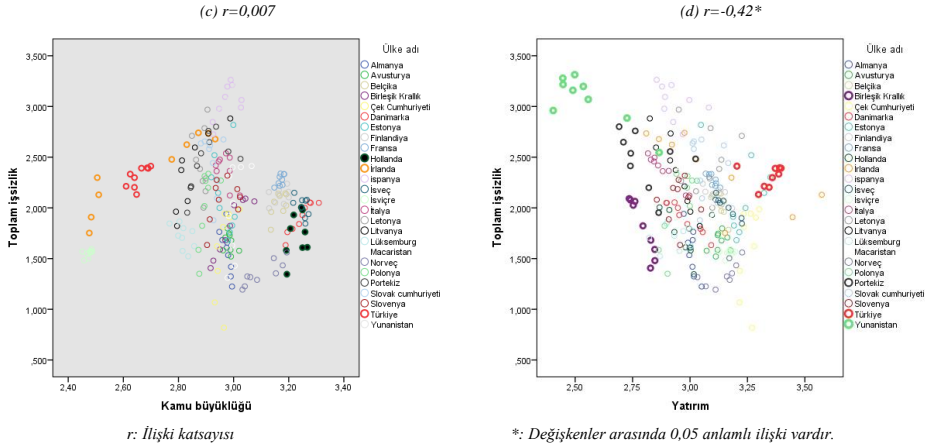


Grafik 2'de yıllara göre çizilmiş olan (c) dağılımında bazı ülkeler için negatif, bazı ülkeler için pozitif ilişki olduğu ve bazı ülkeler için ise yıllar içinde toplam işsizliklerde değişimlere kıyasla kamu büyüklüklerinde çok değişim olmadığı gözlemlenebilmektedir.

² Değişkenler arası oluşturulan serpme diyagramı (saçılım grafiği) elips şeklinde olması durumunda veriler bir doğruyla temsil edilebilir. Bu durumda az ya da çok anlamlı ilişkiden söz edilebilir.

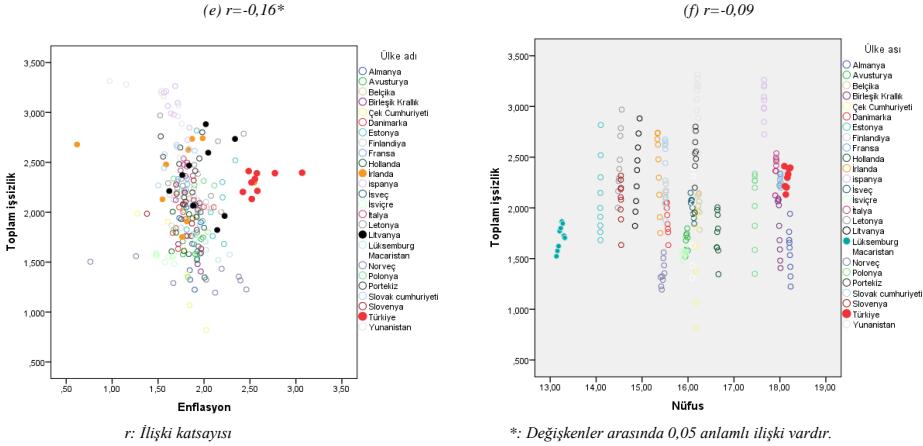
Bu toplam işsizlik ile kamu büyüklüğü arasında zayıf ilişkinin göstergesi olarak kabul edilebilir. $r=0,007$ değerine dayalı, toplam işsizlik ile kamu büyüklüğü arasında anlamlı ilişki olmadığı söylenir. (d) dağılımında yatırım ile toplam işsizlik veri yapısının genel itibariyle ters yönlü (negatif eğimli) bir elips yapısı gösterdiği gözlemlenebilmektedir. Çoğu ülke için negatif ilişki tespit edilirken bazı ülkeler örneğin Türkiye için yatırımlar ile toplam işsizlik arasında pozitif ilişki gözlemlenmektedir. Toplam işsizlik ile işgücü piyasası düzenlemeleri arasında 0,42’lik anlamlı negatif ilişki belirlenmiştir.

Grafik: 2
Kamu Büyüklüğü ve Yatırım ile Toplam İşsizlik Arasındaki İlişki Dağılımı



Grafik 3’te (e) dağılımı için $r = -0,16$ ’lık anlamlı negatif ilişki olduğu bilgisi yer almaktadır. Dağılım incelendiğinde yıllara göre olan veri yapısının ters yönlü bir elips şeklinde olduğu gözlemlenebilmektedir. Bununla birlikte, bazı ülkeler örneğin Türkiye, İrlanda ve Litvanya için tüm yıllarda enflasyon ile toplam işsizlik arasında ters yönlü ilişki olmadığı belirlenebilmektedir. Enflasyon ile toplam işsizlik arasındaki ilişki ($r = -0,16$) yatırım ile enflasyon arasındaki ilişkiden ($r = -0,42$) daha zayıftır. (f) dağılımı için $r = 0,09$ ’lık anlamlı ilişki olmadığı bilgisi yer almaktadır. Dağılım incelendiğinde tüm yıllar için ülkelerin büyük çoğunluğunda nüfusun çok değişmediği toplam işsizlikte ise değişimler olduğu gözlemlenebilmektedir.

Grafik: 3
Enflasyon ve Nüfus ile Toplam İşsizlik Arasındaki İlişki Dağılımı



3. Literatür

Literatür incelemesi bölümünde çalışmaya konu olan işsizlik ile işgücü piyasası düzenlemeleri, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfus üzerine yapılmış çalışmalara yer verilmiştir.

3.1. İşsizlik ile Enflasyon İlişkisi

Reichel (2004) çalışmasında 1960 ile 2001 yılları arasındaki dönemde seçilen 16 OECD ülkesi için Phillips eğrisi ilişkisinin analizi yapılmıştır. Hata düzeltme modeli (ECM) tahminlerinden Portekiz ve Amerika Birleşik Devletleri (ABD) için pozitif bir korelasyon ve diğer ülkeler için negatif bir korelasyon olduğu belirlenmiştir. Phillips eğrisinin uzun dönemli bir ilişki olarak sadece ABD’de olduğu belirlenmiştir. Enflasyonun işsizlik üzerindeki önemli kısa dönem etkisi, 16 ülkeden sadece 2’si (İtalya ve ABD) için tanımlanmıştır.

Bhattarai (2016), OECD ülkeleri için 1990:1 ile 2014:4 arasındaki üç aylık zaman serilerine dayalı enflasyon ile işsizlik arasındaki ilişki araştırmıştır. OECD ülkelerinin her biri için belirlenen regresyonlardan, sabit ile rastgele etki panel veri modellerinde ve panel VAR modelinde 35 ülkeden 28’inde Phillips eğrisinin ampirik olarak önemli olduğunu belirlemiştir. Çalışmada eşbütünleşme ve Granger nedensellik testleri, OECD ülkelerinde enflasyon ile işsizlik arasında uzun dönemli ilişkilerin olduğu göstermiştir.

Sancar ve Atay Polat (2017) çalışmasında G7 ülkelerinin 1998: 1-2016: 1 dönemi üçer aylık verilerinde panel veri analiziyle işsizlik ile enflasyon arasındaki nedensellik ilişkisi araştırılmıştır. Johansen-Fisher panel eşbütünleşme testi ile işsizlik ile enflasyon arasında uzun dönemde eşbütünleşme olduğu belirlenmiştir. Dumitrescu-Hurlin (2012)

nedensellik testi sonucu enflasyondan işsizliğe ve işsizlikten enflasyona doğru çift yönlü nedensellik ilişkisi saptanmıştır. Bu bulgu, G7 ülkeleri için uzun dönemde işsizlik ile enflasyon arasındaki Phillips’in geçerli olduğunu göstermiştir.

Shaari vd. (2018) çalışmasında, seçilmiş 10 yüksek gelirli ülkenin 1990’dan 2014’e kadar olan işsizlik oranı ve enflasyon oranı panel verileri kullanılmıştır. Bu ülkelerde Phillips eğrisinin varlığını panel veri analizi kullanarak araştırmayı amaçlamıştır. Enflasyon oranı ile işsizlik oranı arasında negatif bir ilişki olduğu belirlenmiştir. Hata düzeltme terimi (ECT) katsayısının negatif ve anlamlı olduğu dolayısıyla ülkelerde enflasyon oranı ile işsizlik oranı arasındaki uzun dönemli ilişkiyi desteklediği belirlenmiştir. Panel eşbütünleşme testi sonuçları enflasyon oranı ile işsizlik oranı arasında eşbütünleşme ilişkisi olduğunu göstermiştir.

Kirca ve Canbay (2020), kırılğan beşli ülkeler olan Brezilya, Endonezya, Hindistan, Güney Afrika ve Türkiye’nin 1991-2019 dönemi verileri üzerinde Konya (2006) panel bootstrap nedensellik testi uygulanmasıyla enflasyon oranı ile işsizlik oranı arasındaki ilişkiler araştırılmıştır. Araştırma sonucunda Türkiye’de enflasyondan işsizliğe doğru negatif nedensellik ilişkisi, Hindistan’da işsizlikten enflasyona doğru negatif nedensellik ilişkisi olduğu diğer ülkelerde ise değişkenler arasında nedensellik ilişkisi olmadığı belirlenmiştir.

Lisani vd. (2020) çalışmasında, 1989-2018 dönemi Güneydoğu Asya Ülkeleri Birliği (ASEAN) üye ülkelerinde kısa ve uzun dönemde enflasyon-işsizlik dinamik nedensel ilişkileri araştırılmıştır. Panel eşbütünleşme testi bulgularından enflasyon ile işsizlik arasında uzun dönemli denge belirlenmiştir. Vektör Hata Düzeltme Modeli analiziyle uzun dönemde enflasyonun işsizlik oranını olumlu yönde etkilediği, kısa dönemde ise enflasyon-işsizlik arasında anlamlı ilişkisi olmadığı belirlenmiştir.

3.2. İşsizlik ile Kamu Büyüklüğü Arasındaki İlişki

Christopoulos vd. (2005) çalışmasında 10 Avrupa ülkesinde 1961-1999 yıllarını kapsayan verilerden yararlanarak işsizlik ve kamu büyüklüğü arasındaki ilişki panel eşbütünleşme ve tahmin yöntemleri kullanılarak incelenmiştir. İnceleme sonucunda işsizlik ile kamu büyüklüğü arasında pozitif ilişki olduğu saptanmıştır.

Wang ve Abrams (2011) tarafından kamu büyüklüğü ile işsizlik oranı arasındaki ilişkinin hem kısa vadeli hem de uzun vadeli belirlenmesi amacıyla yirmi OECD ülkesindeki 1970-1999 yılları arasındaki verileri kullanarak yapılan çalışmada panel hata düzeltme modeli kullanılmıştır. Araştırma sonucunda kamu büyüklüğünün işsizlik oranını etkilediği sonucuna ulaşılmıştır. Ayrıca çalışma sonucunda transferlerin ve sübvansiyonların istikrarlı durumdaki işsizlik oranını önemli ölçüde etkilediği tespit edilmiştir.

Brückner ve Pappa (2012), 10 OECD ülkesi için 1964-2004 yıllarını kapsayan verilerden yararlanarak kamu harcamaları ve işsizlik arasındaki ilişkiyi Yapısal VAR analizi

kullanarak incelemişlerdir. Analiz bulgularından işsizlik ile kamu harcaması arasında ilişki olduğu ve kamu harcamalarının işsizliği artırdığı tespit edilmiştir.

Durkaya ve Ceylan (2016) tarafından kamu büyüklüğü ve işsizlik arasındaki ilişki 2002-2014 yıllarına ait üçer aylık veriler kullanılarak incelenmiştir. Çalışmada Toda-Yamamoto nedensellik testiyle kısa dönem ilişkiler ve sınır testiyle uzun dönem ilişkiler analiz edilmiştir. Testler sonucunda uzun dönemde kamu büyüklüğü ile işsizlik arasında ters yönde ilişki olduğu belirlenmiştir. Nedensellik testi sonucu, işsizlik oranından kamu büyüklüğüne doğru tek yönde ilişki olduğu sonucuna ulaşılmıştır.

Kovacı vd. (2018b) çalışmasında, Avrupa Birliği (AB) ülkelerinde 2005-2016 yıllarını kapsayan verilerden yararlanarak işsizlik ve kamu büyüklüğü arasındaki ilişki dinamik panel veri analizleri kullanarak incelenmiştir. İnceleme sonucunda AB ülkeleri için işsizlik ile kamu büyüklüğü arasında pozitif ilişki olduğu sonucuna ulaşılmıştır.

Güney ve Balkaya (2018), ticari açıklığı ve kamu harcamalarının, işsizlik ve genç işsizlik üzerindeki etkisini Türkiye için 2006-2017 dönemine ait verileri kullanarak araştırmışlardır. Çalışmada uzun dönemli etkiyi tahmin etmek için eş bütünlüşme analizini ARDL yaklaşımına dayalı kullanılırken kısa dönemli etkiyi tespit etmek için Hata Düzeltme Modeli kullanılmıştır. Yapılan analizler sonucunda cari ve transfer harcamaları ile işsizlik ve genç işsizlik arasında pozitif ilişki olduğu sonucuna ulaşılmıştır.

Ayas ve Ayas (2021), kamu harcamaları ve işsizlik arasındaki ilişkiyi Keynesyen ve klasik yaklaşım açısından değerlendirdiği çalışmasında 1988-2018 dönemi verilerini kullanmışlardır. Çalışmada standart etki tepki analizi sonucunda klasik yaklaşımın (kamu harcamalarının işsizliği artırdığı), asimetrik etki-tepki analizinde Keynesyen yaklaşımın (kamu harcamalarının işsizliği azalttığı) geçerli olduğu tespit edilmiştir.

3.3. İşsizlik ile Yatırım Harcamaları Arasındaki İlişki

Blanchard (2000), Herbertson ve Zoega (2002), Sawyer (2002) ve Smith ve Zoega (2005), toplam yatırım düzeyleri ile işsizlik oranı arasında negatif ilişkiyi belirleyen bazı çalışmalardır. Kunz (2009), yatırım düzeyinin Almanya'nın bölgesel işsizliği üzerinde en güçlü etkiye sahip olduğunu belirlemiştir (Bande & Karanassou, 2014: 1865).

Miaouli (2001), beş Avrupa ülkesinin imalat sektöründen yıllık verileri kullandığı çalışmasında tüm ülkelerde, özel sektör yatırım birikiminin istihdamı olumlu yönde etkilediğini belirlemiştir. Abiad vd. (2015) 17 OECD ülkesi gelişmiş ekonomilerindeki 1985-2013 yılları incelemelerinde kamu yatırımlarının makroekonomik etkilerine ilişkin kanıtlar sunarak artan kamu yatırımının hem kısa vadede hem de uzun vadede üretimi artırdığını, işsizliği azalttığını ortaya koymuştur. Yatırım etkinliğinin fazla olduğu ülkelere işsizliğin azaltılmasının daha yüksek olduğunu tespit etmişlerdir.

Monastiriotis (2006), yetersiz yatırımın İngiltere'de bazı bölgelerde zayıf işsizlik performansı için önemli bir makroekonomik açıklama olduğunu belirlemiştir. Rowthorn

(1995), sermaye stoku ile istihdam arasındaki ilişkiyi araştırdığı çalışmasında OECD ülkelerindeki işsizlikle mücadelede, kapasite yaratan yatırımlarda önemli artışa ihtiyaç olduğu belirlenmiştir. Rowthorn, Batı Avrupa'daki işsizlik artışında son 20 yıldaki düşük yatırımın, özellikle imalat ve diğer ticarete düşük yatırımın önemli bir faktör olduğunu ve işsizlikte büyük çaplı azalmanın büyük ölçekli yatırım gerektireceğini savunmuştur.

Şahin ve Özenç (2007) tarafından kamu harcamalarının işsizlik, enflasyon ve Gayri Safi Yurt İçi Hasıla (GSYİH) değişkenleri üzerindeki etkisini araştırmak amacıyla yapılan çalışmada Granger Nedensellik Testi kullanılmıştır. Çalışma verileri Türkiye için 1988-2006 yıllarını kapsamıştır. Yapılan testler sonucunda işsizlik ile kamu harcamaları arasında herhangi bir ilişkiye rastlanılmamıştır. Bande ve Karanassou (2009) çalışmasıyla 1985-1995 yılları İspanyol bölgesel işsizlik oranları üzerine incelemesinde yatırımın işsizlik üzerinde önemli etkiye sahip olduğunu belirlemiştir.

Yatırım ve işsizlik arasında negatif bir ilişkiye işaret eden çok çeşitli sağlam (robust) kanıtlar elde edilmiştir. Malley ve Moutos (2001), Herbertsson ve Zoega (2002), Sawyer (2002), Arestis vd. (2007) ve Karanassou vd. (2008) çok farklı analitik yaklaşımlarla bu sonuca varmıştır (Bande-Ramudo vd., 2014: 6). Bande-Ramudo vd. (2014), İspanya ve Almanya ekonomilerinde 2010 yılına kadar ki son yirmi yılda yatırım ile işsizlik arasında negatif ilişki olduğunu göstermiştir. Tüketim şoklarının yatırımdaki değişiklikler yoluyla işsizlik üzerindeki önemli etkisi olduğuna işaret ederek İspanyol ekonomisi çerçevesinde elde edilen sonuçlar yatırım ve işsizlik arasında ters ilişki bulunduğunu göstermiştir.

Yıldırım ve Yıldırım (2017) çalışmasıyla 2005-2016 dönemi üç aylık verilerde uygulanan çeşitli Yapısal Vektör Otoregresif modellerinden Türkiye'deki tüketim, yatırım ve işsizlik oranları arasında dinamik ampirik analiz uygulanmıştır. Türkiye'deki toplam talep ve işsizlik oranları arasındaki ilişkiyi değerlendirmek için genel, genç, erkek ve kadın olmak üzere dört farklı işsizlik oranını kullanılmıştır. Bulgular işsizlik oranlarının tüketime ve yatırıma tepkisinin geleneksel makroekonomik görüşlerle tutarlı olduğunu doğrulamıştır. Çalışmada kullanılan modellerden elde edilen bulgular, yatırım ve işsizlik oranları arasında negatif ilişki olduğunu ortaya koymuştur. Toplam talebin önemli bir bileşeni olan yatırımın tüm farklı işsizlik oranları üzerinde etkisi olduğu görülmüştür.

3.4. İşsizlik ile Nüfus Arasındaki İlişki

Malizia ve Ke'nin (1993), 1972-88 döneminde ABD'deki çoğu metropoliten alanı içeren çalışmada çeşitliliğin, istikrarsız sektörlerde yoğunlaşan istihdamın, nüfus boyutunun, büyüme hızının ve kontrol değişkenlerinin işsizlik ve istihdam istikrarsızlığı üzerindeki etkisi çoklu regresyon analiziyle tahmin edilmeye çalışılmıştır. Denklemleri tahmin etmek için OLS ve WLS kullanılmıştır. İşsizliği ve istikrarsızlığı etkileyen en önemli faktörler nüfus büyüklüğü, işgücünün özellikleri ve ekonomik yapıdır. Ortalama işsizlik oranları, metropol alanlarının nüfus büyüklüğü arttıkça azalma eğiliminde olduğu belirlenmiştir. Büyük nüfuslu metropol alanlar, daha çeşitli oldukları ve istikrarsız

endüstrilerde daha az işçiye sahip oldukları için düşük işsizlik oranlarına sahip olma eğiliminde olduğu saptanmıştır.

Korenman ve Neumark (2000) çalışmasında 1970'den 1994'e kadar OECD ülkelerinin çoğuna ilişkin verileri kullanarak topluluk kalabalığının genç işsizliği ve istihdamı üzerindeki etkilerine ilişkin uluslararası bir araştırmadan elde edilen kanıtları sunulmuştur. Çalışmanın bulgularından havuzlanmış verisi ve AR düzeltmesi ile sabit yıl ve ülke etkileri altında kurulan regresyon modelinde genç/yetişkin nüfusun işsizlik üzerinde anlamlı etkisi olmadığı belirlenmiştir. Sabit ülke etkileri ile sabit yıl ve ülke etkisi altında kurulan regresyon modelinde ise genç/yetişkin nüfusun işsizlik üzerinde pozitif yönde anlamlı etkisi olduğu belirlenmiştir.

Felbermayr vd. (2011) çalışmasında birinci olarak 20 OECD ülkesinden alınan 1983-2003 yıllarına ait verileri, ikinci olarak 62 ülkenin kesit verisinde 1990-2006 boyunca tüm değişkenlerin ortalamasının alındığı verileri ve üçüncü olarak 77 ülke kümesine ilişkin 1971-2005 yılları arasında 5 yıllık dönemler ilişkin verileri kullanılmıştır. Verilere dayalı nüfus, işgücü piyasası kurumları ve ürün piyasası düzenlemesi, çıktı açığı, ticari dışa açıklık ve diğer makroekonomik değişkenlerin toplam işsizlik üzerindeki etkileri belirlenmeye çalışılmıştır. Regresyon analizlerinin bulgularından birinci ve ikinci veride nüfusun toplam işsizlik üzerinde negatif ve anlamlı etkisi olduğu üçüncü veride farklı model yapılarında nüfusun toplam işsizlik üzerinde ayrı ayrı negatif ve pozitif anlamlı etkisi olduğu belirlenmiştir.

Gozgor (2014) çalışmasında makale, panel verilere dayalı pazar büyüklüğünün (toplam nüfus), ticari dışa açıklık ölçülerinin, küreselleşme endeksleri, gecikmeli GSYİH büyüme oranı, kişi başına düşen reel GSYİH, diğer makroekonomik göstergeler (enflasyon oranı ve verimlilik değişimi) ve işsizlik oranı üzerindeki etkisi incelenmiştir. G7 ülkelerinde 1970-2009 yılları dengesiz bir panel veride araştırmaya dahil edilen değişkenlerin işsizlik oranı üzerindeki etkileri ampirik olarak araştırılmıştır. Panel veri analizinden elde edilen güçlü ampirik bulgular, makroekonomik göstergeler ve pazar büyüklüğü ile birlikte, ticari dışa açıklık ve küreselleşmenin tüm ölçülerinin işsizlik oranı ile önemli ve negatif ilişkili olduğunu göstermiştir.

Kovacı vd. (2018a) çalışmasında 15 OECD ülkesi (Danimarka, Finlandiya, Fransa, Almanya, Türkiye İngiltere, İtalya, İspanya, İsveç, Yunanistan, Norveç, Belçika, Hollanda, Avusturya, Portekiz) 2005-2014 dönemi için demografik değişkenlerden nüfusun ve işgücü piyasası düzenlemelerinin işsizlik göstergeleri üzerindeki etkileri panel regresyon analiziyle araştırılmıştır. Nüfusun işsizlik göstergelerinin tümü üzerinde pozitif ve anlamlı etkisi olduğu belirlenmiştir. Nüfus artışının işsizliği artırdığı bulgusuna ulaşılmıştır.

Tarı ve Bakkal (2017), Türkiye'de işsizliğe yol açan faktörlerin neler olduğu ve belirlenen faktörler ile işsizlik arasında ne tür bir ilişki olduğunu tespit etmek amacıyla yaptıkları çalışmada VAR analizini kullanmışlardır. Analiz sonucunda işsizliğe yol açan en

önemli nedenin ekonomik kriz olduğu ve nüfus artışının işsizliği azaltmadığı sonucuna ulaşılmıştır.

3.5. İşsizlik ile Dışa Açıklık Arasındaki İlişki

Felbermayr vd. (2009), 20 OECD ülkesi için 1980-2000 yıllarını kapsayan verilerine dayalı ticari dışa açıklık ile işsizlik arasındaki ilişkiyi panel veri analizi yöntemiyle araştırmışlardır. İnceleme sonucunda ticari dışa açıklık ile işsizlik oranı arasında negatif ilişki tespit etmişlerdir. Yılmaz ve Altay (2016), Almanya, ABD, İtalya, Japonya, Fransa, İngiltere, Rusya ve Kanada ülkeleri için 1990-2014 yıllarını kapsayan verilerden yararlanarak işsizlik oranı ve ticari dışa açıklık oranı arasındaki ilişkiyi panel veri analizi yöntemiyle incelemiştir. İnceleme sonucunda Almanya, Kanada ve Japonya'da ticari dışa açıklıkta oluşan artışın işsizliği azalttığını ve ABD, İngiltere, İtalya, Fransa ve Rusya için işsizlik oranı ile ticari dışa açıklık arasında istatistiksel olarak anlamlı bir ilişkiye rastlanılmadığını belirlemiştir.

Gozgor (2014), ABD, Almanya, İtalya, Kanada, Fransa, Japonya ve Birleşik Krallık (İngiltere) ülkeleri için dışa açıklık oranı ve küreselleşmenin işsizlik oranı üzerindeki etkisini araştırmak amacıyla yaptığı çalışmasında panel veri analizini kullanmıştır. Analiz sonucunda işsizlik oranı üzerinde dışa açıklık oranının ve küreselleşmenin negatif etkisi olduğu tespit edilmiştir.

Ekinci vd. (2017) çalışmalarında Almanya, Fransa, İtalya, İspanya, İngiltere ve Türkiye için işsizlik oranı ile dışa açıklık oranı arasındaki ilişkiyi tespit etmek amacıyla 2001-2015 verilerini, zamana göre değişen parametrelili VAR analizi kullanmışlardır. İnceleme sonucunda AB ülkelerinde işsizlik oranı üzerinde dışa açıklık oranının etkisinin hem azalış hem artış yönünde iken Türkiye'de azalış yönünde olduğu tespit edilmiştir.

Ercan ve Kılıç (2019) tarafından 2004-2014 yılları için Türkiye'de işsizlik ile bölgesel ticari dışa açıklık arasında ilişki olup olmadığı dinamik doğrusal panel veri analizi teknikleriyle araştırılmıştır. Araştırma sonucunda işsizlik oranı ile bölgesel ticari dışa açıklık arasında çift yönlü ve negatif ilişki olduğu sonucuna ulaşılmıştır.

3.6. İşsizlik ile İşgücü Piyasa Düzenlemeleri-Ekonomik Özgürlükler Endeksi Arasındaki İlişki

Gwartney ve Lawson (1997), 115 ülke verisinden yararlanarak yaptıkları çalışmalarında ekonomik özgürlük ve işsizlik arasındaki ilişkiyi incelemişlerdir. İnceleme sonucunda ülkelerin ekonomik özgürlükleri düşük olduğunda işsizlik oranlarının yüksek olduğu sonucuna ulaşmışlardır. Grubel (1998), makroekonomik değişkenler ile ekonomik özgürlük arasında ilişkiyi araştırmak amacıyla yaptığı çalışmada ekonomik özgürlüğün işsizlik oranı üzerinde kayda değer bir etkisi olmadığı sonucuna ulaşmıştır.

Feldmann (2007), 1980-2003 yıllarında 87 ülkeden elde edilen veriler ile ekonomik özgürlüğün işsizlik üzerindeki etkisini tespit etmek amacıyla yaptığı çalışmada regresyon

analizini kullanmıştır. Analiz sonucunda, ekonomik özgürlüğün kadınlar ve gençler arasında işsizliği önemli ölçüde azalttığı sonucuna ulaşılmıştır. Acar (2010), ekonomik özgürlük ile refah göstergeleri arasındaki ilişkiyi araştırmak amacıyla yaptığı çalışmada ekonomik özgürlüğü daha fazla olan ülkelerde işsizlik oranlarının daha düşük olduğu sonucuna ulaşmıştır.

Zribi vd. (2014), 2000-2010 dönemi 32 gelişmiş ülke ve 60 gelişmekte olan ülkeden oluşan panel çalışması yürütmüştür. Toplam işsizlik, uzun dönem işsizlik ve genç işsizlik üzerinde makroekonomik ve demografik değişkenlerin etkisi araştırılmıştır. Makroekonomik ve demografik değişkenlerin çoğunun ve işgücü piyasa esnekliği göstergelerinin işsizlik ve genç işsizlik oranlarını azalttığı görülmüştür.

Heller ve Stephenson (2014), 50 ülke için 1981-2009 verilerini kullanarak ekonomik özgürlük ile işsizlik oranı, işgücüne katılım oranı ve istihdam-nüfus oranı arasındaki ilişkiyi inceledikleri çalışmada ekonomik özgürlüğün daha düşük işsizlik oranı ile sonuçlandığı sonucuna ulaşmışlardır.

Kovacı vd. (2018a), 15 OECD ülkesi için 2005-2014 yıllarını kapsayan verilerden yararlanarak işsizlik ile piyasa düzenlemeleri arasındaki ilişkiyi panel regresyon analizi kullanarak incelemiştir. İnceleme sonucunda işsizlik ile esnek işgücü piyasası düzenlemeleri arasında anlamlı ve negatif yönde ilişki olduğu belirlenmiştir. Bayar (2019), 36 OECD ülkesi için 2000-2016 yıllarını kapsayan verilerden yararlanarak işsizlik ile piyasa düzenlemeleri arasındaki ilişkiyi panel nedensellik analizi kullanarak incelemiştir. İnceleme sonucunda işsizlik ile işgücü piyasası düzenlemeleri arasında anlamlı bir ilişki olduğu tespit edilmiştir.

4. Yöntem

Çalışmanın amacı temel makroekonomik faktörler ve nüfus bağımsız değişkenlerinin işsizlik boyutları üzerindeki etkilerini araştırmaktır. OECD üyesi ülkelerin 2010-2018 dönemine ait işsizlik, makroekonomik faktörler ve nüfus değişkenlerine ait dengeli panel veriler kullanılmıştır. Panel veri, yatay kesit ve zaman serisi verilerinin birlikte incelendiği veri yapısıdır. Panel veri, yatay kesit birimlerin zaman içinde takip edilmesi yoluyla elde edilmektedir (Baltagi, 2005: 1). Panel veri için dengeli panel veri ve dengeli olmayan panel veri olmak üzere iki yapı söz konusudur. Dengeli panel, tüm yatay kesit birimleri için zaman gözlem sayılarının aynı olduğu veri yapısıdır. Dengeli olmayan panel ise yatay kesit birimleri için zaman gözlem sayılarının aynı olmadığı veri yapısıdır (Gujarati, 2004: 640).

Panel veri analizi, panel verilerde istatistiksel analizlerin yürütülmesini kapsamaktadır. Panel verilere dayalı incelemelerde bağımsız değişkenlerin bağımlı değişken üzerindeki etkilerini belirlemede panel veri analizi yöntemlerinden panel regresyon analizi kullanılmaktadır. Dolayısıyla, çalışma amacını gerçekleştirebilmek için panel regresyon analizi uygulanacağına karar verilmiştir. Panel regresyon analizi için üç temel regresyon

yapısı vardır. Bunlar, havuzlanmış regresyon modeli (sabit katsayılar modeli), sabit etkiler modeli ve tesadüfi etkiler modelidir.

Havuzlanmış regresyon modelinde genel varsayım olarak bağımsız değişkenlerin stokastik olmadığı ve hata teriminin ortalaması sıfır ve varyansının tüm birimler (kesitler) için aynı olduğu varsayılır (Gujarati & Porter, 2009: 594). Havuzlanmış regresyon modelinde Y bağımlı değişkeni ile X bağımsız değişken(ler)i arasında kurulan model aşağıdaki gibi gösterilebilir.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \dots + \beta_k X_{kit} + \varepsilon_{it} \quad (1)$$

Modelde β_0 sabit terimi, β_k k . ıncı bağımsız değişken katsayısını, ε hata terimini ifade etmektedir. K : bağımsız değişken sayısı, N : kesit sayısı, T : zaman sayısıdır. $k = 1, \dots, K$, $i = 1, \dots, N$, $t = 1, \dots, T$.

Havuzlanmış regresyon modelinde sabit terimi (modelde tüm bağımsız değişken(ler)in değerleri sıfır olduğunda bağımlı değişkenin aldığı değer) tüm birimler için aynıdır. Sabit etkiler modeli, sabit teriminin birimden birime farklılık gösterirken zamana göre farklılık göstermediği durumlar için uygun panel regresyon modelidir. Sabit etkiler modelinde $\beta_0 = \beta_{0i}$ yapısındadır ve β_{0i} birimlere göre sabit değer olarak kabul edilir. Tesadüfi etkiler regresyon modelinde ise sabit etkiler sabit etkiler modelindeki β_{0i} için $\beta_{0i} = \beta_0 + u_i$ olarak ortalaması β_0 olan bir tesadüfi değişken olduğu varsayımı yapılır. Burada u_i ortalaması sıfır ve varyansı σ_u^2 olan tesadüfi hata terimidir (Gujarati & Porter, 2009: 594-603).

Panel regresyon analizinde bu üç regresyon modeli yapısından hangisinin çalışma için uygun model olduğunun belirlenmesi gerekir. Uygun modelin seçimi için geliştirilen farklı yöntemler olmuştur. Moulton ve Randolph'ın (1989) geliştirdiği F testi, Bresuch-Pagan testi ve Hausman testi uygulanmaktadır. F testi, sabit etkiler modeli ile havuzlanmış model arasında seçim yapmada başvurulmuş bir yöntemdir. Bresuch-Pagan testiyle havuzlanmış model ile tesadüfi etkiler modelinden hangisinin çalışma için uygun model olduğu belirlenmektedir. Hausman testiyle sabit etkiler modeli ile tesadüfi etkiler modelinden hangisinin çalışma için uygun model olduğu araştırılmaktadır.

5. Veri Seti, Hipotezler ve Modeller

Çalışmada toplam işsizlik, eğitimli işsizlik, kadın işsizlik, genç işsizlik ve uzun dönem işsizlik olmak üzere işsizliğin beş boyut üzerinde makroekonomik göstergelerden (değişkenlerden) işgücü piyasası düzenlemeleri, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve demografik değişkenlerden nüfusun etkileri araştırılmaktadır. Çalışma veri seti olarak OECD üyesi ülkelerin 2010-2018 dönemine ait işsizlik, makroekonomik faktörler ve nüfus değişkenlerine ait dengeli panel veriler kullanılmıştır.

2008 yılı küresel finans kriz zaman etkisinin çalışmaya dâhil etmemek için 2009 yılı sonrası 2010-2018 dönemi panel verisi kullanılmıştır. 2008 yılı küresel finansal kriz, küresel

finansal piyasalarda ve bankacılık sistemlerinde 2007 ortası ile 2009 başı arasındaki aşırı stres dönemini ifade etmektedir. Gelişmiş ekonomiler 1930'lardaki Büyük Buhran'dan bu yana en derin durgunluklarını yaşarken milyonlarca insan işini kaybetmiştir (RBA, 2022).

Yatay kesit verisi olarak OECD ülkeleri ve zaman serisi verisi olarak da 2010-2018 yılları alınmıştır. 2010-2018 dönemi için OECD ülkelerinin bazıları için çalışma değişkenlerinin tümüne ait bilgilere ulaşılabilmektedir. Dolayısıyla, tüm değişken bilgilerine ulaşılan OECD ülkeleri çalışmaya dâhil edilmiştir. Böylece, dengeli panel veri yapısı oluşturulmuştur. Analiz aşamasında kullanılacak olan değişkenlerin yer aldığı açıklamalar Tablo 1'de sunulmuştur.

Tablo: 1
Çalışma Değişkenleri

| Bağımlı Değişkenler | Tanım | Veri Kaynağı |
|-----------------------------------|--|------------------|
| ISSIZLIK | İşsiz sayısının toplam işgücü içindeki payı | OECD |
| EGITIM | Üniversite mezunu eğitilmiş işsizlerin toplam işgücü içindeki payı | OECD |
| KADIN | Kadın işsizlerin toplam kadın işgücü içindeki payı | OECD |
| GENC | 15-24 yaş arası işsizlerin toplam işgücü içindeki payı | OECD |
| UZUN | Bir yıl veya daha uzun süreli işsizlerin toplam işsizler içindeki payı | OECD |
| Bağımsız (Açıklayıcı) Değişkenler | Tanım | Veri Kaynağı |
| DEOE | Dünya Ekonomik Özgürlükler Endeksi | Fraser Enstitüsü |
| DA | İthalat ve ihracat toplamı/ Gayri Safi Yurt İçi Hâsıla (GSYİH) | Dünya Bankası |
| KB | Kamu harcamaları (GSYİH %) | OECD |
| YATIRIM | Gayri safi sabit sermaye oluşumu | Dünya Bankası |
| ENFLASYON | GSYİH Deflâtörü | Dünya Bankası |
| NUFUS | Toplam nüfus | Dünya Bankası |

İşgücü piyasası düzenlemelerinin göstergesi olarak Dünya Ekonomik Özgürlükler Endeksi kullanılmaktadır (Feldmann, 2009; Gwartney vd., 2015). Çalışmada Dünya Ekonomik Özgürlükler Endeksi DEOE, işgücü piyasası düzenlemelerinin göstergesi olarak kabul edilmiştir. DA, dışa açıklığı ve KB, kamu büyüklüğünü ifade etmektedir. Çalışmanın amacına yönelik panel regresyon modellerindeki değişkenler Tablo 2'de tanımlanmıştır. Çalışma kapsamında beş hipotez ve beş panel regresyon modeli oluşturulmuştur. Modeller, değişkenlerin doğal logaritmalarının ((LN) alınarak oluşturulmuştur.

Tablo: 2
Modellerde Kullanılan Değişkenlerin Tanımları

| |
|--|
| <ul style="list-style-type: none">• $LN_{ISSIZLIK}_{it}$: i ülkesinin t dönemine ait toplam işsizlik değerinin doğal logaritması• LN_{EGITIM}_{it}: i ülkesinin t dönemine ait eğitilmiş işsizlik değerinin doğal logaritması• LN_{KADIN}_{it}: i ülkesinin t dönemine ait kadın işsizlik değerinin doğal logaritması• LN_{GENC}_{it}: i ülkesinin t dönemine ait genç işsizlik değerinin doğal logaritması• LN_{UZUN}_{it}: i ülkesinin t dönemine ait uzun dönemli işsizlik değerinin doğal logaritması• LN_{DEOE}_{it}: i ülkesinin t dönemine ait Dünya Ekonomik Özgürlükler Endeksi değerinin doğal logaritması• LN_{DA}_{it}: i ülkesinin t dönemine ait dışa açıklık değerinin doğal logaritması• LN_{KB}_{it}: i ülkesinin t dönemine ait kamu büyüklüğü değerinin doğal logaritması• $LN_{YATIRIM}_{it}$: i ülkesinin t dönemine ait yatırım değerinin doğal logaritması• $LN_{ENFLASYON}_{it}$: i ülkesinin t dönemine ait enflasyonun doğal logaritması• LN_{NUFUS}_{it}: i ülkesinin t dönemine ait nüfusun doğal logaritması |
|--|

Model 1'deki amaç bağımlı değişkenlerden biri olarak belirlenen toplam işsizlik üzerinde bağımsız değişkenler olan dünya ekonomik özgürlükler endeksinin, dışa açıklığın,

kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun etkisini araştırmaktır. Model 1 ve Model 1 için kurulan hipotez aşağıdaki gibidir.

$$\text{Model 1: } \text{LNISSIZLIK}_{it} = \beta_0 + \beta_1 \text{LNDEOE}_{it} + \beta_2 \text{LNDA}_{it} + \beta_3 \text{LNKB}_{it} + \beta_4 \text{LNYATIRIM}_{it} + \beta_5 \text{LNENFLASYON}_{it} + \beta_6 \text{LNNUFUS}_{it} + \varepsilon_{it}$$

H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun toplam işsizlik üzerinde etkisi yoktur.

H1: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun toplam işsizlik üzerinde etkisi vardır.

Model 2’de bağımlı değişken eğitimli işsizlik üzerinde dünya ekonomik özgürlükler endeksi, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun etkisini araştırmaktadır. Model 2 ve Model 2 için kurulan hipotez aşağıdaki gibidir.

$$\text{Model 2: } \text{LNEGITIM}_{it} = \beta_0 + \beta_1 \text{LNDEOE}_{it} + \beta_2 \text{LNDA}_{it} + \beta_3 \text{LNKB}_{it} + \beta_4 \text{LNYATIRIM}_{it} + \beta_5 \text{LNENFLASYON}_{it} + \beta_6 \text{LNNUFUS}_{it} + \varepsilon_{it}$$

H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun eğitimli işsizlik üzerinde etkisi yoktur.

H1: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun eğitimli işsizlik üzerinde etkisi vardır.

Model 3’te bağımlı değişken kadın işsizlik üzerinde dünya ekonomik özgürlükler endeksi, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun etkisini araştırmaktadır. Model 3 ve Model 3 için kurulan hipotez aşağıdaki gibidir.

$$\text{Model 3: } \text{L NKADIN}_{it} = \beta_0 + \beta_1 \text{LNDEOE}_{it} + \beta_2 \text{LNDA}_{it} + \beta_3 \text{LNKB}_{it} + \beta_4 \text{LNYATIRIM}_{it} + \beta_5 \text{LNENFLASYON}_{it} + \beta_6 \text{LNNUFUS}_{it} + \varepsilon_{it}$$

H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun kadın işsizlik üzerinde etkisi yoktur.

H1: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun kadın işsizlik üzerinde etkisi vardır.

Model 4’te bağımlı değişken genç işsizlik üzerinde dünya ekonomik özgürlükler endeksi, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun etkisini araştırmaktadır. Model 4 ve Model 4 için kurulan hipotez aşağıdaki gibidir.

$$\text{Model 4: } \text{LNGENC}_{it} = \beta_0 + \beta_1 \text{LNDEOE}_{it} + \beta_2 \text{LNDA}_{it} + \beta_3 \text{LNKB}_{it} + \beta_4 \text{LNYATIRIM}_{it} + \beta_5 \text{LNENFLASYON}_{it} + \beta_6 \text{LNNUFUS}_{it} + \varepsilon_{it}$$

H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun genç işsizlik üzerinde etkisi yoktur.

H1: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun genç işsizlik üzerinde etkisi vardır.

Model 5'te bağımlı değişken uzun dönem işsizlik üzerinde dünya ekonomik özgürlükler endeksi, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun etkisi araştırılmaktadır. Model 5 ve Model 5 için kurulan hipotez aşağıdaki gibidir.

$$\text{Model 5: } \text{LNUZUN}_{it} = \beta_0 + \beta_1 \text{LNDEOE}_{it} + \beta_2 \text{LNDA}_{it} + \beta_3 \text{LNKB}_{it} + \beta_4 \text{LNYATIRIM}_{it} + \beta_5 \text{LNENFLASYON}_{it} + \beta_6 \text{LNNUFUS}_{it} + \varepsilon_{it}$$

H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun uzun dönem işsizlik üzerinde etkisi yoktur.

H1: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun uzun dönem işsizlik üzerinde etkisi vardır.

Modellerde β_0 sabit terimi, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ regresyon katsayıları, ε hata terimidir, i yatay kesit indisi ve t zaman indisidir, $i = 1, \dots, 26$ ve $t = 1, \dots, 9$.

6. Bulgular

Bulgular bölümünde sırasıyla korelasyon analizi, birim kök testleri, uygun modelin seçimi, model varsayımlarının incelenmesi bulgularına yer verilirken son aşamada panel regresyon modelleri belirlenmeye çalışılmıştır. Panel veri modellerinin geçerli olabilmesi için temel varsayımların sağlanması gereklidir. Hata teriminin birim içi ve birimler arasında eşit varyanslı olması, hata teriminde otokorelasyon olmaması ve birimler arası korelasyon olmaması varsayımlarının sağlanması gereklidir. Varsayım incelemeleri veri yapısına uygun düşen model yapısının (havuzlanmış model, sabit etkiler modeli veya tesadüfi etkiler modelinden hangisinin çalışma için uygun model olduğunun) belirlenmesi aşamasından sonra gerçekleştirilebilmektedir. Varsayım incelemeleri model yapısına uygun düşen heteroskedasite (değişen varyans), otokorelasyon ve birimler arası korelasyon testleriyle yapılmaktadır. Varsayımların sağlanmamış olması durumunda havuzlanmış model, sabit etkiler modeli veya tesadüfi etkiler model yapısına uygun düşen yöntemlerle regresyon modellerinin tahminleri yapılmalıdır. Heteroskedasite (değişen varyans), otokorelasyon ve birimler arası korelasyon varlığında model yapısına göre dirençli tahmin ediciler uygulanır (Yerdelen-Tatoğlu, 2012).

Çalışmada sabit etkiler modelinde değişen varyans, birimler arası korelasyon ve otokorelasyon sorunlarına dirençli tahminler sağlayan Driscoll ve Kraay (1998) sabit etkiler tahmincisi kullanılmıştır. Tesadüfi etkiler modelinde değişen varyans, birimler arası korelasyon ve otokorelasyon sorunlarına dirençli tahminler sağlayan Arellano (1987), Froot (1989) ve Rogers (1993) tahmincisi kullanılmıştır.

6.1. Değişkenler Arası Korelasyon Analizi

Korelasyon analizi sonucu bağımlı değişkenler ile bağımsız değişkenler arasındaki ilişkiler Tablo 3'te sunulmuştur. Korelasyon analizinden oluşturulan bağımsız değişkenler arası ilişkiler korelasyon matrisi ile varyans enflasyon faktörü (VIF) bulguları Tablo 4'te yer almıştır. Korelasyon analizlerinde kurulan hipotez aşağıdaki gibidir:

H0: Değişkenler arasında ilişki yoktur.

H1: Değişkenler arasında ilişki vardır.

Tablo: 3
Bağımlı Değişkenlerin Bağımsız Değişkenlerle Arasındaki İlişkileri Gösteren Korelasyon Analizi Bulguları

| BAĞIMSIZ DEĞİŞKENLER | BAĞIMLI DEĞİŞKENLER | | | | |
|----------------------|---------------------|--------------|--------------|--------------|--------------|
| | LNİSSİZLİK | LNEGİTİM | LNKADIN | LNGENC | LNÜZUN |
| LNDEOE | -0.360490*** | -0.417314*** | -0.381526*** | -0.406415*** | -0.103682 |
| LNDA | -0.241928*** | -0.313581*** | -0.223049*** | -0.239467*** | 0.186288*** |
| LNKB | 0.007148 | -0.080639 | -0.111868* | 0.099225 | -0.221311*** |
| LNİYATIRIM | -0.417935*** | -0.375782*** | -0.333701*** | -0.438457*** | -0.386178*** |
| LNENFLASYON | -0.161746** | -0.115028* | -0.060382 | -0.140225** | -0.294469*** |
| LNNUFUS | 0.090437 | 0.078348 | 0.131276** | 0.107997* | 0.012090 |

*** %1, ** %5, * %10 düzeyinde H₀ hipotezinin kabul olduğunu göstermektedir.

Yukarıda Tablo 3'ten bağımlı değişken toplam işsizlik oranı ile işgücü piyasası düzenlemeleri, dışa açıklık, yatırım ve enflasyon arasında negatif ilişkili olduğu; toplam işsizlik oranı ile kamu büyüklüğü ve nüfus arasında anlamlı ilişki (istatistiksel olarak anlamlı ilişki) olmadığı belirlenmektedir. Bağımlı değişken eğitimli işsizlik ile işgücü piyasası düzenlemelerinin, dışa açıklık, yatırım ve enflasyon arasında negatif ilişki olduğu; eğitimli işsizlik ile kamu büyüklüğü ve nüfus arasında anlamlı ilişki olmadığı görülmektedir. Bağımlı değişken kadın işsizlik ile işgücü piyasası düzenlemelerinin, dışa açıklık, kamu büyüklüğü, yatırım ve nüfus arasında negatif ilişki olduğu görülürken; enflasyon ile arasında anlamlı bir ilişki olmadığı görülmektedir. Bağımlı değişken genç işsizlik oranı ile işgücü piyasası düzenlemelerinin, dışa açıklık, yatırım, enflasyon ve nüfus arasında negatif ilişkili olduğu; genç işsizlik oranı ile kamu büyüklüğü arasında anlamlı ilişki olmadığı görülmektedir. Son olarak uzun dönemli işsizlik ile kamu büyüklüğü, yatırım ve enflasyon arasında negatif ilişkili olduğu; uzun dönemli işsizlik oranı ile işgücü piyasası düzenlemelerinin ve nüfus arasında anlamlı ilişki olmadığı görülmektedir.

Bağımsız değişkenler arasındaki ilişkileri gösteren korelasyon matrisi Tablo 4'te sunulmuştur. En yüksek ilişki -0,724 değeriyle dışa açıklık ile nüfus arasındadır. Dışa açıklık ile enflasyon; kamu büyüklüğü ile nüfus; yatırım ile nüfus; ve enflasyon ile nüfus arasında anlamlı ilişki olmadığı diğer tüm değişkenler arasında anlamlı ilişki olduğu belirlenmiştir. Regresyon analizlerinde bağımsız değişkenler arası çoklu doğrusal bağıntı olup olmadığı araştırılması gerekir. Çoklu doğrusal bağıntı sorunu regresyon katsayılarının yanlış tahmin edilmesi demektir. Bağımsız değişkenler arasında çoklu doğrusal bağıntı sorunu olup olmadığını belirleyebilmek için VIF değerleri incelenmiştir. VIF değerinin 10'dan yüksek değerli olması çoklu doğrusal bağıntı sorunu olduğunun bir göstergesidir (Montgomery vd., 2012: 374). Tablo 5'te son sütunda VIF değerleri içinde en yüksek değer 2,28'dir. VIF sonuçlarından bağımsız değişkenler arasında çoklu doğrusal bağıntı sorunu olmadığı söylenebilir.

Tablo: 4
Bağımsız Değişkenler Arasındaki İlişkileri Gösteren Korelasyon Matrisi ve VIF Değerleri

| | (1) | (2) | (3) | (4) | (5) | (6) | VIF |
|----------------|-----------|-----------|----------|----------|-------|-----|----------|
| (1) LNDEOE | 1 | | | | | | 1,194533 |
| (2) LNDA | 0,284*** | 1 | | | | | 2,281068 |
| (3) LNKB | -0,108* | -0,205*** | 1 | | | | 1,086407 |
| (4) LNYATIRIM | 0,196*** | 0,153** | -0,160** | 1 | | | 1,245855 |
| (5) LNNFLASYON | -0,166** | -0,008 | -0,138** | 0,343*** | 1 | | 1,227581 |
| (6) LNNUFUS | -0,224*** | -0,724*** | 0,088 | -0,0718 | 0,025 | 1 | 2,129727 |

*** %1, ** %5, * %10 düzeyinde H_1 hipotezinin kabul olduğunu göstermektedir.

6.2. Birim Kök Testleri

Panel veri setlerinin birim kök incelemeleri için Levin, Lin ve Chu ile Im Pesaran ve Shin Wstat testleri kullanılmıştır. Veri setlerinden belirlenecek regresyon modellerinin doğru tahminler sağlayabilmesi için serilerin durağan olması (birim kök olmaması) gerekmektedir. Verinin durağanlığının incelenmesinde Çalışma değişkenlerinde durağanlık incelemesinde Levin, Lin ve Chu ile Im Pesaran ve Shin Wstat birim kök testleri uygulanmıştır. Hipotezler aşağıdaki gibi kurulmuştur. Levin, Lin ve Chu ile Im Pesaran ve Shin Wstat testleri sonuçları Tablo 5’te sunulmuştur.

H_0 : Veri durağan değildir.

H_1 : Veri durağandır.

Tablo: 5
Değişkenlerin Birim Kök Test İstatistiği Bulguları

| Değişken | Levin, Lin ve Chu | | Im Pesaran ve Shin Wstat | |
|------------|-------------------|-----------|--------------------------|-----------|
| | İstatistik | Olasılık | İstatistik | Olasılık |
| LNİSSİZLİK | -13,5500 | 0,0000*** | -2,04043 | 0,0207** |
| LNNEGİTİM | -14,2103 | 0,0000*** | -2,97515 | 0,0015*** |
| LNKADIN | -8,07130 | 0,0000*** | -1,39474 | 0,0815* |
| LNGENC | -9,57229 | 0,0000*** | -2,55624 | 0,0053*** |
| LNUZUN | -4,76832 | 0,0000*** | -3,05651 | 0,0011*** |
| LNDEOE | -13,0962 | 0,0000*** | -3,03515 | 0,0012*** |
| LNDA | -6,02382 | 0,0000*** | -2,01691 | 0,0219** |
| LNKB | -23,0684 | 0,0000*** | -4,22703 | 0,0000*** |
| LNYATIRIM | -9,00808 | 0,0000*** | -3,39821 | 0,0003*** |
| LNNFLASYON | -31,2066 | 0,0000*** | -6,21812 | 0,0000*** |
| LNNUFUS | -15,8025 | 0,0000*** | -2,65666 | 0,0039*** |

*** %1, ** %5, * %10 düzeyinde H_1 hipotezinin kabul olduğunu göstermektedir.

Tablo 5’te sunulan bulgularından Levin, Lin ve Chu testine göre %1, %5 ve %10 anlamlılık düzeylerinde tüm çalışma değişkenlerinin durağan oldukları ve Im Pesaran ve Shin Wstat testine göre ise LNKADIN için %10, LNİSSİZLİK ve LNDA için %5 ve diğer tüm değişkenler için %1 düzeyinde durağan oldukları belirlenmiştir. Dolayısıyla %10 düzeyinde tüm değişkenlerin seviyelerinde durağan oldukları ve birim kök bulunmadığı yorumu yapılabilir.

6.3. Uygun Modelin Seçimi

Çalışmanın belirlenen beş modelinin her biri için hangi model yapısının uygun olduğuna karar vermek gerekir. Üç temel model yapısı olan havuzlanmış model, sabit etkiler modeli ve tesadüfi etkiler modelinden hangisinin çalışma için uygun model olduğu araştırılacaktır. Çalışmada model seçiminde uygulanan testlerden F testi, Bresuch-Pagan testi ve Hausman testi bulgularına yer verilmiştir.

Model seçiminin ilk aşaması olarak havuzlanmış model ile sabit etkiler modeli arasında seçiminin yapılabilmesi amacıyla F testi uygulanmıştır. F testi sınaması için kurulan hipotezler aşağıdaki gibidir.

H0: Havuzlanmış model uygundur.

H1: Sabit etkiler modeli uygundur.

Tablo 6’dan beş model için de olasılık değerlerinin sıfır olduğu görülmektedir. Dolayısıyla, %1, %5 ve %10 anlamlılık düzeylerinde H0 hipotezi reddedilmektedir. F testleri sonucu tüm modeller için sabit etkiler model yapısının uygun olduğu yorumu yapılır.

Tablo: 6
F Testi Bulguları

| MODEL | İstatistik | s.d. | Olasılık |
|---------|------------|----------|-----------|
| Model 1 | 24,487 | (25,202) | 0,0000*** |
| Model 2 | 28,39 | (25,202) | 0,0000*** |
| Model 3 | 31,88 | (25,202) | 0,0000*** |
| Model 4 | 31,25 | (25,202) | 0,0000*** |
| Model 5 | 45,43 | (25,202) | 0,0000*** |

*** %1, ** %5, * %10 düzeyinde H₁ hipotezinin kabul olduğunu göstermektedir.

Model seçiminin ikinci aşaması olarak Bresuch-Pagan testi uygulanmıştır. Havuzlanmış model ile tesadüfi etkiler modelinden hangisinin çalışma için uygun model olduğu belirlenmesinde Bresuch-Pagan testi hipotezleri aşağıdaki gibi kurulur.

H0: Havuzlanmış model uygundur.

H1: Tesadüfi etkiler modeli uygundur.

Bresuch-Pagan testinde Tablo 7’deki son sütun yorumlanır. Buna göre, tüm çalışma modelleri için olasılık değerleri sıfırdır. Dolayısıyla, Bresuch-Pagan testi için kurulan hipotezde H0 hipotezinin reddedildiği, tüm modeller için tesadüfi etkiler model yapısının uygun olduğu sonucuna ulaşılır.

Tablo: 7
Bresuch-Pagan (LM) Testi Bulguları

| MODEL | Bresuch-Pagan (LM) Testi Sonuçları | | |
|---------|------------------------------------|---------------------|-------------|
| | Yatay Kesit (Tek Yönlü) | Periyot (Tek Yönlü) | Her İkisi |
| Model 1 | 426,7538 | 14,45622 | 441,2100 |
| | (0,0000) | (0,0001) | (0,0000)*** |
| Model 2 | 454,5800 | 0,824476 | 455,4045 |
| | (0,0000) | (0,3639) | (0,0000)*** |
| Model 3 | 344,9907 | 22,59519 | 367,5859 |
| | (0,0000) | (0,0000) | (0,0000)*** |
| Model 4 | 508,6290 | 10,55056 | 519,1796 |
| | (0,0000) | (0,0012) | (0,0000)*** |
| Model 5 | 567,4650 | 0,743167 | 568,2081 |
| | (0,0000) | (0,3886) | (0,0000)*** |

*** %1, ** %5, * %10 düzeyinde H_1 hipotezinin kabul olduğunu göstermektedir. (Olasılık değerleri parantez içinde verilmiştir.)

Model seçiminin son aşamasında sabit etkiler modeli ile tesadüfi etkiler modeli arasında hangi modelin uygun model olduğunu belirlemede Hausman testi uygulanmıştır. Hausman testi için hipotezler aşağıdaki gibi kurulur.

H_0 : Tesadüfi etkiler modeli uygundur.

H_1 : Sabit etkiler modeli uygundur.

Tablo: 8
Hausman Testi Bulguları

| Hausman Test İstatistiği Sonuçları (Test Özeti-Yatay Kesit Tesadüfi) | | | |
|--|----------------------|--------------|-----------|
| MODEL | Ki- Kare İstatistiği | Ki-Kare s.d. | Olasılık |
| Model 1 | 19,206998 | 6 | 0,0038*** |
| Model 2 | 31,268170 | 6 | 0,0000*** |
| Model 3 | 49,207315 | 6 | 0,0000*** |
| Model 4 | 14,685909 | 6 | 0,0228** |
| Model 5 | 8,780012 | 6 | 0,1863 |

*** %1, ** %5, * %10 düzeyinde H_1 hipotezinin kabul olduğunu göstermektedir.

Hausman testi sonuçları Tablo 8'den incelendiğinde, olasılık değerlerine dayalı olarak Model 1, Model 2 ve Model 3 için %1 düzeyinde ve Model 4 için %5 anlamlılık düzeyinde H_0 hipotezinin reddedildiği yorumu yapılır. Dolayısıyla, Model 1, Model 2, Model 3 ve Model 4 için %5 düzeyinde H_1 hipotezi geçerlidir ve uygun modelin sabit etkiler modeli olduğuna karar verilir. Model 5 için olasılık değeri 0,1863 olduğu için %1, %5 ve %10 anlamlılık düzeylerinin tümünde H_0 hipotezi kabul edilmiştir. Buradan, Model 5 için uygun modelin tesadüfi etkiler modeli olduğu belirlenir.

6.4. Model Varsayımlarının İncelenmesi

Havuzlanmış, sabit etkiler ve tesadüfi etkiler modellerinde heteroskedasite (değişen varyans), otokorelasyon ve birimler arası ilişki sorunu olmadığı varsayımı söz konusudur. Veride değişen varyans (değişen varyans), otokorelasyon ve birimler arası ilişkilerden en az birinin olması durumunda havuzlanmış, sabit etkiler ve tesadüfi etkiler modelleriyle elde edilen tahminler yanlış bilgiler sağlayacaktır. Dolayısıyla, veride varsayımların incelenmesi gerekir. Bu üç sorunun olması durumları için geliştirilmiş dirençli tahminler üreten model yapılarının uygulanması gerekir.

Değişen varyans olması hata terimi varyanslarının gözlemlere göre farklılık göstereceği anlamına gelmektedir. Değişen varyans incelemesinde, Geliştirilmiş Wald Testi sabit etkiler modelinde ve Levene, Brown ve Forsythe Testi tesadüfi etkiler modelinde kullanılmaktadır. Testlerin hipotezleri aşağıdaki gibi kurulur.

H0: Hata terimlerinde değişen varyans yoktur.

H1: Hata terimlerinde değişen varyans vardır.

Tablo 9’da sunulan Geliştirilmiş Wald testi ile Levene, Brown ve Forsythe testi bulguları tüm modeller için olasılık değerlerine bakıldığında %1, %5 ve %10 anlamlılık düzeylerinde H0 hipotezi reddedilmektedir. Modellerin tümünde “Hata terimlerinde değişen varyans vardır.” yorumu yapılır.

Tablo: 9
Geliştirilmiş Wald Testi ile Levene, Brown ve Forsythe Testi Bulguları

| MODEL | Panel Veri Modeli | Test | Test İstatistiği | Olasılık |
|---------|-------------------|---------------------------------|------------------|---------------|
| Model 1 | Sabit Etkiler | Geliştirilmiş Wald Testi | 26872,89 | 0,0000*** |
| Model 2 | Sabit Etkiler | Geliştirilmiş Wald Testi | 10563,75 | 0,0000*** |
| Model 3 | Sabit Etkiler | Geliştirilmiş Wald Testi | 7780,00 | 0,0000*** |
| Model 4 | Sabit Etkiler | Geliştirilmiş Wald Testi | 9802,29 | 0,0000*** |
| Model 5 | Tesadüfi Etkiler | Levene, Brown ve Forsythe Testi | W0=3,6633837 | 0,00000012*** |
| | | | W50=2,1466889 | 0,00195378*** |
| | | | W10=3,6633837 | 0,00000012*** |

*** %1, ** %5, * %10 düzeyinde H₀ hipotezinin kabul olduğunu göstermektedir.

Seriler arasında otokorelasyon olup olmadığının araştırılması gerekir. Otokorelasyon varlığının sınanmasında sabit etkiler modelinde ve tesadüfi etkiler modelinde Baltagi-Wu yerel en iyi değişmez testi ile Bhargava, Franzini ve Narendranathan’ın Durbin-Watson testi kullanılmaktadır. Her iki testten belirlenecek istatistik değerinin 2’den küçük çıkması durumunda otokorelasyon olduğu yorumu yapılır (Yerdelen-Tatoğlu, 2012: 214). Baltagi-Wu yerel en iyi değişmez testi ile Bhargava, Franzini ve Narendranathan’ın Durbin-Watson testlerine ait hipotezler aşağıdaki gibi kurulur.

H0: Otokorelasyon yoktur.

H1: Otokorelasyon vardır.

Çalışmanın beş modeli için otokorelasyon testleri bulguları Tablo 10’da sunulmuştur. Modeller için test istatistiği değerlerine bakıldığında tümünün 2’den küçük olduğu görülmektedir. Dolayısıyla, çalışmanın tüm modelleri için otokorelasyonun var olduğu söylenir. H0 hipotezi reddedilmiştir.

Tablo: 10
Modellerde Otokorelasyonun Test Edilmesi

| MODEL | Panel Veri Modeli | Otokorelasyonun Varlığını Sınamak İçin Kullanılan Test | Test İstatistiği | Olasılık | Karar |
|---------|-------------------|--|------------------|----------|--------------------|
| Model 1 | Sabit Etkiler | Durbin-Watson | 0,38356703 | - | H ₀ Red |
| | | Baltagi-Wu Testi | 0,78376032 | | |
| Model 2 | Sabit Etkiler | Durbin-Watson | 0,47032726 | - | H ₀ Red |
| | | Baltagi-Wu Testi | 0,85009043 | | |
| Model 3 | Sabit Etkiler | Durbin-Watson | 0,42364652 | - | H ₀ Red |
| | | Baltagi-Wu Testi | 0,83806689 | | |
| Model 4 | Sabit Etkiler | Durbin-Watson | 0,42432671 | - | H ₀ Red |
| | | Baltagi-Wu Testi | 0,80124473 | | |
| Model 5 | Tesadüfi Etkiler | Durbin-Watson | 0,72701541 | - | H ₀ Red |
| | | Baltagi-Wu Testi | 0,12134525 | | |

Yatay kesit bağımlılık (birimler arası korelasyon) incelemesinde Pesaran (2004) testi kullanılmaktadır. Pesaran testi için kurulan hipotez test aşağıdaki gibidir.

H₀: Birimler arası korelasyon yoktur.

H₁: Birimler arası korelasyon vardır.

Tablo 11’de Pesaran Testi bulguları verilmiştir. Pesaran Testleri sonucu tüm modeller için olasılık değerleri sıfır olduğu için H₀ hipotezi reddedilir. Tüm modellerde birimler arası korelasyon vardır yorumu yapılır.

Tablo: 11
Birimler Arası Korelasyon İncelemesi

| MODEL | Panel Veri Modeli | Test | Pesaran’ın Yatay Kesit Bağımsızlık Test değeri | Olasılık | Karar |
|---------|-------------------|---------------|--|----------|--------------------|
| Model 1 | Sabit Etkiler | Pesaran Testi | 16,424 | 0,0000 | H ₀ Red |
| Model 2 | Sabit Etkiler | Pesaran Testi | 13,877 | 0,0000 | H ₀ Red |
| Model 3 | Sabit Etkiler | Pesaran Testi | 11,664 | 0,0000 | H ₀ Red |
| Model 4 | Sabit Etkiler | Pesaran Testi | 20,060 | 0,0000 | H ₀ Red |
| Model 5 | Tesadüfi Etkiler | Pesaran Testi | 9,655 | 0,0000 | H ₀ Red |

6.5. Panel Regresyon Modelleri

Bu bölümde çalışmada kurulan modeller için regresyon analizi bulgularına yer verilecektir. Varsayım incelemeleri bulgularına dayalı olarak Model 1, Model 2, Model 3 ve Model 4 sabit etkiler modellerinde değişen varyans, birimler arası korelasyon ve otokorelasyon olduğu belirlenmiştir. Sabit etkiler modelinde bu sorunlara dirençli standart hatalar üreten Driscoll ve Kraay sabit etkiler tahmincisi kullanılmaktadır. Model 5 tesadüfi etkiler modelinde değişen varyans, birimler arası korelasyon ve otokorelasyon olduğu belirlenmiştir. Tesadüfi etkiler modelinde bu sorunlara dirençli standart hatalar üreten Arellano, Froot ve Rogers tahmincisi kullanılmaktadır. Dolayısıyla panel regresyon modelleri Driscoll ve Kraay ile Arellano, Froot ve Rogers tahmincisiyle belirlenecektir.

6.5.1. Model 1 için Panel Regresyon Modeli

Panel regresyon analizinde Model 1 için Driscoll ve Kraay tahmin edicisi sonuçları Tablo 12’de sunulmuştur. Model 1’de toplam işsizlik üzerinde işgücü piyasası

düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun etkisi araştırılmaktadır.

Tablo 12’deki Driscoll ve Kraay dirençli tahmincisi bulgularından $F = 296,29$ değerine karşılık gelen olasılık değeri 0,000’dır. Dolayısıyla, Model 1 için kurulan panel regresyon modelinin geçerli olduğu ve Model 1 hipotezi “ H_0 : İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun toplam işsizlik üzerinde etkisi yoktur.” hipotezinin reddedildiği söylenebilir. Model 1 için H_1 hipotezi kabul edilir.

Tablo: 12
Model 1 için Sabit Etkiler Driscoll ve Kraay Tahmin Edicisi Bulguları

| Driscoll-Kraay standard hatalarla regresyon | | | Metot: Sabit Etkiler Regresyonu | | | |
|---|------------|---------------|---------------------------------|----------|---------------------|------------|
| Gözlem Sayısı: 234 | | | Grup Sayısı: 26 | | | |
| Grup değişkeni (i): id. | | | F (6, 25) = 296,29 | | | |
| $R^2 = 0,2831$ | | | Olasılık Değeri > F = 0,0000 | | | |
| LNİSSİZLİK | Katsayı | Standart Hata | t değeri | P> t | [95% Güven Aralığı] | |
| LNDEOE | -1,332787 | 0,999355 | -1,33 | 0,194 | -3,390998 | 0,7254226 |
| LNDA | -0,7414551 | 0,4017668 | -1,85 | 0,077* | -1,568909 | 0,0859992 |
| LNKB | 0,8058733 | 0,3785178 | 2,13 | 0,043** | 0,0263012 | 1,585445 |
| LNİYATIRIM | -0,999188 | 0,3391537 | -2,95 | 0,007*** | -1,697688 | -0,3006879 |
| LNENFLASYON | -0,0937831 | 0,0923371 | -1,02 | 0,320 | -,2839549 | 0,0963888 |
| LNNUFUS | 2,335377 | 0,5962586 | 3,92 | 0,001*** | 1,107359 | 3,563394 |
| Sabit (c) | -28,60785 | 7,525393 | -3,80 | 0,001*** | -44,10668 | -13,10901 |

*** %1, ** %5, * %10 düzeyinde anlamlı olduğunu göstermektedir.

Model 1’de $R^2 = 0,2831$ değeri bağımsız değişkenlerin bağımlı değişkendeki değişiminin %28,31’ini açıkladığını ifade eder. Regresyon katsayılarına ait t değerlerinin olasılık değerleri incelendiğinde Model 1’e LNKB, LNDA, LNİYATIRIM ve LNNUFUS değişkenlerinin anlamlı katkısı olduğu ve diğer bağımsız değişkenlerin ise anlamlı katkısının olmadığı tespit edilmiştir. Toplam işsizlik üzerinde kamu büyüklüğü ve nüfus pozitif etkiye sahip iken dışa açıklık ve yatırım negatif etkiye sahiptir. Kamu büyüklüğü %1 azaldığında işsizlik %0,806 azalacak; dışa açıklık %1 artırıldığında işsizlik %0,74 azalacak; yatırım %1 artırıldığında işsizlik %0,999 oranında azalacak ve nüfus %1 azaldığında işsizlik %2,335 oranında azalacaktır³.

Model 1 için kurulacak panel regresyon modeli aşağıdaki gibidir.

$$LNİSSİZLİK_{it} = -28,60785 - 1,332787.LNDEOE_{it} - 0,7414551.LNDA_{it} + 0,8058733.LNKB_{it} + 0,999188.LNİYATIRIM_{it} - 0,0937831.LNENFLASYON_{it} - 0,0937831.LNNUFUS_{it}$$

³ Tüm modellerde yorumlarda diğer değişkenler sabit tutulduğunda her bir bağımsız değişkendeki %1’lik değişimin toplam bağımlı değişkende oluşturacağı değişiklik belirtilmektedir. Aşağıdaki tüm yorumlar da bu yapı dikkate alınarak yapılmıştır.

6.5.2. Model 2 için Panel Regresyon Modeli

Model 2 için Driscoll ve Kraay tahmin edicisi bulguları Tablo 13’te yer almaktadır. Model 2’de eğitilmiş işsizlik üzerinde işgücü piyasası düzenlemelerinin, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun etkisi araştırılmaktadır.

Tablo: 13
Model 2 için Sabit Etkiler Driscoll ve Kraay Tahmin Edicisi Bulguları

| Driscoll-Kraay standard hatalarla regresyon | | | Metot: Sabit Etkiler Regresyonu | | | |
|---|------------|---------------|---------------------------------|----------|---------------------|------------|
| Gözlem Sayısı: 234 | | | Grup Sayısı: 26 | | | |
| Grup değişkeni (i): id. | | | F (6, 25) = 619,14 | | | |
| R ² = 0,2166 | | | Olasılık Değeri > F = 0,0000 | | | |
| LNNEGITIM | Katsayı | Standart Hata | t değeri | P> t | [95% Güven Aralığı] | |
| LNDEOE | -0,6824553 | 0,9121554 | -0,75 | 0,461 | -2,561074 | 1,196164 |
| LNDA | -0,6106235 | 0,3930305 | -1,55 | 0,133 | -1,420085 | 0,1988379 |
| LNKB | 0,04183856 | 0,5154035 | 0,81 | 0,425 | -,6431078 | 1,479879 |
| LNİYATIRIM | -0,8698119 | 0,4120963 | -2,11 | 0,045* | -1,71854 | -0,0210836 |
| LNENFLASYON | -0,0515964 | 0,0765061 | -0,67 | 0,506 | -0,2091637 | 0,105971 |
| LNNUFUS | 3,37687 | 0,7126366 | 4,74 | 0,000*** | 1,909168 | 4,844573 |
| Sabit (c) | -47,28726 | 8,828335 | -5,36 | 0,000*** | -65,46955 | -29,10496 |

*** %1, ** %5, * %10 düzeyinde anlamlı olduğunu göstermektedir.

Yukarıda Tablo 13’teki bulgulardan F = 619,14 değerine karşılık gelen olasılık değeri 0,000’dır. Dolayısıyla Model 2 için kurulan H₀ hipotezi reddedilir. İşgücü piyasası düzenlemelerinin, dışa açıklık, kamu büyüklüğü, yatırım, enflasyon ve nüfusun eğitilmiş işsizlik üzerinde birlikte etkisinin olduğu yorumu yapılır. Model 2’de R² = 0,2166 değerinden bağımsız değişkenlerin bağımlı değişkendeki değişimin %21,66’sını açıkladığı söylenir. Regresyon katsayılarına ait t değerlerinin olasılık değerleri incelendiğinde Model 2’ye LNİYATIRIM ve LNNUFUS değişkenlerinin anlamlı katkısı olduğu ve diğer bağımsız değişkenlerin ise anlamlı katkısının olmadığı belirlenmiştir. Regresyon katsayılarından eğitilmiş işsizlik üzerinde yatırımın negatif ve nüfusun pozitif etkiye sahip olduğu saptanmıştır. Yatırım %1 azaltıldığında eğitilmiş işsizlik %08,698 oranında azalacak ve nüfus %1 azaldığında eğitilmiş işsizlik %3,377 oranında azalacaktır.

Model 2 için kurulacak panel regresyon modeli aşağıdaki gibidir.

$$LNNEGITIM_{it} = -47,28726 - 0,6824553.LNDEOE_{it} - 0,6106235.LNDA_{it} + 0,4183856.LNKB_{it} - 0,8698119.LNİYATIRIM_{it} - 0,0515964.LNENFLASYON_{it} + 3,37687.LNNUFUS_{it}$$

6.5.3. Model 3 için Panel Regresyon Modeli

Model 3 için Driscoll ve Kraay tahmin edicisi sonuçları aşağıda Tablo 14’te sunulmaktadır. Model 3 için kurulan hipotezde “H₀: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun kadın işsizlik üzerinde etkisi yoktur.” sınanmaktadır.

Tablo: 14
Model 3 İçin Sabit Etkiler Driscoll ve Kraay Tahmin Edicisi Bulguları

| Driscoll-Kraay standard hatalarla regresyon | | | Metot: Sabit Etkiler Regresyonu | | | |
|---|------------|---------------|---------------------------------|----------|---------------------|------------|
| Gözlem Sayısı: 234 | | | Grup Sayısı: 26 | | | |
| Grup değişkeni (i): id. | | | F (6, 25) = 968,73 | | | |
| R ² = 0.2748 | | | Olasılık Değeri > F = 0,0000 | | | |
| LNKADIN | Katsayı | Standart Hata | t değeri | P> t | [95% Güven Aralığı] | |
| LNDEOE | -3.5076320 | 0.6579992 | -5.33 | 0,000*** | -4.862806 | -2.152457 |
| LNDA | -0.2053863 | 0.113333 | -1.81 | 0,082* | -0.4388 | 0.0280273 |
| LNKB | -0.6111801 | 0.0635884 | -9.61 | 0,000*** | -0.7421428 | -0.4802174 |
| LNyatırım | -0.7247482 | 0.181948 | -3.98 | 0,001*** | -1.099477 | -0.3500193 |
| LNENFLASYON | -0.0974186 | 0.118893 | -0.82 | 0,420 | -0.3422838 | 0.1474466 |
| LNNUFUS | -0.0310239 | 0.0221258 | -1.40 | 0,173 | -0.0765928 | 0.014545 |
| Sabit (c) | 14.90372 | 1.841799 | 8.09 | 0,001*** | 11.11046 | 18.69698 |

*** %1, ** %5, * %10 düzeyinde anlamlı olduğunu göstermektedir.

Tablo 14'deki bulgulardan F = 968,73 değerine karşılık gelen olasılık değeri 0,000'dır. Dolayısıyla Model 3' ait H0 hipotezi reddedilir. İşgücü piyasası düzenlemelerinin (dünya ekonomik özgürlükler endeksi), dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun birlikte kadın işsizlik üzerinde etkisi olduğu söylenir. R² = 0,2748 değerinden Model 3'te bağımsız değişkenler bağımlı değişkendeki değişimin %27,69'unu açıklıyordu. Model 3'e LNDEOE, LNDA, LNKB ve LNYATIRIM değişkenlerinin anlamlı katkısı olduğu ve diğer bağımsız değişkenlerin anlamlı katkısının olmadığı belirlenmiştir. Regresyon katsayılarından kadın işsizlik üzerinde işgücü piyasası düzenlemeleri (dünya ekonomik özgürlükler endeksi), dışa açıklığın, kamu büyüklüğünün ve yatırımın negatif etkisi olduğu tespit edilmiştir.

Model 3 için kurulacak panel regresyon modeli aşağıdaki gibidir.

$$LNKADIN_{it} = 14.90372 - 3.507632.LNDEOE_{it} - 0.2053863.LNDA_{it} - 0.6111801.LNKB_{it} - 0.7247482.LNYATIRIM_{it} - 0.0974186.LNENFLASYON_{it} - 0.0310239.LNNUFUS_{it}$$

6.5.4. Model 4 için Panel Regresyon Modeli

Tablo 15'te Model 4 için Driscoll ve Kraay tahmin edicisi sonuçları yer almaktadır. Model 4 için kurulan hipotez “H0: İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun genç işsizlik üzerinde etkisi yoktur.” sınanmaktadır.

Tablo: 15
Model 4 için Sabit Etkiler Driscoll ve Kraay Tahmin Edicisi Bulguları

| Driscoll-Kraay standard hatalarla regresyon | | | Metot: Sabit Etkiler Regresyonu | | | |
|---|------------|---------------|---------------------------------|----------|---------------------|------------|
| Gözlem Sayısı: 234 | | | Grup Sayısı: 26 | | | |
| Grup değişkeni(i): id. | | | F (6, 25) = 308,02 | | | |
| R ² = 0.2637 | | | Olasılık Değeri > F = 0,0000 | | | |
| LNGENC | Katsayı | Standart Hata | t değeri | P> t | [95% Güven Aralığı] | |
| LNDEOE | -1.634807 | 0.9444709 | -1.73 | 0,096* | -3,579982 | 0,3103668 |
| LNDA | -0,8368539 | 0,4305022 | -1,94 | 0,063** | -1,72349 | 0,0497821 |
| LNKB | 0,7839439 | 0,3387087 | 2,31 | 0,029** | 0,0863603 | 1,481528 |
| LNYATIRIM | -0,8509197 | 0,3272826 | -2,60 | 0,015** | -1,524971 | -0,1768685 |
| LNENFLASYON | -0,0178247 | 0,1014691 | -0,18 | 0,862 | -0,2268042 | 0,1911549 |
| LNNUFUS | 1,92404 | 0,6252928 | 3,08 | 0,005*** | 0,636225 | 3,211854 |
| Sabit (c) | -19,92836 | 8,682187 | -2,30 | 0,030 | -37,80966 | -2,047058 |

*** %1, ** %5, * %10 düzeyinde anlamlı olduğunu göstermektedir.

Tablo 15'teki bulgulardan $F = 308,02$ değerine karşılık gelen olasılık değeri $0,000^*$ 'dır. Model 4 H0 hipotezi reddedilir. İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun genç işsizlik üzerinde etkisi vardır yorumu yapılır. $R^2 = 0,2637$ değerinden Model 4'te bağımsız değişkenler bağımlı değişkendeki değişimin %26,37'sini açıklıyordur. Model 4'e LNDEOE, LNDA, LNKB, LNYATIRIM ve LNNUFUS değişkenlerinin anlamlı katkısı olduğu ve enflasyonun anlamlı katkısı olmadığı belirlenmiştir. Regresyon katsayılarından genç işsizlik üzerinde kamu büyüklüğü ile nüfusun pozitif ve işgücü piyasası düzenlemeleri, dışa açıklık ile yatırımın negatif etkisi olduğu belirlenmiştir. İşgücü piyasa düzenlemelerinde %1 artırma genç işsizlik oranında %1,63'lük azalışa; dışa açıklıkta %1 artış genç işsizlik oranında %0,837'lik azalışa neden olacaktır. Kamu büyüklüğünde %1 azalış genç işsizlik oranında %0,784'lik azalışa; yatırımda %1 artış genç işsizlik oranında %0,85'lik azalışa ve nüfusta %1'lik azalış genç işsizlik oranında %1,93'lük azalışa neden olacaktır.

Model 4 için kurulacak panel regresyon modeli aşağıdaki gibidir.

$$LNGENC_{it} = -19,92836 - 1,634807.LNDEOE_{it} - 0,8368539.LNDA_{it} + 0,7839439.LNKB_{it} - 0,8509197.LNYATIRIM_{it} - 0,0178247.LNENFLASYON_{it} + 1,92404.LNNUFUS_{it}$$

6.5.5. Model 5 için Panel Regresyon Modeli

Model 5 için Arellano, Froot ve Rogers tahmin edici sonuçları Tablo 16'da sunulmaktadır. Model 5 için kurulan hipotezde "İşgücü piyasası düzenlemelerinin, dışa açıklığın, kamu büyüklüğünün, yatırımın, enflasyonun ve nüfusun uzun dönem işsizlik üzerinde etkisi yoktur." sınanmaktadır.

Tablo: 16
Model 5 için Tesadüfi Etkiler Arellano, Froot ve Rogers Tahmin Edicisi Bulguları

| Tesadüfi etkiler GLS regresyon | | | | | | |
|--------------------------------|------------|---------------|--|----------|---------------------|------------|
| R^2 grup içi = 0,1061 | | | Gözlem sayısı = 234, Grup sayısı = 26 | | | |
| R^2 gruplar arası = 0,2830 | | | Grup başına gözlem minimum = 9, Ortalama = 9, Maksimum = 9 | | | |
| R^2 genel = 0,2625 | | | Wald ki-kare(6) = 29,62 | | | |
| | | | Olasılık > ki-kare = 0,0000 | | | |
| LNNUZUN | Katsayı | Standart Hata | Z | P > z | [95% Güven Aralığı] | |
| LNDEOE | -0,5134338 | 0,9656448 | -0,53 | 0,595 | -2,406063 | 1,379195 |
| LNDA | 0,393078 | 0,1520291 | 2,59 | 0,010** | 0,0951064 | 0,6910496 |
| LNKB | -0,0288852 | 0,2666627 | -0,11 | 0,914 | -0,5515344 | 0,4937641 |
| LNYATIRIM | -0,4181957 | 0,1597039 | -2,62 | 0,009*** | -0,7312096 | -0,1051818 |
| LNENFLASYON | -0,0500884 | 0,0483534 | -1,04 | 0,300 | -0,1448593 | 0,0446825 |
| LNNUFUS | 0,0997541 | 0,0514471 | 1,94 | 0,053* | -0,0010803 | 0,2005885 |
| Sabit (c) | 2,685528 | 3,256012 | 0,82 | 0,409 | -3,696138 | 9,067193 |

*** %1, ** %5, * %10 düzeyinde anlamlı olduğunu göstermektedir.

Tablo 16'daki Arellano, Froot ve Rogers tahmin edicisi bulgularından Wald ki-kare değeri 29,62 ve karşılık gelen olasılık değeri $0,000^*$ 'dır. Dolayısıyla, Model 5 için H0 hipotezi reddedilir, H1 hipotezi kabul edilir.

Model 5'te $R^2 = 0,2625$ değeri bağımsız değişkenlerin bağımlı değişkendeki değişimin %26,25'ini açıkladığını ifade eder. Model 5'e LNDA, LNYATIRIM ve

LNUFUS değişkenlerinin anlamlı katkısı olduğu ve diğer bağımsız değişkenlerin ise anlamlı katkısının olmadığı belirlenmiştir. Uzun dönem işsizlik üzerinde dışa açıklık ve nüfusun pozitif ve yatırımın negatif etkisi vardır. Dışa açıklıkta %1 artış uzun dönem işsizlik oranında %0,513’lük azalışa; yatırımda %1 artış uzun dönem işsizlik oranında %0,418’lik artış ve nüfusta %1’lik azalış olması durumunda genç işsizlik oranında %0,997 düzeyinde azalışa neden olacaktır.

Model 5 için kurulacak panel regresyon modeli aşağıdaki gibidir.

$$LNUZUNit = 2,685528 - 0,5134338.LNDEOEit + 0,393078.LNDAit - 0,0288852.LNKBit - 0,4181957.LNYATIRIMit - 0,0500884.LNENFLASYONit + 0,0997541.LNUFUSit$$

7. Sonuç

Çalışmada, OECD üyesi ülkelerin 2010-2018 dönemine ait panel verisinde işsizlik üzerinde temel makroekonomik faktörler ve nüfusun etkisi panel regresyon analizleriyle araştırılmıştır. İşsizliğin toplam, eğitimli, kadın, genç ve uzun dönem işsizlik boyutları ayrı ayrı incelenmiştir. Temel makroekonomik faktörler olarak dünya ekonomik özgürlükler endeksi, dışa açıklık, kamu büyüklüğü, gayri safi sabit sermaye oluşumu yatırım değeri, enflasyon ile demografik faktörlerden nüfus çalışma kapsamına alınmıştır.

Veride korelasyon analizi sonucu dünya ekonomik özgürlükler endeksi ile uzun dönem işsizlik arasında anlamlı ilişki olmadığı, diğer işsizlik boyutları arasında ise anlamlı ve negatif ilişki olduğu belirlenmiştir. Ülkelerin dünya ekonomik özgürlükler endeksi değerinde artış olması durumunda toplam, eğitimli ve genç işsizlik oranlarının her birinde ayrı ayrı azalış sağlanabileceği yorumu yapılabilir. Korelasyon analizi sonucu dışa açıklık ile toplam, eğitimli, kadın ve genç arasında negatif ve anlamlı ilişki varken dışa açıklık ile uzun dönem işsizlik arasında pozitif ilişki saptanmıştır. Ülkelerin dışa açıklığının artmasıyla toplam, eğitimli, kadın ve genç işsizliğin her birinde azalış sağlanabilir. Ülkelerin dışa açıklığında artış olmasıyla uzun dönem işsizlikte artış gözlenebilir. Kamu büyüklüğü ile kadın işsizlik ve uzun dönem işsizlik arasında negatif ve anlamlı ilişki belirlenirken kamu büyüklüğü ile toplam, eğitimli ve genç işsizlik arasında anlamlı ilişki olmadığı belirlenmiştir. Kamu harcamalarındaki artışlar -kamu büyüklüğü kapsamında- kadın ve uzun dönem işsizliğin her birinde azalış sağlayabileceği yorumu yapılabilir. Yatırım-gayri safi sabit sermaye oluşumu- ile işsizliğin tüm boyutları arasında negatif anlamlı ilişki vardır. Yatırımın yükselmesiyle işsizliğin tüm boyutlarının her birinde azalış gözlenebileceği söylenebilir. Enflasyon ile kadın işsizlik arasında anlamlı ilişki belirlenmezken enflasyon ile toplam, eğitimli, genç ve uzun dönem işsizlik arasında anlamlı ve negatif ilişki belirlenmiştir. İşsizlik ile enflasyon arasındaki negatif ilişki çalışmada enflasyon ile toplam, eğitimli, genç ve uzun dönem işsizlik boyutlarının her biri arasında belirlenmiştir. Nüfus ile kadın işsizlik ve genç işsizlik arasında pozitif ve anlamlı ilişki olduğu belirlenmişken nüfus ile toplam, eğitimli ve uzun dönem işsizlik arasında anlamlı ilişki yoktur. Nüfus artışının kadın işsizlik ve genç işsizlik oranının her birinde artışa neden olabileceği söylenebilir.

Kamu harcamalarını yansıtan kamu büyüklüğü işsizlikle ilişkilendirilmekte ve bazı ekonomilerde sürdürülebilir büyüme sağlarken bazı ekonomilerde istikrarsızlığın nedenleri olarak görülmektedir (Bölükbaş, 2018: 3). Literatürde kamu harcamalarındaki artışın işsizlik üzerinde pozitif, negatif etkileri olduğu veya etkisi olmadığını belirleyen çalışmalar mevcuttur. Çalışmada kamu büyüklüğünün toplam işsizlik ve genç işsizlik üzerinde anlamlı ve pozitif etkisi olduğu, eğitilmiş işsizlik ve uzun dönem işsizlik üzerinde anlamlı etkisi olmadığı, kadın işsizlik üzerinde ise anlamlı ve negatif etkisi olduğu belirlenmiştir. Toplam işsizlik için elde edilen bulgu literatürde yer alan OECD ülkelerine dayalı yürütülen panel veri çalışmalardan Abrams (1999), Abrams ve Wang (2007), Aysu ve Dökmen (2011), Wang ve Abrams (2011), Brückner ve Pappa (2012) bulgularıyla tutarlı olmuştur. Ding (2012) işsizlik üzerine yapılan kamu harcamalarının, toplam işsizlik oranı ve uzun süreli işsizlik oranı üzerinde pozitif etkisi olduğunu ancak genç işsizlik oranı üzerinde anlamlı etkisinin olmadığını göstermiştir.

Politikanın anlamı, kamu sektörünün azaltılması istihdamın daha hızlı büyüyebileceği ek bir kanal olarak görülebileceğidir. OECD ülkeleri, işsizlikle mücadele aracı olarak kamu sektörünün boyutunu küçültmeyi düşünmelidir (Aysu ve Dökmen, 2011: 188). Çalışma bulgularından kamu büyüklüğünde daralmaya gidileceği politikaların, bununla birlikte, kadın işsizliği üzerinde negatif etkisi dikkate alındığında kamu harcamalarının kadın istihdamına yönlendirilmesi politikaları izlenebileceği önerilebilir.

Çalışmada yatırım ile işsizlik boyutları arasında negatif ilişki olduğu ve yatırımın işsizliğin tüm boyutları üzerinde negatif etkisi olduğu belirlenmiştir. Literatürde yatırımlar ile işsizlik oranları arasında negatif ilişkiyi tespit eden çok sayıda çalışma vardır. Bunlardan bazıları; Rowthorn (1995), Monastiriotis (2006), Bande-Ramudo vd. (2014), Bande ve Karanassou (2014), Yıldırım ve Yıldırım (2017). OECD ülkelerinde yatırımların işsizlik üzerinde negatif etkisi olduğunu belirleyen çalışmalar şöyledir; Abiad vd. (2015) artan kamu yatırımının hem kısa vadede hem de uzun vadede işsizliği azalttığını ve yatırım etkinliğinin yüksek olduğu ülkelerde işsizliğin azaltılması üzerindeki etkilerin daha büyük olduğunu tespit etmiştir. Rowthorn (1995), hizmet sektörüne yapılan yatırımın bu sektördeki istihdam üzerinde fazla etkisi olmadığını, üretime yapılan yatırımın hizmet istihdamı üzerinde önemli etkisi olduğunu belirlemiştir. Kovacı vd. (2018a) yatırımlardaki artışın işsizlikle mücadelede en önemli etken olduğunu belirlemiştir. İşsizlik sorunu nihayetinde bir yatırım sorunudur. Gerekli sayıda kabul edilebilir iş yaratmak için hem sabit sermayeye hem de eğitim ve öğretime önemli miktarda yatırım yapılması gereklidir. Bu tür yatırımlar ikame olarak değil tamamlayıcı olarak görülmelidir (Rowthorn, 1995: 38). Yeni iş olanakları sağlayan yatırımların yetersizliği daha yavaş istihdam artışına yol açması anlamına gelmektedir (Monastiriotis, 2006: 30). Bu nedenle, istihdama yönelik yatırımları artırıcı politikalar izlenmesi işsizliğin azaltılmasında öncü olabilecektir.

Eğitime ve işgücünün mesleki kazanımların artırılmasına yönelik yatırımlar genç işsizliği soru için bir çözüm önerisi olabilir. Bassanini ve Duval (2006: 53), belirli grupların istihdam oranını etkileyen politikaların muhtemelen genel istihdam oranını da etkileyeceğini vurgulamıştır. Anneler için işgücü piyasasına yeniden dönüşü artıran aile dostu politikalar-

örneğin çocuk yardımlarının yerine kamu çocuk bakımı sübvansiyonlarının ikame edilmesi gibi-hepsi genel istihdam oranını artırmaya katkıda bulunacağını belirtmiştir.

Literatürde enflasyonun işsizlik üzerinde negatif etkisi olduğunu belirleyen çok sayıda çalışma olmakla birlikte enflasyonun işsizlik üzerinde pozitif etkisini veya etkisi olmadığını belirleyen çalışmalar yer almaktadır. Bu çalışmada, enflasyon ile toplam, eğitilmiş, genç ve uzun dönem işsizlik arasında negatif ilişki olduğu kadın işsizlik arasında ilişki olmadığı belirlenmiştir. Buna karşın, enflasyonun işsizlik üzerinde anlamlı etkisi olmadığı bulgusuna ulaşılmıştır. OECD ülkelerinden panel veri analizleri çalışmalarından Marelli vd. (2013) ayrı kurulan on regresyon modelinin yedisinde enflasyonun toplam işsizlik ve genç işsizlik üzerinde negatif etkisi olduğunu, diğer modellerde ise etkisi olmadığını belirlemiştir. Clifton vd. (2001) çalışma bulguları enflasyon hedeflemesinin benimsenmesinin güvenilirliği artırıcı etkilerinin işsizlik-enflasyon dengesinde bir iyileşmeye neden olması gerektiğini, yani enflasyonun belirli bir miktarda düşürülmesinin işsizlikte daha küçük bir artışla gerçekleşmesi gerektiği hipotezini desteklemiştir. Bhattacharai (2016) ve Turner vd. (2018) çalışmalarında çoğu OECD ülkesi için enflasyon ile işsizlik arasında bir Phillips eğrisi ilişkisi olduğuna dair kanıtlar belirlenmiş, diğer OECD ülkeleri için ilişki belirlenmemiştir.

İşsizliğin düşmesine izin vererek ve enflasyonist baskıları yakından izleyerek işsizlik ve enflasyon sorunlarının ele alınması makroekonomik ve yapısal politika girişimlerinin karşılıklı olarak güçlendirilmesini sağlamayı içerir (OECD, 1996: 9). İşsizlik oranlarındaki düşüşler, mikro ekonomik yapısal ve kurumsal reformlarla makro teşvikin tamamlanmasını gerektirir. Beklenen enflasyonu ekonominin istikrarlı büyümesine sabitleyerek daha dinamik ve esnek işgücü piyasaları ile düşük enflasyon ve düşük işsizlik oranları ekonomik büyümeyi mümkün kılar (Bhattacharai, 2016: 101). Ekonomik gelişimi ve bireylerin refahını azaltan işsizlik ve enflasyon arasında denge kurulmasını sağlayan politikalar izlenmesi öneriler arasında yer alabilir.

Hem nüfus artış hızının hem de işgücüne katılım oranının düşük olduğu birçok gelişmiş ülkede, 2007-2013 döneminde işsizlik oranı hızla yükselmiş ve ardından yeniden düşmeye başlamıştır (Aktugan & Dogan, 2021: 22). Negatif nüfus eğilimleri Avrupa ülkelerinin karakteristiğidir. Hristov ve Roeger (2020), çoğu AB-28 ülkesi için 2000 ve 2007'ye kıyasla 2018'deki doğal işsizlik oranındaki düşüş büyük ölçüde yaşanan nüfustan kaynaklandığını belirlemiştir (Bosna, 2022: 364). Tüm ülkelerin işsizlik oranını düşürmede önemli bir etkiye sahip olabilecek olumsuz demografik eğilimlerle karşı karşıya olduğu göz önüne alındığında (Bosna, 2022: 362), işsizliğin belirleyicileri incelenirken demografik faktörlerden nüfusun analizlere dâhil edilmesi gerekli görünmektedir. Çalışmaya nüfus değişkeni eklenerek işsizlik üzerindeki etkisi araştırılmıştır. Çalışma bulgularından nüfusun toplam işsizlik, eğitilmiş işsizlik, genç işsizlik ve uzun dönem işsizlik üzerinde pozitif etkisi olduğu ve kadın işsizlik üzerinde ise anlamlı etkisi olmadığı görülmüştür. Literatürde nüfusun işsizlik üzerindeki etkisini araştıran çalışmalarda etkinin yönü konusunda belirsizlik söz konusudur. Felbermayr vd. (2011) panel verilere dayalı yürütülen çalışmasında 20 OECD ülkesinde nüfusun işsizlik üzerindeki etkisi olmadığı; daha geniş kapsamlı alınan

ülkeler grubunda ise kurulan sekiz regresyon modelinden altısında nüfusun işsizlik üzerinde negatif etkisi olduğu bulgusuna ulaşmıştır. Kovacı (2018a), OECD ülkelerinde panel veri çalışmasında nüfusun toplam işsizlik, eğitilmiş işsizlik, genç işsizlik, uzun ve kadın işsizlik üzerinde pozitif etkisi olduğunu belirlemiştir. Nüfusun ve işsizliğin yoğun olduğu ülkelerde aktif işgücü piyasası önlemleriyle, dışa açıklığa yönelme ve pazar genişliğinin artırılmasıyla istihdam olanaklarının artırılması çabaları işsizlik sorununa çözüm olarak önerilebilir.

Literatürde çoğu makalede dışa açıklığın işsizlik oranı için önemli olduğu sonucuna varılmasına karşın ilişkinin anlamlılığında ve işaretinde farklılıklar olduğu görülmektedir. OECD ülkeleri panel verisinde yürütülen çalışmalardan Felbermayr vd. (2011) uzun dönemde daha yüksek dışa açıklığın daha düşük yapısal işsizlik oranıyla nedensel olarak ilişkili olduğunu belirlemiştir. Diğer bir çalışma olarak Kim (2010), uluslararası ticaretteki artışın katı işgücü piyasası kurumlarıyla etkileşime girdiği için daha yüksek toplam işsizliğe yol açtığını, ancak işgücü piyasasının esnekliği durumunda toplam işsizliği azaltabileceğini belirlemiştir. Güneri ve Erünlü (2020), uluslararası ticaretin artmasının ve ihracatta farklı kalemlere yer verilmesinin işsizlik oranlarını azalttığını göstermiştir.

Bu çalışmada, dışa açıklık ile uzun dönem işsizlik arasında pozitif anlamlı ilişki varken diğer işsizlik boyutları arasında negatif anlamlı ilişki olduğu belirlenmiştir. Çalışmada dışa açıklığın toplam işsizlik, kadın işsizlik ve genç işsizlik üzerinde negatif anlamlı etkisi varken uzun dönem işsizlik üzerinde pozitif anlamlı etkisi olduğu belirlenmiştir. Bulgular, Felbermayr vd. (2011), Kim (2010), Güneri ve Erünlü (2020) bulgularına paralel olarak dışa açıklığın toplam işsizlik oranını azalttığını göstermektedir. Buradan, bireylerin uzun dönem işsizliğine düşmesini engelleyecek girişimlerin yapılmasıyla birlikte dışa açıklığı destekleyen politikalar izlenmesi işsizliğin boyutlarında azalmaya katkı sağlayabileceği söylenebilir.

Ekonomik özgürlük piyasa ekonomisini ifade etmektedir. Bu özgürlük kanun ve anayasalarla değil piyasa ekonomisiyle elde edilebilmektedir (Mises, 1956; Aktaran: Çetin, 2001: 227). Katı işgücü piyasası düzenlemelerinin işsizlik üzerinde etkisinin yönüne ilişkin fikir birliği olmamasına karşın Fraser Enstitüsü'nün yayınladığı DEOE kullanıldığı çoğu makalede yüksek veya artan ekonomik özgürlük seviyeleri ile refahı ve diğer iyi oluş ölçütlerinin sağlanması arasında bir bağlantı olduğu belirlenmiştir (Lawson, 2022). OECD ülkelerine dayalı yürütülen pozitif etkisi olduğu belirlenen bazı çalışmalar şöyledir (Bernal-Verdugo vd., 2012): Nickell (1998), Elmeskov vd. (1998) ve Nunziata (2002) işsizlik yardımlarının düzeyinin ve süresinin işsizlik düzeyini artırdığına dair sağlam (robust) kanıtlar belirlemişlerdir. Nickell (1997) yüksek işgücü vergilerinin işgücü piyasasındaki durumu kötüleştirdiği ve işsizlik oranlarını artırma eğiliminde olduğunu belirlemişlerdir. Botero vd. (2004), daha katı istihdam yasalarının, özellikle gençler için yüksek işsizlikle ilişkili olduğunu bulmuştur. OECD ülkeleri üzerine yürütülen diğer çalışma bulguları: Scarpetta (1996), sıkı istihdam koruma düzenlemelerinin denge işsizlik oranlarını önemli ölçüde yükselttiği, gençler ve uzun süreli işsizlik üzerinde daha güçlü pozitif etkileri olduğu görülmüştür. Aynı şekilde dinamik analiz, bu düzenlemelerin işsizliğin kalıcılığı üzerinde önemli bir pozitif etkisine işaret etmiştir. Bertola vd. (2002), sendikaların varlığının bazı işçi

kategorilerinin (gençler, yaşlılar, kadınlar) göreceli işgücü piyasası konumu üzerinde negatif etkisi olduğunu göstermiştir. Belot ve van Ours (2004), özellikle ikame oranları ve vergi oranları, işgücü piyasasındaki durumu kötüleştirmede birbirini pekiştirdiğini belirlenmiştir. İstihdam koruması ise aynı ülkelerde daha büyük bir olumsuz etkiye sahip belirlenmiştir. Bassanini ve Duval (2006) çalışmasında yüksek ve uzun süreli işsizlik yardımları, yüksek vergi dilimleri ve katı rekabet karşısı ürün piyasası düzenlemelerinin toplam işsizliği artırdığı tespit edilmiştir. Yüksek işsizlik yardımları ve yüksek vergi dilimleri, kadınlar ve gençler için daha düşük istihdam beklentileriyle ilişkili bulunmuştur. Rafi (2017), reformlar yoluyla işgücü piyasası düzenlemelerinin esnekliğinin artırılmasının işsizlik oranında düşüşlere yol açabileceğini göstermiştir. Esnekliğin artırılmasıyla genç işgücü piyasası katılımcılarının istihdam fırsatları açısından kazanacakları daha fazla şeye sahip olacağı belirlenmiştir. Kovacı vd. (2018a) esnek işgücü piyasası düzenlemelerinin tüm işsizlik boyutlarını azalttığını belirlemiştir. Heritage Foundation 2021 yılı DEÖE raporunda, daha fazla ekonomik özgürlüğün olduğu ülkelerde yaşam standardının çok daha yüksek olduğu, şaşırtıcı üretkenlik, yenilik ve ekonomik büyüme yaşandığı; ekonomik özgürlüğe yönelmenin yüz milyonlarca insanı yoksulluktan kurtardığı açıklandı. Bu çalışmada, DEOE ile işsizlik boyutları arasında negatif anlamlı ilişki olduğu; DEOE’nin kadın işsizliği ve genç işsizlik üzerinde negatif anlamlı etkisi olduğu belirlenmiştir. Literatür ve çalışma kapsamında, hükümetlerin ekonomik özgürlüğü artırıcı politikalara yönelmesi işsizliğin azaltılmasına ve özellikle kadın işsizliği ile genç işsizliği sorunun çözümüne katkı sağlayabileceği söylenebilir.

OECD üye ülkeleri arasında ABD ve İngiltere gibi daha liberal piyasalara ve makroekonomik esnekliğe sahip ülkeler, Fransa, İtalya ve İspanya gibi daha katı işgücü piyasalarına sahip ülkelere göre önemli ölçüde daha düşük işsizlik oranlarına sahiptir (Bhattarai, 2016: 101). İşsizlik oranlarını en aza indirgeyebilen ülkelerin refah politikaları takip edilerek ülke ekonomilerinde düzenlemelere gidilebilir.

Literatürde yapılan bu çalışmadan farklı olarak Kovacı vd. (2018a) ayrıca modele bağımsız değişken olarak 2008 yılı küresel finans krizi zaman etkisini de dâhil etmiş ve çalışmamızdan farklı sonuçlara ulaşmıştır. Farklı sonuçlara ulaşılmasının nedeni küresel krizin işsizlik üzerindeki etkisinin büyük olmasıdır. Küresel krizlerin toplumları ve ülke ekonomilerini olumsuz yönde etkilediği bir gerçektir. Dünya Bankası tahminlerine göre dünya ekonomisi koronavirüs kriziyle İkinci Dünya Savaşı’ndan bu yana en derin resesyonunu ve son 150 yılın en kötü dördüncü ekonomik daralmasını yaşamaktadır (BBC, 2020). Dünya ekonomileri işsizlik artışıyla mücadele etti ve etmekte, işsizlik oranları arttı ve birçok insan işini kaybetti veya gelirlerinde kesintiler yaşadı (Jones vd., 2021: 1). Çalışmamızda en son güncel veri 2018 yılını kapsadığı için 2018 yılı sonrası yıllara ait verilere ulaşamamıştır. Bu durum araştırmanın önemli bir kısıtıdır. Koronavirüs krizi boyutunun araştırmalara dâhil edileceği araştırmalar yapılmasıyla farklı ülkeler üzerinde ve/veya farklı zaman dilimlerinde yürütülecek çalışmalarla ve işsizliğin farklı boyutlarının da araştırılacağı çalışmalarla literatüre önemli katkı sağlanabileceği söylenebilir.

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Articles in edited books: Krugman, P. (1995), "The Move Toward Free Trade Zones", in: P. King (ed.), *International Economics and International Economic Policy: A Reader*, New York: McGraw-Hill, Inc., 163-82.

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.....Griffin (1970a: 15-20) ileri sürmektedir.

(Gupta vd., 1982: 286-7).

(Rivera-Batiz & Rivera-Batiz, 1989: 247-9; Dornbusch, 1980: 19-23).

7. Metinde gönderme yapılan bütün kaynaklar, sayfa numaraları ile birlikte, “Kaynaklar” (“Kaynakça” diye yazılmayacak) başlığı altında ve aşağıdaki örneklerle uygun olarak belirtilmelidir:

Kitaplar: Kenen, P.B. (1989), *The International Economy*, Englewood Cliffs, N.J.: Prentice-Hall, Inc.

Dergiler: Langeheine, B. & U. Weinstock (1985), “Graduate Integration”, *Journal of Common Market Studies*, 23(3), 185-97.

Derlemeler: Krugman, P. (1995), “The Move Toward Free Trade Zones”, P. King (ed.), *International Economics and International Economic Policy: A Reader* içinde, New York: McGraw-Hill, Inc., 163-82.

Diğer Kaynaklar: Türkiye Cumhuriyet Merkez Bankası (2001), *2002 Yılında Para ve Kur Politikası ve Muhtemel Gelişmeler*, Basın Duyurusu, 2 Ocak, Ankara, <<http://www.tcmb.gov.tr>>.

Chang, R. (1998), “The Asian Crisis”, *NBER Discussion Paper*, 4470, National Bureau of Economic Research, Cambridge, Mass.

8. Kaynaklar’da web sitelerine yapılan atıflar muhakkak, gün, ay, yıl olarak alındığı tarih itibarıyla ve tam adresleriyle birlikte belirtilmelidir.

....., <<http://www.sosyoekonomijournal.org>>, 18.12.2019.