

MANAGEMENT AND FINANCE STUDIES



Editors

Assoc. Prof. Faruk KALAY
Assoc. Prof. Yuksel Akay UNVAN

Social Sciences



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ASSOC. PROF. FARUK KALAY & ASSOC. PROF. YUKSEL AKAY UNVAN



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Editors • Assoc. Prof. Faruk KALAY • Orcid: 0000-0002-6801-798X
Assoc. Prof. Yuksel Akay UNVAN • Orcid: 0000-0002-0983-1455

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website • <http://www.livredelyon.com>

e-mail • livredelyon@gmail.com



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PREFACE

Today, the environment in which organizations operate has become global in the context of consumer demands and behavior, the goods and services produced and the technology used, and the competition between enterprises has intensified. Under these conditions, business organizations need to adapt to changing environmental conditions and develop strategies accordingly in order to sustain their existence, obtain above-average income and achieve sustainable competitive advantage. Therefore, every day the manager who are responsible for managing the business effectively and efficiently stands out against the new management approaches and techniques. The success of managers and businesses depends on the application of the most appropriate management approach and technique.

This book is a study based on the developments mentioned above. Recent developments in many areas such as organizational performance, human resource management, organizational behavior, organizational communication, innovation and competition are discussed. It is hoped that the topics covered in this book will be useful for business managers, decision makers and entrepreneurs. In addition, the theoretical and empirical studies discussed in the book provide important contributions to the existing literature and constitute a starting point for future studies.

I would like to thank the authors who contributed to the creation of the book with their invaluable scientific studies, and wish them continued success.

Editors

Assoc. Prof. Faruk KALAY & Yuksel Akay UNVAN

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CHAPTER I

RELATIONSHIP BETWEEN OCCUPATIONAL HEALTH AND SAFETY PRACTICES, JOB PERFORMANCE AND ORGANIZATIONAL TRUST IN PORT ENTERPRISES: CASE OF KOCAELI PORTS

Murat Yorulmaz

*(Asst. Prof. Dr.), Kocaeli University,
e-mail: murat.yorulmaz@kocaeli.edu.tr
ORCID: 0000-0002-5736-9146*

1. Introduction

In international trade, maritime transport has always been a preferred mode of transportation. The key infrastructure of maritime transport is ports, which are the starting and ending points of transportation. Ports are coastal facilities that provide the facilities and equipment necessary for ships to moor to docks and piers, to carry out handling and storage activities, and to distribute cargoes to land areas via inland transportation (Chlomoudis et al., 2003, p.79-80). Regionalization of ports and their hinterlands is becoming widespread with the development of logistics services, as in the Izmit Bay and a large part of the Marmara Sea (Esmer & Duru, 2017, p.214). The maritime sector in Kocaeli, an industrial city in Turkey, has rapidly grown due to increase in industrial activities and ports in the region, making Kocaeli one of the major port cities of Europe. There are currently 35 active ports and terminals in the port region of Kocaeli (Kocaeli Harbor Master, 2021). The main field of

activity of the 14 port enterprises that operate in the port region of Kocaeli is port management, while others are port facilities that serve their own industrial enterprises or other industrial enterprises. (Bayraktutan & Özbilgin, 2013, p.32). The 2019 statistics of the Turkish Ministry of Transport and Infrastructure (UAB) show that a total of 72.196.415 tons of cargo was handled in the ports of Kocaeli with an annual total of 8,714 ship voyages. The statistics for January-November 2020 indicate that a total of 69.568.748 tons of cargo was handled with a total of 8,134 ship voyages, making Kocaeli the leading port in Turkey both in terms of ship voyages and the amount of cargo handled for 2019 and 2020. Thus, according to these statistics, Kocaeli is the busiest shipping and freight port in Turkey. Considering the cargo loads handled in November 2020 in Turkey, the port region of Kocaeli ranks third with 149 thousand 37 TEU, following Ambarlı and Mersin (UAB, 2020). Also, Kocaeli ranks seventh among the 20 largest ports in Europe, with 72 million tons of cargo handled (Eurostat, 2019). The occupational health and safety (OHS) practices in the ports of Kocaeli as well as the individual or organizational results of these OHS practices are important for port management to ensure successful operation of the ports of Kocaeli with a pronounced role in both national and international trade. Given the roles of ports in supply chain, OHS practices, safety and environmental issues at ports require a particularly careful evaluation (Antão et al., 2016). The infrastructure-superstructure facilities (ship berthing areas and warehouses), cargo handling equipment (carriers, transporters), which are essential for carrying out port activities, (Esmer, 2019, p. 22) can be dangerous as well. In port facilities, which are highly risky operational areas, occupational accidents may occur during the handling of large volumes of cargo, due to cargo falling, toppling, damaging caused by equipment malfunction and breakdown; presence of unauthorized people in the field; operations carried out by staff at heights and on slippery ground; failure to use the necessary protective equipment during cargo operations; non-compliance with the procedures such as staying away from the area around the hatch covers during opening or closing (Oral, 2018, p.33-35). Port staff are also exposed to the risks posed by dangerous cargoes, air pollution as well as noise. Such accidents, which may cause employees to experience various health problems or even lose their lives, can damage the trust of the employees in the organization and the working environment as well. Due to high mortality rates from operational accidents in ports, ports are classified as highly dangerous facilities. These being said, this study seeks to determine

the causal relationship between OHS practices and employees' job performance (JP) in port enterprises, considered as highly dangerous facilities, as well as the role of perceived organizational trust (OT) in this relationship. To do so, the data were collected from 334 participants who work in the port enterprises that operate in the Port Region of Kocaeli through survey and then analyzed using AMOS 22 and SPSS 22 statistical package programs (Process macro v3.4) via a Bootstrap resampling with 5000 replications. Although previous studies have investigated the relationship between OHS practices and JP (Kaynak et al., 2016; Putri et al., 2018; Baloğlu et al., 2018; Kavgacı & Çiçek, 2019), the relationship between JP and OT (Altaş & Kuzu, 2013; Akıllı & Cingöz, 2015; Uslu & Şimşek, 2020; Yorulmaz & Karabacak, 2020) as well as the relationship between OHS practices and OT (Üngüren & Koç, 2016; Pelit & Gülen, 2018), no study has specifically studied these variables together. The findings of this study will hopefully provide important insights into the literature because it is the first of its kind that examines these variables together and thus reveals the causal relationship between the variables that affect OHS practices in port enterprises and the JP of employees.

2. Conceptual Framework and Hypotheses

2.1 *Relationship Between Operational Health and Safety Practices and Job Performance*

The characteristics of the work environment are essential for the job performance of employees. OHS practices, intended to ensure that employees are psychologically and physically healthy and to protect them from the dangers of the work environment, are considered one of the aspects of the work environment that affect JP (Hayta, 2007, p.22; Akça & Yurtçu, 2017, p.198). Various studies on the relationship between OHS practices and JP are available in the literature. One of them was performed with staff in four public hospitals in the city of Burdur, Turkey, to investigate the effect of OHS practices on the JP of 554 employees in public hospitals through survey. The study concluded that all sub-factors of OHS have a significant and positive correlation with JP. It further ascertained that OHS practices affected JP and that the sub-factors that most affected JP are “protective measures and rules” and “material and equipment inspection” (Kavgacı & Çiçek, 2019, p.306-331). Another study conducted with white-collar employees of small and medium-sized companies,

examined the effect of OHS management practices in public and private sector companies in Kocaeli on employees, using structural equation modeling. This study determined that the indirect effects of organizational security support provided by security and risk management practices had positive impacts on JP (Toklu, 2016).

Acknowledging the need to increase the safety of ship and cargo operations in ports, Darbra and Casal (2004) examined the data of accidents that cover a period of 22 years around the world and reported that most accidents (60%) that happened in ports occurred during the maneuver of the ships or due to the transportation of the cargo in the port by truck or train. The major causes of occupational accidents in ports were identified as human error, administrative problems, use of inappropriate equipment and working conditions, respectively (Özdemir, 2016, p.235). Eryılmaz (2014) studied the effect of OHS practices on JP, with the hypotheses that the performance of the employees participating in the study depended on the quality of the personal protectors they use in their workplaces and the precautions taken by the company they work for against accidents. This study conducted with employees of the automobile, healthcare and furniture sectors, which are completely different from each other, revealed the positive effect of OHS practices on JP. A different study focused on a consumer goods company and concluded that OHS practices are a key factor that affects JP as well as the working environment and discipline (Putri et al., 2018). A positive relationship between the OHS practices of an enterprise and JP has been confirmed by other studies on the relationship between OHS practices and JP in the literature (Yusuf et al., 2012; Bükülmez, 2013; Madushani & Nilwala, 2020). In light of these, Hypothesis 1 has been proposed:

Hypothesis 1: Occupational health and safety practices in port enterprises positively affect job performance.

2.2 Relationship between Organizational Trust and Job Performance

OT, which consists of three sub-dimensions as trust in the organization itself, trust in colleagues and trust in managers, is an effective factor on JP with all its dimensions (Turhan et al., 2018, p.49). There are numerous studies on the relationship of OT and JP in different fields in the literature. Using structural equation modeling, Yorulmaz and Karabacak (2020) analyzed the relationship between organizational commitment, job satisfaction, OT and JP among a total of 260 port workers in port enterprises in the Marmara Region. Their findings

showed that perceived OT positively affects JP. They also ascertained that OT alone accounted for 11% of the change in JP. Altaş and Kuzu (2013) investigated the effect of trust in administrators on JP in pre-school education institutions in Sakarya. The data were obtained from interviews with 135 pre-school teachers in 19 different institutions. The analysis of the data showed that the trust of teachers in their administrators has a positive effect on their JPs and that as teachers' trust in their administrators increases, their JPs also increase. In another study, which examined the effect of trust in colleagues on JP among 324 employees in the Iron-Steel Casting and Machining enterprise, it was concluded that the psychological status of the employees was a key factor influential on their performance. The findings demonstrated that there is a significant and positive relationship between JP and trust in colleagues (Uslu & Şimşek, 2020). The relationship between OT and JP was examined in another research, which was performed with the bank employees in the city of Mersin through a questionnaire form with 33 questions. It revealed a significant and positive relationship between OT and JP, and claimed that the sub-dimensions of OT (trust in the organization itself, trust in colleagues and trust in managers) affect JP (Turhan et al., 2018). Among other studies that examine the relationship between OT and JP, there are a descriptive study with 230 call center employees in Kırıkkale (Aktuğ, 2016), a study that probes into the mediating role of public service motivation in the relationship between OT and JP in Nevşehir (Akillı & Cingöz, 2015), and another study that involved the employees of public and private sector enterprises in Ankara to measure the effect of perceived organizational justice and OT on JP (Özdemir, 2019). All these studies highlight that perceived OT positively affects JP and that there is a positive and significant relationship between OT and JP. In light of these information in the literature, Hypothesis 2 has been proposed:

Hypothesis 2: Perceived organizational trust of port staff positively affects their job performance.

2.3 Mediating Role of Organizational Trust

Employees who feel healthy and trust their workplace and colleagues can show higher job performance (Sadullah et al., 2013, p.57). Pelit and Gülen (2018) examined the impact of OHS practices on OT and concluded that there is a significant relationship between OHS and OT. The researchers argued that poor working conditions reduce employee motivation and cause accidents, and that increase in OHS practices in the working environment enhances the trust of the

employees in the organization as well. A similar study, which was conducted on the accommodation enterprises in Alanya district of Antalya, revealed that although the effects of OHS practices carried out by the enterprise on OT differed across different departments, there was a significant relationship between OHS and OT in general. It was concluded that employees' compliance with the rules related to OHS, their awareness on OHS, the cooperation related to OHS within the organization, and the OHS measures taken by the management were key factors that affect the OT of employees (Üngüren & Koç, 2016, p.152-153).

As for the relationship between OT and JP, Judeh (2016) averred that there was a significant relationship between OT and JP and reported that a good and healthy trust environment among the employees is a prerequisite to boost JP. This is supported by İlbasan (2019) who studied IT sector employees through survey. She determined that it is necessary to provide a safe working environment for employees in order to increase their JP. Enterprises with a policy to provide a safe working environment for their employees create a sense of trust within the organization. This further enhances the organizational commitment of employees and increases their productivity by ensuring that they stay in the organization for a longer period of time (İlbasan, 2019, p.174-175). It is notable from these studies that OHS practices intended to support the mental and physical health of employees and perceived OT, have direct effects on JP. OHS practices in enterprises lead to a positive increase in the perceived OT of employees, and increased perceived OT boosts JP. In other words, OHS practices have a direct effect on JP as well as an indirect effect through OT. Considering these studies on OT, it is possible that OT may have a mediating role in the relationship between OHS practices and JP. Thus, Hypothesis 3 and Hypothesis 4 have been proposed.

Hypothesis 3: Occupational health and safety practices in port enterprises positively affect organizational trust.

Hypothesis 4: Organization trust plays a mediating role in the relationship between occupational health and safety practices and job performance.

3. Research Method

3.1 Sampling and Data Collection

The data were collected from 334 staff in port enterprises that operate in the Port Region of Kocaeli, Turkey, through questionnaire method. The questionnaires

were applied between June-December, 2020 using Google form. The port staff were asked to give a voluntary consent form before the study and then answered the questionnaire. Most of the participants are male (332 participants, 96.4%). Further, 127 (38%) of them are aged between 25-35 whilst 8 (2.4%) are 55 or older. 196 of them (58.7%) are high-school graduates; 231 (69.2%) are married; 271 (81.1%) are port field staff (operations staff); 43 (12.9%) are foreman/ chief; 12 (3.6%) are occupational safety specialist; and 8 (2.4%) work at the management level.

3.2 Scales

This study draws on the scale used by Üngüren and Koç (2016) to measure OHS practices and perceived OT. Figure 1 shows the dimensions formed as in the original scale. The items in the scale were arranged using the 5-point Likert rating scale. (1 = strongly disagree; 5 = strongly agree).

The scale of OHS practices consists of 29 items and five dimensions, which are as follows: managerial precautions and measures (MPM) in OHS practices (8 items), work in accordance with OHS standards (WS) (7 items), levels of awareness and consciousness on OHS (LAC) (5 items), OHS training practices (TP) (4 items) and cooperation and communication on OHS (CC) (4 items). The explanatory factor analysis, using the Principal Components analysis and the Varimax rotation technique, was performed to determine the factor structure of the scale. This showed that the scale has a five-dimensional structure with eigenvalues greater than 1, as in the original scale (KMO=0.929; $\chi^2=4200.723$; $df=406$; $p<0.001$; factor loads are between 0.532-0.887; total explained variance: 62.3%)

The scale of perceived OT presents 18 items and three dimensions, which are as follows: trust in the institution (TII) (8 items), trust in the manager (TIM) (6 items) and trust in colleagues (TIC) (4 items). The explanatory factor analysis, using the Principal Components analysis and the Varimax rotation technique, was performed to determine the factor structure of the scale. This showed that the scale has a three-dimensional structure with eigenvalues greater than 1, as in the original scale (KMO=0.942; $\chi^2=3110.331$; $df=153$; $p<0.001$; factor loads are between 0.575-0.740; total explained variance: 59.9%)

This study draws on the scale of JP designed with one dimension and four items by Sigler and Pearson (2000). The explanatory factor analysis, using the Principal Components analysis and the Varimax rotation technique,

was performed to determine the factor structure of the scale. This showed that the scale has a one-dimensional structure with eigenvalues greater than 1 (KMO=0.768; $\chi^2=392.035$; $df=6$; $p<0.001$; factor loads are between 0.741-0.831; total explained variance: 61.8%).

4. Results

4.1 Validity and Reliability

Table 1 demonstrates the results of the confirmatory factor analysis (CFA) performed after the explanatory factor analyses to measure the structural validity of the measurement tools.

Table 1: CFA Goodness of Fit Indices

Dimensions	χ^2	sd	χ^2/sd	CFI	TLI	SRMR	RMSEA
OHS	695.389	370	1.879	0.917	0.909	0.046	0.051
OT	299.087	132	2.226	0.945	0.936	0.030	0.062
JP	9.324	2	4.662	0.978	0.934	0.018	0.078

It is clear from Table 1 that the goodness of fit indices of the second-order OHS practices, the second-order perceived OT and JP scales were within the acceptable limits (Bentler & Bonnet, 1980; Hu & Bentler, 1999; Hair et al., 2014). Moreover, the CFA analyses ascertained that the standardized factor loads of all variables were greater than 0.50 and statistically significant ($p<0.01$), which means that the scales are valid.

The Cronbach's alpha (CA) coefficients, presented in Table 2, were calculated to determine whether the scales, proved to be valid, are reliable or not; the CA values were greater than the threshold value of 0.70 (Hair et al., 2014), which implies that the scales are reliable. Table 2 indicates that the averages of OHS and perceived OT are moderate whilst the average of JP is high and that there are positive relationships between the variables.

Table 2: Cronbach's Alpha, Correlation, Skewness and Kurtosis Coefficients

	Mean	SD	CA	Skewness	Kurtosis	1	2	3
1. OHS	3.177	0.895	0.897	-1.378	1.776	1		
2. OT	3.167	0.616	0.935	-0.896	0.191	0.713**	1	
3. JP	3.840	0.620	0.793	-0.041	0.685	0.628**	0.698**	1

** $p<0,01$

Table 2 further shows that the skewness and kurtosis coefficients of the research variables are not greater than ± 3 and ± 10 , respectively. This means that the data showed a normal distribution (Kline, 2016).

4.2 Testing Hypotheses

Table 3 presents the results of the analyses, which were conducted using SPSS 22 Process macro (v3.4) plugin was used to test the mediating role of OT in the relationship between OHS practices and JP, a Bootstrap resampling with 5000 replications and Model 4 by Hayes (2019). It follows that all models included in the mediation analysis are statistically significant ($p < 0.001$).

Table 3: Mediating Role of OT

	OT			JP			JP		
	B	SE	t	B	SE	t	B	SE	t
Constant	0.451	0.202	2.234*	1.050	0.225	4.649***	0.818	0.202	4.042***
OHS	0.362	0.019	18.547***	0.320	0.021	14.687***	0.134	0.027	4.858***
OT	-	-	-	-	-	-	0.513	0.054	9.409***
Model Summ.	R ² =0.508;F(1;332)=343.9; p< 0.001			R ² =0.393;F(2;331)=215.72; p < 0.001			R ² =0.522;F(2;331)=180.57; p < 0.001		
Bootsp Indirect Effect	Effect=0.186; p< 0.05; 95% BCA CI [0.138; 0.235]								

*p< 0,05; ***p< 0.001

Table 3 clearly shows that the positive total effect of OHS practices on JP (B= 0.320; t: 14.687; p < 0.001) and on OT (B= 0.362; t: 18.547; p < 0.001) are statistically significant. It is also notable that OT as well as OHS practices have still a positive effect on JP, but the effect of OHS practices is reduced and that OT has a positive, significant effect on JP (B=0.513; t: 9.409; p < 0.001). Moreover, OHS practices together with OT explain approximately 52.2% (R² = 0.522) of the change in JP.

The confidence intervals identified through the Bootstrap test were used to determine whether OT has a mediating role in the relationship between OHS practices and JP. The finding that the bias-corrected and accelerated Bootstrap confidence intervals (BCA, CI) are statistically significant (Effect=0.186; p< 0.05; 95% BCA CI [0.138; 0.235]) and exclude zero, means that OT has a mediating role in the relationship between OHS practices and JP (MacKinnon,

Lockwood & Williams, 2004). Further, the Sobel test confirmed that the mediating role of OT is statistically significant ($z=8.501$; $SE=0.021$; $p<0.01$). Based on these results, *Hypotheses 1, 2, 3 and 4* have been accepted. Figure 1 presents the research model tested, dimensions of the measurement tools and results of the analyses.

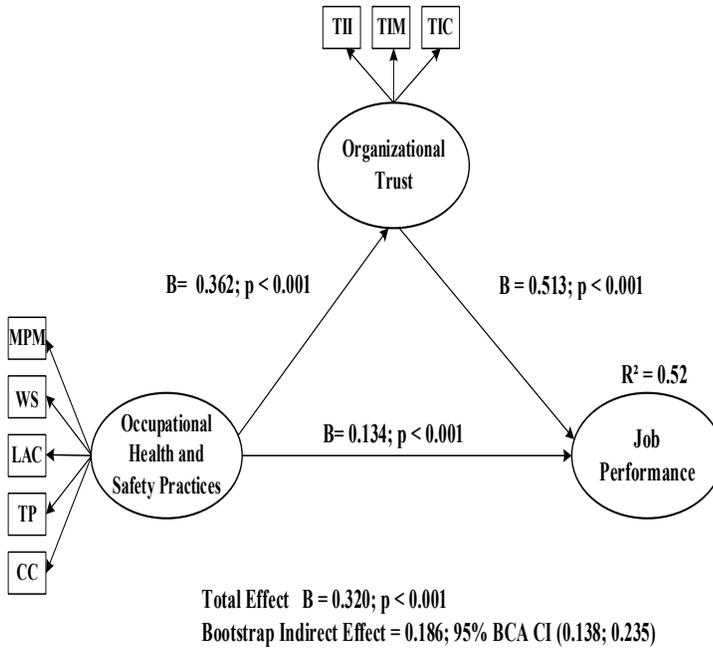


Figure 1: Research Model and Analysis Results

5. Conclusion and Discussion

This study, which seeks to measure the OHS practices in ports and the perceived OT of port staff and to explore the mediating role of the perceived OT in the relationship between the OHS practices and JP, examined the data obtained from a total of 334 port staff, most of whom are male, blue-collar and high-school graduates, through questionnaire, using SPSS 22 and AMOS 22 software.

The findings of this study reveal that the OHS practices at ports positively affect the JP of staff both directly and indirectly through perceived OT, and that the OHS practices have a positive effect on perceived OT whereas perceived OT has a positive effect on JP. Based on these findings, *Hypothesis 1: Occupational health and safety practices in port enterprises positively affect job performance, Hypothesis 2: Perceived organizational trust of port staff positively affects their*

job performance, and *Hypothesis 3: Occupational health and safety practices in port enterprises positively affect organizational trust* have been accepted. This study also ascertains that the OHS practices and perceived OT explain approximately 52% ($R^2 = 0.522$) of the change in the JP of port staff. Further, the results of the mediating analysis using a Bootstrap resampling with 5000 replications and the Process macro (v3.4) plugin developed by Hayes (2019) as well as the Sobel test point out that perceived OT has a mediating effect on the relationship between the OHS practices and JP. Based on this finding, *Hypothesis 4: Organization trust plays a mediating role in the relationship between occupational health and safety practices and job performance* has been accepted. The fact that perceived OT has a mediating role means that some of the positive effect of the OHS practices on JP is realized through perceived OT. In other words, the OHS practices at ports positively affect the JP of staff both directly and indirectly through perceived OT. Therefore, increase in the JP levels of port staff is possible through positive OHS practices and positively perceived OT.

The first aspect to be considered within the research model is the relationship between the OHS practices and JP. This study finds out that the OHS practices in port enterprises positively affect JP. This finding is congruent with the findings of the studies performed in different sectors (Tait & Walker, 2000; Yusuf et al., 2012; Bükülmez, 2013; Karamık & Şeker, 2015; Putri et al., 2018; Perera, 2019; Madushani & Nilwala, 2020). The application of OHS measures such as eliminating the fear of losing job among employees and protecting employees from the damaging effects of the work environment and psychological harm, would increase their JPs. Enterprises, which prevent accidents in the workplace through various health and safety precautions, allow employees to take more ownership in their jobs, be more dynamic and work more comfortably, resulting in enhanced job performance. Enterprises that seek for higher performance should enforce the necessary OHS measures. In conclusion, the findings of this study are congruent with other studies in the literature, showing a positive effect of the OHS practices in port enterprises on the employees' JPs.

The second aspect is the relationship between OT and JP. The findings reveal that the perceived OT of port staff has a positive effect on JP. This is congruent with the findings of other studies in the literature (Büte, 2011; Altaş & Kuzu, 2013; Akıllı & Cingöz, 2015; Aktuğ, 2016; Özdemir, 2019; Uslu & Şimşek, 2020; Yorulmaz & Karabacak, 2020). The perceived OT of employees

in an enterprise is key for the performance of that enterprise, because the performances of the teams formed by individuals with a sense of mutual trust are also positively affected by this trust. One of the ways for the organization to create more added value through increased JP is to carry out activities that enhance the trust of employees in their superiors and colleagues with whom they interact directly or indirectly. Further attention to the concept of OT would help enterprises that seek to show high performance and provide competitive advantage against their competitors.

Another aspect that needs consideration is the relationship between the OHS practices and perceived OT. This study finds out that the OHS practices in port enterprises have a positive effect on perceived OT. The findings of this study are congruent with the findings of a limited number of studies performed in this subject in the literature (Üngüren & Koç, 2016; Pelit & Gülen, 2018). As the importance given by enterprises to OHS practices increases, so does the trust of employees in their enterprises. For that reason, enterprises that aim to ensure that their employees are committed to their job and feel a sense of trust, need to prioritize OHS practices so that they can provide their employees with a healthy and safe environment.

The last aspect in this study is that perceived OT has a mediating role in the relationship between the OHS practices in port enterprises and the JPs of port staff. In the literature there is no study conducted before in this regard; however, the studies that probe into these variables in pairs seem to confirm this finding. Through OHS practices intended to ensure that employees are psychologically and physically healthy, port enterprises eliminate the fear of facing danger at any moment in their work environment among employees and allow them to work with a sense of trust and high motivation. Employees who feel that their own lives and the lives of their colleagues are safe thanks to OHS practices can demonstrate more self-sacrifice and high performance. Needless to say that high performance provides an advantage for port enterprises in the maritime sector, which is a considerably volatile industry with a high risk factor.

Based on the findings of this study, it is recommended that the managers of port enterprises that seek to increase the JPs of their employees and thus organizational performance, first need to implement the health and safety practices that will increase the OT of the employees in their enterprises. It is important that port managers examine and take measures against dangers in the work environment that may cause threats and occupational diseases, offer

trainings on OHS to their employees, meet with them regularly and report the problems related to health and safety issues. Port managers may also ask their employees for their opinions about potential dangers and the conditions under which they would feel safer; then, they can design appropriate practices and assign their employees to right jobs according to their qualifications. These would increase the OHS and OT in the enterprise and thus boost JP. As a result of based on the findings of this study, port managers that seek to increase JP are recommended to prioritize OHS and ensure OT in their enterprises.

This study draws on the data obtained only from port staff, which is a limitation of this research. Further studies may be performed with more participants from different sectors. Also, findings on the effects of OHS practices in enterprises on OT and JP can be supported by the opinions of managers as well as the statistical data related to the enterprise in question. A similar study may be carried out specifically on terminals in ports. Because OHS practices may differ in terminals where liquid cargo handling is carried out, compared to terminals where dry cargo is handled. Moreover, the attitudes and behaviors of managers may be influential in ensuring the effectiveness of OHS practices, which have an impact on OT and JP, in enterprises. For that reason, future research may also consider the behaviors of managers as an influential variable while examining the mediating role of OT in the effect of OHS practices on JP.

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CHAPTER II

NEPOTISM PERCEPTIONS OF THE EMPLOYEES THAT WORK IN FAMILY BUSINESSES: A RESEARCH IN BURSA

Nilüfer Rüzgar¹

¹ (Dr.Öğr. Üyesi), Bursa Teknik Üniversitesi,
nilufer.ruzgar@btu.edu.tr
ORCID: 0000-0002-9598-3390

1. Introduction

Nepotism, in the most general sense, is the selection made by prioritizing blood ties, that is, kinship relations in recruitment and promotion processes. Although nepotism practices are more common in underdeveloped societies where family ties are strong, and so family-business relationships are experienced, such practices also exist in developing and developed countries where family businesses are present. The reason for the implementation of nepotism is to keep the power in family businesses again. In this context, it can be said to be a strategic application. However, it is obvious that it constitutes a major obstacle to institutionalism (Özler, Özler and Gümüştekin 2007).

In studies conducted on nepotism applied in organizations, the negative effects of this practice on organizational staff in terms of attitude and behavior are investigated (Abdalla et al., 1994; Hutcheson, 2002; Ichniowski, 1988; Araslı et al., 2016; Özler et al., 2007; Büte and Tekarşlan, 2010).

Considering that nepotism is mostly applied in family businesses, since nepotism is perceived as very important in the development of positive/negative attitudes by employees towards organizations and managers, there can occur

a decrease of justice and equality in distribution in the case that nepotism is perceived (Araslı et al., 2006).

On the other hand nepotism practices, as mentioned above, is more common in countries that are experiencing the traditional family relations in the business practises (Araslı et al., 2006), such as Turkey, which has high power distance and which is collectivist (Hofstede, 1998). In this case, societies/ organizations can be described by its internal dynamics as well (close relatives, crony relations, traditional criteria based on social solidarity etc.) (Bayhan, 2002; Pelit, Baytok, Soybalı and Kılıç, 2017). In this sense, the purpose of this study is to measure the nepotism perceptions of employees working in family businesses. In this context, a survey was carried out in 3 family companies operating in Bursa. The questionnaire forms consist of demographical questions and Nepotism Scale developed by Abdalla, Maghrabi and Al-Dabbagh (1994) and adapted into Turkish by Asunakutlu and Avcı (2010). The forms were sent to the participants both via e-mail and given via hand as hardcopies. The data obtained were analyzed via SPSS 22.0 package program.

2. Nepotism

Nepotism is defined as “prioritising the relatives” in literature. Although it is not synonymous with “favoritism”, it is considered as a sub-type. It is also called “keen selection”, which is the instinct in humans, that is, the attraction of the blood bond, and is defined as a reasonable and conscious behavior in this context (Büte, 2011).

Nepotism is derived from the concept of “nepos” which means “nephew” in Latin (Kiechel, 1984: 143). Bellow (2003) states that the word comes from the Italian “nipote”. The term “nepotismo” was used to describe the appointment of pope relatives and even illegitimate children to a number of authorities in the 14th and 15th centuries (Ciulla, 2005).

According to Dökümbilek (2010), nepotism is the employment or promotion of people, regardless of factors the qualifications required by the job, only on the basis of kinship relations.

As it can be understood, nepotism is a concept used for positioning employees and business owners who use their organizational position, influence, merit, and benefit for their family and relatives, regardless of merit. Therefore, in nepotism, as mentioned above, blood ties come to the fore (Erdem et al., 2013).

Nepotism is regarded as a practice that should be avoided both in public institutions, private institutions and non-governmental organizations (Bayhan, 2002; Abdalla et al., 1994). The reason for this is the decrease in morale, motivation, loyalty, satisfaction and confidence of the employees who are not favored.

Although nepotism is mainly used for recruitment and promotion processes (Jones et al., 2008), Bellow (2003) has developed a modern concept called “new nepotism”. Accordingly, people may choose the same profession as their parents or close friends, or they may want to take advantage of the opportunities offered by family and close friends. In this context, Bellow (2003) argues that nepotism has been effectively adopted in various segments of American society, including the film industry and political circles. For example, Albert Gore, George W. Bush, Jane Fonda, Michael Douglas and Gwyneth Paltrow are among the successful second generation politicians and actors. In 2000, the contest of the sons of two deep-rooted families was another proof of how widespread nepotism was (Joffe, 2004). On the other hand, official anti-nepotism codes have been created in some companies due to contradiction with American values, where favoritism is essentially egalitarianism and merit. However, even in companies that claim not to tolerate nepotism, nepotism practices can be experienced. In addition to the examples given above, it may be added that Paul Wolfowitz lost his job in the World Bank while trying to make a promotional deal for his partner Shaha Reza (Corkindale, 2007).

To sum up briefly, in organizations where nepotism is applied, Human Resources Management (HRM) practices are not professional, so it becomes extremely difficult to have meritocracy within the organization (İşçi, Taştan and Kozal, 2013). This is uneasy for non-family employees, and lack of trust also creates stress in terms of motivation, job satisfaction, and performance as employees and family members and conditions are unfair (Günel, 2005). For this reason, ignoring the necessary management principles decreases the effectiveness and efficiency of the organization in the long term by preventing the formation of an organizational climate and culture (İşçi, Taştan and Kozal, 2013).

3. Concepts That are Related to Nepotism

The concept of nepotism is handled in two dimensions as individual and political; there are four concepts under these two dimensions. There is favoritism

(nepotism) and chronism under individual dimension, there is patronage and clientalism under political dimension (Özkanan and Erdem, 2014).

3.1 Favoritism

Although the concept of favoritism is used synonymously with nepotism and chronism (Aktan, 2001, Kayabaşı, 2005; Çelik and Erdem, 2012), it is a much more comprehensive concept (Nadler and Schulman, 2006; Asunakutlu and Avcı, 2010). Favoritism means “bias” and means giving privileges to a friend, colleague or acquaintance in decisions such as employment and promotion (Merriam-Webster Online Dictionary, n.d.). That is, favoritism can be expressed in favor of a person or group as a tendency to deviate from rights and justice (Erdem, 2010).

Favoritism is mostly called “torpedo” in the society (Özsemerci, 2002; Meriç and Erdem, 2013). In addition, it is also expressed in the forms of uncle-nephew, crony-sergeant and so on relations. Therefore, favoritism in the organization is based on the relationship and friendship of the employees, on being from the same country, on having studied at the same school, on supporting the same party, etc. It takes place by keeping similarities in the foreground (Oktay, 1983; Shepherd, 1999). Thus, the favored person can be promoted faster in the organization compared to others, receive higher wages and benefit from similar favors (Basu, 2009).

3.2 Chronism

The word chronism means old and sincere friend and derives from the word “crony” used among Cambridge University students in the 17th century. Chronism is expressed as bringing old friends to certain positions regardless of their qualifications (Nadler and Schulman, 2006). While favoritism, which is tried to be explained in the previous section, means favoritism of friends, colleagues and acquaintances, chronism is defined as the politicians’ priority to give way to their close friends regardless of their qualifications (Araslı and Tümer, 2008).

On the other hand, organizational chronism is expressed as “management disease” (Büte, 2011). It is defined as the manager’s privileged approach arising from factors such as performance criteria for certain employees or personal relationships other than formal procedures (Turhan, 2014). Chronism is also considered as giving priority to establishing economic relations in public

institutions and private sector (Özler and Büyükarıslan, 2011). In addition, it is seen that organizational chronism is examined as degeneration (Erdem, Çeribaş and Karataş, 2013).

3.3 Patronage/Bosism

Patronage, which is mostly considered as a type of political corruption, can be a complex way for a manager to implement nepotism practices in organizations. Namely, a manager brings his trusted employees to managerial positions and then asks them to hire friends or family members. Thus, the manager can have the power to spread to the whole organization as he/she brings his/her favorite employees to the top positions (Polat, 2012).

Used as equivalent to the patronage of the concept of “Bossism” in Turkey is intended to highlight the power in the private sector (Özkanan and Erdem, 2014).

Patronage, which is generally accepted as a state of political corruption as afore mentioned, is very common in countries where democracy culture and human rights are not developed. As a result of patronage practices, many people are appointed to the positions they do not deserve, while many people lose their jobs or other opportunities even if they are qualified, unless they are connected with politically strong groups (Karacaoğlu, 2018).

3.4 Clientalism

Clientalism is instead of improving the quality of public resources, rich goods and services, privatizations, tenders, etc., distributing these to acquaintances. The origin of the concept derives from the English word “client”. Therefore, it is defined as mass political bribery and influence trade against the supporters (Karacaoğlu, 2018).

Clientalism is a form of favoritism that occurs when people or groups with different social status come together in different positions while in a social hierarchy. People and/or groups working in higher positions in the social hierarchy refer to people and/or groups working in lower positions; that is, they have the opportunity to help customers. At this point, clientalism also appears as a kind of patronage relationship. As Sorauf mentions the patronage system is an “unplanned merit” system in which untalented and inexperienced people are hired by some superiors and managers and then they are given a privileged view regardless of political developments (Doğan, 2016).

4. Organizational Applications of Nepotism

Various applications of nepotism in organizations can be encountered at various stages. The most common of these are nepotism in recruitment (selection), in performance evaluation and promotion, in remuneration and in processes.

4.1 *Nepotism in Recruitment*

In the recruitment process, some candidates are recruited in the election exams as advantageous compared to other candidates and are employed only because someone is familiar with them regardless of their qualifications. It is called “torpedo” as mentioned in the previous sections (Korkut, 2013).

Recruitment nepotism is predominantly seen in family businesses. In family businesses, although nepotism is the case of hiring members of one or more generations of the family, some family members hire their spouses within their organizations, and this practice is considered within the scope of recruitment nepotism (Padgett and Morris, 2005).

It has been observed that the majority of the researches on this subject facilitated the hiring of family members, especially the members of the next generation. This approach, since extremely important criteria such as education, merit and talent are not taken into consideration, can both decrease productivity in businesses and affect organizational culture and climate negatively (Çalık and Naktiyok, 2018).

4.2 *Nepotism in Performance Evaluation and Promotion*

Promotion is defined as the assignment of an individual working in an institution to a higher position, generally with a better salary (Monappa and Saiya dain, 2001). In the promotion process, nepotism can cause irreversible negative consequences. Employees who develop a perception of nepotism in promotion may not be able to accept this, and this can lead to intra-organizational conflicts and even high turnover rates (Çalık and Naktiyok, 2018).

As mentioned earlier, promotion and performance evaluation processes in family businesses, where nepotism practices are frequently seen, are also affected by factors such as personal relationships and kinship ties. On the other hand, it should not be forgotten that one of the most important duties of human resources is to ensure that employees are promoted in parallel with their talents and competencies. In the same way, performance evaluation is to reward those

with high performance by evaluating the employees via criteria such as talent, competence, efficiency and productivity by the human resources department, to increase the low performances and to establish a punishment system for those who cause negative consequences for the overall of the organization (Şimşek and Öge, 2007). However, if nepotism is applied instead of benefiting from these independent criteria in the promotion and performance evaluation process, the organizational justice perceptions of the employees will be negatively affected and both their motivation and job satisfaction will decrease (Özüren and Paksoy, 2019).

4.3 Nepotism in Remuneration

Although wage/salary is one of the greatest sources of motivation for employees and increases their organizational commitment and motivation, wage/salary determination in family businesses does not depend on the contribution or performance or merit of the employee to the organization, but rather depend on to the position in the family. While non-family workers are subjected to a standard remuneration policy, family workers receive high wages regardless of their position. This situation reduces the commitment, motivation, satisfaction and perception of justice of non-family employees to the organization (İyışleroglu, 2006). In addition, the turnover rate may increase and cause the loss of qualified employees (Özüren and Paksoy, 2019).

4.4 Nepotism in Processes

One of the important issues in terms of organizational justice is the employment of employees in line with their qualifications. However, in practice, choices are made among the employees for various reasons, and some employees are employed in easier jobs in relation to the risk, difficulty, duration or the location of the job. This situation is defined as process nepotism (İşçi, Taştan and Kozal, 2013).

Fair distribution of resources in family businesses is also extremely difficult (Lansberg, 1983). In this case, to provide the best room, computer and other equipment in the organization to the members of the family, to behave more flexibly during working hours in order to meet their personal needs and to realize their personal goals, to benefit from many privileges that other personnel do not enjoy, are among the most common situations (Karacaoğlu, 2018). When the perception of process nepotism occurs in non-family employees, it can also

affect in organizational commitment, motivation, satisfaction and performance negatively as in other nepotism practices. This again increases the turnover of the workforce in the organization (Candan Wilson, 2012).

5. International and National Research Examples on Nepotism

Family businesses are businesses where family ties are largely determinative, although institutionalized. For example, the majority shares of Walmart, which is among the most successful businesses in the world, belong to the founding relatives (Bellow, 2003). There are various studies in the international and national literature in order to measure the level of nepotism practices in family businesses and the nepotism perception levels of employees' nepotism.

As an example to international researches, in the research conducted by Spranger, Colarelli, Dimotakis, Jacob, and Arvey (2012), how the relative density in family businesses is related to nepotism and organizational justice perceptions and the moderate role of family membership in this relationship were examined. According to the findings from the sample of 79 employees who are from the family and 299 employees who are not from the family in 21 family companies, both relative density and family membership were associated with perceptions of nepotism. In addition, nepotism perceptions provided a partial mediation between relative density and organizational justice perceptions. These results show that the density of relatives and family membership are important variables to be taken into account in understanding the experiences and attitudes of employees in family businesses.

In the research conducted by Pelletier and Bligh (2008) on spouses with dual careers, it was concluded that employment based on family ties is perceived as negative when compared to employment based on talent, ability and merit.

Daily and Reuschling (1980), on the other hand, found that applying nepotism in small family businesses is an effective way of identifying dedicated employees. At this point, it is among the results that the favored relatives showed more effective participation than non-family employees.

To give an example to national researches, Karacaoğlu and Yörük (2012) conducted a research to determine the relationship and interaction between employees' perceptions of nepotism and organizational justice. 129 blue-collar workers of a family business operating in Turkey, has formed

the research sample. Findings from the collected data show that there is an inverse relationship between participants' perceptions of nepotism and organizational justice. In addition, nepotism in promotion and nepotism in recruitment have a statistically significant effect on the perception of organizational justice.

In a study conducted by Polat (2012), the relationship between nepotism practices and employees' perceptions of organizational justice was examined. The research sample was the companies listed in "Turkey's Top 500 Industrial Enterprises". The findings revealed that perceived nepotism negatively affected the perception of organizational justice of employees (İşçi, Taştan and Kozal, 2013).

Büte and Tekarslan (2010) conducted a study to investigate the effects of nepotism applied in family businesses on employees who are not family members. The sample of the study consisted of 130 managers and employees who are not family members in family businesses in Trabzon. According to the findings, as nepotism practices increase, work stress of non-family members increases while job satisfaction, motivation, trust and perception of justice decrease. This causes an increase in the turnover rate of the employees in addition to decrease in the performances.

On the other hand, Dökümbilek (2010) conducted a research to see the extent of nepotism tendency in Turkish family businesses with tight family ties. Findings revealed that the members of the board of directors of the sample, consist only of family members. In addition, employees who are not family members and who fail in performance evaluation in these enterprises were warned and/or dismissed; however, it was determined that family members whose performance evaluation failed were warned only and no other sanction was imposed. This revealed that family members were clearly favored in the sample companies.

6. Methodology

The purpose of this research is to measure the perceptions of nepotism of the people working in family businesses. In this context, a survey was conducted in three medium-sized family companies operating in various sectors in Bursa. The applied questionnaire consists of two parts. In the first part, there are demographical questions and in the second part, the Nepotism Scale

developed by Abdalla, Maghrabi and Al-Dabbagh (1994). The questionnaire forms were delivered to 265 participants both via e-mail and as hardcopies and 194 feedbacks were received. The data obtained were analyzed via SPSS 21.0 package program. As a result of the reliability analysis of the scale, Cronbach's Alpha value was obtained as 0,915 and therefore the scale was accepted as highly reliable.

Table 1: Cronbach's Alpha Value of the Scale

Scale	Cronbach's Alpha Value	Number of Items
Nepotism Scale	,915	14

6.1 Demographical Findings

According to demographical findings, 86 (44.3%) participants are women and 108 (55.7%) participants are men. As for age groups, 59 (30.4%) participants are in 18-29, 84 (43.3%) are in 30-39, 14 (7.2%) are in 40-49, and 37 (19.1%) are in 50-59 age group. 121 (62.4%) participants are married, 73 (37.6%) participants are single.

6.2 Hypothesis

H0: There is no statistically significant difference between the socio-demographic characteristics (gender, age, marital status, income, department, experience) of the family business employees and their perceptions of nepotism.

H1: There is a statistically significant difference between the socio-demographic characteristics (gender, age, marital status, income, department, experience) of the family business employees and their perceptions of nepotism. $h_1: \mu_1 > \mu_2$

6.3 Descriptive Analysis

The descriptive statistical results of the Nepotism Scale show that the most important item according to the participants is the 12th statement with an average of 2,64, which is "Acquaintances are prioritized in recruitment process in this business". The second important item is the 4th statement with an average of 2,54, which is "I think it is easier for managers to promote their acquaintances in this business". In the third place, there is the 11th statement with an average of 2,52, which is "In this business, the authority is primarily transferred to acquaintances".

The least important statement according to the participants is the 9th statement with an average of 1,84, which is “In this business, I hesitate from people whom managers know closely”.

Table 2: Descriptive Analysis Results

Items		Totally Disagree	Disagree	Neutral	Agree	Totally Agree	x	Standadt Deviation
1- Knowledge, skills and abilities are at the forefront in promoting employees in this business.	fi Y.fi	49 25,3	58 29,9	68 35,6	0 0	18 9,3	2,38	1,14216
2- No matter how successful I am in this business, I cannot avoid the acquaintances of managers.	fi Y.fi	59 30,4	73 37,6	42 21,6	8 4,1	12 6,2	2,18	1,10272
3- Relationships of kinship and closeness are primarily taken into account in promoting employees in this business.	fi Y.fi	55 28,4	62 32,0	30 15,5	29 14,9	18 9,3	2,44	1,29564
4- In this business, I think it is easier for managers to promote their acquaintances in this business.	fi Y.fi	48 24,7	43 22,2	71 36,6	14 7,2	18 9,3	2,54	1,20485
5- Factors other than the qualifications required by the job are prioritized in promoting employees in this business.	fi Y.fi	80 41,2	62 32,0	36 18,6	13 6,7	3 1,5	1,95	1,00409

6- Employees who are known in the management team of this business are respected by other persons	fi Y.fi	77 39,7	14 7,2	53 27,3	39 20,1	11 5,7	2,44	1,33890
7- The lower and middle level managers in this business treat employees that they know in a privileged way.	fi Y.fi	72 37,1	22 11,3	78 40,2	22 11,3	0 0	2,25	1,08000
8- I believe that it is very difficult for managers of this business to punish or dismiss their acquaintances.	fi Y.fi	94 48,5	41 21,1	5 2,6	51 26,3	3 1,5	2,11	1,30266
9- In this business, I hesitate from people whom managers know closely.	fi Y.fi	123 63,4	25 12,9	10 5,2	25 12,9	11 5,7	1,84	1,30237
10- Those who are familiar with this business and managers, benefit from the resources of the business more easily.	fi Y.fi	71 36,6	32 16,5	65 33,5	15 7,7	11 5,7	2,29	1,20072
11- In this business, the authority is primarily transferred to acquaintances.	fi Y.fi	46 23,7	74 38,1	26 13,4	22 11,3	26 13,4	2,52	1,32800
12- Acquaintances are prioritized in recruitment process in this business.	fi Y.fi	54 27,8	37 19,1	40 20,6	50 25,8	13 6,7	2,64	1,30852

13- Those who know this business and managers, do not have difficulty in the recruitment process.	fi Y.fi	68 35,1	31 16,0	52 26,8	40 20,6	3 1,5	2,37	1,20347
14- The reference of the people in the management staff is very important in recruiting employees for this business.	fi Y.fi	18 9,3	22 6,2	34 17,5	77 39,7	53 27,3	3,69	1,20245

6.4 Factor Analysis Results

According to the factor analysis (Table 3), it is seen that the Nepotism Scale is gathered under two dimensions. These dimensions are called as *Promotion* and *Reward/Punishment*. The *Promotion dimension* explains the Nepotism Scale with a percentage of 45,368, while the *Reward/Punishment dimension* explains with a percentage of 31,434. The cumulative percentage of both dimensions are 76,802.

Table 3: Explained Total Variance

Components	Calculated Sums of Square			Rotated Sums of Square		
	Total	% Variance	Cumulative%	Total	%Variance	Cumulative%
1	5,719	57,190	57,190	4,537	45,368	45,368
2	1,961	19,612	76,802	3,143	31,434	76,802

6.5 Comparative Statistical Findings

In order to find out whether there is a statistically significant difference between the socio-demographical characteristics of the participants and the dimensions of the scale obtained as the result of factor analysis, Mann-Whitney U and Kruskal-Wallis tests are applied (Table 4).

It is concluded that the Reward/Punishment dimension do not show a statistically significant difference ($p > 0.05$) in the gender and marital status characteristics of the participants' On the other hand, there is a statistically significant difference in age, income, department, and experience characteristics of the participants ($p < 0.05$). Therefore, the H_0 hypothesis has been rejected to a large extent in terms of Reward/Punishment dimension.

Regarding the Promotion dimension, it is observed that there is no statistically significant difference in the experience characteristics ($p > 0.05$), while a statistically significant difference is found in the characteristics of gender, marital status, age, income and the department ($p < 0.05$). Therefore, the H1 hypothesis is accepted in terms of Promotion dimension.

Table 4: Comparative Statistical Results

Variable	Dimension	Test	Statistics	P
<i>Gender</i>	Promotion	Mann-Whitney U	1862,500	,000
	Reward/Punishment		7748,500	,109
<i>Marital Status</i>	Promotion	Mann-Whitney U	3212,000	,001
	Reward/Punishment		4241,000	,641
<i>Age</i>	Promotion	Kruskal-Wallis	54,032	,000
	Reward/Punishment		65,533	,000
<i>Income</i>	Promotion	Kruskal-Wallis	36,403	,000
	Reward/Punishment		70,415	,000
<i>Department</i>	Promotion	Kruskal-Wallis	53,246	,000
	Reward/Punishment		6,481	,039
<i>Experience</i>	Promotion	Kruskal-Wallis	4,031	,258
	Reward/Punishment		24,162	,000

7. Conclusion and Discussion

Nepotism and favoritism are generally used synonymously and refers to favoritism of “relatives” (Asunakutlu and Avcı, 2010). In general, nepotism is considered as a negative concept.

Nepotism is a very common behavior in business. In particular, nepotism behavior can be seen more frequently in family businesses. When it is not carried out professionally, non-family employees who feel that the family members are favored, may be adversely affected. In this case, stress, lack of motivation and job satisfaction, insecurity towards the organization and finally quitting the job may occur.

The findings of this study show that, according to the participants, the most important statement is the idea that “Acquaintances are prioritized in recruitment process in this business”. The second important item is “I think it is easier for managers to promote their acquaintances in this business” and the third important item is “In this business, the authority is primarily transferred to acquaintances”.

At this point, it can be inferred that family businesses are not really institutionalized, although it is assumed that they are institutionalized because of the fact that they are medium-sized.

On the other hand, it was concluded that the *Reward/Punishment* dimension of the scale did not show a statistically significant difference in the gender and marital status characteristics of the participants. A statistically significant difference was observed in the characteristics of age, income, department and experience. Regarding the *Promotion* dimension, it was observed that there was no statistically significant difference in the characteristics of experience, while there was a statistically significant difference in the characteristics of gender, marital status, age, income and the department. Achieving partly the same result in both dimensions can be interpreted as the fact that the sample businesses have not yet fully institutionalized and therefore employees have a perception of the existence of nepotism in their organizations regardless of their socio-demographic characteristics.

The limited number of studies on nepotism in especially the national literature both constitutes a limitation to this study and is a reference for the future studies. It is expected that carrying out such studies not only in the private sector but also in public institutions will lead academicians to gain more in-depth knowledge of the subject, and thus the business owners and managers to act more professionally. In particular, it is thought that working in a wider scope in family businesses will accelerate institutionalization and that the importance of professional management will be understood.

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CHAPTER III

THE EFFECT OF ROLE CONFLICT ON QUALITATIVE JOB INSECURITY: THE MEDIATOR ROLE OF SELF CONTROL

Saadet Ela Pelenk

*(Asst. Prof. Dr.), Recep Tayyip Erdogan University,
e mail: epelenk503@gmail.com
ORCID: 0000-0002-8068-5518*

1. Introduction

Role is the behavior that the individual is responsible for in society, so the individual is a social actor. The player's behavior is governed by norms and values. Role is a necessity and a dynamic extension of status (Linton, 1936). Therefore, role is an expected behavior, such as father, boss, student, teacher, and it is the social order that determines the roles of each (Yilmazer & Eroğlu, 2013). Likewise, the employee has different job roles determined by the work organization. When they successfully complete these roles, they encounter positive results such as job satisfaction, performance increase, rewarding, otherwise they may experience negative job consequences such as stress, emotional burnout, intention to quit, job insecurity and loss of productivity.

Role conflict was first examined by Kahn et al. (1964). Role conflict is an expectation mismatch between employee and manager (Evrin, 1972; Thoits, 1987), assigning different roles to a single employee or the presence of many oppositions within the role. Role conflict is a concept that creates a psychological sense of tension and can harm the employee as physical health problems. An employee's overwork or having to do unrelated tasks at the same time can create

stress and anxiety. At this point, an individual who cannot think properly may make a communication accident and work error. Anxious employees may attract the attention of managers and colleagues. Thus, they may experience a feeling of failure. In this respect, the perception of unemployment is a strong negative feeling that the employee feels that it is not actually present but that it may be in the future. Why might an employee perceive job insecurity?

Organizations have to adapt to change for profitability. For this reason, businesses that do not adapt to development cannot survive. In a way, the sustainability of businesses depends on innovative jobs and attitudes. However, new jobs and tasks or being qualified may also require the employee to work beyond their capacity and take on many job roles. With this situation, which brings concentration problems, the employee may feel tired and exhausted after a while. With these negative emotions, he may feel qualitative job insecurity with the impression that he contributes less to the job. This situation, which the person thinks cognitively, can change with self-control, which is also a mental mechanism.

Self-control is the adaptation of the employee's behavior and attitudes to the work environment by arranging them according to the environment. However, this is a strong balance skill. The balance between internal and external control, is a distinctive feature on employee's lives. Individuals who maintain the balance of internal and external control they will be more successful at school and at work. The reason for success is that internal and external control individuals set permanent goals and are determined to achieve them (Yılmaz, 2017).

Self-control is the control and management of human emotions, thoughts and behavior (Nebioğlu, Konuk, Akbaba & Eroğlu, 2012). In this context, the individual must first recognize all his/her weaknesses and strengths. In order to harmonize with the outside world, he/she must strengthen his/her weaknesses and show his/her strengths to its surroundings. Self-regulation gives people the ability to develop solutions (Yılmaz 2017). With this solution, the responsibilities given to the employee by the role conflict can be classified and realized within a plan. Thus, the perception of qualitative job insecurity may decrease when the employee fulfills their duties completely and on time. Self-control abilities can be defined as monitoring-evaluation-supporting (Rehm, 1977). First of all, the subjective situation is evaluated and the reason for the behavior is found. Then standard behavior is compared with subjective behavior. By comparing

the results, he either continues his behavior or goes to a change in behavior. This situation is the adaptation process of the person to the environment. In this context, in the behavioral adaptation process to the work environment, the employee can regulate role conflict through self-control.

Role conflict affects anxiety and intention to quit (Rizzo et al., 1970). In the literature, role conflict variable and uncertainty (Schuler, Aldag & Brief, 1977; Netemeyer, Johnston & Burton, 1990), effectiveness (Getzels & Guba, 1954), organizational stress (Kahn et al. 1964), psychological wellbeing (Zainal Badri & Wan Mohd Yunus, 2021), job insecurity (Minnotte & Yücel, 2018; Adıgüzel & Küçüköğlü, 2019), organizational strategy (Floyd & Lane, 2000), cognitive control (Botvinick et. al. 2001), strategic decision making (Amason, 1996) relationship has been examined. Perception of job insecurity can be affected by role conflict. The number of studies on the direct effect of role conflict on job insecurity is limited in the literature. However, qualitative job insecurity and well-being (De Witte, De Cuyper, Handaja, Sverke, Näswall & Hellgren, 2010), counterproductive work behavior (Van den Broeck et al, 2014), job strain and psychological withdrawal (Vander Elst et al., 2014), job performance (Callea, Urbini & Chirumbolo, 2016), role performance (Fischmann, De Witte, Sulea & Iliescu, 2018), turnover intension (Urbanaviciute et al., 2018) were examined. In related studies, the negative effects of role conflict and job insecurity are mentioned. In this research, it is expected that the negative effects of role conflict and job insecurity will decrease by adding the mediation effect of self-control to the model. Therefore, with this research, it was tried to contribute to the fields of positive psychology/ management and to expand the literature.

Today, unemployment has become a social problem in almost all countries. The solution to unemployment is to create new employment areas. The process that continues with entrepreneurship and qualified workforce will create role conflict in many people due to time and expectation mismatch. Role conflict affects workforce productivity. Businesses with reduced productivity threaten both the national economy and the peace of the family. Due to the sociological and psychological importance of the research variables, the aim of the study is to examine the mediating role of self-control in the effect of role conflict on qualitative job insecurity. It is hoped that the research will contribute to the fields of organizational behavior, employment, productivity, work psychology, positive psychology and human resource management.

2. Conceptual Framework

2.1 *Role Conflict*

The concept of role conflict was discussed for the first time in Kahn (1964). Role is expected and routine duties and responsibilities of a person in his/her work and social life (Yıldırım, 1996). Role conflict refers to incongruence in role expectations between a role incumbent and role senders (Lynn & Kalay, 2015a; Lynn & Kalay, 2015b). Role conflict may arise from the difference between the expectations of the manager and the employee or by assigning different roles (Ceylan & Ulutürk, 2006). Role conflict can occur at individual and organizational levels. The role played by the employee in the individual role conflict is different from the desired one. On the other hand, those working in organizational roles have difficulties in fulfilling these duties since they undertake many tasks at the same time (Yörükoğlu, 2008). As the causes of role conflict; changes in the role over time, the role is not suitable for the personality of the employee, the role has a continuity character, the roles are incompatible, the managers have different expectations, the employee cannot make choices between roles, the role of the employee is over the capacity of the employee, and the work-family role conflict (Yavuz, 2011). However, role conflict may also be caused by organizational situations such as downsizing or change.

The most important of personal conflicts is role conflict. Role conflict is the difference in the role a person takes and the role others expect. Role conflict arises when the individual has to perform a task that is incompatible with the experience, education, expertise, abilities, goals and expectations of the individual in the organization (Gümüş, 2021).

Organizationally, role conflict can create a feeling of disability in the employee. The employee may look for different jobs with the perception of not being wanted. On the other hand, role conflict may cause physiological health problems by increasing stress in the employee. In addition, role conflict can reduce job satisfaction and organizational trust (Kılınç, 1991).

2.2 *Qualitative Job Insecurity*

Job insecurity is the inability to maintain a job under threat or the weakness experienced by a person in this regard. In this context, job insecurity is the loss of the job except for the influence of the employee. If the job threat is perceived

subjectively depending on the person's opinion, it is qualitative job insecurity. Three factors can threaten the employee's job insecurity. These elements are planned and unplanned organizational messages and rumors. Unplanned organizational messages constitute the weakness and severity of the threat to job insecurity. In this context, job insecurity is linked to the severity of the danger and the employee's power to resist this danger. In this context, the employee may react to job insecurity such as resistance to the job, intention to leave and decreased productivity (Greenhalgh & Rosenblatt, 1984). Sverke and Hellgren (2002) also expressed job insecurity as negative reactions of employees to job change. However, if the employee gets stronger professionally and internally against the danger of job loss and unemployment, he/she can win this war if he/she is more qualified.

Job insecurity, which is an uncertain situation or danger in terms of the continuity of work, is divided into two as quantitative and qualitative. Quantitative job insecurity is a situation where a person actually loses his/her job. In a way, the employee will be dismissed after a certain period of time. On the other hand, qualitative job insecurity is the perception of the employee that the job will not continue. Organizational changes can trigger this perception (Borg & Elizur, 1992; Klandermans & Vuuren, 1999). Qualitative job insecurity is the emotional reaction of the employee to losing his/her job depending on subjective factors and is also based on psychological factors (Sandıkçı, 2009). According to Greenhalgh and Rosenblatt (1984), the lack of organizational communication, changing the correct information until it reaches the employee subjectively affects job insecurity. In this context, effective communication and control of employees can change their perceptions of job insecurity.

Ashford et al. (1989) stated that role conflict causes the individual to lose control power, thus triggering job insecurity. At this point, role conflict triggers the perception of job insecurity as it reduces employees' expectations from managers.

2.3 Self Control

Self-control is the ability of a person to change and regulate their behavior and attitudes in order to adapt to the environment (Rothbaum, Weisz & Snyder, 1982). It may be to achieve the goals of the individual to develop self-control abilities (Kim & Park, 2015). Self-control abilities are divided into three as self-monitoring, self-assessment and self-support (Rehm, 1977). Self-monitoring

is the awareness of the observed or unobserved behavior of the employee by himself (Stark, Brookman & Frazier, 1990). Thus, thanks to self-monitoring, the person gains awareness and gets to know himself.

Self-assessment is the comparison of the behaviors observed by the employee with the standard behaviors. At this point, it is determined if there is a deficiency, inaccuracy and inconsistency in their behavior (Kanfer & Karoly, 1972). Self-monitoring can be an action that everyone should do in everyday life. Because the person may not be aware of the mistakes or injustices he made, as he often changes the solution options according to the situation. However, taking the right behavior and person as an example in situations can at least minimize mistakes.

Self-support-empowerment consists of a person's decision to continue his behavior compared with the standards (Mezo, 2009). At this point, self-control includes actions such as managing emotions and thoughts and making decisions to change behaviors. However, self-control is not an endless resource, and it may run out a little more when used voluntarily. In this case, it can be expressed by the pressure of the person to keep his/her feelings and thoughts under control. Because self-control requires regulating behavior according to the cultural structure and rules of each environment (Baumeister et al., 2007). The decrease or loss of self-control can leave the person under the direction of impulse or emotions. At this point, self-control needs to be renewed again, just like resting an athlete who does intense physical activity. In this context, morale-improving activities or spending time with friends can be effective.

2.4 Hypothesis Development

Role conflict is the stress of the employee as a result of job role complexity or simultaneous work. If the employee feels this stress for a long time, psychological problems arise (Flouri & Kallis, 2011). Employees who cannot think correctly due to role conflict arising from the difference in role expectation of the manager and subordinates (Ceylan & Ulutürk, 2006) may have a perception of job insecurity. Because the employee believes that he cannot fulfill his duty properly. Therefore, role conflict may cause the job insecurity perception (Ashford et al., 1989)

Role conflict can occur in a variety of ways. There can be complexity in the sender role. In this context, the sender assigned conflicting roles to the contractor. Second, the sender's role may have different expectations. In this

case, conflicts may arise if the contractor takes on more than one unrelated role. Sometimes the role is incompatible with the person's beliefs and values, but there is an overwork due to the role contractor's inability to say no. At this point, while the employee is already experiencing a contradiction in completing the job, the use of pressure and force also increases the severity of the role conflict (Kara, 2010). Floyd and Lane (2000) examined the conflict between the need for change and management roles. In this context, multiple strategic roles and environmental changes can create role conflicts. Strategic role conflict increases the risk of uncertain and opportunistic behavior in the actions of managers, affecting organizational development by damaging the quality of shared knowledge. In this context, positive personal development practices will provide job control (Bandura, 1997).

The power distance between the employer and the employee increases the job insecurity perception (Tüzün, 2020). The job insecurity perception that may be caused by role conflict can be reduced by self-control (Francis, Mezo & Fung, 2012). Self-control allows employees to focus more on their work. If the employee has self-control, their success will increase and they will manage their time effectively by managing their mood disorder (Feldman Martinez-Pons & Shaham, 1995). In fact, the individual controls his / her behavior with standard behaviors with self-evaluation, the sub-dimension of self-control. Therefore, emotions such as anxiety and stress can be controlled. In this context, stress and anxiety caused by role conflict can be balanced with self-control. However, if the employee has a high locus of control, they may feel more perceived job insecurity.

Self-control provides individual decision-making and problem-solving ability. Employees may feel less about losing their job as they develop problem-solving skills (Jacobson, 1995; Wyk & Pienaar, 2008); it also has a positive effect on performance. As a result of Yılmaz's (2017, p.33) research with tennis athletes, it was found that the performances of athletes with high levels of self-control were high. Sport has a positive effect on self-control, self-esteem and self-management. In this way, athletes with high self-control skills minimize the negative situations they encounter, eliminate situations that prevent their success and ensure the continuity of their success.

Individuals face many problems in business and social life. And only through struggle and experience they overcome problems. At this point, the employee must first evaluate and strengthen in terms of personality, in other words,

develop self-control skills. First of all, the individual who can communicate with himself / herself in a healthy way does not escape his / her problems and tries to solve them. Self-control is an effective and important topic in human behavior and psychology. Studies have revealed that self-control reduces unconscious addiction (Walters, 2000) and aggressive behaviors (Denson, Capper, Oaten, Friese & Schofield, 2011). In this context, an individual's anxiety and maladaptive behaviors may decrease (Powers, Moshontz, & Hoyle, 2020). At this point, self-control can reduce the aggressive and provocative behaviors of the employee (Denson et al., 2011). For example in a study investigating the relationship between trauma and anti-sociality in young people, the complete mediation of self-control between trauma reactions was found (Pechorro, De Lisi, Gonçalves & Oliveira, 2021). Therefore, self-control is a defensive skill that concerns not only the present but also the future (Jimura, Braver & Chushak, 2013). The mediating effect of self-control between role conflict and job insecurity can be explained by *The Social Monitoring System and Sociometry Theory* (Pickett & Gardner, 2005). According to this theory, the employee regulates himself in order not to be excluded from the business system. In this context, self-control can change the perception of unemployment by reducing the effects of stress and anxiety caused by role conflict. Therefore, the likelihood of future unemployment can be minimized by adjusting roles and responsibilities. Based on the informations in the literature, the model and hypotheses of the research are as follows:

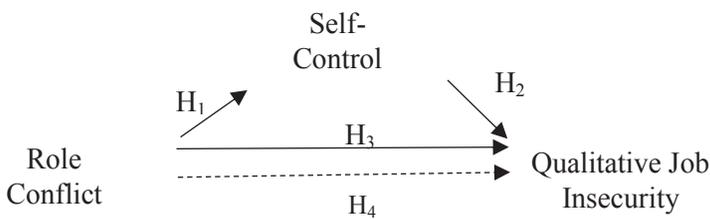


Figure 1: Research model

In the research model, the independent variable was determined as role conflict, the dependent variable was qualitative job insecurity and the mediator variable was self-control (Figure 1). The research hypotheses are as follows:

H_1 : Role conflict has a negative and significant effect on self-control.

H_2 : Self-control has a negative and significant effect on qualitative job insecurity.

H_3 : Role conflict has a positive and significant effect on qualitative job insecurity.

H₄: Self-control has a mediating role in the effect of role conflict on qualitative job insecurity.

3. Method

3.1 *The Research Universe and Sample*

The research universe consists of 250 people (N=250) working in two financial institutions in Istanbul. An online questionnaire was sent to the participants. The convenience sampling method was used for data collection. 250 questionnaires were sent for the research and 220 people returned. 20 incorrect and incomplete surveys were removed from these surveys and were not included in the analysis. So the sample of this research is 200 people.

It was determined that the number of samples to be reached in the calculation made taking into account the 95% confidence interval and 5% margin of error for 250 people, who are the research population, is at least 151 people (Hair, Black, Babin & Anderson, 2014). Bryman and Cramer (2001) state that the number obtained by multiplying the number of items by five or ten is sufficient for the sample size. In this research, the number of items in the scale with the highest number is 10. Considering that 10 times will be 100, the sample can be considered to be sufficient (Çokluk, Şekercioğlu & Büyüköztürk, 2010). Research data were collected between March 4, 2019 and April 4, 2019.

40% of the participants are women (80 people). 60% of the participants are married (120 people). 10% of the participants are graduate (20 people), 50% are undergraduate (100 people), 30% are vocational school (60 people) and 10% (20 people) are high school graduates. 20% of the participants are in the 18-25 age range, 30% in the 26-33 age range, 40% in the 34-41 age range, and 10% in the age range 42 and above. 50% of the participants have 10 years or more of experience in the industry.

3.2 *Data Collection Method and Scales*

The convenience sampling method was used in this research. An online questionnaire consists of two parts of demographic and scale questions. In the demographic part of the questionnaire the gender, educational status, age and industry experience of the participants were asked. The 5-point Likert scale was used in the research. Rizzo, House and Lirtzman's (1970) scale consisting of eight items and one dimension was used to measure *role conflict*. The reliability

(α) of the scale is 0.80. To measure *self-control*, a scale of Mezo (2009) consisting of sixteen items and three sub-dimensions was used. The reliability (α) of the scale is 0.81. Borg and Elizur's (1992) scale consisting of seven items and one dimension was used to measure *qualitative job insecurity*. The reliability (α) of the scale is 0.72.

3.3 Data Analysis

Spss and Amos programs were used in the analysis of the data. Confirmatory factor analysis was used within the scope of validity studies of the scales and item analysis methods were used within the scope of reliability study. This analysis tests whether a previously defined and restricted structure is verified as a model and is one of the structural equation models. In the evaluation of model fit, ratio of chi-square statistics to degrees of freedom, statistical significance of individual parameter estimate, residual fit indexes, fit indices based on independent model fit indices classified as and root mean square error are used (Çokluk, Şekercioğlu & Büyüköztürk, 2010).

The Cronbach Alpha technique, one of the item analysis methods, is used to examine the consistency between test scores and is generally expected to be above 0.70. Item total correlation, another item analysis method, is used to explain the relationship between the scores obtained from the test items and the total score of the test. Item-total correlation shows to what extent the items differentiate individuals in terms of measured behavior. It shows that the two scale items exemplify the same behavior and the internal consistency of the test is high. Generally, items with an item-total correlation of 0.30 or higher are good discriminatory (Büyüköztürk, 2011). The mediating variable path model was created to determine the mediating role of self-control in the effect of role conflict on qualitative job insecurity. The confidence interval in the analyzes was determined as 95%.

4. Findings

4.1 Validity and Reliability Analysis of the Scales

4.1.1 Fit Indexes of the Role Conflict Scale

Confirmatory factor analysis, which was performed in accordance with the original structure of the *Role Conflict Scale* (8 items and one dimension), was

determined that the model fit indices were not at appropriate levels at the first stage, so the covariance connections were made first, but the fit indices could not be improved, so items (i.1, i.2, i.4) were deleted. Results from repeated confirmatory factor analysis are shown in Table 1.

Table 1: Fit Indexes of Role Conflict Scale

Model Fit Indices	CFA 8 Items 1 Factor	CFA* 6 Items 1 Factor
X ² /sd	6,92	1,58
RMSEA	0,17	0,05
SRMR	0,03	0,01
GFI	0,86	0,98
NNFI	0,95	0,99
CFI	0,96	0,99
Factor Load (min/max)	0,77/ 1,00	0,86 / 0,98

* With covariance connections

According to the results in Table 1, it was determined that the model fit indices reached a very good level with the covariance connections and the factor loads were in appropriate intervals.

Table 2: Item analysis results of role conflict scale

Item	Std. β	t	r	α
i3	0,94		0,92	0,97
i5	0,86	20,17**	0,85	
i6	0,95	28,36**	0,94	
i7	0,97	30,84**	0,96	
i8	0,98	31,78**	0,96	

r: Item total correlation, ** $p < 0.01$, I= Item.

According to the results of the confirmatory factor analysis and item analysis in Table 2, it was determined that the factor loads of the 5 items in the role conflict scale were in appropriate ranges, and the t values of the factor loads were significant at the level of 0.01. The Cronbach Alpha coefficient of the scale was determined as 0.97, and the item-total correlation for all items in the scale was found to be higher than 0.30 (in the range of 0.85 to 0.96). According to the results of validity and reliability analysis, it was determined that the scale is a reliable and valid scale with 5 items remaining in the role conflict scale and its unidimensional structure.

4.1.2 Fit Indexes of the Qualitative Job Insecurity Scale

Confirmatory factor analysis, which was performed in accordance with the original structure of the *Qualitative Job Insecurity Scale* (7 items and one dimension), was determined that the model fit indices were not at appropriate levels at the first stage, so the covariance connections were made first, but the fit indexes could not be improved, so items (i.1, i.6, i.7) were deleted. Results from repeated confirmatory factor analysis are shown in Table 3.

Table 3: Fit indexes of qualitative job insecurity scale

Model Fit Indices	CFA	CFA*
	7 Item 1 Factor	4 Item 1 Factor
X ² /sd	9,16	0,04
RMSEA	0,20	0,01
SRMR	0,03	0,01
GFI	0,86	0,99
NNFI	0,94	0,99
CFI	0,96	0,99
Factor Load (min/max)	0,82/ 0,99	0,87 / 0,98

* With covariance connections

According to the results in Table 3, it was determined that the model fit indices reached a very good level with the covariance connections and the factor loads were in appropriate intervals.

Table 4: Item analysis results of qualitative job insecurity scale

Item	Std. β	t	r	α
i2	0,98		0,91	0,95
i3	0,87	21,33**	0,86	
i4	0,93	20,18**	0,86	
i5	0,93	27,48**	0,91	

r: Item total correlation, ** $p < 0.01$, i= item.

According to the results of the confirmatory factor analysis and item analysis in Table 4, it was determined that the factor loads of the 4 items in the qualitative job insecurity scale were in appropriate ranges, and t values of the factor loads were significant at 0.01 level. The Cronbach Alpha coefficient of the scale was determined as 0.95 and the item-total correlation for all items in the scale was

found to be higher than 0.30 (between 0.86 and 0.91). According to the results of validity and reliability analysis, it was determined that it is a reliable and valid scale with 4 items remaining in the qualitative job insecurity scale and its one-dimensional structure.

4.1.3 Fit Indexes of the Self-Control Scale

Since the confirmatory factor analysis performed with the 16-item and 3-dimensional structure of the *Self-Control Scale* was determined that the model fit indices were not at appropriate levels in the first stage, the confirmatory factor analysis was repeated with covariance connections and the results are shown in Table 5.

Table 5: Fit indexes of the self-control scale

Model Fit Indexes	CFA 16 Items 3 Factors	CFA* 16 Items 3 Factors
X ² /sd	3,36	2,07
RMSEA	0,11	0,07
SRMR	0,03	0,02
GFI	0,82	0,90
NNFI	0,95	0,98
CFI	0,96	0,98
Factor Load (min/max)	0,89 / 0,98	0,90 / 0,98

* With covariance connections

According to the results in Table 5, it was determined that the model fit indices reached a good level in general with the covariance connections suitable for the modification suggestions, the factor loadings and the correlation values among the factors were in appropriate intervals.

Table 6: Item analysis results of the self-control scale

Item (i)	Std. β	t	r	α (0,98)
i1	0,94		0,91	0,97
i2	0,93	31,42**	0,91	
i3	0,90	23,47**	0,89	
i4	0,92	24,58**	0,89	
i5	0,96	30,58**	0,91	
i6	0,97	31,55**	0,92	

i7	0,98		0,93	0,98
i8	0,97	49,19**	0,92	
i9	0,92	29,85**	0,92	
i10	0,96	39,22**	0,92	
i11	0,98	49,10**	0,93	
i12	0,95		0,91	0,97
i13	0,93	37,82**	0,90	
i14	0,92	25,47**	0,89	
i15	0,95	29,33**	0,89	
i16	0,97	42,21**	0,91	

r: Item total correlation, ** $p < 0.01$

According to the results of the confirmatory factor analysis and item analysis in Table 6, it was determined that the factor loads of the items in the self-control scale were in appropriate ranges, and t values of the factor loads were significant at the 0.01 level. The Cronbach Alpha (α) coefficient of the overall scale was 0.98, the Cronbach Alpha coefficients of the sub-dimensions were 0.97 for self-monitoring; 0.98 for self-evaluation; 0.97 for self-empowerment. It was determined that the item-total correlation for all items in the scale was higher than 0.30 (in the range of 0.89 to 0.93). According to the results of the validity and reliability analysis, the self-control scale was found to be a reliable and valid scale with 16 items and its 3-dimensional structure.

4.2 Descriptive Statistics of the Scales

Descriptive statistics of scale are given in Table 7.

Table 7: Descriptive statistics

Variables	n	\bar{X}	ss	Skewness
Role Conflict	200	2,30	1,34	1,00
Qualitive Job Insecurity	200	2,31	1,25	0,99
Self-Monitoring	200	3,60	1,27	-0,92
Self-Evaluation	200	3,63	1,28	-0,80
Self-Empowerment	200	3,69	1,29	-1,00
Self Control	200	3,64	1,23	-0,98

According to table 7, the role conflict (2.30 ± 1.34) and emotional job insecurity (2.31 ± 1.25) scores of the participants were found to be low. Self-monitoring (3.60 ± 1.27), self-evaluation (3.63 ± 1.28), self-empowerment (3.69 ± 1.29) and

self-control (3.64 ± 1.23) scores of the participants have been detected at a high level.

4.3 Results of Correlation Analysis

The results of correlation analysis are shown in Table 8.

Table 8: Results of correlation analysis

	2	3	4	5	6
1. Role Conflict	0,88**	-0,87**	-0,85**	-0,90**	-0,91**
2. Qualitative Job Insecurity	1	-0,89**	-0,89**	-0,93**	-0,94**
2.1.Self monitoring		1	0,91**	0,88**	0,97**
2.2.Self evaluation			1	0,88**	0,96**
2.3.Self empowerment				1	0,95**
3. Self Control					1

* $p < 0,05$, ** $p < 0,01$

The positive and significant relationship was found between role conflict scores and qualitative job insecurity scores ($r = 0.87$; $p < 0.05$). Self-monitoring with role conflict ($r = -0.87$; $p < 0.05$), self-evaluation ($r = -0.85$; $p < 0.05$), self-empowerment ($r = -0.90$; $p < 0, 05$) and self-control ($r = -0.91$; $p < 0.05$) scores were found to be negatively and significantly correlated. A negative and significant relationship was found between self monitoring with qualitative job insecurity ($r = -0.89$; $p < 0.05$), self-evaluation ($r = -0.89$; $p < 0.05$), self-empowerment ($r = -0.93$; $p < 0.05$), self-control the scores ($r = -0.94$; $p < 0.05$).

4.4 Hypothesis Results

In this research, the independent variable was determined as role conflict, the dependent variable was qualitative job insecurity and the mediator variable was self-control. The research model includes four hypotheses. And the hypotheses have been tested with path analysis. The road line of the H_4 hypothesis can also be defined as the indirect effect of the independent variable on the dependent variable through the mediator variable (Çokluk, Şekercioglu & Büyüköztürk, 2010). After the addition of the mediator variables, in addition to the direct effect of the independent variable on the dependent variable, its indirect effect arises from the mediator variable. The statistical significance of the obtained indirect effect is obtained with the Sobel Test statistics. The results of the path analysis of the research are shown in Table 9.

Table 9: The results of path analysis of the research

Direct Effect						
Hypothesis	Independent variable	Path	Dependent variable	β (SH)	t	R ²
H ₁	Role conflict	→	Self control	-0,95 (0,04)	-21,56**	0,91
X ² /sd: 2,17 RMSEA: 0,08 SRMR: 0,01 GFI: 0,96 NNFI:0,98 CFI:0,99						
H ₂	Self control	→	Qualitative Job Insecurity	-0,98 (0,05)	-23,15**	0,95
X ² sd: 2,34 RMSEA: 0,08 SRMR: 0,01 GFI: 0,96 NNFI:0,98 CFI:0,99						
H ₃	Role conflict	→	Qualitative job insecurity	0,90 (0,04)	19,67**	0,81
X ² sd: 4,54 RMSEA: 0,13 SRMR: 0,03 GFI: 0,90 NNFI:0,95 CFI:0,97						
Indirect Effect						
	Independent variable	Mediator variable	Dependent variable	ES	SBT	R ² _{EB}
H ₄	Role conflict	Self control	Qualitative job insecurity	1,25**	7,00	0,18
X ² /sd: 2,28 RMSEA: 0,05 SRMR: 0,09 GFI: 0,88 NNFI:0,93 CFI:0,94						

SBT: Sobel test statistic, ES = Effect size, * p < 0.05 **, p < 0.01

The research hypothesis results were shown in the Table 10.

Table 10: Hypothesis results

Hypothesis	Results
H ₁ : Role conflict has a negative and significant effect on self-control.	Accepted ($\beta = -0.95$; $t = -21.56$; $p < 0.05$)
H ₂ : Self-control has a negative and significant effect on qualitative job insecurity.	Accepted ($\beta = -0.98$; $t = -23.15$; $p < 0.05$)
H ₃ : Role conflict has a positive and significant effect on qualitative job insecurity.	Accepted ($\beta = 0.90$; $t = 19.67$; $p < 0.05$)
H ₄ : Self-control has a mediating role in the effect of role conflict on qualitative job insecurity.	Accepted (ES = 1.25; SBT = 7.00; R ² ES = 18%; $p < 0.05$)

In Tablo 10, the indirect effect of role conflict on qualitative job insecurity, through self-control (H_4) is statistically significant ($p < 0.05$). Due to this effect, the variance change in job insecurity is at the level of 18%. In other words, role conflict has the effect of increasing qualitative job insecurity. However, this effect decreases or disappears in individuals with high self-control.

5. Conclusion

The individual wants to know how to behave in a control-oriented way or the reason for another person's behavior. Only in this way is it possible to establish and maintain a social order. On the other hand, behavioral standards are also necessary for social order (Yılmaz & Eroğlu, 2013). But the social order is full of uncertainty in many areas. Business life also provides a social order for the employee. The employee gets a job role to meet economic and social needs. In some cases, the employee's job roles continue to increase. However, factors such as population growth and insufficiency of employment opportunities, rapid advancement of technology and globalization create a perception of unemployment among employees. In this context, the employee who tries to perform many roles at the same time is faced with the fear and anxiety of being fired.

The micro and macro conditions of the business do not guarantee long-term employment. Since human beings are an inherently receptive asset, they can take many tasks to take advantage of business opportunities. Or, in a business with a narrow business volume and a small number of employees, it may have to do many jobs at the same time. For whatever reason, after a while, the employee may experience a confusion between the roles he / she assumes. As a result, none of the roles can be completed on time or with the desired quality. The effect of this negative situation on human psychology is the fear of dismissal. In fact, the source of this fear is the person's insecurity or loss of control.

According to the findings of the research role conflict has a negative and significant effect on self-control, so the H1 hypothesis was accepted. According to the first finding of the study, when the employee's role conflict increases, self-control decreases. This situation may be caused by the employee, who has to do many tasks at the same time, trying to keep up with all jobs and losing the work-individual balance. Secondly, self-control has a negative and significant impact on qualitative job insecurity. Therefore, the H2 hypothesis was accepted. According to the second finding of the study, when self-control increases, perceived job insecurity decreases. Thus, the employee can recognize his/her abilities through monitoring-evaluation-empowerment. Therefore, problem solving and decision-making skills increase and perceived job insecurity may decrease. According to the third finding of the study, role conflict has a positive and significant effect on qualitative job insecurity. Therefore, the H3 hypothesis was accepted. According to the third finding of the study, when role conflict increases, the perception of job insecurity also increases. The employee's anxiety about being unemployed is a psychological

psychological phenomenon. As the different duties of the employee increase, he / she may feel inadequate and psychologically feel dismissed. The fourth result is that self-control has a mediation role in the effect of role conflict on qualitative job insecurity. Hence, the H4 hypothesis was accepted. According to the fourth finding of the research, self-control mediates the effect of role conflict on qualitative job security. According to the fourth finding of the study, role conflict has the effect of increasing qualitative job insecurity, but this effect decreases or disappears in employees with high self-control. Therefore, although role conflict increases the unemployment perception of the employee, those who work with self-control can reduce this thought. Therefore, the employee can increase his / her performance without panic of unemployment or by balancing different tasks. The relevant results with this research show that the perception of job insecurity is positively affected by role conflict, but this interaction can be reduced by self-control. These results were supported by some researches (Jacobson, 1995, Wyk & Pienaar, 2008, Francis, Mezo & Fung, 2012, Jimura et al., 2013).

This research offers self-control as a solution to reduce the perception of job insecurity caused by role conflict and thus increase employee productivity. Competitive businesses impose many work roles on employees and cause role conflicts. It is necessary to balance work and non-working time by focusing the employee's self-identity (Thompson & Bunderson, 2001). This control mechanism can reduce the negative impact of role conflict on the employee. However, employees with advanced self-control skills can turn the crisis into an opportunity and plan their roles. Employees who can fulfill their duties and responsibilities may be concerned with the issue of being constructive and productive rather than the perception of job insecurity.

This research provides important contributions to the scientific and management literature. One of these contributions is that can be managed employees' perceptions of workload and unemployment through self-control. In this context, tasks can be given that will enable the employee to realize his/her abilities and characteristics. Employees should be able to discuss incomplete and erroneous behaviors with their supervisors and co-workers. Secondly, employees' perception of job insecurity arises from role conflict involving overwork or incompatibility of duties. In this context, the supervisor should carry out a series of studies suitable for the capacities of the employees. In addition, the human resources (HR) department can provide training to employees to ensure their professional development, as well as job analysis and definitions.

Employers should not lay off employees in the slightest crisis. Instead, the supervisor and HR department should develop constructive solutions. For this reason, organizations should utilize human resources units effectively for employee's motivation. In this context, a job role should be defined in accordance with the qualifications and abilities of the employees. For this reason, the employee should take duties and responsibilities in a way that does not feel anxious.

Anxiety and stress can be caused by the employee's personality trait or organizational factors. If this psychological situation is due to organizational factors, it is important that managers gain self-control skills to employees. For this, it may be effective to support employees to be successful, learn from their mistakes, provide professional development trainings and organize meetings that increase social and commercial solidarity. Most importantly, the supervisor-manager must be able to communicate effectively with employees.

Employers and supervisors should know their employees and assign them roles and responsibilities according to their capacities. On the other hand, the employee's getting support from friends and supervisor, scheduling their jobs can alleviate this anxiety. The perception of job insecurity is a negative feeling and a cognitive state as a result of the person's attitudes and behaviors. The control of this thought can positively affect the work psychology. The self-controlled individual does not give meaning to events and accepts events as they are. In this context, self-control is primarily to balance the inner and outer world of a person with cognitive and emotional control. The supervisor can increase the self-control of employees by increasing their participation, supporting them and giving feedback to their mistakes.

This research has some limitations. The first limitation of this research is that it is conducted in a short period of time and in a single sector. The second limitation of the research is that a certain number of samples has been reached due to the workload of the participants. For this reason, this research results should not be generalized for all sectors. In future researches, it is recommended to add personality and role uncertainty variables to the research as independent variables.

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CHAPTER IV

COMPETITION STRATEGIES IN THE TELECOMMUNICATION SECTOR IN NORTHERN IRAQ

Abdulkadir Gümüş¹ & A. Kamal Ghafour²

*¹(Dr. Öğr. Üyesi), Van Yüzüncü Yıl
University, kadirgumus@yyu.edu.tr
ORCID: 0000-0002-6069-8776*

*²(Doktora Öğrencisi), Van Yüzüncü Yıl University,
akaam.kamal@gmail.com
ORCID:0000-0003-0385-3167*

Introduction

Communication is an integral facet of human civilization. The development of various intellectual paradigms such as social, political and economic sectors has been the art of possibility due to communication. The medium of communication encompasses several measures and steps to ensure exchange of signs, signals, words, images and ideas among the people (Chen, Y, et al. 2008:9). The medium through which these exchanges take place have been threaded in comprehensive concept of communication. In other words, the transmission of words, images, signs and figures among different entities is known as communication. The addition of various mechanisms of technology has transformed simple communication to higher ambit of telecommunication (Verecken W, et al 2011).

Competitive strategies have developed over the time for the analysis and bifurcation of the micro-economic factors. Telecommunication sector is experiencing various models-strategies including the cost leadership strategy,

the differentiation strategy, the market focused technique and corporate growth strategy (Tungcab. T. 2014).

Strategic competitive management is the process of focuses on the result for long-term sustainable survival and sustainable competitive, these strategies are amalgamated in to one framework which is termed as competitive strategies because the companies compete with each other and work under the ambit of comparative advantage theory for penultimate results (Rid, T. 2016).

In this research work, the strategies of telecommunication in northern Iraq have been delimited for further studies. Northern Iraq is a territorial configuration of four geographical regions in Iraq. The region holds majority of Kurds. (Doshi, et al. 2003). The sector of telecommunication in Northern Iraq has expanded manifold over the last few decades. Amongst the prominent telecommunication corporations in this region, Asia cell, Zain and Korek hold the major chunk of the market of services of the Telco's. (Abbedin M Z, and Laboni F. 2015). The Asia cell is Iraqi based Telecommunication Company which is operating since 1999 in this country. Its base has widened significantly in northern Iraq as well. (Yildiz, Kerim, 2007). However, zain telecom held 53% of the total market share in northern Iraq as per the last latest surveys in 2018. Along with these companies, Korek is the only regional telecom player in northern Iraq. It has the base of this region. This corporation is medium range unit so it holds only 15% market share of the sector. The research works focuses upon the prospects of telecommunication sector in northern Iraq.

This study is aims to understand the strategic competition between three popular telecom companies (Zain Iraq, Asiacell and Korek telecom) in north Iraq, mainly in service quality dimension, the different factors which influence the adoption of the sector, competition in customer needs and satisfactions, and having some suggestion and recommendation for the future plan and business sustainability in the region.

1. Background of Telecommunication Sector in North Iraq

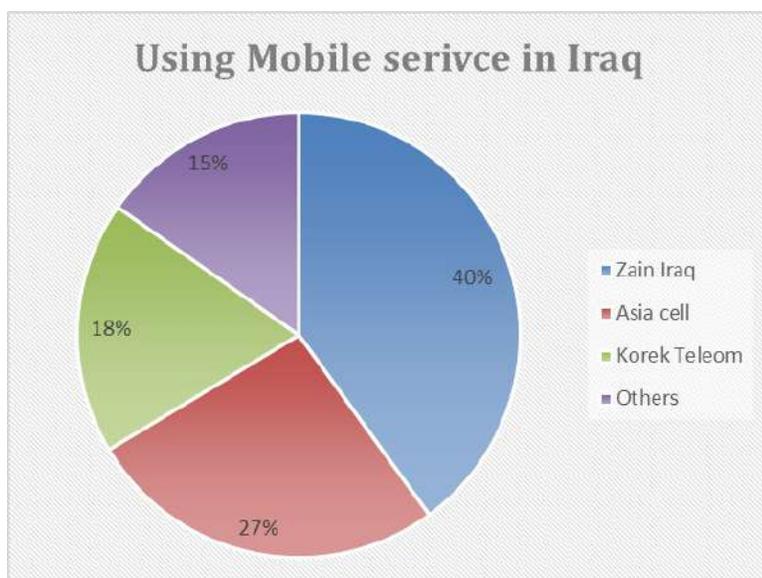
The north iraq region was cut off from all postal and telephone connections due to gulf war 1991. The region faced serous impediments in the sector of telecommunication from 1991 to early 2000. (Nazab T, and Almas H 2012:3).

However, the region stayed connected with the help of satellite communication channels. The postal and telephone connectivity was ensured to the region after the US invasion of Iraq in 2003. The competition in the telecommunication sector got impetus during first decade of 21st century.

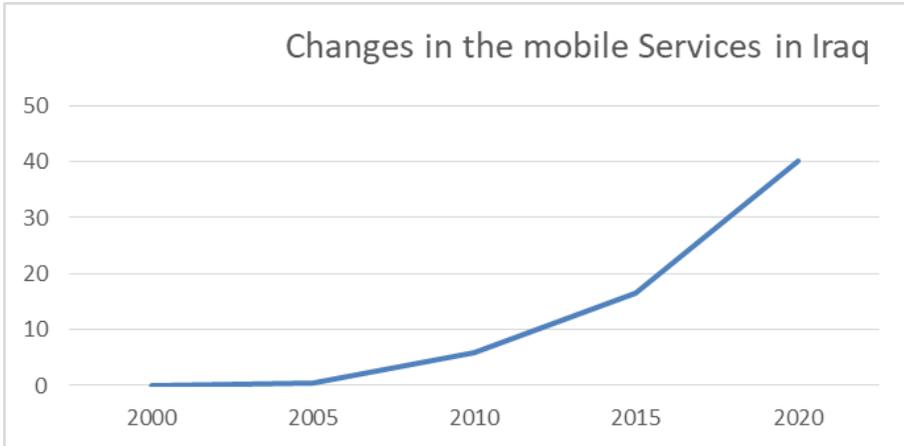
Asia cell is the first telecommunication company established in Sulimanyah, Iraq in 1999, the company started the commercial operation since 2000, and in 2003 getting GSM license in north Iraq. While in the center and south of Iraq till 2003 mobile phone networks were prohibited after 2003 Zain telecom company provided telecommunication service in Iraq and getting license in the same year, now is the largest telecommunication company in Iraq. Kerek telecom is the third historical mobile and telecom company in Erbil, Iraq established in early 2011 and now growing to overall Iraq. Currently according to the Datareportal report in January 2020 Iraq has 40.01 Million mobile connections around, 98,3% of total population in Iraq having access to use mobile (datareportal 2020).

In overall Iraq Zain is the largest telecom company, while in the north Iraq Asia cell an Korek telecom having more subscribers, according to the ministry of communications of Iraq (MOC), the companies have following subscribers for using mobile services in Iraq in (figure 1) explained the rate of using mobile service in Iraq:

- Zain Company has 15,7 Million customers, majority users from Baghdad and south of Iraq.
- Asia cell has 10,4 million customers, leading the North Iraq.
- Korek Telecom has 7,2 Million customers.
- Other telecom companies such as (Moutiny and Iraquana) having 6 Million customers.



In 2003 only 2500 customer using mobile phone while in January 2020, 40 million users using mobile phone Even though Iraq facing a lot of political and economic issues in the last decade but telecommunication industry is developing very wild in the region, and it has high growth in the last 5 years as mentioned in the (Figure 2).



Increasing the number of customer in Iraq giving the good opportunities for international companies to compete in the region and get benefit, growing the number of customer continually is the best reason for international telecom industry to come and invest in the area, France Telecom acquired a 20% stake in Korek in 2011 Ooredoo corporate a Qatari telecom acquired a majority stake in Asiacell in 2012. and Zain is a Kuwait mobile telecommunication and providing mobile and internet services in Iraq since 2003.

In north autonomous region three telecommunication mobile operations with GSM license having different market share, the telecommunication industry experiences growth of 11,6%, where the penetration rate went in less than 7 years from 5% to 75%. Zain is the largest operator in the market Share by 53%, followed by Asia cell with a 31% market share and Korek Telecom with a 15,7% market share in 2013 (marcopolis.net). The comparative advantage belongs to the Zain Iraq with 53% share of the market. Korek is the smallest in terms of share in the Northern Iraq. The social, political and economic upheavals have been major obstacles for the growth of the sector in Iraq (www. marcopolis, net).

Zain Iraq, Asiacell and Korek telecom own over 90% of mobile service infrastructure in Iraq, still in Iraq using the basic services such as GSM, 3G and only in the north iraq region using 4G services.

2. Research Objectives

General objective the general objective of this study is to understand the competitive strategy of telecommunication companies in north Iraq.

Specific objectives:

The research work has the following objectives:

- To develop understanding about competitive strategies of telecommunication companies.
- To assess the prospects of telecommunication sector in northern Iraq.
- To evaluate and recommend strategies for competitiveness and sustainability of telecommunication sector in northern Iraq.

2.1 Methodology

Qualitative research design has been used in this research work. The theory of comparative advantage is employed to adjudge the performances of the companies of telecommunication in Northern Iraq. The comparative advantage theory is focused on specialization and enhancement of efficiency in particular field over the companies. The sources consist of primary and secondary intellectuals scripts of the authors. The empirical data is not used in this work.

Differentiation strategy, If the distinction is drawn in quality and style of the product, it denotes the differentiation strategy to excel in market and calling randomly to 100 users in different companies also is a part of qualitative of this work, finally Market focused strategy: In this strategy the company concentrates on specific segment of quarter of the market to attract customers for the profiteering of the company. (Tungcab.T. 2014).

2.2 Literature Review

Some studies have observed the adaption of the telecommunication company in service quality model (Wang, Lo, and Yang, 2004; Johnson and Sikirit, 2002; Lai, 2004), some of them through the small group discussions and coming up with different idea for networking quality (Shafei and Tabaa, 2016; Kim et al., 2004), that quality of service has significant effect of the users , Secondly the price structure is the great point for the competitive strategy, among all of the theoretical models for intentions to adopt mobile network technology we are try to use the technological accepting model TAM developed by Davis in 1989. For this research work, the technology acceptance model (TAM) has been employed.

The TAM method highlights a situation in which the potential customers are assessed on reasoned relation and use of the product. (Nazab, and Almas,2012:1-7).Their inherent instincts are evaluated for the expansion of the company. Likewise, the model focuses upon the market of telecommunication in North Iraq. The population of around 6 million has great potential for the company. Researches show that three companies compete for the capturing of the market

2.3 Conceptual Framework

For the clarity and crystal clear understanding of the concepts of this research work, a brief account of each concept has been entailed here after. Telecommunication is the transmission of words, signs, signals, images, figures and sounds via wires, wireless mechanisms (radio radiations and electro-magnetic rays) (Chen, Y, and et al. 2008:9).

- Strategies of management: The management and operations of the sector in terms of policies and practical steps for the improvement of the sector. The steps that are taken on both the ambits are included in this concept. (Khayyat, and Almas, 2013: 27)
- Competitive strategies: In the ambit of strategic planning and operations, the business firms work under the penumbra of competitiveness and strategies. These theories reflect competition among the companies to enhance their output and efficiency. (Nazab T, and Almas H (2012):1-7).The theories and plans that are framed to compete in market are widely symbolized as the competitiveness in strategies.
- Sustainability: In the affairs of the business, the companies devise new strategies to improve their standard and efficiency. In this race, the companies follow novel ideas. Once the goal of the efficiency is achieved, the companies strive for its long term sustainability so that the standard is maintained over long course of time (Tungcab. T: 2014).
- Comparative advantage theory: In the realm of the economics, David Ricardo has been great economist who propounded the theory of comparative theory in 1817 (Ricardo). As per the tenants of this theory, but the Poter's competitive strategic theory is useful for this research and the companies specialize in those areas in which their cost is minimum or their benefit is maximum. In this way, they specialize in particular field and take advantage over the other company in such field.

Northern Iraq: The region of Iraq consisting of four governorates, Erbil, Duhok, Halbja and Sulimainayah.

3. Competition Strategies

3.1 *Structure of Telecommunication Sector in Northern Iraq*

The Iraqi ministry of telecommunication regulates the services of mobile phones, internet and other broadband facilities to the people of Iraq (Rid.T 2016:52). Previously, the regime in Iraq and Northern Iraq has been guided and confined in many sectors of the country. In 2003, only 2500 people used internet in all regions of Iraq (Ahmad A et al. 2000: 235-243).

Since the debacle of Saddam Regime in 2002, the screws have been untightened for the people of Iraq. The number of users of internet and mobile have increased manifold. This fact is supported by the evidence in form of fourth national tender for national licensing of telecom sector in 2018.

The private authorities have been investing heavily in Iraq due to its ever going political stability and large natural reserves of oil and gas. So far as the telecom sector in Northern Iraq is concerned, Zain Iraq, Asia cell and Korek telecom have been the prominent players in the field. Zain Corporation constitutes for 53% of the share in market in 5 million populations. Asia cell comprise of 31% share and Korek possesses only 15% share of the market. The point which worth mentioning is that Zain is the oldest company operating in Northern Iraq. Whereas, Asia cell is the only country wide telecom corporation. On the other hand, Korek is the only original operator in Northern Iraq. Its base is deep rooted in Northern Iraq. Below is the detailed description of the operations of these companies in Northern Iraq.

Zain Iraq: The pioneer of telecommunication services in Iraq in general and Northern Iraq in particular is none other than Zain Iraq. This company operates in 8 states of Africa and Middle East. Its total base of users is around 13,8 million. In Iraq it started its operations in latter passage of 20th century. It reaches out to 97% of the population in Iraq. It holds for 53% users of northern Iraq and 62% users overall in Iraq. Zain Iraq is the largest telecom corporation operating in northern Iraq. The services of the company include Prepaid and Postpaid mobiles. The company is also providing internet services including 3G and 4G services. Most of the users enjoy the prepaid services from this company. This company started its services in Northern Iraq in 2011. Its CEO,

Emad Makiyah announced this launching ceremony for the Kurds of this region. Due to the political turmoil and destruction in Iraq, the provision of telecom services in northern Iraq was an uphill task for the companies. However, this task was completed by three companies. (Al-Aqeeli, et al. 2015: 179-193).

Asia Cell: In 1999, Asia Cell was established in Northern Iraq to provide services of Mobile and internet to the citizens. The company was formed in Sulimaniyah (Northern Iraqi governorate). This company has the edge over the Zain Iraq on the basis that it owes its roots to the governorate of northern Iraq. The company started its operations in 2000. It is the only company that reaches to all the nationals of the country. Till 2007, the company provided services to the citizens of northern Iraq. Whereas, post 2007 bidding and licensing, it extended its services to other regions of the country. In total, it caters for around 9,1 users of the country. As per the services of the company, it provides mobile phone services (GSM) and internet services to the users. The base line of the company is Northern Iraq which greatly signifies its position in this region of the country. This company is positively pursuing the goals of marketing in northern Iraq for the users (Rid, T, 2016 :52).

Korek Telecom: The third telecommunication company in Northern Iraq is the Korek telecom. This company was founded in 2000 in Erbil (northern Iraq). The base of this company is also the Kurdish region of Erbil in Iraq. The employee base of this company is 2500. So this company is small business unit in Iraq. The company is providing mobile phone services and internet facilities to the citizens. The root of the business is northern Iraq for the users. The company also won the 3G license in bidding held in 2015. This company intends to do business in this region since it is getting politically strong and heading towards political autonomy.

According to some research specially the benchmarking of service quality in the telecommunication sector in region, Zain Iraq has well performance in telecommunication facility proving over overall Iraq. Alongside Korek showing low performance in the sector, the consequences of evaluating the feature, indications that Asia cell having more quality in the services and achieve self-evaluation, intend a better development plan for future of telecommunication sector in the region. The study is significant for the region in order to growth the competition advanced strategy benchmarking. All competitions is to provide better high quality services with lower price and satisfy customer in the new modern society (Demir, A: 2015).

3.2 *Sustainability*

In this study focused on sustainability in the telecommunication sector in North Iraq, suitability is managed by organization's structure with cooperating with government's regulation. The analysis takes place in three major telecom companies: Zain Iraq, Asia Cell and Korek Telecom. With different questions to cover the significant sustainability issue in the region, there are several ways to assess sustainability management of corporations, for example by environmental impact assessment (EIA). The demand from the public is the catalyst for healthy competition among the companies in any business sector to provide services. The competitive strategies as mentioned above, the cost leadership strategy innovates changes to reduce the charges of the products to enhance the customer base. On the other hand, companies strive to produce distinct products to influence the minds and thoughts of the customers. These strategies have been prevalent in northern Iraq in the sector of telecommunication. In north Iraq, the competition is among three companies; Zain Iraq, Asia Cell and Korek. Competitiveness means the race or competition among companies to produce the best and cheapest product to target the market. In this perspective, the comparative advantage theory is pursued in which the companies specialize and focus on those products for which their resources are best suited. David Ricardo is the pioneer of this theory. In northern Iraq, the Korek Company is the root base of the services in Northern Iraq. Though it is the smallest of the three companies, it provides the best services. The reason for its customer base is the perceived usefulness in this company for the users. Many reports have revealed that Korek is the most liked telecommunication company among the youngsters. Its services of prepaid and internet are mostly used. The value addition to the services is vital for the improvement in market share.

It is worth to mention that there is not clear agreement for the concept of service quality in telecommunication service sector (Carman, 1990:38). Once the company has struck good competitiveness in the market, the management strikes for sustainability. This is the next step of competitiveness. Sustainability focuses on strategies as to how the company can sustain its standard and customer base. This is the most difficult part after the innovating steps of the company. In northern Iraq, the political, social and economic upheavals have been major challenges for the companies. However, Korek Telecom apart

from its small scale business has sustained its standard and technical services to the customers. Yes, by scale, Zain Iraq is the largest as compared to other two competition forces. But its value addition has been on the decline. The internet services along with prepaid connections have been attractive and comforting for the customers. That is why the comparative advantage theory works effectively for the companies. The students have been mostly linked with Korek for different services.

3.3 *Competitive Strategy*

Business are always compete each other, they want to get more benefit, increasing the market share are satisfy the customer. There are four types to competitive business strategy which is explore by American academic professor Dr.Michael Poter and he explained the primary methods of gaining a competitive strategy which is cost leadership, differentiation, cost focus and differentiation focus, Competitive strategy is taking attacking or self-protective actions to make a defensible place in an industry, in order to manage positively with the five competitive forces and thereby produce a greater reoccurrence on investment inside the firms (Porter, 1998).All firms competing in the industry and all they have competitive strategy, implicit or explicit. The strategy has been developed clearly among the planning process or it should be changed implicitly though the different functional activities in the (Porter, 1998). Numerous strategies recognized beside the defendants to specify the level of the organization which we are explained in this study for telecommunication sectors. Figure 3: Porter's generic strategies



3.3.1 Cost leadership strategy

We asked the telecom companies and some customer about the cost leadership strategy, the cost leadership strategy accepted by the companies. According to our study in same statement Zain focused on the growing market by charging lower prices compare by Asiacell and Korek Telecom, in the same time the cost leadership strategy protects Korek telcome and helps company to gain a competitive advantage over competitor, while Asiacell works on the quality of the work and try to go to the appropriate location in overall region compare by other companies. Korek is leading the market due to its cheap rates and attractive value added services.

3.3.2 Differentiation strategy

Each company has different approach of working around the region, according to the study Asia cell try to engage the highly level of the staff with minimize the turnover of employees in the company, Zain Iraq is using to keep the customer and quick delivery timeline, while Korek telecom focusing on improvement and promotion strategy in the region.

3.3.3 Focus strategy

All competitor in telecom companies have specific market segmentation for example different area controlling by the companies, Zain controlled the location of center and south of Iraq, majority of Zain customer from Baghdad and Mosul, while Asia cell covered the Sulaimanyah city and Mosul city in the same time Korek telecom available deeply in Erbil and Dhok cities, it should be mention all telecom company access to all customer in different cities but political, behavior of customer and historical background affect the customer to choose the companies depend on the location, in the same time all companies absorbed on competitive pricing to satisfy their customer. Korek and Asia cell trying to get customer loyalty in the region as a part of performance the organization.

3.3.4 Differentiation Focus Strategy

This approach in competitive strategic advantage is try to outperform its rivals by offering different and attract product and services for the customer even the price is higher than the competitors but it is new innovation and focused on the narrow market, focused on the small group and specialist segment,

Asia cell always attempt to provide new services and product with special offer for customer, for example having 3G and 4G in north Iraq are proving by Asia cell first then another companies using the same techniques to deliver to customer.

4. Conclusion and Recommendations

Technology acceptance model has been applied under the shadow of competitive strategies to study telecommunication sector in Northern Iraq. The market equilibrium is achieved through the influence upon the perceived usefulness of the product and perceived impact upon the choices of the customers. The youngsters are in bulk in northern. The telecommunication sector is targeting this portion of market. Korek Telecom has been successful to penetrate this segment of economy. Youngsters have been using the value added services of Korek due to the comparative advantage for them. The company is looking forward towards the sustainability of the services. However, it is facing serious political implications, yet it standing firm in the market to induce more customers. Inspire of the political hazards, the scope for business exists due to rich oil and gas reserves in this region of the world.

The research aims to explore the influence and importance of strategic competitive management and apply it to the telecommunication sector in Northern Iraq. The research will mainly use the secondary methodology and collect information from peer-reviewed and journal articles. The results of the study will be based on historical facts and the comparison of the previous and current situation of the telecommunication business in North Iraq NGO. Thus, the research is expected to provide useful implications to the competitor companies in Iraq, regarding its strategic competitive advantage.

Results of qualitative evaluating shows that the in overall Iraq Zain is better performing interim of the number of customer, loyalty of customer and expanding through over all Iraq, while in the North Iraq Asia cell is having more customer, providing more telecom services such as SMS, MMS, Internet service, 4G, 5G, adapted service and customer service. Having better quality of services and having better strategic plan, alongside this Korek is providing less price and getting more promotion in the market, this revision is significant for all competitor to understand the environment of the telecom sector and preparing the strategic plan for the future.

Mobile users are increasing in daily bases in the region, meanwhile there are manipulating this business by different political parties and they are not paying the tax and not following the regulating. However this business is new and government needs to preparing the appropriate policy and monitoring the companies accordingly, regulations in the market is necessary to improve and build competitive strategic and healthy environment among all of the companies.

Following recommendations have been chalked out from the study:

- Competitive strategies should be pursued in modern economic affairs in the region.
- The telecommunication sector in northern an Iraq has huge potential of business provided it differentiates in value added services for the customers.
- Youngsters constitute major portion of the customer base which is catalyst for likewise services for the customers.
- The political stability is firm and steady for future prospects of business in northern Iraq.
- The government has responsibilities to develop elaborate and clear regulation and policies with guide the company's operation to follow.
- Follow the strategic competitive advantage scientifically to avoid the monopoly of telecommunication business in the region.
- Improving the performance in human resource management to employee satisfaction and motivate them for innovation in the sector.
- Preparing the policy of the market coordinating with government to understand and improve the cost leadership in the market and formulating the differentiating strategy for all telecommunication companies in the region.
- Building a good relationship with the customer, understanding the customer expectation and build a customer engagement in the sector.
- Improving the mechanics of sustainability in operation for telecommunication sector.

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CHAPTER V

INDUSTRY 4.0 AND PRODUCTION PLANNING: A SYSTEMATIC REVIEW

Cemal Aktürk

*(Asst. Prof. Dr.) Gaziantep Islam Science and
Technology University, Gaziantep, Turkey,
ORCID: 0000-0003-3764-3862*

1. Introduction

1.1 *Production and Production planning*

Production refers to the processes and activities carried out for the purpose of producing goods or services. It is also the opposite of the word consumption as a dictionary meaning. Production, which is considered by economists to create value, can be considered as activities to be modified in order to increase the value of a physical asset in terms of engineering science. On the other hand, production can also be carried out in the form of service provision, not limited to a physical asset. In areas such as cleaning, accommodation, transportation, training and consultancy; only service production is carried out without any changes on a physical material. Business activities that ultimately bring value and benefit to society are carried out. As a result of production activities, an economic value or benefit is expected from the initial asset (Acar, 1989; Tanyas & Baskak, 2013).

In terms of process management, production can be expressed as a set of activities that transform resource inputs such as materials, energy, money, buildings and workforce into products. The production process creates transformations on the input in terms of form, space and time. As a result of these conversions, the product is expected to benefit in terms of value or benefit. The production of thin sheet profiles from raw iron is the result of a

formal transformation. The transportation of a material to another location is an example of a service production involving relocation. In order to provide added value in production, the value of the unit amount of product must be higher than the cost of the resources used to produce that product.

Since production is a process that requires using resources, products that will not turn into sales will have a certain cost to businesses due to resource use and waiting due to inputs such as raw materials, energy and human resources used in production are obtained by using financial resources. If the finished products are not sold to the company in a profitable way according to the production cost, the resources will be spent inefficiently. Thus, both the profitability of the firm and the protection of its existing capital are at risk. For this purpose, customer demands, raw material stock status and stock supply times, current production and workforce capacities, competitors' status and environmental factors should be taken into consideration while producing. Considering these factors, a certain time period is chosen to plan the production first. This time period can consist of three months or can be determined as six months or annual periods. Afterwards, businesses determine their safe stock levels before and after the planning period and create production plans according to customer orders or demand forecasts. When creating this plan, material requirement planning should be made, and the number of shifts per day and the number of workers and hours of work for the human resource that will work in production should be used in calculating the production capacity that will be taken as basis in production planning (Tanyas & Baskak, 2013; Kobu, 2014).

Considering that production planning depends on many processes such as raw material procurement, sales demand forecasting, safe stock levels, maintenance planning and workforce planning, it will be seen how complex business process it is. A successful production plan should make the business profitable by aiming to use resources in the most efficient way, while minimizing costs. Production planning is not a simple calculation that can be done manually, but can be done with computer support. For this, companies use enterprise resource planning (ERP) systems where they can manage all business processes from purchasing to production, from shipment to finance with a holistic approach.

When the studies in the literature on production planning are examined; It has been observed that mass production planning is made for a large-scale television producer using genetic algorithm optimization (Vural, 2005). Eker ve Acar (2006), for example, a method involving the production planning in forestry operations planning with production planning stage presenting their work has

contributed to the forestry sector in Turkey. Paşayev (2010) investigated the factors that should be considered in production planning in order to reduce fabric losses corresponding to approximately one quarter of the production cost in apparel production. The researcher emphasized that considering the width of the fabric and the body measurements to be included in the marker plans in the production planning is effective in reducing the fabric losses. Kafali et al. (2018) proposed a production planning and control model for shipyards to reduce in-process stock levels for shipbuilding.

Türk and Kiani (2019) made demand forecasting using artificial neural networks to be used in white goods production planning. Erkmén et al. (2019) stated in their study for the paint industry that water and paint loss can be reduced by about 97% with a production plan that takes customer orders or storage needs into account in the production of water-based paints. Hatami-Marbini et al. (2020) offers an optimum control and simulation-based planning approach in order to control the production rates of machines in the production of perishable goods and to reduce the cost of failure, shortage and spoiled products in the production line. Researchers have shown that a 24% reduction in expected production costs will be achieved with the production planning to be made with the use of this approach. Bilgin and Özçakar (2021) proposed a mixed integer linear programming model by planning the production and distribution of perishable products together. The model proposed by the researchers producer of milk and dairy products in Turkey by applying for a company in the production and distribution planning, stressed that the proposed model was made by reducing the total cost of the factories and distribution centers.

1.2 The Fourth Industrial Revolution - Industry 4.0

The repercussions of the technological developments in the information and communication systems and the integration of systems with each other in the industry were perceived as the transition to the fourth industrial revolution. This industrial revolution, expressed as Industry 4.0, is based on the connection of computers with machines, sensors and users via the internet. The computing pillar of Industry 4.0 is the integration of the internet of things, cloud computing, cyber security, big data, robotics, augmented / virtual reality, simulation and software. Because of these features, Industry 4.0 makes it possible to implement additive manufacturing, to use artificial intelligence techniques in production, to monitor production from machines through sensors, and to use the big data

collected by integrating all objects through the internet. Thus, in a decentralized production system, the “smart factory” where people, machines and software are in a social network has started to be expressed as a component of Industry 4.0.

With the instant processing of the data collected in the smart factory system, the complexity of the production processes can be managed more easily, providing cost advantage in production, making tactical and strategic decisions more effectively, and thus increasing the profitability and competitiveness of the company (Yıldız, 2018). Gabaçlı and Uzunöz (2017) examined Turkey’s automotive industry in terms of 4.0. The researchers suggested that automotive manufacturers should be promoted by the government in terms of conversion costs by raising awareness within the scope of digital transformation. The researchers also emphasized that technical training should be given importance for the qualified workforce needed by the industry and Industry 4.0. In a study that investigated the status of manufacturers in the furniture industry on the web, it was seen that there were 34 furniture manufacturers selling online on their own website. On the other hand, it has been observed that there are 479 vendors selling furniture on the Hepsiburada.com shopping site, 181 on gittigidiyor.com and 408 on n11.com (Ceyhan, 2016; Öztürk & Koç, 2017). This shows that furniture manufacturers are insufficient in their online sales sites as of the research year.

Social media platforms and data mining practices have changed the competitive conditions for businesses in protecting the brand loyalty of consumers and reaching potential customers. Thanks to the technological possibilities offered by Industry 4.0, creating new generation marketing strategies to ensure customer loyalty and reach new potential customers has created the opportunity to make optimized decisions in determining demand and market needs in production enterprises (Ertuğrul & Deniz, 2018).

1.3 Purpose of Research and Research Questions

In this study, it is aimed to make a systematic analysis of the publications on production planning and industry 4.0 as of 2011, when Industry 4.0 began to emerge. In this context, answers to the following research questions are sought.

In terms of publications on Industry 4.0 and production planning;

1. What are the distributions of the publications according to their years, types and languages?
2. What are the countries and institutions with the most publications?

3. What is the distribution of the publications according to their subject areas?
4. What are the most cited publications and authors?
5. What are the common keywords of the publications?

2. Method

In this study, the studies on production planning and industry 4.0 were searched from the Scopus database, and the descriptive analysis and bibliometric analysis of the obtained studies were made. Within the scope of descriptive analysis, the distribution of the publications according to various criteria is presented. Within the scope of bibliometric analysis, the most cited publications and authors were examined. In addition, common keywords used in article studies were analyzed. The search query made in the Scopus database is shown in the code block below.

```
TITLE-ABS-KEY ( "industry 4.0" AND ( "production  
plan*" OR "production schedul*" ) )
```

In the search query, the existence of production planning or production scheduling concepts together with the concept of industry 4.0 in the title, summary and keywords of the publications were investigated. Since the concept of Industry 4.0 emerged as of 2011, the studies were not filtered on a yearly basis.

3. Results

3.1 Results of Research Question1

The distribution of the publications by years is given in Table 1 and in Figure 1. Accordingly, it is seen that the studies on the subject under investigation started in 2014 and continued until 2021, and a total of 333 studies were conducted on this subject. It is understood that there is an increase in the number of publications with each passing year and the most publications are made in 2020 (n = 92). The highest increase in the number of publications is seen in 2019 (Table 1, Figure 1).

Table 1: Distribution of publications by years.

Year	Documents	%
2014	4	1,2
2015	7	2,1
2016	19	5,7
2017	37	11,1

2018	52	15,6
2019	90	27,0
2020	92	27,6
2021	32	9,6
SUM	333	100,0

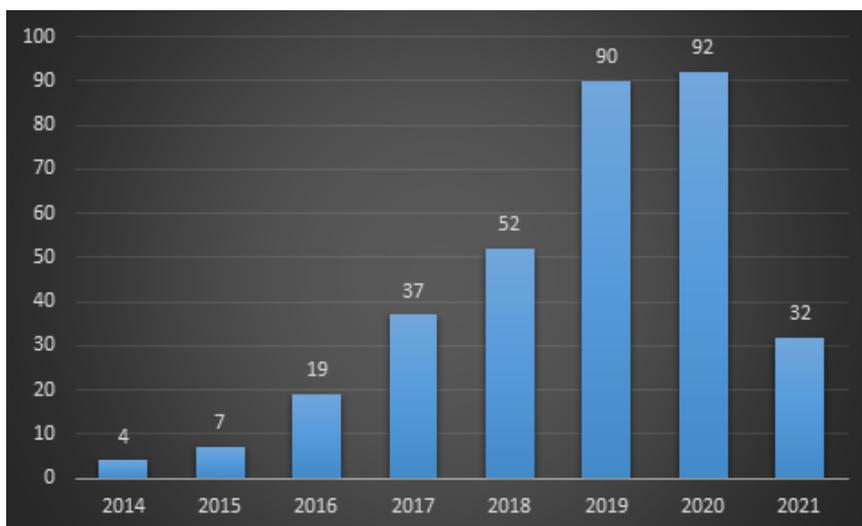


Figure 1: Distribution of Publications by Years

The distribution of the publications according to their type and language is given in Table 2. It is understood from Table 2 that half of the publications are conference paper ($n = 166, \% = 49.8$), followed by article ($n = 130, \% = 39$) studies. The least common document types were in Editorial and Book Chapters. When looking at the distribution of the studies according to the language of publication, it is understood that 94% of them are written in English and 5.7% of them are written in German. On the other hand, it is seen that there is only one study published in Russian, Chinese and Italian languages.

Table 2: Distribution of Publications According to Their Types and Languages

Document type	Documents	%
Conference Paper	166	49,8
Article	130	39,0
Conference Review	14	4,2
Review	12	3,6
Book Chapter	9	2,7
Editorial	2	0,6

Language	Documents	%
English	313	94,0
German	19	5,7
Russian	2	0,6
Chinese	1	0,3
Italian	1	0,3

3.2 Results of Research Question2

The countries with the most publications on research are given in Table 3. It is understood from Table 3 that the country with the highest number of publications on Industry 4.0 and Production Planning is Germany (n = 100). Studies conducted in Germany constitute 30% of all studies on the subject. The fact that the Industry 4.0 concept came out of Germany is an indication that this result is not accidental. Italy ranks second, hosting 46 studies. France ranks third with 20 studies, China fourth with 16 studies, and United States fifth with 15 studies. Although Chinese and United States are among the leading countries in the world in terms of production and technology, they are behind European countries in research and publication studies on this subject. Hong Kong ranks last in the top 20 with 4 studies.

Table 3: Distribution of Publications by Country

No	Country/Territory	Documents	%
1	Germany	100	30,03
2	Italy	46	13,81
3	France	20	6,01
4	China	16	4,80
5	United States	15	4,50
6	Austria	14	4,20
7	Norway	12	3,60
8	Portugal	12	3,60
9	Spain	11	3,30
10	Canada	10	3,00
11	United Kingdom	10	3,00
12	Taiwan	9	2,70
13	Brazil	8	2,40
14	Poland	7	2,10
15	Czech Republic	6	1,80

16	India	6	1,80
17	Slovakia	6	1,80
18	Sweden	6	1,80
19	Argentina	4	1,20
20	Hong Kong	4	1,20

The 10 institutions with the most publications in the distribution of the publications according to the author institutions are given in Table 4. It is noteworthy that many of the institutions in Table 4 are in Germany.

Table 4: Distribution of Publications by Institution

No	Affiliation	Documents
1	Rheinisch-Westfälische Technische Hochschule Aachen	14
2	Norges teknisk-naturvitenskapelige universitet	10
3	Universität Stuttgart	9
4	LAMIH	8
5	Universität Bremen	7
6	Polytechnique Montréal	6
7	Politecnico di Milano	6
8	Friedrich-Alexander-Universität Erlangen-Nürnberg	5
9	Universidade do Minho	5
10	Arts et Metiers Institute of Technology	5

3.3 Results of Research Question 3

The distribution of the studies covering Industry 4.0 and production planning subjects according to the subject areas is given in Table 5. When Table 5 is examined, it is seen that 70% of the studies are carried out in the field of Engineering. In addition, almost half of the studies cover the field of computer science. In addition, it is seen that the studies conducted include topics that concern almost all fields of study such as Decision Sciences, Business, Management and Accounting, Mathematics, Physics and Astronomy, Earth and Planetary Sciences. This situation is a concrete indicator of how broadly Industry 4.0 is an issue that needs to be addressed.

Table 5: Distribution of Publications by Subject Areas

No	Subject area	Documents	%
1	Engineering	234	70,3
2	Computer Science	161	48,3

3	Decision Sciences	59	17,7
4	Business, Management and Accounting	49	14,7
5	Mathematics	44	13,2
6	Materials Science	32	9,6
7	Energy	18	5,4
8	Environmental Science	15	4,5
9	Social Sciences	15	4,5
10	Chemical Engineering	14	4,2
11	Physics and Astronomy	10	3,0
12	Economics, Econometrics and Finance	6	1,8
13	Agricultural and Biological Sciences	5	1,5
14	Chemistry	5	1,5
15	Earth and Planetary Sciences	4	1,2
16	Medicine	3	0,9
17	Biochemistry, Genetics and Molecular Biology	2	0,6
18	Neuroscience	1	0,3

3.4 Results of Research Question4

The most cited publications in the relevant field are listed in Table 6. According to Table 6, the most cited publication is the study titled “Digital Twin and Big Data Towards Smart Manufacturing and Industry 4.0: 360 Degree Comparison” published in 2018, with a number of 313 citations and the author of Qi and Tao. The second publication is the study titled “The industrial management of SMEs in the era of Industry 4.0”, which was published in the same year and reached 259 citations. The study titled “Industry 4.0 and circular economy: Operational excellence for sustainable reverse supply chain performance”, which is at the end of the list with 48 citations, draws attention. Although this study was published in 2020, it reached 48 citations and entered the top 10 in terms of the number of citations of publications in the relevant field at all times.

Table 6: Most cited publications

No	Document title	Authors	Year	Source	Cited by
1	Digital Twin and Big Data Towards Smart Manufacturing and Industry 4.0: 360 Degree Comparison	Qi, Q., Tao, F.	2018	IEEE Access 6, pp. 3585-3593	313

2	The industrial management of SMEs in the era of Industry 4.0	Moeuf, A., Pellerin, R., Lamouri, S., Tamayo-Giraldo, S., Barbaray, R.	2018	International Journal of Production Research 56(3), pp. 1118-1136	259
3	Lean Automation enabled by Industry 4.0 Technologies	Kolberg, D., Zühlke, D.	2015	IFAC-PapersOnLine 28(3), pp. 1870-1875	238
4	Scheduling in production, supply chain and Industry 4.0 systems by optimal control: fundamentals, state-of-the-art and applications	Dolgui, A., Ivanov, D., Sethi, S.P., Sokolov, B.	2019	International Journal of Production Research 57(2), pp. 411-432	75
5	Industry 4.0: Smart Scheduling	Rossit, D.A., Tohmé, F., Frutos, M.	2019	International Journal of Production Research 57(12), pp. 3802-3813	74
6	Cyber-physical production systems combined with logistic models-a learning factory concept for an improved production planning and control	Seitz, K.-F., Nyhuis, P.	2015	Procedia CIRP 32, pp. 92-97	67
7	Analysis of Control Architectures in the Context of Industry 4.0	Meissner, H., Ilsen, R., Aurich, J.C.	2017	Procedia CIRP 62, pp. 165-169	56
8	The fit of Industry 4.0 applications in manufacturing logistics: a multiple case study	Strandhagen, J.W., Alfnes, E., Strandhagen, J.O., Vallandingham, L.R.	2017	Advances in Manufacturing 5(4), pp. 344-358	51

9	Global Footprint Design based on genetic algorithms - An “industry 4.0” perspective	Schuh, G., Potente, T., Varandani, R., Schmitz, T.	2014	CIRP Annals - Manufacturing Technology 63(1), pp. 433-436	49
10	Industry 4.0 and circular economy: Operational excellence for sustainable reverse supply chain performance	Dev, N.K., Shankar, R., Qaiser, F.H.	2020	Resources, Conservation and Recycling 153,104583	48

The screenshot of the most cited authors according to the analysis results obtained with the VOSviewer program is shown in Figure 2. In Figure 2, Qi and Tao are at the top of the list with 313 citations, followed by Barbaray and Tamayo-Giraldo (259 citations), Kolberg and Zühlke (238 citations), Dolgui, Sethi and Sokolov (75 citations). Here, although Barbaray and Tamayo-Giraldo are ranked second according to the number of citations, it is seen that they are in the first place according to the total link strength with other authors and publications ($n = 14$). On the other hand, it is understood that the connection strength of the authors with 48, 49 and 56 citations is 0.

Author	Documents ^	Citations	Total link strength
qi q.	1	313	2
tao f.	1	313	2
barbaray r.	1	259	14
tamayo-giraldo s.	1	259	14
kolberg d.	1	238	0
zühlke d.	1	238	0
dolgui a.	1	75	6
sethi s.p.	1	75	6
sokolov b.	1	75	6
nyhuis p.	1	67	6
seitz k.-f.	1	67	6
ilsen r.	1	56	0
alfnes e.	1	51	1
strandhagen j.w.	1	51	1
vallandingham l.r.	1	51	1
potente t.	1	49	0
schmitz t.	1	49	0
varandani r.	1	49	0
qaiser f.h.	1	48	0

Figure 2: Most cited authors

3.5 Results of Research Question5

A common keyword analysis was carried out from the data of the studies obtained from the research query, downloaded from the Scopus database. Within the scope of this analysis, the VOSviewer screenshot of the most repeating words is shown in Figure 3. When Figure 3 is examined, the most repetitive words in the studies were “industry 4.0” with 168 repetitions. This is followed by “production planning”, which is used 41 times. The fact that the term “scheduling” included in the research query is also among the frequently repeated words is an indication of the necessity of including this term in the research query. The other common keywords ‘internet of things’, ‘machine learning’, ‘smart factory’, ‘cyber-physical systems’, ‘cloud manufacturing’ and ‘digitalization’ terms are seen in the research findings, indicating that Industry 4.0 components are used in the study.

It was determined that a total of 862 keywords were used in the common keyword analysis. When the keywords were analyzed according to the use of at least 5 times, it was seen that there were 30 keywords that fit the situation. The visual map obtained by classifying these 30 keywords in six different clusters through the VOSviewer program is presented in Figure 4. When Figure 4 is examined, there are seven words in the red cluster, five words in the yellow cluster, four words in the green cluster, and two words in each of the turquoise, blue and purple clusters. The relationship of commonly used keywords with each other can be seen in Figure 4 in the form of a cooperation network.

Keyword	Occurrences ▼	Total link strength
industry 4.0	168	197
production planning	41	71
smart manufacturing	22	39
production planning and control	21	42
scheduling	18	31
production scheduling	15	16
internet of things	13	35
machine learning	13	27
smart factory	13	26
cyber-physical systems	12	31
cloud manufacturing	12	25
digital twin	12	17
control	10	22
digitalization	10	22
predictive maintenance	9	11

Figure 3: Repetition Numbers of Common Keywords

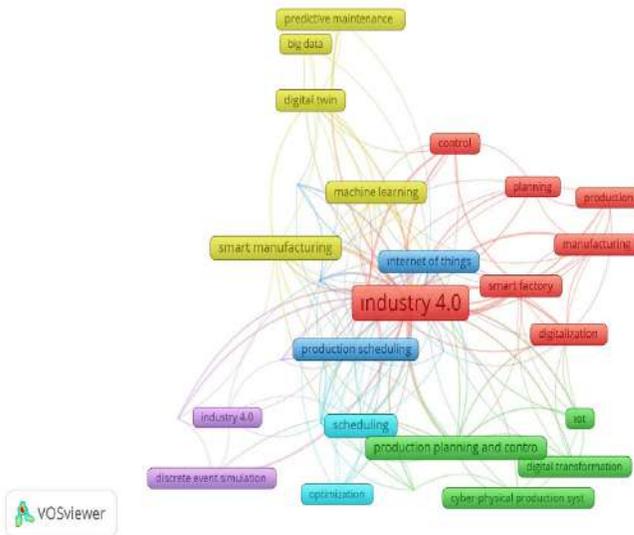


Figure 4: Common Keyword Analysis - Visual Map

4. Conclusions

The capabilities of ERP systems in production planning are related to the success of businesses. Aydođan and Asal (2009) investigated the effects of material requirement planning and production resource planning on SMEs in their study. The researchers stated that the most important problems faced by companies in planning MRP and production resources are that the software they use is inadequate, the software is not specific to their own institutions, and the lack of technical support. These negativities can be eliminated by using ERP systems that are designed specifically for the relevant sector and by making agreements with the ERP supplier for an effective and sufficient technical support, as the sector will better meet the requirements.

In this section, studies related to production planning made in the perspective of industry 4.0 are handled with a systematic perspective and the distribution of the studies according to various features is presented. Since the concept of Industry 4.0 has started to become a trend as of 2011, it is understood that the studies that have been researched are included in the literature as of 2014. The majority of the studies were conducted in conference paper and article types and in English. The country leading the research subject is Germany, which is also the origin of Industry 4.0. Other European countries such as Italy and France follow Germany. Developed countries such as China and the USA are not included in the publication studies

on this subject at the same rate as their countries' development in production and technology in terms of number of studies. The subject areas of the studies are generally gathered around engineering and computer science. On the other hand, it has been observed that industry 4.0 and production planning studies have been carried out in almost all fields, including mathematics, physics, astronomy, economics, chemistry, medicine, and social sciences. In the common keyword analysis, it is understood that the industry 4.0 keyword is the most used word, followed by the words related to production planning and components of industry 4.0 such as internet of things, cloud computing, cyber physical systems, smart factory.

Since Industry 4.0 is a subject area that directly targets smart factories and smart production, it is closely related to the full integration of components such as business processes, machines, sensors and process software in enterprises. Processes such as order acceptance, material requirement planning, production planning, shipment planning and maintenance planning, which are processes that require planning, are in direct relation with each other in terms of production capacity and order delivery times.

Although many opportunities are offered to factories in terms of production processes and competitiveness with Industry 4.0, there are also various difficulties faced by companies in this transformation. These difficulties; digital transformation of factories requires very costly investments, insufficient incentives for investments and R&D studies, deficiencies in competent human resources, and training curricula need regulations to meet the needs of qualified workforce (Soylu, 2018). As a service sector, due to the developments in robot technology in the tourism sector, most of the employees in the sector may experience loss of workforce, and tour companies can be replaced by digital advertising agencies due to virtual and augmented reality applications. .

Industry 4.0 will create opportunities and challenges according to the development and transformation adaptation of countries. When the situation is evaluated in terms of developed countries, it is thought that the investments made in Asian countries will return to them due to the advantages of cheap labor. As a result, it is expected that employment will increase and unemployment will decrease and foreign trade balance will improve in developed countries. In countries that cannot adapt to Industry 4.0, with the disappearance of many professions, new unemployed will be added to the existing unemployment, and additional burdens will come on the economies of this country due to the foreign trade deficit and loss of competitiveness (Bağcı, 2018).

Researchers, software developers, system analysts and managers in this field have more duties in order to increase the integration and efficiency in the planning processes of production enterprises by using Industry 4.0 components and to benefit from artificial intelligence techniques. The aim of this study is to raise the awareness of researchers, experts and technical personnel working in this field about industry 4.0 and production planning.

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CHAPTER VI

THE RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN THE MIDDLE EAST AND NORTH AFRICA

Yüksel Akay Ünvan¹ & Aziza Hashi Abokor²
*1 (Doç.Dr.), Ankara Yıldırım Beyazıt Üniversitesi,
akay.unvan@gmail.com,
ORCID: 0000-0002-0983-1455*
*2 (Doktora Öğrencisi)., Ankara Yıldırım Beyazıt
Üniversitesi, azizahashi@yahoo.com
ORCID: 0000-0003-4223-1977*

1. Introduction

Foreign direct investment (FDI), plays crucial role in the development and improvement of the host country. This research is aimed to investigate the role of foreign direct investment, and its positive contribution to the progress of the host country. FDI is considered to have a constructive effect on magnification of the economy, also it increases the opportunities of employment, technology and generally development of the countries. This study is carried out to assess the potential outcome of FDI on the GDP of the host countries. The literature review of such type of the investments where funding directly comes from the foreign countries to the host countries provide a great opportunity to the beneficiaries. (Yousafzai, 2014). As the percentage of distribution of MENA countries is assessed, the foreign direct investment is unequally benefited by only some countries. Since the 2000 the highest 60% percentage of regional

inflow order respectively is; Turkey, United Arab Emirates and Saudi Arabia, followed by Morocco, Lebanon, Qatar and Egypt. (UNCTAD, 2018).

Theoretical Studies indicate that an increase of such investment will elevate the booming of local products. Most of empirical studies show that FDI has a productive result to the economic development of the country. Tamilselvan M., & Manikandan S. (2015), had investigated the impact of FDI on GDP outcome for 23 years, started from 1991-2014 by using a simple regression model; found out that FDI has constructive effect on the GDP of Indian economy.

Some researchers like Banga (2005), suggested that the ways through FDI impact to GDP are lot, but the most important worldwide well known are through wages and employments. Akalper E., & Adel H. (2017), employed Vector Error Correction Model (VECM) for the period 1980 to 2014 and determined that there is no long-term relationship or causality that runs from gross savings, foreign direct investment, trade and gross fixed capital formation (GFCF); therefore, more comprehensive studies should be done to reveal the effects of FDI in Singapore. The significance of this research is crucial as it will be addressed of FDI and GDP of MENA region. Though the literature has examined the impact of FDI on economic growth in Mena region, researchers have not agreed on the exact effect of FDI on economic growth. The world economy has changed negatively in the last decade. Issues such as Covid19, climate change, financial crisis, instability, technologically distorted progress have a serious impact on the economy and development of the MENA region.

Before the COVID 19 pandemic, most countries started formulating policy that initiates to foreign direct investors to their countries. Generally, there is a huge need to start studies that can support the governments and the region to find out the role of FDI in the elevation of the economy.

Economic growth policies changed dramatically however, the evidence of FDI inflows to economic growth are different from one country to another. This study will try to explore how foreign direct investment affects the economy of the above-mentioned countries.

2. Literature Review

In so many years, a series of empirical studies were carried out to inspect the way foreign direct investment enhances the development of economy, by

texting different aspects and approaches. Srinivasan et al. (2010) shows that there is a long term relationship between FDI and GDP for the ASEAN economy according to the results they obtained from the Johansen Co-integration. Also the VECM result established a long run causality with some of ASEAN countries. Umoh et al. (2012), by using single and simultaneous or multiple equations explored the beneficial outcome that there are positive effects from foreign direct investment to growth and from growth to foreign direct investment.

According to Mahmoodi M. and Mahmoodi E. (2016), the causality outcome for developing countries of the Europe panel indicated bidirectional causality among the growth of local products and direct flow investment from the foreign investors, as well as causality between domestic production and FDI. Referred from a study done by Iqbal.,et., al(2010), results of the VECM causality test brought up two-way causality between foreign direct investment, exports, and economic growth. Economic growth and exports are two factors that boost the impact of economic growth in Pakistan. Also it is found that FDI has a positive effect on trade growth in Pakistan.

From the tests done by Faras and Ghali (2009), between the period of 1970 to 2006 for unit roots of GCC countries documented their indication of how this type of investment has a positive outcome to the economic growth of the country. Faruku et., al, (2011), stated the causality relationship of Nigeria's economy and how positively foreign investment enhanced GDP. The authors used the VECM model, co-integration test, and granger causality for the period 1970 to 2004, and their results indicate that the great outcome of the foreign direct investment improves to the local product. Rafael et., al (2017), empirically investigated the result of foreign direct investment on economic growth with 19 Latin American countries, employed panel data of econometrics recommended that FDI has no statistical significance with GDP. On the other hand FDI has a positive effect on the employment growth of host countries. Borensztein et al. (1998), tested the effect of FDI on GDP in a context of panel regression for 69 industrialized countries. Their results found that FDI is an important instrument for the transfer of technology also contribute relatively more to the growth of host countries domestic investment. Asafu-Adjaye (2005), by using time series data from 1970 to 2007 discovered a two way causality relationship between FDI and economic growth of Ghana, also examined with multivariate

maximum likelihood method and found out a significant positive relationship between inflow of FDI and GDP.

The study conducted by Hansen and Rand (2006), indicated bidirectional causality between FDI and GDP from 31 developing countries. This result interpreted as that FDI has an impact on GDP like adoption of new technology and knowledge transfers.

According to Khaliq & Noy (2007), which analyzed the FDI and economic growth in Nepal and Indonesia found that there is a positive long-run relationship between FDI and GDP. Özer and Erdoğan (2006), analyzed the relationship between GDP and exports in Turkey for the period 1987 to 2006 by using the Granger Causality Test. Their study revealed that there was an unidirectional relationship from exports to GDP. Dritsaki and Stiakakis (2014) examined the relationship between FDI, exports and economic growth in Croatia from 1994 to 2012 using ARDL technique. They found a two way long-run and short-run causal relationship between exports and growth, while the FDI doesn't have a positive impact to the economic growth.

Based on the previous discussion and research objectives, the following test hypotheses have been developed for this study.

Hypothesis I:

Null hypothesis (H_0): There is no relationship between GDP and FDI in the Mena region

Hypothesis II:

Null hypothesis (H_0): There is no relationship between Inflation and FDI in the Mena region.

Hypothesis III:

Null hypothesis (H_0): There is no relationship between Exports and FDI in the Mena region.

Hypothesis IV:

Null hypothesis (H_0): There is no relationship between Imports and FDI in the Mena Region.

2.1 Variables Used in This Study

2.1.1 Foreign Direct Investment

Foreign Direct Investment (FDI), means direct investment inflows to the reporting economy. This type of investment is made by a firm or individual in

one country interested in other country's businesses and brings their technology and equity to the host countries. Cross border investment is when an investor has ownership of 10 percent or more of shares in the enterprise of another country and has a voting criterion for determining its existence (Moose 2002).

From the Figure 1 below, it's visible how FDI significantly changes over the period 1971 to 2018. As shown in the figure, the 2007 to 2009 crisis that occurred in the world did not caused any effect to the FDI inflows in the Mena region. However the Arab Spring effected the region's inflows. It can be observed that FDI dropped from 3.17 billion in 2010 to 1.94 billion in 2011.

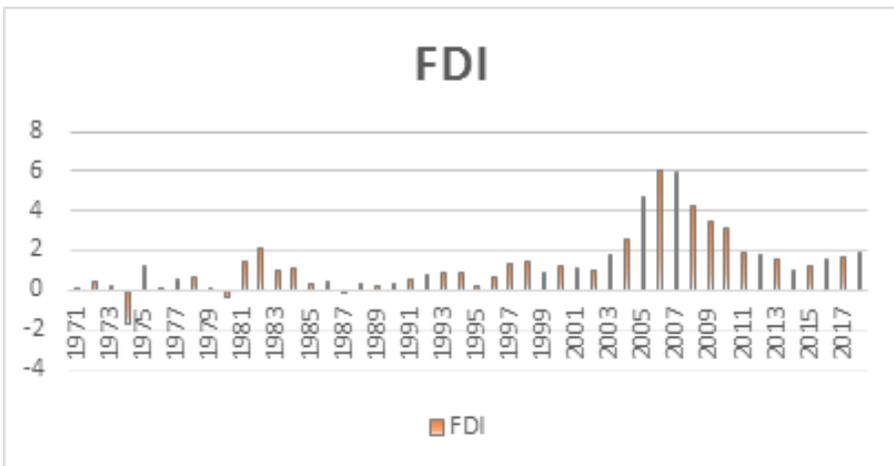


Figure 1: 1971 to 2018 FDI in MENA Countries

2.1.2 Gross Domestic Product

Gross domestic product (GDP), is the standard estimation of the value of final goods and services produced by a country for a period of time. While GDP is the most important indicator for capturing these economic activities, it is not a good measure of the well-being of societies and is only a limited measure of people's material living standards. However, most countries that have a higher GDP have a developed infrastructure and they are more prosperous according to lower GDP countries (OECD, 2009).

The figure below shows the fluctuation of GDP has changed in between 1971 to 2018. As it's shown in the figure, lowest year of GDP was 2009, followed by 2010. But in 2011 the GDP of Mena countries has risen compared to the 2009. Later Arab spring has affected the GDP of those countries.

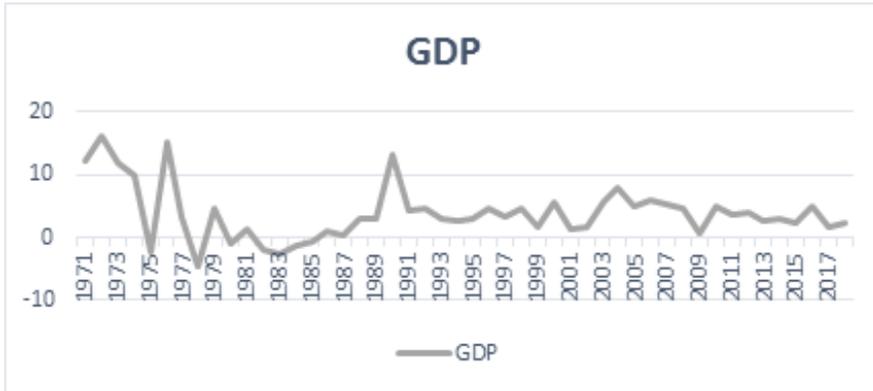


Figure 2: 1971 to 2018 GDP in MENA countries

2.1.3 Inflation

Inflation is the rise in costs of economic consumption. However, the prices of economic consumption may rise or fall over time. Inflation is not just a rising in the cost of a particular economic consumption alone, in spite of that a continuous rise in the general level of prices. Inflation will always reduce the nominal price except if the countries interest rates are higher than inflation. This means that some overall inclusive index of prices continues to rise. In an expanding and changing economy, some costs rise and some fall as supply changes following in consumer tastes and desires and in national needs (Peterson 1960).

Figure 3 indicates the consequence of Arab spring to inflation and how it caused the price increase of the local products. The figure below shows that the lowest rate of inflation in Mena countries was seen in 2009.

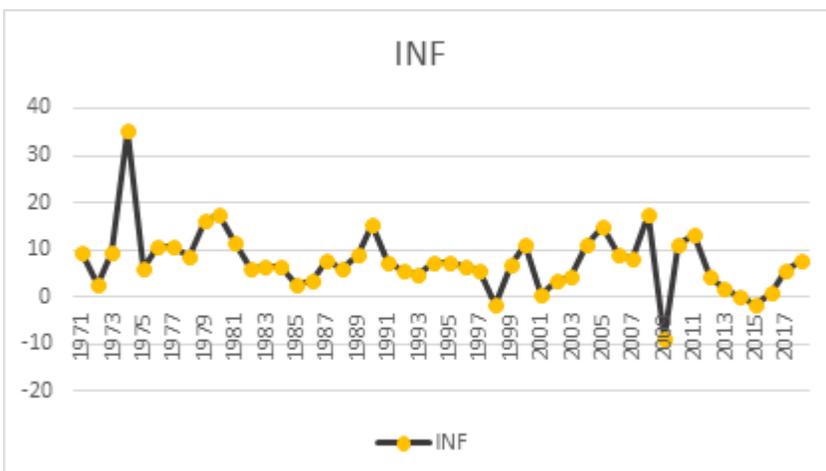


Figure 3: 1971 to 2018 Inflation in MENA Countries

2.1.4 Export

Export is the economic consumption produced in one country and exported to other countries resident to use. Wagner (2012) pointed out the significance of productivity for exporting. The MENA exports are largely oil and gas (56% of all exports in 2017), and though most countries have undertaken diversification policies, the level remains quite low compared to other resource-rich countries (OECD, 2018).

In 2009 export of the MENA countries had hit its lowest point in period of time. From here it could be understood that how the Arab spring, crises and political instability of the region has badly affected the exports.

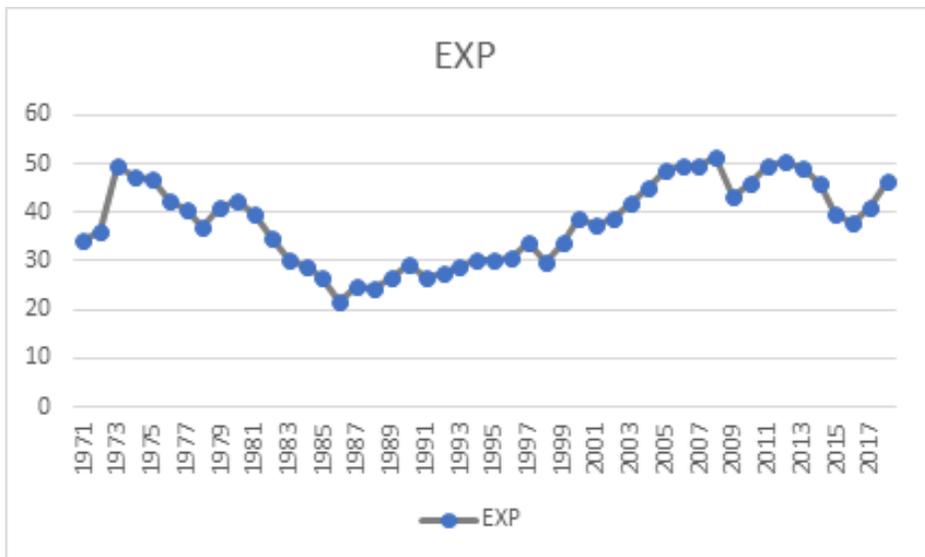


Figure 4: 1971 to 2018 EXP in MENA Countries.

2.1.5 Import

Import is the economic consumption that a country purchased from the world for its residents. Rodrik D. (1999) states that imports play a significant part in long-run economic growth because of the fact that export growth is usually associated with speedy import growth.

Figure 5 indicates that between 1971 and 2018 there was no tangible change about the import of MENA countries and it almost seems fixed.

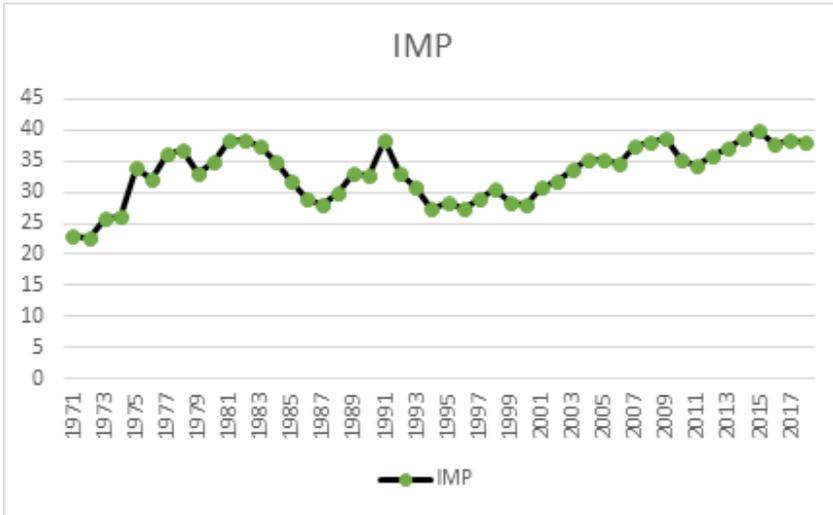


Figure 5: 1971 to 2018 IMP in MENA Countries.

3. Methodology

This analysis will be used for the available yearly data from 1971 to 2018 on MENA countries in the World Bank indicator. The statistical analyze of the series, the *Augmented Dickey Fuller* test, which has been used in the literature review, was applied. Consequently for the examination of the causality relationship between the two series, the *cointegrated test* analysis was correlated. The study applies the autoregressive distributed lags (ARDL) approach to examine the relationship between FDI, GDP, INF, IMP, and EXPORT.

3.1 Ardl Estimation

ARDL (Autoregressive Distributed Lag Model), is the model that we use to estimate the standards of the model and to check its reliability and stability. The Eviews 10 program will be used to estimate the data. However, descriptive and normality analysis will be examined before the ARDL. The motivation of this research is the relationship of the dependent and independent variables is presented as follow:

$$FDI = f(GDP, INF, EXP, IMP) \quad (1)$$

Model Specification:

The mathematical formulation of the model is presented as follows:

$$FDI_t = \alpha_1 + \beta_1 GDP_t + \beta_2 INF_t + \beta_3 EXP_t + \beta_4 IMP_t + \epsilon_t \quad (2)$$

$\tilde{\alpha}_1$: Constant term

- $\beta_1\beta_2\beta_3\beta_4$: Coefficients of the explanatory variables;
- ϵ_t : Model Error Correction Term

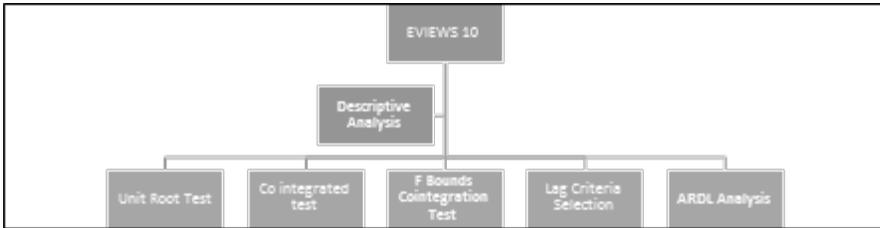


Figure 6: Econometrical Analysis Charter

4. Findings and Discussions

4.1 Descriptive Statistics

The descriptive statistics in Table 1 shows that the mean of FDI is 1.36. Its maximum and minimum values are 6.11 and -1.69 respectively, the standard deviation values of all factors compared to the average values are low indicating relatively lower volatility. From the table all the variables are positively skewed except import and export. The probability values of Jarque –Bera test show that export and import have normally distribution. The rest of the variables are not normally distributed.

Table 1: Descriptive Statistics

Statistics	FDI	GDP	IMP	INF	EXP
Mean	1.36	3.86	33.11	7.64	38.03
Median	1.07	3.17	33.87	7.10	38.87
Maximum	6.11	16.25	39.87	35.50	51.30
Minimum	-1.69	-4.75	22.76	-8.71	21.46
Std. Dev.	1.51	4.39	4.47	6.57	8.52
Skewness	1.49	0.94	-0.50	1.35	-0.11
Kurtosis	5.60	4.10	2.33	8.53	1.79
Jarque-Bera	31.24	9.49	2.88	75.60	3.04
Probability	0.00	0.01	0.24	0.00	0.22
Sum	65.44	185.33	1589.193	367	1825.4
Sum Sq. Dev.	106.47	907.72	938.2774	2031	3408.6
Observations	48	48	48	48	48

4.2 Correlation Analysis

The correlation analysis in Table 2 shows that there is no high correlation among the variables in the study.

Table 2: Correlations

Variables	FDI	GDP	IMP	INF	EXP
FDI	1				
GDP	-0.070	1			
IMP	0.469	-0.46	1		
INF	-0.154	0.29	-0.17	1	
EXP	0.503	0.19	0.35	0.26	1

4.3 Collinearity and Tolerance

The collinearity result shows the variables are free from multicollinearity problems. The variance inflation factor (VIF) analysis was conducted to verify the non-existence of multicollinearity. The VIF analysis specifies that for variables to be free from multicollinearity problems they must show a VIF value below 10 and the tolerance value exceeding 0.10. This analysis satisfies these presumptions.

Table 3: Collinearity and Tolerance

Model	Collinearity Statistics	
	Tolerance	VIF
GDP	.639	1.564
INF	.842	1.187
EXP	.660	1.514
IMP	.569	1.758

4.4 Unit root test results

Analyzing empirical studies first it is needed to examine the unit root test of variables. Most of macroeconomic time series reveal non-stationarity in the level, which analyzer often meets a problem if not provided appropriate measures. Table 4 presents the unit root test results based on the Augmented Dickey-Fuller (ADF). Dickey (1979).

Table 4: Results of Applied Unit Root Test

Variables		ADF Test	t-static	Prob-Values	Decision rules
FDI	1%	-3.58***	-7.72****	0.00	I(1)
	5%	2.92****			

GDP	1%	-3.57****	- 5.11****	0.00	I(0)
	5%	-2.92****			
EXP	1%	-3.58****	-5.88****	0.00	I(1)
	5%	-2.92****			
INF	1%	3.57****	-6.02****	0.00	I(0)
	5%	2.92****			
IMP	1%	3.58****	-6.78****	0.00	I(1)
	5%	2.92****			

The unit root test is performed at both level I (0) and first difference I (1), as presented in Table 4. For the ADF test for Growth domestic product, inflation become stationary at level I (0) while FDI, EXP and IMP become stationary at first level I(1).

4.5 Lag Length Criteria

Table 5 shows the lag length criteria based on AIC. The four information criteria (LR, FPE, SC, HQ), give the optimal lag 1 and AIC give the optimal lag 3. The AIC criterion gives an efficient estimator of p . The value $p = 3$ will be retained because of the length of this series.

Table 5: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-610.3426	NA	518767.4	27.34856	27.54930	27.42339
1	500.8285	189.8244*	12221.83*	23.59238	24.79682*	24.04138*
2	-477.72	34.91957	13871.18	23.67644	25.88459	24.49962
3	449.8581	35.91082	13659.61	23.54925*	26.76109	24.74659

4.6 Cointegration Test

F-bounds test was applied to determine the short run and the long run association between foreign direct investment and its variables. According to this test (as it can be seen in Table 6), there is no long run association among the variables (Since F statistic value (1.85) less than the critical bound value (4.01)). This means that there is a short run association among the selected variables.

Table 6: F-Bounds Test for Cointegration

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	1.85	10%	2.45	3.52
K	4	5%	2.86	4.01
		1%	3.74	5.06

4.7 Short-run ARDL Model

The short-run estimates are presented in Table 7. From the results, the R^2 value indicates that about 85% variation in FDI is explained by the independent factors in the study. The F-statistic and its probability value depict that the model is statistically significant. The Durbin Watson statistics is 2.14 which is considerably close to the benchmark of 2.0 in the model. It suggests that there is no sign of serial or auto correlational in the model specification. Therefore, the expectation of non-autocorrelation hold.

Table 7: Short-term ARDL Model

Dependent Variable: FDI				
Method: ARDL				
Selected Model: ARDL(2, 0, 0, 2, 3)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	1.02	0.15	6.75	0.00
FDI(-2)	-0.27	0.15	-1.80	0.08
GDP	0.02	0.04	0.57	0.57
IMP	0.06	0.04	1.38	0.18
INF	-0.04	0.02	-2.08	0.05
INF(-1)	0.06	0.02	2.54	0.02
INF(-2)	-0.04	0.02	-1.55	0.13
EXP	0.09	0.04	2.07	0.05
EXP(-1)	-0.13	0.05	-2.63	0.01
EXP(-2)	0.14	0.06	2.56	0.02
EXP(-3)	-0.09	0.03	-2.72	0.01
C	-1.53	1.09	-1.40	0.17
R-squared	0.85			
Adjusted R-squared	0.80			
S.E. of regression	0.68			
Sum squared resid	15.27			
Durbin-Watson stat	2.14			
F-statistic	17.18			
Prob(F-statistic)	0.00			

The findings of the short-run estimates indicate that the signs of coefficient follow the theoretical expectation. According to the results GDP and import have a positive effect on FDI, though the effect is statistically insignificant. The results suggest that an increase in GDP and import increases FDI inflows.

The unit increase of the inflation will also increase foreign direct investment by 0.04 in MENA countries, however, the inflation effect is also statistically insignificant. Meanwhile, export has a negative significant impact on foreign direct investment. A percentage increased in export will reduce FDI by 0.09% and statistically approved.

4.8 Diagnostic Test Results

From the diagnostic test results in Table 8, it can be observed that at 5% significance level, there is no serial correlation and heteroscedasticity problems in the study. The model is also well specified as shown by the Ramsey RESET.

Table 8: Diagnostic test results

<i>Specification</i>	<i>F-statistics</i>	<i>Prob. Value</i>
Breusch–Godfrey (Serial Correlation LM test)	0.495	0.61
Breusch-Pagan (Heteroscedasticity)	0.411	0.94
Ramsey RESET	3.901	0.57

4.9 CUSUM Tests

Ploberger and Kramer (1990) indicate the local power of the CUSUM and CUSUM of squares tests, and model stability tests are conducted using the CUSUM test. The CUSUM test examines the stability of the data to determine if the model can be used for policy-related issues. Thus, a model is considered stable if it satisfies the stability tests in terms of the residuals and the squares. The CUSUM test results exhibit that the model is stable, as shown by the figures below.

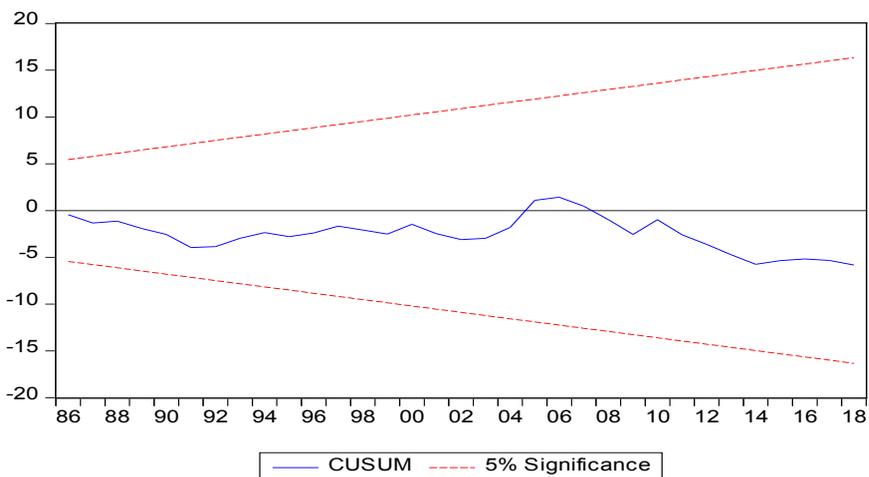


Figure 7: CUSUM plots

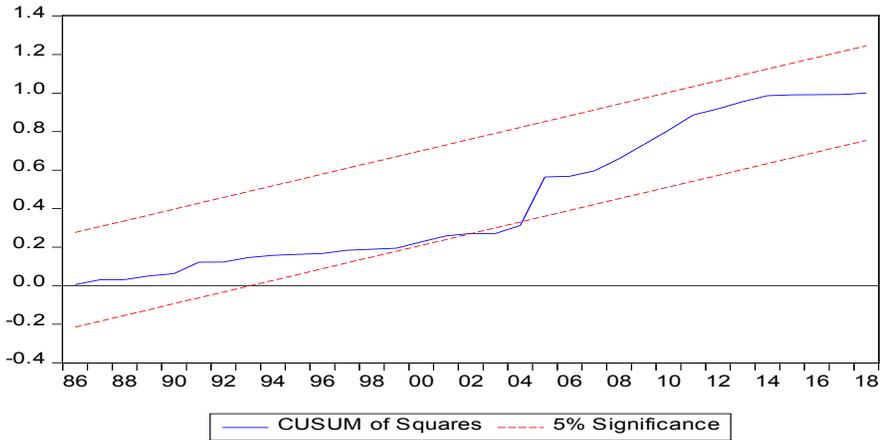


Figure 8: CUSUM of Squares

5. Conclusion

This study examined the relationship between FDI and economic growth in the MENA region for the period 1971 to 2018. The study used the autoregressive distributed lag (ARDL) technique to investigate the long run and short-run impact of the independent variables on FDI. The results of the F-bound test showed that there is no long-run relationship among the variables. Therefore, this study estimated only the short-term impact of the region. From the ARDL analysis, the results show that GDP growth and imports have a positive insignificant effect on FDI in the short-run. Inflation and export have a negative impact on FDI. Nevertheless, only export has a significant effect on FDI. FDI plays a vital role in the development of the economy of host countries, and it's the most important way to accelerate and promote local products, technology, and managerial skills. Based on the results, the study recommends that policymakers in the MENA region should implement measures to boost economic activities and import level. This will help in attracting more investors into the region.

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CHAPTER VII

FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH

Yüksel Akay Ünvan¹ & Hasan Kurtar²

1 (Doç.Dr.), Ankara Yıldırım Beyazıt Üniversitesi,

akay.unvan@gmail.com,

ORCID: 0000-0002-0983-1455

2 (Doktora Öğrencisi), Ankara Yıldırım Beyazıt

Üniversitesi, hasankurtar8989@gmail.com

ORCID: 0000-0002-0261-4431

1. Introduction

Beginning from 1970s, the trend toward financial liberation had been seen in developing countries in different degrees and in different times until the late 1990s. Developing countries started to seek remedies for high cost, inefficiencies, and demand to more financial resources in financial sector through liberalization of it. It is believed and advised through various authorities and policy makers (i.e. Washington Consensus) that making the trade free, liberalization of foreign direct investment, deregulating financial markets and creating self-regulated financial markets will bring financial development which results in economic growth and efficiency in the developing countries. Most of the developing countries reacted those recommendations by allowing foreign capital and foreign financial instruments to enter, move and exit freely from their countries (World Bank, 2005). One of these developing countries was Turkey and Turkey had also tried to solve its economic problems through financial liberalization and financial development. Decree No. 32, the Law of the Protection of the Value of Turkish Currency removed all restrictions on capital movements in 1989 and this decree brought financial liberalization in Turkey (The Undersecretariat of Treasury, 2015).

In this study, relationship between financial development and economic growth will be observed for Turkey beginning from 1991 in which influences of financial liberalization act (Decree 32) and financial development started to be clearly seen. Before starting scrutinizing relationship between financial development and economic growth, brief information will be provided on the main two indicators, which are financial development and economic growth.

Financial sector is composed of institutions, investors, instruments, regulations and, legal regulators. Financial development means lowering costs for transaction and obtaining information, creating financial markets having high volume, differentiating instruments, increasing types and amount of information and deepening the financial markets (World Bank, 2020). Financial systems have common main functions such as allowing financial resources to move freely, making risk management easier, monitoring the investments, facilitating trade and transactions easier, matching fund borrower and fund lender, creating financial resources for investments and etc. Financial development is seen when those functions are better performed. In the literature, it is mostly thought that functions above can be performed under liberal and competitive financial market conditions (Hermes & Lensink, 2006). In other words, financial development can be provided through financial liberalization, which means removing barriers and restrictions on capital in the financial system. Prices and interest rates should be determined in the market according to supply and demand conditions. This mechanism will provide competitive market equilibrium in financial sector and it will cause increase in available financial resources. Moreover, mobilization of financial resources will rise. This, in return, is going to trigger economic growth because more and mobile financial resources will be created for economy through financial liberalization and financial development (McKinnon, 1973). For example, holding the interest rate consciously lower will discourage depositors to deposit their funds to banks. This will cause reduction in financial resources. However, in free competitive financial market, interest rate will be determined through supply and demand mechanism. This will probably cause higher interest rate and depositors will deposit their funds to banks. This will create more financial resources for the economic growth. In addition, financial development will facilitate access to funds for disadvantaged and vulnerable groups, SMES and etc. This will help providing economic growth, reducing poverty and inequality in the society (World Bank, 2020).

Economic growth is an issue interested by academicians and policy makers for a long time. Determinants of economic growth is tried to be understood by researchers from mercantilists to today. After the Second World War, economic growth is explained by savings, investments and productivity of capital through Keynesian approach by Harrod (1948) and Domar (1957). This model asserts that capital accumulation provided by savings and investments increase production and income level. On the other hand, Solow growth model explains economic growth by technological change and population growth rate (Solow, 1957). Moreover, endogenous growth theories explain economic growth by human capital (Lucas, 1988), research and development activities (Romer, 1986; Rebelo, 1991), government spending (Barro, 1990), international trade etc. Another factor that influences economic growth is financial development. In literature it is mostly claimed that financial development affects economic growth. There are many studies that support this claim. For example, Schumpeter (1912), Robinson (1952) and Hicks (1969) asserted that there is a positive relationship between financial development and economic growth. On the other hand, there is an ongoing debate on direction of this relationship between these two variables among researchers. Schumpeter (1912) thinks that financial development influences economic growth through technical development and productivity increase. Especially banking sector has enormous effect on economic growth. On the contrary, Robinson (1952) claims that real economic growth brings financial development through increasing need for financial intermediation. Patrick (1966) deals with the issue with a different perspective. He adopts demand-following and supply-leading approach for the relationship between financial development and economic growth. Demand-following hypothesis puts forward that there is a causal relationship from economic growth to financial development because growing business cycle and economic activity force and trigger financial sectors to expand their volume and activities. On the contrary, supply-leading hypothesis asserts that there is a causality from financial development to economic growth because increasing financial services and sources will create base and encourage economic growth. Different from these two hypotheses, there is an another theory called “Stage of Development Hypothesis”. This theory claims that supply-leading financial development can trigger capital accumulation in the early stages of economic growth. Financial development, which creates new financial services and innovation in the sector, results in economic growth. While financial development and economic growth

continue, supply-leading sides of financial development decrease slowly and are possessed by demand-following characteristics of financial development (Calderon & Liu, 2003).

Until here, theoretical background of the relationship between financial development and economic growth has been summarized. In literature, there are many studies observing the relationship between financial development and economic growth for Turkey. Most of them determine financial development with a few indicators such as money supply, credits, stock values traded etc. Determining financial development by a few financial market indicators is open to debate. How well and sufficient can financial development be represented or measured with a few financial market indicators? The best way of measuring financial development is to include all necessary, suitable and highly representative indicators. Therefore, “financial development” in this study will be measured in details by “four mains” indicators (banking sector development, stock market development, bond market development, and insurance market development) and sixteen “sub indicators”. The way of describing and measuring financial development will be the contribution of this study to the literature. In addition, this study will contribute to the literature by examining long run and short run bidirectional causal relationship between financial development and economic growth for Turkey with the help of ARDL cointegration technique.

In the first part of the study, theoretical relationship between two main variables (economic growth and financial development) has been told in details. Secondly, empirical evidences on the relationship between financial development and economic growth will be given in literature review section. Thirdly, brief information on the methodology, data and variables which will be employed in the study will be provided. In the fourth section, analysis will be made and analysis results will take place. Finally, the results will be evaluated comparatively in the conclusion part.

2. Literature Review

The relationship between economic growth and financial development is popular research topic for decades and it is still a hot issue among researchers today. Many researchers observed this relationship from different perspectives. Some of them focused on developed countries while others concentrated on developing countries. Some researchers examined this relationship by using

different methods and techniques. In short, there are lots of studies on this issue in the literature but this study will focus on recent studies for practical purposes.

Menyah et al. (2014) analysed the relationship in two main variables, which are financial development and economic growth in 21 African countries. The analysis has been made for the years between 1965 and 2008. Financial development has been constructed by liquid liabilities, domestic credits provided by banking sector, domestic credits to private sector and money supply. The relationship between financial development and economic growth examined by panel analysis and granger causality tests. The empirical results show that the relationship between financial development and economic growth is weak. There is an association between financial development and economic growth in only four countries according to the empirical results. Demand-following hypothesis has been supported by only evidences in one country while supply-leading hypothesis has been verified by evidences in only three countries. There is no empirical confirmation “on financial development and economic growth relationship” in remaining 17 African countries.

Herwartz & Walle (2014) examines finance and development relationship with a different technique called functional coefficient modelling approach. The study has been made for years between 1975 and 2011. The researchers employed panel data sets which include 73 countries’ data for financial and economic development. The financial development is measured by only credit provided by the banks and financial institutions to private sector. The researchers demonstrated with the help of empirical evidence that financial development has much more positive influence on economic growth in high-income countries than low-income countries.

Samargandi et al. (2015) discuss the relationship between financial development and economic growth whether this relation is monotonic or not. The study covers the period 1980 to 2008. 52 countries have been observed in the research. 23 of them are high-income countries while others are low-income countries. Financial development has been measured by employing liquid liabilities, commercial bank asset, central bank assets and bank credits to the private sectors. Dynamic heterogeneous panel regression techniques have been used in study. The empirical results that researchers found clearly demonstrate that relationship between financial development and economic growth is not always straight forward and linear. It is clearly stated in the article that relationship between these variables are like inverted U-shape. The results

recommend that financial resources do not always help positively to economic growth.

Peia & Roszbach (2015) revised the relationship between financial development and economic growth with a different approach. Financial development has been separated into two subgroups namely stock market and banking sector. The study has been made for 22 developed economies for the period over 1973 to 2011. Cointegration analysis causality tests have been applied in order to detect the way of causality among variables which are stock market, bank market and economic growth. Empirical results found in the study recommends that impact of financial development on economic growth is depending on where financial development comes. If financial development is mostly due to stock market development, then it will have positive and significant influence on economic development. On the contrary, if financial development is mostly due to the development in banking sector, it will have negative and little impact on economic growth.

Ductor & Grechyna (2015) explored the association between economic growth and financial development in 102 countries by applying data for the years between 1970 and 2010. The researchers employed panel VAR analysis. They empirically found that influence of financial development on economic growth is determined by the size of the private credit relative to the real output. In other words, there exists a negative association between financial development and economic growth if growth of private credit is not matched by real output growth. Therefore, economic growth can be provided by the optimal level of financial development.

Ciftci et al. (2017) examined financial development and economic growth relationship for period 1989 and 2011 by using yearly data in 40 countries. The researchers applied Augmented Mean Group (AMG) and Common-Correlated Effects (CCE) methods in the study. In most of the countries analysed, positive long run relationship between financial development and economic growth has been detected. In other words, credit market and stock market developments demonstrate positive long run impacts on economic growth. In addition, credit market shows higher influence on economic growth in the most countries observed.

Pradhan et al. (2017) scrutinized the relationship between two main variables observed in this paper in Asean Regional Forum countries for years between 1991 and 2011. Panel vector-auto-regressive model and Granger

causality tests have been employed in this analysis. Researchers have found results supporting the idea that financial development encourages economic growth.

Shahbaz et al. (2017) observed the drivers of economic growth for China and India. The researchers employed annual data for the period 1970 to 2013 by using cointegration tests. Researchers clearly found that financial development significantly and positively influenced and triggered economic growth for both countries. In addition, empirical results demonstrated that financial development and economic growth were interdependent.

Le & Tran-Nam (2018) scrutinized the relationship between financial modernization and economic development in fourteen Asian countries. The study covers the period 1961 and 2011. The researchers employed panel data. 14 countries in the study has been separated into two subgroups, which are middle-income and high-income countries according to the World Bank's income classification. The researcher made their analysis through Feasible Generalized Least Squares and Granger Causality tests. They have found that there is a long run unidirectional relationship between financial development and economic growth. In other words, it has been clearly shown by empirical evidence that there is a causative relationship from financial modernization to economic development in the middle-income countries.

Pradhan et al. (2018) observed the causative relationship among innovation, financial development and economic growth in more than forty European countries. The analysis has been made by the unit root and panel cointegration techniques for years between 1961 and 2014. The researchers constructed the financial development on four banking sector indicators (central bank assets, deposit money banks, domestic credits, and private credits) and three stock market variables (market capitalization, value of traded stocks, and turnover ratio in the stock market). They found that there are cointegrating vectors among three variables and there is a long run causative positive relationship from financial development to economic growth in most of the countries examined.

Pan & Mishra (2018) looked for a relationship between economic growth and financial development in China which is very influential on world economy. The authors employed ARDL method and unit root test in their study. The researchers concluded that the global financial crisis (2007-2012) had impacted financial and real sector negatively. In addition, they found that there exists a negative relation between Shanghai A share market and economic growth in the

long term. On the other hand, there is no association between them in the short term. Finally, it has been indicated through empirical evidence that there is a causative relationship from economic growth to Shenzhen B share market.

Okunlola et al. (2018) examined the relationship between financial development and economic growth with a different analysis technique called Toda Yamamoto Approach. The study observed the relationship for Nigerian economy and it covers the period 1985 to 2015. Empirical results in the study clearly demonstrated that there is a bidirectional causality between financial development and economic growth. In addition, stock market indicators are very influential on economic growth.

Anetor (2019) explored the relationship between financial development and economic growth in 28 sub-Saharan African (SSA) countries over the period 1995 to 2017. The researcher employed system generalized method of moments (SGMM) and dynamic panel threshold regression analysis in the study. The empirical evidence postulated that clear negative association between foreign direct investment and economic growth. However, portfolio investment is positively correlated with economic growth in the African countries.

Guru & Yadav (2019) probed the same relationship between two main variables for five BRICS countries namely Brazil, Russia, India, China, South Africa. The study covers the period 1993 to 2014. Generalized method of moment system estimation (SYS-GMM) has been employed in the analysis. Financial development has been determined by credits provided by financial institutions, size of financial intermediation, stock values and turnover ratios in the stock markets. At the end of the study, empirical results demonstrated that banking sectors and stock markets are very influential on economic growth with respect to BRIC economies.

Asteriou & Spanos (2019) scrutinized the relationship between main variables called financial development and economic growth in the period of financial crisis. The study covers the period 1990 to 2016. It is clear that world faced big global financial in 2008. The researchers compared and contrasted ex crisis and post crisis period by employing dummies in the analysis. They applied their analysis on 26 European countries. Empirical results demonstrated that there is positive relationship between financial development on economic growth in ex crisis period. However, in the post crisis period (after the global financial crisis), financial development influenced economic growth negatively. In addition, after the crisis period, commercial bank assets and capital adequacy of banks contributed to rectification of financial system.

Cheng et al. (2020) observed the association between financial development and economic growth in 72 different countries for the years between 2000 and 2015. The researchers employed dynamic GMM estimation and panel data analysis in the study. The empirical evidence indicates that there is a negative relationship between financial development and economic growth. Magnitude of this negative association is higher in developed and high income countries.

Rahman et al. (2020) examined the relationship between financial development and economic growth in Pakistan between years 1980 and 2017. The researchers employed two-state Markov switching model in the study and they test whether Schumpeter's view (which asserts finance triggers growth) still holds or not for Pakistan economy. The empirical evidence postulates that there is a positive causality from financial development to economic growth.

Li & Ingham (2020) explored the relationship between financial development and economic growth in different 67 countries between the years 1971 and 2007. The researchers employed ARDL and cross-sectionally augmented autoregressive distributed lag (CS-ARDL) models in the study. They concluded that positive and non-linear relationship exists between financial development and economic growth in the long run.

Mtar & Belazreg (2020) investigated the relationship between financial development and economic growth in 27 OECD countries. The data used for the study covers the period 2001 to 2016 and Panel VAR analysis has been employed in the study. The empirical evidence postulated that there existed a causative relationship from economic growth to financial development. However, neutrality hypothesis still holds from financial development to economic growth. In addition, researchers concluded that quality of financial resources and well regulated financial system are crucial for economic growth.

3. Research Questions and Hypotheses

This study does not try to find determinants of economic growth in Turkey. It only seeks to find causative relationship between economic growth and four financial development indicators which are banking sector development, bond market development, stock market development, and insurance market development in Turkey. It is intended to detect those relationships by employing ARDL cointegration technique. It is tested whether there are long run relationships among financial development indicators and economic growth or not. More concretely, hypotheses are presented below:

H_{01} : There is a long run/short run relationship between Banking Sector Development Index and economic growth

H_{02} : There is a long run/short run relationship between Stock Market Development Index and economic growth

H_{03} : There is a long run/short run relationship between Bond Market Development Index and economic growth

H_{04} : There is a long run/short run relationship between Insurance Market Development Index and economic growth

4. Data and Methodology

The data on economic growth and four financial development indicators for Turkey is obtained from World Development Indicators, World Bank. The analysis will be made over the period 1991-2017 by employing annual data. Annual data has been converted to semi-annual data in order to catch sufficient number of variables ARDL cointegration technique needs.

The employed variables in this study are banking sector development, bond market development, stock market development, insurance market development, and per capita economic growth. The first four variables above represent and measure financial development. The best way of measuring financial development is to include all necessary, suitable and highly representative indicators. Therefore, “financial development” in this study will be measured in details by “four mains” indicators (banking sector development, stock market development, bond market development, and insurance market development) and sixteen “sub indicators”. The way of describing and measuring financial development will be the contribution of this study to the literature.

The banking sector development means efficiency, quality and quantity increase of the bank services. The performances of banks and banking sector improve as a result of many activities and operations (Pradhan et. al. 2017). Therefore, banking sector development cannot be measured and represented by one variable or subindicator. The banking sector development will be represented by four subindicators which are broad money supply (BBRM), domestic credit provided by the banking sector (BDCB), domestic credit provided by the financial sector (BDCF) and domestic credit provided to the private sector (BDPC) in this study. With same approach, stock market development will be measured by subindicators which are stock market capitalization (SMAC), stocks traded

(STRA), stocks turnover ratio (STUR), and the number of listed companies in the stock market (SNLC). Bond market development will be measured domestic private debt securities (BDPT), domestic public debt securities (BDPU), international private debt securities (IDPT), and international public debt securities (IDPU). Insurance market development will be measured through subindicators which are life insurance density (ILID), non-life insurance density (INID), life insurance premium (ILIP), and non-life insurance premium (INIP). The variables and their definitions are shown in Table 1.

Composite indexes of banking sector, bond market, stock market and insurance market will be composed by PCA. PCA will be employed in creation of those indexes because the created indexes will be uncorelated to each other. The PCA is a mathematical technique that transforms data sets with many number of variables into few variables with minimum information loss. The PCA clarify the variance of the data with a few elements that are linear function of the raw variables. In other words, original large number of variables are turned into few number of variables which are not correlated to each other. These few variables represent original data set variables. The intuition behind using the PCA method is eliminating correlation among original data set of variables (Hudrliková, 2013). The PCA method will be applied through following steps. The first step is to make standardization to avoid biased outcome. Second step is to create covariance matrix which shows correlation among different indicators. In the third step, eigenvectors and eigenvalues will be computed in order to obtain principal components which are new set of variables. Then, principal components will be computed by putting eigenvalues into descending order. The variable which have highest eigenvalues will be first principal component. After creating feature matrix which includes all significant variables, principal components will be acquired (Jollife, 2002).

Economic growth will be measured by growth rate of per capita real GDP (gross domestic product).

Table 1: Definition of financial development variables and indices.

Variable	Definition
Definition of banking sector development variables	
BBRM	Broad money supply, expressed as a percentage of gross domestic product.
BDCB	Domestic credit provided by the banking sector to private sector, expressed as a percentage of gross domestic product.

BDCF	Domestic credit provided by the financial sector, expressed as a percentage of gross domestic product.
BDCP	Domestic credit to the private sector, expressed as a percentage of gross domestic product.
CBSD	Composite index of banking sector development, using BBRM, BDCB, BDCF, and BDCP
Definition of stock market development variables	
SMAC	Market capitalization of listed companies, expressed as a percentage of gross domestic product.
STRA	Stocks traded (total value), expressed as a percentage of gross domestic product.
STUR	Stocks traded (turnover ratio), expressed as a percentage change in the turnover ratio in the stock market
SNLC	Number of listed companies in the stock market, expressed per 10,000 population.
CSMD	Composite index of stock market development, using SMAC, STRA, STUR, and SNLC.
Definition of bond market development variables	
BDPT	Domestic private debt securities, expressed as a percentage of gross domestic product.
BDPU	Domestic public debt securities, expressed as a percentage of gross domestic product
BIPT	International private debt securities, expressed as a percentage of gross domestic product.
BIPU	International public debt securities, expressed as a percentage of gross domestic product.
CBMD	Composite index of bond market development, using BDPT, BDPU, BIPT, and BIPU
Definition of insurance market development variables	
ILID	Life insurance density, expressed as direct domestic life premiums per capita.
INID	Non-life insurance density, expressed as direct domestic non-life premiums per capita.
ILIP	Life insurance penetration, expressed as direct domestic life premiums (as a % of gross domestic product).
INIP	Non-life insurance penetration, expressed as direct domestic non-life premiums (as a % of gross domestic product)
CIMD	Composite index of insurance market development, using ILID, INID, ILIP, and INIP

Note: All monetary values are constant price in US dollars.

In this study, ARDL cointegration technique has been employed. ARDL is used to find long run relationship among variables. ARDL allows to make analysis on variables which have different orders of integration. This is the main advantage of ARDL method compared to other cointegration techniques. Therefore there is no need to determine orders of cointegration of variables. However, it is necessary that any of variables should not have second order of cointegration. In addition, it provides more reliable results for small sample sizes compared to other cointegration methods because other cointegration techniques such as Johansen Cointegration provides more reliable results when time span in which analysis is made gets longer. ARDL cointegration analysis is composed of three main steps. In the first step, long run relationships among variables are determined. If long run association is found among variables, long run and short run elasticities are found in the second and third steps.

First of all, Akaike (AIC) and Lagrange Multiplier (LM) statistical criterias have been employed in order to find lag lengths. Minimum value for AIC and LM Chi-Square probability value higher than %5 are important parameters for determining right lag length. With the suitable number of lag length, F statistical tables are formed. Null and alternative hypotheses are presented below:

$H_0: \theta_1 = \theta_2 = 0$ (there is no cointegration)

$H_a: \theta_1 \neq \theta_2 \neq 0$ (there is a cointegration)

According to the test results, if $F_{\text{calculated}}$ is greater than $F_{\text{tabulated}}$, then the null hypothesis can be rejected. This, in return, means that there is a cointegration between variables. However, if test results cannot reject null hypothesis, this means that there is not cointegration between variables. According to the F bound tests, if it is found that there is a long run relationship, then long run and short run estimations are made. After the estimations, in order to ensure reliability of test results diagnostic test is applied. Diagnostic test is applied to show that there is no serial correlation in the analysis.

5. Analysis and Empirical Results

First of all, descriptive statistics of variables is provided in Table 2 below. In this study, E-views 10 package program has been used for analysis.

Table 2: Descriptive Statistics of Variables.

	GDPG	BANK IND	BOND IND	INSU IND	STOCK IND
Mean	4.662	0.276	-8.070	-0.003	-0.146
Maximum	11.114	3.565	3.696	4.423	1.911
Minimum	-4.704	-2.233	-2.479	-2.951	-3.745
Std. Dev.	4.414	2.062	1.589	2.026	1.688
Observations	44	44	44	44	44

In this analysis 44 observations are included. The data used in the analysis is annual data but it has been converted semi-annual data for estimation purposes. The ARDL cointegration technique needs minimum number of observations in order to make estimation. In order to reach sufficient number of observations, annual data has been converted to semi-annual data by using E-views package program. GDPG represents GDP growth. BANK IND represents Composite Banking Sector Development Index. BOND IND symbolizes Composite Bond Market Development Index. INSU IND symbolizes Composite Insurance Market Index. STOCK IND represents Composite Stock Market Development Index. GDP growth has the highest standard deviation and mean. Its maximum value is around 11 while its minimum value is around minus 5. Composite Bond Market Development Index has the lowest mean and lowest standard deviation.

PCA has been employed in order to create four financial market development indexes. Then correlation among the variables has been displayed through correlation analysis. Result of correlation analysis can be seen in Table 3 below.

Table 3: Correlation Analysis

	GDPG	BANK IND	BOND IND	INSU IND	STOCK IND
GDPG	1				
BANK IND	0.244	1			
BOND IND	0.208	0.907	1		
INSU IND	0.263	0.919	0.876	1	
STOCK IND	0.241	0.760	0.698	0.809	1

The correlation analysis shows that our variables are highly correlated with each other. Composite Banking Sector Development Index has highest correlation with other indexes. More concretely, Composite Banking Sector Development Index has correlation which is more than 0.9 with Composite Bond Market Development and Insurance Market Development Indexes. Due to the higher correlation among the variables, it is suspected that whether multicollinearity problem arises in the analysis or not. Therefore, Variance Inflation Factor (VIF) analysis is applied for measuring multicollinearity problem. VIF analysis result is provided below in Table 4.

Table 4: Variance Inflation Factor (VIF) Analysis Result

Variable	VIF	1/VIF
BANK IND	9.11	0.109719
INSURANCE IND	8.47	0.118026
BOND IND	6.10	0.164020
STOCK IND	2.93	0.341489

VIF statistics' maximum value is around 9. Since VIF statistics is lower than 10, there is no multicollinearity among our independent variables. Although it is suspected multicollinearity problem among our variables as a result of correlation analysis, VIF analysis has displayed that there is no multicollinearity among them.

It has been ensured that there is no multicollinearity among independent variables, then ARDL cointegration technique's F bound tests can be applied. F bound tests' results can be seen below in Table 5.

Table 5: Bounds Test

	<i>Value</i>	<i>Significance.</i>	<i>Lower Bound I(0)</i>	<i>Upper Bound I(1)</i>
F-statistic	5.778406	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Bounds test is made in order to show whether there is a long run relationship among variables or not. F statistics is around 5.77. This F statistics is more than upper bound value in all significance levels. This result demonstrates that there is a long run relationship among variables. Therefore, long run and short run estimation can be made as a result of bounds test. The long run estimation results are displayed in Table 6.

Table 6: Long Run Estimation Results

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
BANK IND	-1.407	0.693	-2.030	0.062*
BOND IND	2.161	0.734	2.946	0.010**
INSU IND	-2.143	0.717	-2.988	0.010**
STOCK IND	2.793	0.722	3.869	0.002***
C	5.346	0.671	7.972	0.000***

*, **, *** are 10%, 5% and 1% significance respectively

AIC Model Lag Length Respectively: 4, 1, 4, 4, 4

There is not a long run relationship between GDP growth and Composite Banking Sector Development Index at 5% significance level. Long run association between Composite Bond Market Development Index and GDP growth exists at 5% significance level. Likely, there is a long run relationship between Composite Insurance Market Development Index and GDP growth at 5% significance level. Lastly, test results show existing long run relationship between Composite Stock Market Development Index and GDP growth. This results clearly demonstrate that there is a long run association between three financial development indicators (namely bond market, stock market, and insurance market) and economic growth. More clearly, three of independent financial development variables are significant and they have long run association with economic growth but there is not significant relationship between banking sector index and GDP growth. On the other hand, stock and bond market influence positively economic growth while insurance market has negative impact on economic growth in the long run. Short run estimation results are shown in Table 7.

Table 7: Short Run Estimation Results

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
D(GDPG(-3))	0.967	0.208	4.650	0.000***
D(BANK IND)	-4.677	1.826	-2.562	0.023**
D(BOND IND(-3))	8.793	1.942	4.527	0.001***
D(INSU IND(-3))	3.145	1.098	2.863	0.013**
D(STOCK IND(-3))	-6.152	1.250	-4.921	0.000***
ECM _{t-1}	-2.029	0.296	-6.860	0.000***
R-squared	0.830			
Adjusted R-squared	0.686			
F-statistic	3.551			
Prob(F-statistic)	0.009			
Durbin-Watson stat	1.767			

** , *** are 10% and 5% significance respectively

AIC Model Lag Length Respectively: 4, 1, 4, 4, 4

In the short run estimation results, R-squared is more than 80%. This result implies that independent financial development indicators have well enough explanatory power for dependent variable economic growth. Probability of F-statistic is lower than 5%. This result demonstrates that independent variables are jointly significant. However, composite banking sector development index, composite insurance market and development index are not significant at

5% significance level while composite bond and stock market development indexes are significant at 5% significance level. Banking sector findings for short run supports long run empirical findings because there is not a significant relationship between banking sector and GDP both in short and long run. Bond market has positive influence on economic growth in the short run. This result is also coherent with the results found in the long run estimation. Bond market has positive influence on economic growth in the short and long run. Estimation results for insurance market are contradictory in the short and long run. In the short run, there is no association between insurance market and economic growth while this association exists in the long run. Similarly, stock market has positive relationship with economic growth in the short run but this positive relationship changes to negative relationship in the long run. To summarize, estimations on banking sector and bond market provide coherent results for short and long term while estimations on stock and insurance markets give contradictory results for short and long run.

To ensure the reliability of estimations, it has been assured that there should not be serial correlation in the analysis. Serial correlation analysis has been measured through diagnostic tests. Diagnostic test results can be seen in Table 8.

Table 8: Diagnostic Tests

<i>Test</i>	<i>F-Statistic</i>	<i>Prob.</i>
Serial Correlation	3.282	0.073
Heteroskedasticity	1.420	0.253
Ramsey RESET	1.653	0.221
Normality	12.089	0.002

The serial correlation probability statistics is higher than 5%. This means that hypothesis asserting “there is no serial correlation” is not rejected. Therefore, there is no serial correlation among variables.

6. Discussion and Conclusion

In this study, a long run and short run association between financial development variables have been observed as it is made in prior studies. In the literature, relationship between financial development and economic growth is investigated in different countries and in different types of economies such as low-income

or high-income. There are empirical evidences for supporting both negative and positive relationship between two main variables discussed in the study. Some studies look for short run relationship between the two main variables while others examine long run association between them. Financial development is measured through a few financial sector variables in most of the studies (especially for Turkey) in the literature.

This study includes sixteen financial development subindicators and four main financial development indicators which provide opportunity to explain financial development well enough. Analysis of these results show that there is a significant relationship between three financial development indicators (namely bond, stock, and insurance market) and economic growth for both in the short and long run. However, banking sector does not have association with economic growth. This result supports supply-leading hypothesis because there is a causative relationship from financial markets to economic growth.

The result found for banking sector is interesting and this situation needs further investigation. In the literature, it is commonly asserted that banking sector is very important for economic growth and mobilization of economic resources. Creating sound and stable banking sector is suggested and it is very critical for long term sustainable economic growth. However, a significant relationship could not be find between banking sector and economic growth in this analysis.

Credible and reliable bond and stock markets are very critical and important for ensuring sustainable economic growth as suggested in the literature. Well developed stock and bond markets create resources for investments and economic growth. The results of analysis support this view. Stock and bond markets have significant impact on GDP growth and they trigger economic growth both in short and long run.

Likely, sound and stable insurance market is desirable for sustaining economic growth. Competitive and active insurance market is undeniably important for both long term and short term economic growth. Arguments told above are claimed in the literature. However, results of the analysis are partially supportive for arguments above. In the long run there exists an association between insurance market and economic growth. In the long run, insurance market is important for sustainable economic growth. On the other hand, in the short run there is no significant relationship between insurance market and GDP growth according to the analysis results in this study.

To summarize, the findings for stock and bond markets are in line and coherent with findings in the literature. On the contrary, analysis results for banking and insurance markets are not in line with findings in the literature. Therefore, there is a need for investigation in banking sector and insurance market with respect to economic growth. However; overall findings of this study suggest that policy makers should stimulate financial markets in order to provide sustainable economic growth.

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CHAPTER VIII

EFFICIENCY OF RESOURCE ALLOCATION IN MULTIBUSINESS FIRMS: THEORY AND EVIDENCE*

Mehmet Nasih Tağ
(*Asst. Prof. Dr.*), Mersin University,
e-mail: tag@mersin.edu.tr
ORCID: 0000-0002-8605-280X

1. Introduction

Large multibusiness firms occupy a substantial role in the global economy. To illustrate, the world's 500 largest companies collectively reported total annual sales of 33.3 trillion US dollars in 2019 (Fortune, 2021). Most of these firms operate across multiple products and geographic markets, providing them with options to create and exploit financial economies of scope. For instance, a multibusiness firm may arguably be able to create economic value by forming a portfolio of businesses with imperfectly correlated returns to smooth cash flows.

A more significant source of financial economies of scope, though, may emanate from selectively allocating capital resources among various businesses (Billet & Mauer, 2003; Rajan, Servaes, & Zingales, 2000; Williamson, 1975).

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Note that product market diversification, in effect, creates an internal capital market for capital resources allocation.¹ In an internal capital market, middle and lower-level managers scan their environment and identify opportunities for investment. Top managers then allocate capital resources to a select set of these investment opportunities. In fact, every year, multibusiness firms allocate massive amounts of capital to investments in fixed assets. For instance, according to Standard and Poor's Global Capex Survey of 2019, global capital expenditures are expected to exceed a total of 3 trillion US dollars in 2021 (Williams, 2019). Given the size of these figures, one wonders whether multibusiness firms channel their capital resources toward more profitable and value-creating investment opportunities across their divisions.

Thus, a diversified multibusiness firm could create financial synergies by transferring resources from mature but resource-rich businesses to growing but resource-constrained businesses. This, of course, is the bright side of the internal capital market. The dark side is that the firm could destroy value through its resource transfer policy if faulty projects are selected while more valuable projects are turned down or under-financed. For instance, in the early 1980s, oil firms experienced increases in profits but faced high explorations costs, high real interest rates and low oil forward prices, all of which reduced the value of investment opportunities in the oil industry. Some of these firms had divisions in the chemical industry, which then faced more valuable investment opportunities. The efficiency principle suggests that resources generated by the oil divisions should have been used to subsidize more valuable investments in the chemical divisions. Lamont (1997) examined how these firms reacted to changing environments and trends and found that diversified oil firms increased their exploration and development budgets in their oil divisions but did not significantly change their investments in their chemical divisions. Thus, it appears that while multibusiness firms have the option to transfer resources among divisions in a value-creating way, they, nevertheless, may not exercise this option efficiently. Allocation is defined to be efficient if resources flow from investment opportunities with poor financial prospects toward investment opportunities with brighter prospects.

This chapter reviews the theoretical and empirical literature on the efficiency of resource allocation in multibusiness firms. The chapter proceeds

¹ An internal capital market is defined as the mechanism by which the headquarters allocate capital resources to divisions. Throughout this chapter, the term "resources" refers to capital resources.

by discussing the differences between resource allocation in markets vs. firm hierarchies in section 2. This discussion establishes the costs and benefits of internal resource allocation (i.e., allocation in multibusiness firms). Section 3 summarizes the process of resource allocation in multibusiness firms. Section 4 reviews both theoretical and empirical literature on the efficiency of resource allocation while section 5 discusses the role of managerial incentives and conduct in the process and outcomes of resource allocation in multibusiness firms. Section 6 concludes the chapter.

2. Mechanisms of Resource Allocation: Markets vs. Hierarchies

To understand the differences between market- and hierarchy-based mechanisms of resource allocation, we may consider a stand-alone (single-segment) firm that has valuable investment opportunities. Let us suppose that this firm is capital constrained so that it cannot completely finance its valuable investment opportunities on its own. The capital resources needed can be provided by an external capital market (ECM), where banks, institutional investors, and individual investors supply capital to firms. Thus, the ECM is the “market” mechanism for resource allocation among investment projects. This mechanism is said to be “external” in the sense that the source of finance is external to the firm. In a world with no capital market frictions, capital is allocated in such a manner that the marginal return on investments would be the same across firms. In this case, the ECM is said to be efficient in channeling capital resources to profitable investment opportunities. However, information asymmetry, agency problems, transaction costs, and taxes may prevent ECMs from working efficiently.

Research of the past few decades has shown that informational problems and agency costs are related to either under or overinvestment at the firm level (e.g., Jensen, 2010; Richardson, 2006). There is information asymmetry and incentive misalignment between capital providers and firm managers, which cause sub-optimal investments. On the other hand, capital providers in the external capital markets aim to maximize return on their capital investments. Therefore, they compel firms to design and implement governance and control mechanisms intended to minimize information and agency costs (Jensen, 2010; Shleifer & Vishny, 1997). Nevertheless, these mechanisms are not perfect, and therefore the problem persists, albeit to a lesser extent.

Instead of financing through an ECM, the single-segment firm may become a part of another organization that has excess capital resources, which could then be channeled to finance investment opportunities in the newly acquired single-segment firm. In this case, the single-segment firm becomes a division of a corporation, the headquarters of which provides the necessary financing through the so-called internal capital market (ICM). The ICM is “internal” in the sense that the source of capital resources is within the firm organization, where resources are allocated on a competitive basis, hence the term “capital market.” On the other hand, because a headquarters in a multibusiness firm decides how much to allocate to each investment project (or a division), the resource allocation mechanism is a “hierarchy” in nature.

An important aspect of Adam Smith’s legacy is that we must understand the functioning and comparative advantages of markets and organizations (hierarchies) to understand the mechanisms of wealth creation. The GHM framework (Grossman & Hart, 1986; Hart & Moore, 1990; Hart, 1995) may be used to understand the differences between the two mechanisms. According to the GHM framework, environmental circumstances (such as technological, economic, political, and social forces) surrounding a trade relationship change over time giving rise to contingencies unanticipated at the outset. That is, due to bounded rationality, trading partners are unable to contract for all the potential future contingencies. As an example, consider a pharmaceutical firm developing new drugs and methods of treatments. Suppose that the latest technological developments in biotechnology suggest that the firm extends its scope of R&D to include projects in biotechnology. Who decides on whether the firm should pursue profit opportunities in biotechnology? If the firm decides to pursue R&D projects in biotechnology, who decides on the strategy of entry into biotechnology? If the firm is capital constrained, who decides on the redeployment of resources from other divisions into biotechnology? These sorts of questions are critical because the firm’s answer to these questions determines long-term performance.

According to the GHM framework, trading partners could allocate the residual control rights beforehand, and specify who holds the decision-making power and rights when such unanticipated contingencies arise. In a firm, these rights are allocated by designing the firm’s capital structure, which combines various proportions of equity and debt. Unlike debt, equity gives the holder residual control rights over the firm’s resources provided that the firm can meet its

financial obligations. Thus, according to Gertner, Scharfstein, and Stein (1994), the primary difference between the two mechanisms of resource allocation is that the headquarters in a multibusiness firm (the hierarchy) has property rights and thus control rights over the deployment of resources, whereas an external financier (the market) does not have control rights over firm resources as long as the firm is financially solvent.

An important consequence of holding the residual control rights is that it improves the residual claimant's (i.e., the headquarters') incentives to make an assets-specific investment that could increase the value of assets under its control (see Grossman & Hart, 1986; Hart & Moore, 1990; Hart, 1995). For instance, the headquarters would be more likely to devote more time and effort to improve the technology of production and management. This is because the headquarters can obtain some of the benefits of the improvements in the technology privately. These private benefits include both psychological satisfaction and monetary gains, and they are assumed to increase with resources under the headquarters control.

Thus, the difference between internal and external capital markets invokes three crucial implications concerning resource allocation decisions within a multibusiness firm. First, control rights give the headquarters better access than an external financier to critical information regarding investment opportunities across divisions. This is because the headquarters has property rights over tangible and intangible assets. These rights, combined with the headquarters' authority over employees' actions, bestows the headquarters with superior access to information.

Second, the headquarters has both the right and the authority to utilize this information to make better decisions of resource allocation. Whereas an external financier has no authority over the resource allocation policy of a firm as long as the firm is solvent. For instance, suppose that there is potential synergy among two stand-alone firms and that this potential synergy could be realized by coordinating the investment policies of these two firms. Since external financiers cannot control the firm, to which they provide capital, they cannot force these two independent firms to coordinate their investment policies. Also, due to transaction cost problems, a contract among these two stand-alone firms cannot replicate the role of the headquarters in a multibusiness firm.

Third, since the headquarters can benefit from useful information, it has better incentives than an external financier to invest in collecting information

about investment opportunities available to its divisions as well as information about both current and proposed asset deployments (Gertner et al., 1994). The headquarters may utilize this information to redeploy assets and resources from declining industries or unpromising projects toward divisions or projects with bright prospects. For instance, in the above example of the pharmaceutical firm, the headquarters could shut down some projects and divert resources from these projects to research in biotechnology. On the other hand, external capital providers, lacking effective control over the firm's assets and strategic direction, cannot make the firm reshuffle resources among its projects. For this reason, external capital providers do not have strong incentives to invest in monitoring technologies that might uncover the appropriateness of current asset deployment. Thus, it appears that a headquarters enjoys an informationally advantageous position compared to a capital provider in the external capital market.

3. The Process of Resource Allocation within the Multibusiness Firm

3.1 *Investment Proposals*

Decisions of resource allocation are among the most important strategic decisions in organizations (Bower, Doz, & Gilbert, 2005; Sengul, Costa, & Gimeno, 2019). Therefore, in a multibusiness firm the headquarters holds the final decision right on resource allocation decisions (Bower, 1970; Chandler, 1990; Levinthal, 2017). However, all levels of management undertake important roles in the resource allocation process. According to Bower, the process starts at lower levels of the organization and moves up toward divisional management and then up to the corporate headquarters. Managers at lower levels *define* the projects that require resource allocations. Lower-level managers initiate the process by assessing their internal (division, activity, etc.) and external (industry or market) environment for profit opportunities and then communicating their assessment in the form of investment proposals to the middle management. Middle managers adopt and propose a subset of these projects to the headquarters. As such, middle managers play a vital role in this stage, as they possess industry-specific expertise to evaluate the profit potential of the projects proposed by lower-level managers. Thus, they use their expertise to refine and even redefine these projects before the top management considers them. Thus, this stage is called the *impetus* phase. The top managers at the headquarters generally do not have the necessary skills

and expertise to evaluate the technical and economic aspects of these projects. Their role in this process is to define the organizational *context* that guides the phases of project *definition* and *impetus*. Top managers allocate decision rights, and design systems of performance measurement and rewards to communicate corporate goals that would guide lower-level managers' definition of resource allocation proposals (Bower & Gilbert, 2005).

The resource allocation process that Bower (1970) describes has been corroborated by several studies (for instance, see Burgelman, 1983; 1996; Gilbert & Christensen, 2005; Noda & Bower, 2005). These studies demonstrate that the central feature of the resource allocation process is that investment proposals prepared by lower-level managers compete for scarce corporate resources and the headquarters' attention. Although managers at all levels play important roles in the resource allocation process, normative models of resource allocation generally focus on the role of the headquarters and address the question of how the headquarters ought to evaluate investment opportunities and undertake investments.

3.2 *Normative Decision Rules*

Most financial models conceptualize the firm as a set of assets and investment opportunities (for instance, see Myers & Majluf, 1984). The headquarters evaluates these investment opportunities and then chooses to invest in opportunities that are expected to generate the highest return on investment. When there are perfect capital markets, the decision to invest depends on the return from the investment and the interest rate, or the cost of the capital. Given the return on investment and the cost of capital, the firm invests in a project that provides the highest net present value. The application of this rule to resource allocation decisions in firms suggests that headquarters should channel resources from divisions having lower-value projects to divisions having higher-value projects. A survey of 1000 CEOs and CFOs around the world shows that the net present value of a project is the most important factor that determines the level of resource allocation to the project (Graham, Harvey, & Puri, 2015). Obviously, variants of the NPV rule that take into consideration the opportunity cost of capital also may serve as valid decision rules.

The notion that one of the most important roles of a headquarters is the allocation of resources led to the development of and research on normative models of business portfolio planning in the management and strategy disciplines

as well. One of these portfolio planning models is known as the GE/McKinsey Matrix, according to which a multibusiness firm's divisions can be classified based on two sources of profitability: *industry attractiveness* and *competitive advantage*. According to this model, the headquarters can create value by investing in (allocating resources to) divisions that rank high on both dimensions. Another business portfolio planning matrix is the Boston Consulting Group's (BCG) Matrix. This model classifies divisions (or businesses) according to their *relative market share* (market share relative to that of the largest competitor) and *the annual rate of market growth*. Based on this classification method, a multibusiness firm groups each of its divisions into one of four categories: *cash cows*, *stars*, *question marks*, and *dogs*. According to this model, funds should flow from the cash cows toward the stars, which rank high on both dimensions of the matrix, and the question marks, which are assumed to have the potential to become stars. Dogs, on the other hand, should be divested, and their productive assets should be redeployed in divisions with better prospects (Rothaermel, 2021).

4. Do Multibusiness Firms Allocate Resources Efficiently?

The GHM framework suggests that an ICM gives the headquarters a real option to channel resources to their most profitable use. Does the headquarters exercise this real option efficiently? According to the M-form hypothesis (also known as the efficient ICM hypothesis), the headquarters allocate resources to investment alternatives based on their projected returns on investment (Williamson, 1975; 1996). Stein (1997) further develop this hypothesis by devising a formal model that shows why the headquarters can allocate resources more efficiently than an external capital market. Stein refers to this role of the headquarters as "winner-picking." That is, in a multibusiness firm, alternative investment opportunities compete for scarce corporate resources. The headquarters ranks these opportunities based on their NPVs and then allocates resources to the highest-NPV project, hence the term winner-picking.

Indeed, several empirical studies have shown that multibusiness firms allocate more of their resources to value-creating rather than to value-destroying projects. Khanna and Tice (2000) investigated the reaction of incumbent firms to Wal-Mart's entry into the discount retailing industry and found that multibusiness

firms' resource allocations to their retailing divisions after Wal-Mart's entry were more sensitive to divisional profitability than those of the single-segment retailers operating in the same industry. Guedj and Scharfstein (2004) found similar evidence using research and development projects-level data from firms in the biotechnology industry. In a more comprehensive study, Maksimovic and Phillips (2002) studied the resource allocation behavior of multibusiness firms in the manufacturing industry and found that manufacturing firms in general transfer resources from less productive divisions to more productive divisions. More recently, Kuppuswamy and Villalonga (2016) examined the resource allocation decisions of multibusiness firms before and after the 2008 global financial crisis, which created a severe financial constraint on investment in fixed assets. They found that resource allocation by multibusiness firms was relatively more efficient following the financial crisis. This finding might suggest that internal capital markets might be valuable especially during periods of financial constraints or when external capital markets do not work efficiently. As a matter of fact, a few studies indicate that resource allocation by multibusiness firms in developing countries appears to be efficient (for instance, see Almeida, Kim, & Kim, 2015; Almeida & Wolfenzon, 2006; Kuppuswamy, Serafeim, & Villalonga, 2014), suggesting that resource allocation through internal capital markets may substitute for less developed or inefficient external capital markets. This evidence is consistent with the widely held argument that during periods of external financial constraints, diversification may add value by creating an internal capital market that relaxes the financial constraints that some divisions might face (for instance, see Hovakimian, 2011; Kehrig & Vincent, 2017; Matvos, Seru, & Silva, 2018; Natividad, 2013; Yan, Yang, & Jiao, 2010).

Despite the evidence in favor of the efficient internal capital market hypothesis, the extant literature offers ample evidence suggesting that there is a dark side to internal capital markets. In one of the most influential studies on the relationship between diversification and firm value, Berger and Ofek (1995) found that multibusiness firms have stock market valuations that are, on average, 13% to 15% below the sum of the imputed stock market values of their divisions. While Berger and Ofek did not directly test whether the headquarters in multibusiness firms actively allocated resources among divisions, they nevertheless, attributed a portion of the diversification valuation discount to the overinvestment in divisions with dismal financial prospects.

Following Berger and Ofek's (1995) seminal study, many scholars have sought to understand why multibusiness firms are generally valued less than their standalone counterparts. Subsequent studies have focused on the question of whether internal capital markets are active as the theory suggests. Several studies have shown that headquarters of multibusiness firms do establish and govern internal capital markets through which cash resources generated by divisions are re-allocated among divisions (Billet & Mauer, 2003; Lamont, 1997; Shin & Stulz, 1998). A follow-up and probably more fundamental question is whether resource allocation by the headquarters conforms to the normative decision rules briefly outlined in the previous section.

According to the BCG business portfolio planning matrix, resource allocation would be considered in the right direction and hence expected to create value if resources flow from cash-rich divisions with poor prospects (i.e., cash cows and dogs) to financially constrained divisions with brighter prospects (i.e., stars and question marks). Anand (2004) examined whether firms that had experienced a decline in one of their industry segments redeploy their assets to more productive uses, i.e., to a star or question mark. They found that asset redeployment within firms appears to be less efficient than those through market mechanisms. Similarly, Christensen and Bower (1997) found that the resource allocation strategies of both diversified and focused firms generally focus on meeting the needs of current customers but ignore investing in markets and products that might have bright futures.

Shin and Stulz (1998) offer an operationalization of the BCG matrix' scheme by arguing that a firm's policy of resource allocation would create value if its headquarters 1) gives priority in the allocation of funds to divisions with relatively brighter prospects, 2) makes investments in brighter divisions' less sensitive to their own cash flows as well as other divisions' cash flows, and 3) allocates less to a division when other divisions have relatively more lucrative investment opportunities. This operationalization has been widely used in subsequent research on the efficiency of resource allocation in multibusiness firms. Based on this operationalization, Shin and Stulz found that resource allocation by the headquarters is not sensitive to divisional investment opportunities. On the contrary, resource allocation to a division depends to a large extent on the division's own cash flows, suggesting the ICMs may not be successful in generating financial synergy.

Note that Shin and Stulz's (1998) operationalization assumes that there is a transfer of resources among divisions if a division's investment is related to other divisions' cash flows. Chevalier (2004) criticized this approach by arguing and showing that the cash flows of two divisions of a multibusiness firm may be correlated even though the divisions operate in different industries. The correlation may arise due to a common variable that affects the cash flows to each division in the same manner. For instance, a change in per-capita income may affect cash flows to restaurant and oil divisions in the same firm even though these divisions are unrelated. In this case, a decrease in a division's cash flows will be associated with a decrease in the other division's investment, though this correlation may be spurious rather than causal. Thus, an association is not sufficient to conclude that there is cross-subsidization among divisions (i.e., resource allocation by transferring resources between divisions), and hence, it cannot be used as evidence for judging the efficiency of resource allocation in a multibusiness firm. To support this argument, Chevalier compared the investment policies of divisions before and after they have become a part of a conglomerate. Her analysis showed that investment by divisions did not differ significantly from their investment when they were independent firms.

While Chevalier's (2004) critique has some merit, subsequent research has generated a large body of evidence that by and large corroborates the findings of Shin and Stulz (1998) (for instance, see Agarwal et al., 2011; Bardolet, Lovallo, & Rumelt, 2010; Billet & Mauer, 2003; Glaser, Lopez-De-Silanes, & Sautner, 2013; Lamont & Polk, 2002; Ozbas & Scharfstein, 2010; Rajan et al., 2000). For instance, Lamont and Polk (2002) used an estimation strategy that corrects for the alleged measurement error and selection bias and found that diversified firms are significantly undervalued, an outcome they attributed to inefficient resource allocation.

Furthermore, assuming Chevalier's (2004) critique is generally correct, then divested divisions should generally maintain the investment policy that they pursued when they were a part of a multibusiness firm. Likewise, the resource allocation policy of multibusiness firms that refocus by divesting some divisions should not change. Several scholars have tested these hypotheses and found that investments in both non-divested and divested divisions become more aligned with investment opportunities following the divestitures (Dittmar & Shivdasani, 2003; Feldman, 2016; Gertner, Powers, & Scharfstein, 2002).

A growing strand of the literature on resource allocation suggests that, even in the absence of agency and influence cost problems, aspiration-driven behavior, and managerial cognitive bias toward even allocation of resources among divisions may lead to inefficient resource allocation (e.g., Arrfelt, Wiseman, & Hult, 2013; Bardolet, Brown, & Lovallo, 2017; Bardolet, Fox, & Lovallo, 2011). Drawing on the behavioral theory of the firm, Arrfelt et al. (2013) argue that divisional performance below aspirations leads to overinvestment, whereas divisional performance above aspirations leads to underinvestment, and thus, inefficient allocation. They examined these arguments using a large sample of data and the mixed-effect regression and found that recent performance below (above) aspirations explains divisional overinvestment (underinvestment) and in consequence resource allocation efficiency.

Bardolet et al. (2011; 2017), on the other hand, draw on the so-called naïve-diversification hypothesis (see Benartzi & Thaler, 2001) and argue that top managers making allocation decisions are susceptible to unconscious bias toward even allocation among divisions. Thus, managers underweight cross-divisional differences in investment opportunities and allocate resources based on the $1/n$ heuristic, where n is the number of divisions. Based on these arguments, Bardolet et al. (2011) predict a negative correlation between the number of divisions and the level of resources allocated to a division. Their empirical results show strong support for this hypothesis. That is, multibusiness firms appear to divide resources evenly among divisions, irrespective of the divisional expected return on investment. In the remaining part of this chapter, I discuss extant theory and evidence regarding the conditions under which internal resource allocation creates or destroys value.

5. The Role of Managerial Incentives and Conduct in the Resource Allocation Process

The hypothesis of efficient internal capital markets suggests that a firm could create value by creating a diverse portfolio of businesses and allocating resources among these businesses in a discriminating fashion based on return on investment. This hypothesis is based on the premise that in an internal capital market the headquarters has superior access to information about the profitability of current and future deployment of assets and resources (Williamson, 1975). Why should the headquarters be better informed than external providers of

capital? According to the GHM framework, the headquarters has control rights over how assets can be deployed. Thus, it has incentives to collect information on the profitability of the current as well as potential alternative deployment of assets. Moreover, because the headquarters is detached from local objectives of specific divisions, it has incentives to distribute resources in a profit-maximizing fashion.

Although the headquarters has incentives to uncover information at the divisional level, having access to the right information may turn out to be a challenging task. Bower (1970) is one of the first researchers who emphasized that job division in an organization creates a decentralization of information needed for decision-making. As a result, he argues, the process of internal resource allocation may be riddled with information asymmetry between the headquarters of a firm and its divisional management. In fact, most formal models of internal resource allocation assume that there is a significant information asymmetry between the headquarters and divisional management (for instance, see Harris, Kriebel, & Raviv, 1982; Harris & Raviv, 1996; Ozbas, 2005; Wulf, 2009).

Consistent with Bower's (1970), Harris and Raviv (1998) suggest that one of the consequences of job division is the creation of information asymmetry between individuals holding different jobs, particularly between top management and divisional management. If the interest of divisional managers who may hold private information regarding the profitability of their projects is different from that of the top management, then it would be costly for the headquarters to have access to the right information needed to allocate resources. In another study, Harris and Raviv (1996, p. 1140) argue that "just as modern theories of *external* financing are built upon explicit consideration of capital market frictions, a theory of *internal* capital allocation must account explicitly for decentralized information and incentive problems." For instance, divisional managers could take various hidden actions that distort information by increasing the short-term profitability at the expense of the longer-term profitability of their divisions. Although, in principle, the headquarters can uncover all the information needed by auditing divisions, Harris and Raviv maintain that in many cases auditing is too costly to be optimal. For instance, factors associated with multibusiness firms, such as large size and complex organizational structure and operations, make obtaining objective and useful information an onerous undertaking (Motta, 2003). Therefore, in many cases,

headquarters in multibusiness firms must rely on information provided by the divisional managers.

The discussion thus far suggests that there is information asymmetry between the headquarters and the divisional managers because divisional managers may have some incentives to reveal their private information selectively. Therefore, the headquarters' ability to benefit from its ownership and control advantage is constrained by the divisional managers' incentives to reveal their information accurately and completely. Subsequent research has developed and tested these ideas more formally. Below, I review the literature on the role of divisional and top managers' incentives in the resource allocation process.

5.1 Divisional Managers' Incentives and Conduct

Some models of internal resource allocation assume that the headquarters has incentives to invest in value-creating projects because such investments are consistent with their self-interest (e.g., Gertner & Scharfstein, 2012; Gertner et al., 1994; Ozbas, 2005; Rajan et al., 2000; Wulf, 2009). This assumption rests on the logic that even when there is an agency problem at the headquarters level, an efficient allocation would increase resources under top managers' control, giving them further opportunities to enlarge their empires. According to these models, faulty resource allocations are mainly due to the agency problem between the headquarters and the divisional management.

Formal models of resource allocation generally assume that divisional managers have incentives to increase the resources under their control. Therefore, divisional managers may engage in various influence activities to sway decisions of resource allocation. The notion that the influence activities in the resource allocation process may be pervasive and thus inflict significant organizational cost has been debated extensively in the literature. Milgrom (1988) and Milgrom and Roberts (2009) coined the concept of "influence activities" within organizations to refer to the lobbying process in which lower-level managers with private information engage in costly activities that may manipulate top managers' decisions. In a similar vein, Meyer, Milgrom, and Roberts (1992) argue that lower level and divisional managers engage in costly rent-seeking activities to influence top managers' decisions. They predict that such rent-seeking and influence activities are expected from managers who

manage divisions having unpromising performance prospects. This is because the opportunity cost to such managers of wasting time on rent-seeking activities rather than on productive entrepreneurial activities is lower when their divisions have no bright future.

Drawing on the concept of influence activity, several scholars have developed models of internal resource allocation by ascribing costly influence and rent-seeking of the sort discussed above to divisional managers (for instance, see Ozbas, 2005; Rajan et al., 2000; Scharfstein & Stein, 2000; Wulf, 2009). These models predict that divisional managers' influence activities create information asymmetry between the headquarters and divisional managers, and in turn, distort resource allocation decisions.

Rajan et al. (2000) focus on the agency problem between headquarters and divisions. They also assume that capital resources are allocated through a bargaining process among divisional and top managers. In this process, divisional managers exaggerate the divisional need for resources and thus bargain for more resources when they expect that the headquarters would transfer some of the resources under their control to other divisions. This conceptualization of the allocation process suggests that divisional bargaining power plays an important role in the allocation process. While models of influence cost generally predict that influence activity is more likely to come from divisions with dismal prospects, Rajan et al.'s results suggest that more profitable divisions may anticipate rent-seeking by less profitable divisions and thus take every measure to prevent their divisional resources from being poached by other divisions. In fact, several studies have shown that the level of divisional investment is related to divisional bargaining power (Bardolet et al., 2017; Cremers, Huang, & Sautner, 2011; Glaser et al., 2013; Jun, Yu, & Lin, 2017; Mudambi, Pedersen, & Andersson, 2014; Xuan, 2009). These studies attribute a significant portion of the observed inefficiency in resource allocation to interdivisional political activity and bargaining power in the process of resource allocation.

According to Rajan et al. (2000), divisional managers exert effort to increase their bargaining power by ex-ante committing their divisions to wasteful investment, which results in inefficient allocation of resources. Diversity in investment opportunities is predicted to exacerbate the problem of inefficient investment. The logic behind this prediction is that since resource transfer is most profitable and thus likely when divisions face diverse investment opportunities, the headquarters is more likely to engage in significant resource

transfer among divisions to the extent divisional investment opportunities are dissimilar.² Expecting this, divisional managers attempt to prevent *ex-post* resource transfer by engaging in *ex-ante* sunk-cost commitments that reduce the probability of resource transfer-out from their division to other divisions. They tested their predictions on a large sample of multibusiness firms and found that diversity in investment opportunities, measured by the coefficient of variation in the imputed *Tobin's qs* for divisions, explains a significant portion of the observed inefficiency in resource allocation. As diversity increases, resource transfer from divisions with bright prospects toward divisions with poorer prospects increases. Their results also indicate that a firm's overall value creation through its resource allocation goes down as its overall diversity in investment opportunities increases.

Using alternative measures of diversity in investment opportunities, both Agarwal et al. (2011) and Lamont and Polk (2002) also found that multibusiness firms characterized by high diversity in divisional investment opportunities tend to allocate resources inefficiently. Lamont and Polk interpret their findings as evidence that divisional managers' incentives to increase resources under their control reduce the information quality at the headquarters level and this, in turn, destroys the potential value of internal resource allocation.

Although most models of internal resource allocation are based on information asymmetry, stemming from the potential agency problem between the top and divisional managers, and the accompanying influence activity of divisional managers, there is little empirical research providing direct evidence on the effect of influence activities on information asymmetry and resource allocation decisions. A few studies, investigating the impact of divisional managers' incentives on investment efficiency or divisional performance, come close to providing such evidence. Presumably, firms design and implement incentive and control mechanisms to improve divisional managers' incentives and curb rent-seeking influence activities (André, Brueggen, & Moers, 2011; Bernardo, Cai, & Luo, 2009; Wulf, 2009). The extant literature suggests that multibusiness firms can use a combination of compensation and investment incentives to induce divisional managers to reveal their private information

² In this model, the headquarters is assumed to possess proper incentives to allocate resources efficiently because efficient allocation increases the resources under their control. The accuracy of this assumption does not depend on whether there is an agency problem at the headquarters level. In a similar vein, Hoang and Ruckes (2015) develop a model that predicts inefficient resource allocation when the only agency problem is at the divisional management level.

and exert effort toward the overall corporate goals rather than pursue a narrow-minded agenda on divisional aspirations.

Using a case study approach, Kaplan, Mitchel, and Wruck (2000) investigated the reasons underlying value destruction in two cases of acquisitions. They found evidence suggesting that the complications of creating and managing a system of internal resource allocation are among the primary reasons explaining value destruction in the two cases of acquisitions. They also found that improper managerial incentives existed both at the top and divisional management levels. In one of the cases they investigated, the divisional managers did not understand what determined their compensation. In the other case, incentive mechanisms encouraged managers to inefficiently spend their excess cash flows instead of allowing other divisions to access these resources.

A few papers formally show how divisional managers' preference for larger budgets induces them to engage in costly influence activities in the resource allocation process. These papers model influence activity by arguing that divisional managers influence the informational content of top management's allocation decisions. For instance, Wulf (2002; 2009) argues that the headquarters' decision of resource allocation can be based on two types of information: objective (i.e., accounting) information that is easy to verify and subjective information (i.e., recommendations) that can be easily distorted. Divisional managers engage in activities that distort the subjective information about the investment opportunities of other divisions to increase their chances of obtaining additional resources. Most models of divisional managers' influence activity suggest that rent-seeking is a problem with less profitable divisions because the opportunity cost of such behavior (of taking time away from productive work) is lower for managers of unproductive divisions (e.g., Meyer et al., 1992; Scharfstein & Stein, 2000; Shin & Stulz, 1998; Wulf, 2009).

On the other hand, the headquarters can design incentive mechanisms to curb influence activities. In particular, the headquarters can increase the compensation cost to divisional managers of distorting subjective information by implementing a compensation mechanism that places more weight on the overall firm performance but less weight on the divisional performance. Such a mechanism provides stronger incentives to divisional managers to cooperate by revealing their private information completely, which the headquarters can use to make more efficient investment decisions. Using a dataset that combines COMPUSTAT segment data with proprietary managerial compensation data, Wulf (2002) found evidence consistent with these arguments.

Similarly, Ozbas (2005) argues that divisional managers' influence activity creates information asymmetry between divisional and top managers, leading to rigid allocation rules and thus inefficiency in resource allocations. Ozbas and Scharfstein (2010) tested the predictions in Ozbas (2005) and found that investment by divisions of diversified multibusiness firms is less sensitive to investment opportunities (imputed mean Tobin's q of single-segment firms in the same industry) than stand-alone businesses. They also found an interaction between top management's ownership stake and the sensitivity of divisional investment to opportunities such that as the top management's ownership stake increases, the sensitivity of divisional investment to opportunities increases. Similarly, Duchin and Sosyura (2013) found that favoritism, also a source of inefficiency, in resource allocation increases at firms where the top management's ownership stake is low. This evidence suggests that top managers' incentives play a role as critical as that of divisional managers' incentives.

5.2 Top Managers' Incentives and Conduct

Meyer et al. (1992) argue that although divisional managers have incentives to distort information in the process of resource allocation, they are unable to fool top managers. Thus, unless top managers have misaligned incentives, divisional managers' effort to distort information about investment opportunities would not cause resource misallocation. In a theoretical paper, Scharfstein and Stein (2000) showed how the rent-seeking behavior of divisional managers combined with the agency problem at the headquarters level in multibusiness firms leads to allocation inefficiencies. In their model, both divisional and top managers (i.e., the CEO) derive private benefits from resources under their control. They consider a setting where divisional managers can engage not only in productive work but also in wasteful rent-seeking activities.³ This is because rent-seeking increases the divisional managers' bargaining power when they negotiate a compensation package or an investment budget with the CEO.

The headquarters can provide sufficient compensation to divisional managers to obtain the information needed. However, Scharfstein and Stein (2000) assume that instead of compensating divisional managers with cash, the headquarters chooses to increase divisional managers' investment budgets, as

³ For instance, divisional managers may focus on increasing their employment options to increase their bargaining power with the CEO. If their outside employment options are bright, then they are more likely to be able to grab a larger portion of the investment budget.

this is less costly to the headquarters. In other words, the headquarters substitutes incentive provisions through resource allocation to a division (a less costly mechanism from top managers' perspective) for incentive provisions through cash compensation to divisional managers (a costlier mechanism from top managers' perspective). Empirically, a few studies have shown that allocation inefficiency goes down in firms where the top management or the CEO holds a higher level of equity-based compensation (e.g., Gupta, Briscoe, & Hambrick, 2018; Scharfstein & Ozbas, 2010; Xuan, 2009).

Although there is little direct evidence on the relationship between incentive provisions for top managers and resource allocation decisions, there is strong support for the hypothesis that incentive misalignment at the top management level is related to inefficient investment decisions at the firm level. According to Jensen's (1986) free cash flow hypothesis, managers tend to grow their firms beyond an optimal size, because their private benefits (utilities) increase with the level of resources they control. Note that a firm may finance growth through either internally generated or external funds. Jensen (1986) argues that managers generally prefer to fund firm growth using internal rather than external funds to avert unwanted pressure from external sources of capital. Therefore, they would retain and nonoptimally invest the free cash flows when external or internal corporate governance mechanisms fail.⁴

Several empirical studies (e.g., Jensen, 1986; Matsusaka & Nanda, 2002; Lang, Stulz, & Walkling, 1991; Brush, Bromiley, & Hendrickx, 2000) have shown that due to the agency conflict at the headquarters level, the reinvestment of the free cash flows generally destroys rather than create value. Accordingly, the free cash flow hypothesis suggests that the headquarters may allocate resources inefficiently through suboptimal growth, i.e., by overinvesting in unprofitable old or new projects. The existence of free cash flows, however, is not a necessary condition for inefficiently allocating resources. There is a large body of theory and empirical evidence suggesting that firms invest in suboptimal and value-destroying projects when top management incentives are misaligned (e.g., Jensen, 2010; Jensen & Meckling, 1976; Fama, 1980; Fama & Jensen, 1983; Amihud & Lev, 1981; Shleifer & Vishny, 1989).

On the other hand, a variety of corporate governance mechanisms can be implemented to align the incentives of top managers with those of

⁴ The disciplinary forces of the market mechanism may not be effective when inefficient firms are able to generate cash in excess of their opportunity cost.

shareholders. One of the most prevalent ways to align top managers' incentives is by linking their compensation to shareholders' wealth. There is abundant evidence on the relationship between top management compensation, investment, and performance at the firm level. In a widely cited paper, Jensen and Murphy (1990) investigated the sensitivity of top management pay to firm performance and showed that performance-based pay is not sensitive to firm performance. Specifically, they found that the CEO's wealth increases by \$3.25 for every \$1,000 increase in shareholders' wealth, a rate they argued was too low to align managers' incentives with those of shareholders. Later studies, on the other hand, have documented an increase in the share of equity-based managerial compensation and an accompanying increase in pay-performance sensitivities (e.g., Aggarwal & Samwick, 2003; Murphy, 2013; Murphy & Sandino, 2020).

6. Conclusion

Whereas theoretical research on internal resource allocation has made remarkable advances, the empirical work, nevertheless, is lagging far behind. While multibusiness firms, in general, appear to be overinvesting in less profitable but underinvesting in more profitable divisions, there are a fair number of firms that do allocate resources in an efficient manner. Thus, recent studies have focused on the conditions under which multibusiness firms tend to allocate resources efficiently. One of the factors that have attracted a great deal of attention is the organizational context, the set of organizational forces that characterize the process of generating investment proposals and bringing some of these proposals to the attention of the headquarters. This chapter highlighted managerial incentives as a crucial factor relating to this process. Several theoretical and empirical papers have shown that managerial incentives—in particular, divisional managers' incentives—are among the key determinants of firms' investment behaviors and policies of resource allocation. Although divisional managers do not hold final decision authority over investment policies, they can, nevertheless, engage in influence activities that may sway top managers' decisions of resource allocation. Unfortunately, there is little empirical work that links divisional managers' incentives to allocation efficiency. Thus, examining the linkages between managerial incentives and allocation efficiency is potentially a fertile ground for future empirical studies.

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CHAPTER IX

THE IMPACTS OF TRANSFER PAYMENTS ON ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM TURKEY

Ezgi Baday Yildiz

(Assistant Professor), Karadeniz Technical University,

e-mail: eyildiz@ktu.edu.tr

ORCID:0000-0002-5975-3803

1. Introduction

Public expenditures are defined as payments made by the government of a country such as personnel wages, security, infrastructure, and etc. Some of the public expenditures made in line with the collective needs of the country are transfer payments, like education, health, social security, and etc. According to Samuelson (1958:332), transfer payments arise out of the need for some form of public policy to redistribute income in order to maximize the social welfare function of being a society. Such a policy plays an important role in protecting the disadvantaged groups, supporting social and political stability, eliminating income and opportunity inequalities, flattening consumption throughout the life cycle, and balancing the demand against economic shocks (Başoğlu, 2021: 22).

However, especially the followers of the classical approach have criticized the transfer payments for not creating an economic benefit. Therefore, the economic benefit of transfer payments, which have taken up a considerable size in government budgets in recent years, has become an important focus point. In light of this information, the main purpose of this study is to investigate whether

the public transfer payments and their sub-items in Turkey have an impact on economic growth or not.

For this purpose, following the introduction, the theoretical background on the relationship between public transfer payments and economic growth is presented in the second chapter. Information on public transfers and their sub-item payments in Turkey is located in the third chapter. Hypotheses based on literature, and analysis of the research question are in the fourth chapter. The final chapter is devoted to conclusions and evaluations.

2. Theoretical Background

Two opposing views persist in mainstream economics: Classical and Keynesian views. Looked at the main arguments to by which these views differ, the first view emphasizes the virtues and efficiency of the market system, while the second stresses the deficiencies of the market system and especially the unemployment problem of the labor force. Proponents of the first view often underestimate unemployment as a temporary deterioration and argue that market forces can improve this by themselves. The Keynesian view, on the other hand, opposes this view and claims that the unemployment problem can be solved with limited state intervention.

During the period up to the 19th century, public spending remained rather limited, with the general acceptance of the Classical views arguing that governments should only fulfill their defense and public order duties. With the realization of the Great Depression, Classical views were discredited and the role of public expenditures in determining income levels in the economy began to be examined within the framework of Keynesian views.

In this context, it can be said that the most striking view arguing that transfer payments, which are a part of public expenditures, can have a positive effect on economic welfare belongs to Keynes. As a matter of fact, the successful results of Keynesian spending policies, especially in crisis periods, are the most important proof of this. Despite successful results in crisis periods, the issue of using public expenditures as a policy tool has brought many economists confronted. The theoretical opposition of Keynes-Wagner and Mill-Misses can be shown as examples. While examining the theoretical background, endogenous growth models trying to explain long-

term growth with internal dynamics should not be forgotten. There are many studies proving that especially the public's education and health expenditures contribute to long-term economic growth by strengthening the human capital stock.

2.1 *Wagner versus Keynes*

According to the economists who accept Keynes's view, public spending is an external factor that can be used as a policy tool designed to affect economic growth and correct short-term fluctuations. According to the views Keynes shared with the title "An Open Letter to President Roosevelt" in 1933, there were three suggestions for increasing the output. However, in bad times, the most effective suggestion is the expenditures made by the government. Keynes (1933:2) expressed his suggestions as in the following section:

"...an increase of output cannot occur unless by the operation of one or other of three factors..., ... or public authority must be called in aid to create additional current incomes through the expenditure of borrowed or printed money... It is, therefore, only from the third factor that we can expect the initial major impulse..."

When evaluated from this point of view, similar to public expenditures, transfer payments also contribute positively to total demand. However, it is not analytically in the same category. Because these payments are not directly injected into a commodity market. Instead, the disposable funds are transferred to the household and turn into expenditure. Transfer payments are therefore analyzed as negative taxes, and their multipliers are generally considered equal in size but the opposite of taxes in terms of the sign. In addition, the transfer multiplier is smaller than the public expenditure multiplier. In other words, transfer payments do not increase income as much as public expenditures.

Although transfer payments do not have effect on income as much as public expenditures, the resulting effect is positive. In other words, this situation is only a calculation detail. As a result, Keynes Law expresses the existence of positive causality from public spending to growth. As an opposing view, the Wagner Law (Wagner, 1883, Wagner, 1912) states that the expansion in public expenditures is a product of economic development. Thus, Keynesian and

Wagnerian approaches represent two alternative perspectives towards causality between government spending and total income (Magazzino, 2012: 891). The main difference between the two views concerns the direction of causation. In other words, according to Wagner Law the direction of causation is not from spending to income, but from income to government spending.

2.2 *Mill versus Mises*

Another theoretical contradiction on the subject is followed in the views of John Stuart Mill and Ludwig Von Mises. From a different perspective from Keynes and Wagner, Mill and Mises focused on the redistribution of income through public policy. According to Mill (1848), a redistribution process of receiving income from some and then paying it to others would be a “zero-sum game” with no impact on total wealth production. Mill’s understanding of the link between production and distribution provides an argument for social intervention in distribution results (Galloway and Vedder, 2002: 58). Because, if the actual distribution results are not successful, this can be redistributed by public policy at no cost to the total national output.

On the other hand, Mises (1998) objects by stating that redistribution by public policy would create interventionism because it requires “confiscate”. According to Mises (1998:800), production and distribution is a single ongoing process. In other words, the goods are not produced first and then distributed. Since products emerge as someone’s property, before the government distribute them, they must confiscate them, which capitalism cannot withstand such coercion. Mises (1998:801) rejects such an intrusive policy, emphasizing that it would divert property owners from an accumulation of capital and drive them to consume them.

2.3 *Endogenous Growth Theories*

The impact of Keynesian spending policies on short-term economic growth is widely acknowledged, especially in times of crisis. However, the role of these models in explaining long-term growth is controversial. On the other hand, evaluated in terms of Endogenous Growth Theories, which emphasize that economic growth is an internal process, regulated government policy to increase the shares of education or health spending can have an impact on economic growth.

Romer (1986), Lucas (1988), and Rebelo (1991), who pioneered the trend, focused on the human capital variable rather than the effect of technological change. In their models, investment returns do not decrease with the development of the economy and economic growth can continue uninterruptedly. Because these models have a wide capital structure including human capital and human capital prevents decreasing returns (Barro and Sala-i Martin, 1995: 12).

On the other hand, Robert Barro (1990, 1991a), who expanded the Romer (1986, 1989) and Lucas (1988) models to include state-provided goods and services, states that if the ratio of government procurement to production is small, the increase in government procurement increases long-term growth, but is large enough to show that it slows growth for government procurement rates. The same result is seen in Shell (1967) and Grossman and Helpman's (1991) studies (Weber, 2000:108).

Although studies on endogenous growth theories that include human capital in economic growth models were included in the literature at the end of the 1980s, the first information about the importance of government policies in achieving human capital accumulation points to the year 1960. In his presidential speech he prepared for the American Economic Union in 1960, Theodore Schultz, arguing that the activities carried out by governments to increase the productivity and income of workers can be considered as a process of capital accumulation, he called these activities as "human capital investment" (Gillis, 1987: 206).

Mankiw et al. (1992) state that the model can be expanded to include human capital and can be used to explain income differences between countries, in their study evaluating the empirical results of the Solow model. Mankiw et al. (1992: 418) focused on only the education form of human capital investment and ignored the health and other forms in the model they developed. According to the empirical results of the extended Solow model, Mankiw et al. (1992: 433) found that differences in saving, education, and population growth explain a significant part of the international per capita income differences.

Mushkin (1962: 136) states that health expenditures improve the total product of labor and begin to generate a return within a few years. Fuchs (1966) emphasizes that changes in the health levels of individuals have important effects on the economy in terms of both consumption and production. According to Fuchs (1966: 70-71), health is a consumption target, and healthcare is generally requested from governments, like education or police services. Better health can

contribute to the productive capacity of the economy, and therefore he argues that health spending may have positive effects on economic growth (Fuchs, 1966: 90).

3. Public Transfers and Their Sub-items in Turkey

Analytical budget classification prepared in accordance with the international standards is used in Turkey since 2004. Accordingly, government activities are classified according to institutional, functional, and economic criteria. According to the economic classification made by Government Finance Statistics (GFS) standards, there are nine items under the title of Current Transfers: 1. Duty Losses; 2. Treasury Aids; 3. Transfers to Non-Profit Organizations; 4. Household Transfers; 5. Agricultural Support; 6. Other Transfers to Households; 7. Social Purpose Transfers; 8. Transfers to Abroad; 9. Shares Allocated From Revenues. Figure 1 represents the distribution of current transfer payments between these sub-items. *According to the Analytical Budget Classification Guide (2019-2021), the definitions of these payments are as follows:*

Current Transfers are unrequited payments that do not target capital accumulation; Duty loss refers to the loss, including the loss of profit, which occurs as a result of the performance of the duty of public institutions; Treasury aids are unrequited payments made for purposes such as financing the budget deficits of institutions from which funds are transferred from the budget; Transfers to non-profit organizations represent the contribution to the current payments of organizations such as associations, foundations, political parties, etc.; Household transfers are unrequited payments made to households in order to fulfill various purposes such as education, health, accommodation and to contribute to their current expenditures; Social transfers are transfers made to protect the entire population or a certain part of it against some social risk. These can be shown as social security, social support, or employee-owned social insurance programs; Transfers abroad are unrequited payments made to foreign countries, international institutions, and organizations or foreign persons or organizations to finance current goods and services expenditures; Shares allocated from revenues refer to the shares to be given to other institutions and organizations from the taxes, duties, fees, and similar revenues collected by public administrations within the scope of the general government, according to Article 37 of the Public Financial Management and Control Law No. 5018.

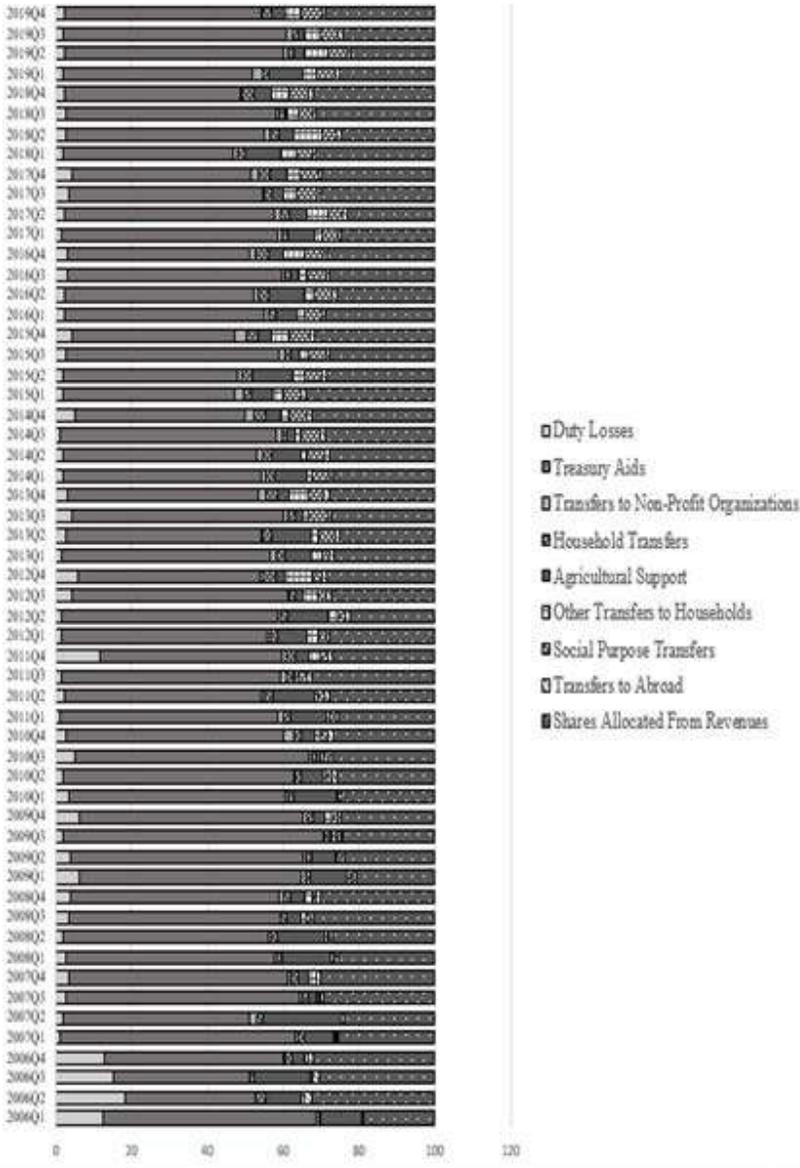


Figure 1: Distribution of Current Transfers in Turkey (2006Q1-2019Q4)

Source: It is created by the author.

When the share of relevant expenditure items in Current Transfers for the period 2006Q1-2019Q4 is analyzed (Figure 1), it is seen that the most important share belongs to the Treasury Aids. The content of transfers related to treasury aids mostly consists of payments such as state social security contribution, employer insurance premium support, health premium for those without social security,

unemployment insurance fund, and etc. The economic benefits of public transfers to the social security system are still a matter of debate in the literature. According to the economic analysis of budget transfers to the Turkish social security system, despite the negative effects of budget transfers on the budget balance, there are also positive effects on public fixed capital investments (Cural, 2016: 693). On the other hand, unemployment insurance during periods of crisis in Turkey's economy shows the effect of automatic stabilizers (Akar and Şahin, 2018: 154).

Another item with a large share in current transfers is the shares allocated from revenues. This item mainly consists of payments made to metropolitan municipalities. Since some of the taxes and fees collected for the transactions carried out by the metropolitan municipalities are to be returned to them, it cannot be said to be a full transfer payment. However, it is clear that it contributes to the services to be provided by local administrations.

The portion allocated for households in current transfers is relatively less. Scholarships, education, and health-related payments constitute a large part of household transfer expenditures. There is a lot of evidence in the literature that especially spending for educational purposes contributes to economic growth by increasing the quality of human capital or can explain income differences between countries (Mankiw et. al., 1992; Baum and Lin, 1993; Umut, 2011; Churchill et al., 2015; Alper and Demiral, 2016; and more...). SME (Small and Medium Enterprises) subsidies and state contribution payments for private pension are included under the heading of other transfers to households. Of these payments, the state social security contribution is intended to create an economic benefit in terms of encouraging households to be included in the private pension system and thus obtaining capital accumulation. With the state contribution, a significant increase has been observed in the number of participants and the amount of savings in the private pension system (Rakıcı and Ela, 2016: 89). When the economic impacts of SME subsidies are examined, the number of those establishing businesses with new entrepreneur support is increasing. In addition, approximately half of the enterprises established under the support of new entrepreneurs were founded by women entrepreneurs (Türkmen and Erten, 2018: 1106).

Among the current transfers, there are agricultural support transfers of almost equal size to transfers to households. Agricultural support payments aim to increase the income level of the agricultural sector and to increase production, productivity, and product diversity in the agricultural sector (Semerci, 2019:

181). Despite the criticisms in the literature that agricultural supports are low, there is a lot of confirmation that agricultural support payments increase the level of agricultural production in the long run. In addition, it is argued that the increase in agricultural production also contributes to economic growth, as it provides resources for non-agricultural sectors (Yao, 2000; Poonyth et al., 2001; Yağınkaya, 2018).

According to the definition of The Turkey Ministry of Family, Labor, and Social Services, Payments of Social Services and Child Protection Agency and disabled and elderly pensions constitute the subject of social purpose transfers. The economic benefits of these payments, which are made in order to provide opportunities for people and families who are in poverty, who cannot meet their basic needs, and who have difficulty in living even at the lowest level, are always discussed in the literature. The main reason for the debate is the exploitation of these services and the need for financial resources they create. Despite this controversy in the literature, social welfare work has reached a significant level in Turkey when compared with European Union countries (Türkoğlu, 2013:275).

Finally, the share of duty losses, transfer to abroad, and transfers to non-profit organizations in current transfers are rather low. In Figure 1, it is seen that the share of duty losses has decreased significantly as of 2007. On the other hand transfers to abroad have increased significantly since the first quarter of 2019.

4. Methodology

In this section, the relationships between economic growth and total transfer payments and sub-item transfers, which are thought to theoretically affect economic growth, will be tested empirically.

4.1 Data and Hypotheses

For the purpose of examining transfers and their sub-items effects on economic growth in Turkey, according to the economic classification, the current transfers and sub-items of the period 2006Q1-2019Q4 constitute the data set. The data set has been compiled from The Central Bank of the Republic of Turkey - Electronic Data Distribution System and Ministry of Treasury and Finance - General Directorate of Public Financial Management and Transformation Statistics. In the research model, the dependent variable is real GDP (rgdp) calculated according to the chained volume index representing economic

growth. Real total transfers (rtransfer), real household transfers (rhouse), real social purpose transfers (rsocial), and real agriculture transfers (ragriculture) have been determined as independent variables. Independent variables are made real with the deflator. Logarithmic transformations of all variables used in the study have been performed. In addition, since the data are quarterly, the seasonal adjustment has been made for all variables via X-12. The relationships between the changes in real transfers and economic growth are shown in Figure 2.

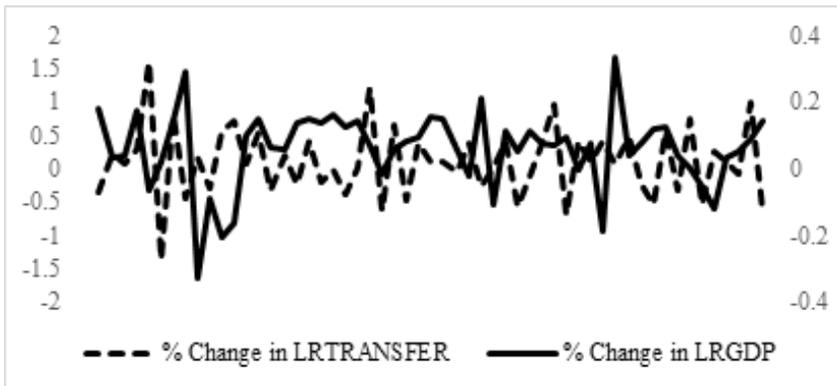


Figure 2: The Percentage Changes in Real Transfer Payments and Economic Growth

Source: It is created by the author.

When the relationships in Figure 2 are examined, it is generally observed that the two variables move together. However, especially in times of crisis, the change in transfer payments follows a movement against the conjuncture. This opposing movement in times of crisis can be attributed to fiscal policies implemented to combat recession. In line with this information, the general hypothesis is that transfer payments have a positive effect on economic growth. Keynes and Wagner Laws, whose theoretical backgrounds are explained in the second chapter, can be tested by means of this hypothesis.

In addition, there are studies in the literature that show a positive relationship between transfer payments and economic growth within the scope of different country examples. For example, Sala-i Martin (1995) showed that the partial correlation between transfers and growth was significantly positive for 75 country data. Cashin (1995) determined that transfer payments have increased growth for 23 developed countries between 1971 and 1988. Akbulut ve Güran (2015) tested the relationship between public transfer expenditures and economic growth with data from 27 developing countries (1990-2011).

The authors found that the effect of public transfer expenditures on long-term economic growth was statistically significant and positive.

In the light of this information, the primary hypotheses for the testing of Keynes and Wagner Laws are as follows:

H_{A1} : *Transfer payments positively affects economic growth.*

H_{A2} : *Economic growth positively affects transfer payments.*

The relationships between the change in sub-items of transfer payments and economic growth are shown in Figure 3 for Household Transfer Payments, Figure 4 for Social Purpose Transfer Payments, and Figure 5 for Agricultural Supports, respectively.

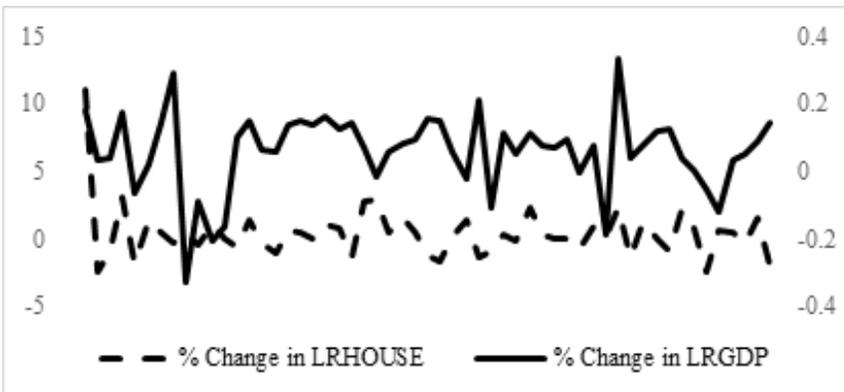


Figure 3: The Percentage Changes in Real Household Transfer Payments and Economic Growth
Source: It is created by the author.

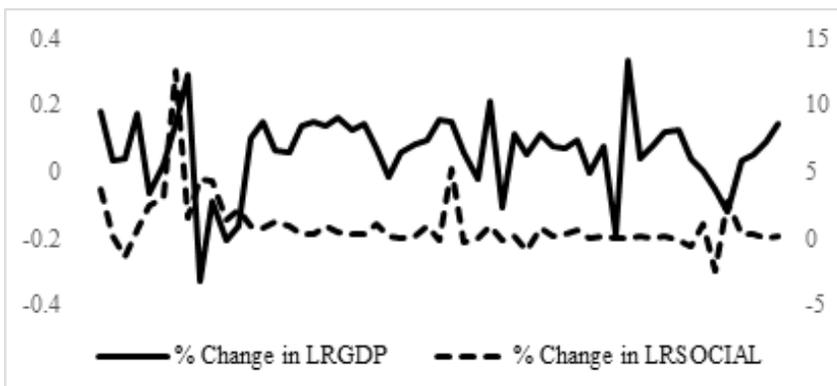


Figure 4: The Percentage Changes in Real Social Purpose Transfer Payments and Economic Growth
Source: It is created by the author.



Figure 5: The Percentage Changes in Real Agricultural Supports and Economic Growth

Source: It is created by the author.

Considering the transfers to households, one of the sub-items of current transfers, there are opinions in the literature that argue that the increase in the shares allocated to health and education expenditures have a positive effect on income. Examples of empirical evidence for this view are as follows: Erdil and Yetkiner (2009) have examined the Granger causality relationships between real per capita income and real per capita health expenditures for 19 low, 22 low-middle, 10 upper-middle, and 24 high-income countries for the 1990 - 2000 period. They state that the dominant result is bidirectional causation. Similar results have been identified for various country groups: Hartwig (2010) 21 OECD countries, Narayan et al. (2010) 5 Asian countries, Mehrara et al. (2012) 13 the Middle East and North African Countries (MENA), Gisore et al. (2014) East African Countries, Zaidi and Saidi (2018) Sub-Saharan African countries, Dinçer and Yüksel (2019) E7 countries. Frank (2017) reached statistically significant results for all countries in his study, in which he investigated the effect of government spending allocated to education on long-term economic growth in 179 countries. Similar results have been identified for various country groups: Baum and Lin (1993) 58 countries, Umut (2011) 14 countries, Kıran (2014) 18 Latin American Countries, Mallick (2016) 14 Asian Countries, Alper and Demiral (2016) 18 OECD countries. In the light of this information, the first sub-hypothesis is as follows:

H_{B1} : Household transfer payments positively affect economic growth.

Another item of research in the literature is social transfers. Romer and Romer (2016) have investigated the macroeconomic effects of changes

in transfers and found that consumption has a large, sudden, and significant positive response, but that this response does not spread to industrial production or employment. On the other hand, Polat (2020) states that there is no long-term relationship between social expenditures and economic growth and that there is only a weak causality relationship in the short term. Altunöz and Altuntaş (2021) determined that social security expenditures have a positive effect on long-term economic growth. However, they state that the effect of such transfer payments on domestic debt interest payments is greater than the effect on growth. In the light of this information, the relevant hypothesis is as follows:

H_{B2} : *Social purpose transfer payments positively affect economic growth.*

Finally, another item subject to research in the literature is the effects of agricultural support payments on growth. There are many studies in the literature proving that agricultural support payments not only increase the level of agricultural production but also contribute positively to economic growth. However, it is observed that the majority of the relevant studies are composed of developing countries, Asian, and African countries. The literature analyzing the impact of agricultural supports on economic growth in terms of developed countries is rather limited. Examples of studies concluding that agricultural supports positively affect the level of agricultural production: Semerci (2019), Yıldız (2017), Şimşir (2012). Examples of studies concluding that agricultural supports and increase in the level of agricultural production positively affect economic growth: Yao (2000) China; Poonyth et al. (2001) South Africa; Obansa and Maduekwe (2013) Nigeria; Yalçınkaya (2018) Turkey. In the light of this information, the relevant hypothesis is as follows:

H_{B3} : *Agricultural supports positively affect economic growth.*

4.2 Method and Findings

In this study, the long-run relationships between variables have been analyzed using ARDL (The Autoregressive Distributed Lag) Bound Test Approach developed by Pesaran et al. (2001). In addition, if there is a cointegration relationship between the variables, the Error Correction Model is estimated in the following stages and whether the short-term imbalance can be corrected in the long term is examined.

ARDL is an alternative application that does not require variables to be equally stationary. However, considering the possibility of variables being I (2), firstly, the ADF (Augmented Dickey-Fuller) has been used to understand the stability of the data and to what degree they have been integrated. Results are included in Table 1.

Table 1: ADF Results

Variable	Level (with constant)	First difference (with constant)
lrgdp	-2.615365	-7.118186*
lrtransfer	-1.018733	-13.68663*
lrhouse	-2.788514***	-12.93257*
lrsocial	-3.087123**	-6.387076*
lragriculture	-8.029813*	--

L: logarithmic transformation; R: realization with deflator.
 * Significant at 1% ; ** Significant at 5% ; *** Significant at 10%

According to the ADF test results for the lrgdp and lrtransfer series, the null hypothesis that they contain unit root at their levels is not rejected. However, these series are stationary at 1% significance at the first differences. In other words, it has been determined that the lrgdp and lrtransfer series are I (1). For other variables, the null hypothesis that they contain unit roots at their level is rejected. In other words, these variables have been determined as I (0). Since some of the variables are determined as I (0) and some as I (1), ARDL solutions could be proceeded with.

Pesaran et al. (2001: 289), regardless of whether the variables are I (0) / I (1), defined the null hypothesis as “no relationship” and calculated two sets of critical values. These sets of critical values, calculated on the assumption that all variables are I (1) and all variables are I (0), form the bounds. If the calculated F-statistic occurs within these bounds, it is not possible to make inferences in terms of the cointegration relationship of variables. However, if the relevant statistical values occur outside the boundaries, an inference can be made about the existence of a cointegration relationship (Pesaran et al., 2001: 290).

In the light of this information, related ARDL models are as follows:

$$\Delta lrgdp_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrgdp_{t-i} + \sum_{i=0}^p \delta_i \Delta lrtransfer_{t-i} + \vartheta_{gdp} lrgdp_{t-1} + \vartheta_r lrtransfer_{t-1} + \mu_t \quad (1)$$

$$\begin{aligned} \Delta lrtransfer_t = & \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrtransfer_{t-i} + \sum_{i=0}^p \delta_i \Delta lr GDP_{t-i} \\ & + \vartheta_{gdp} lr GDP_{t-1} + \vartheta_{lr} lrtransfer_{t-1} + \mu_t \end{aligned} \quad (2)$$

$$\begin{aligned} \Delta lr GDP_t = & \alpha_0 + \sum_{i=1}^k \beta_i \Delta lr GDP_{t-i} + \sum_{i=0}^p \delta_i \Delta lrhouse_{t-i} \\ & + \vartheta_{gdp} lr GDP_{t-1} + \vartheta_{lr} lrhouse_{t-1} + \mu_t \end{aligned} \quad (3)$$

$$\begin{aligned} \Delta lr GDP_t = & \alpha_0 + \sum_{i=1}^k \beta_i \Delta lr GDP_{t-i} + \sum_{i=0}^p \delta_i \Delta lr social_{t-i} \\ & + \vartheta_{gdp} lr GDP_{t-1} + \vartheta_{lr} lr social_{t-1} + \mu_t \end{aligned} \quad (4)$$

$$\begin{aligned} \Delta lr GDP_t = & \alpha_0 + \sum_{i=1}^k \beta_i \Delta lr GDP_{t-i} + \sum_{i=0}^p \delta_i \Delta lr agriculture_{t-i} \\ & + \vartheta_{gdp} lr GDP_{t-1} + \vartheta_{lr} lr agriculture_{t-1} + \mu_t \end{aligned} \quad (5)$$

In the equations, k and p represent optimal lag lengths, Δ represents difference operator. The empty and alternative hypothesis for determining the long-term relationships are as follows:

$$H_0 : \vartheta_{gdp} = \vartheta_{lr} = 0 \text{ (The long-run relationship does not exist)}$$

$$H_1 : \vartheta_{gdp} \neq \vartheta_{lr} \neq 0 \text{ (The long-run relationship exists)}$$

According to the ARDL Bound Test Results presented in Table 2 and ARDL Long Run Coefficients presented Table 3:

- The Boundary Test F-statistics shows the existence of a long-run relationship between the real transfer payments and economic growth at a significance level of 10% for the Equation (1) and 1% for the Equation (2). In addition, the coefficient of real transfer payments in Equation (6) and the coefficient of economic growth in Equation (7) are positive and significant at 1% level. For this reason, there is a positive relationship between the real transfer payments and economic growth in the long run.
- The Boundary Test F-statistics shows the existence of a long-run relationship between the household transfer payments and economic growth at a significance level of 1% for the Equation (3). In addition, the coefficient of household transfer payments is positive and significant at 1% level in the Equation (8). Therefore, it has been determined that the real household transfer payments have a positive effect on economic growth in the long run.

- The Boundary Test F-statistics shows the existence of a long-run relationship between the social purpose transfer payments and economic growth at a significance level of 1% for the Equation (3). In addition, the coefficient of social purpose transfer payments is positive and significant at 10% level in the Equation (9). Therefore, it has been determined that the real social transfer payments have a positive effect on economic growth in the long run.
- The Boundary Test F-statistics shows the existence of a long-run relationship between the agricultural support payments and economic growth at a significance level of 5% for the in the Equation (5). However, the coefficient of agricultural support payments is negative and not statistically significant in the Equation (10). Therefore, it has been determined that the real agricultural support payments has no effect on economic growth in the long run.

Table 2: ARDL Bound Test Results

Equations	Models	F-statistic	$\chi^2(\text{LM})$	$\chi^2(\text{White})$
Equation (1)	ARDL(1,4)	3.584236***	0.34	0.19
Equation (2)	ARDL(2,4)	7.616552*	0.74	0.10
Equation (3)	ARDL(1,1)	6.060456*	0.63	0.44
Equation (4)	ARDL(1,3)	6.842279*	0.99	0.34
Equation (5)	ARDL(1,1)	4.608499**	0.88	0.81
Critical Values	I(0)		I(1)	
* 1%	4.94		5.58	
** 5%	3.62		4.16	
***10%	3.02		3.51	
*, **, ***: Pesaran et al. (2001:300) Case II Restricted intercept and no trend Critical Values				
F-statistic is the ARDL cointegration test statistic.				
χ^2 (White) is the White Heteroscedasticity Test Chi-Square probability value.				
χ^2 (LM) is the Breusch-Godfrey Serial Correlation LM Test Chi-Square probability value.				

Table 3: ARDL Long Run Coefficients

Long-run Equations	Variable	Coefficient (Std. Error)
(6) lrgdp lrtransfer	lrtransfer	0.831101 (0.142128)*
(7) lrtransfer lrgdp	lrgdp	1.161752 (0.142891)*
(8) lrgdp lrhouse	lrhouse	0.318921 (0.056730)*
(9) lrgdp lrsocial	lrsocial	0.091009 (0.054197)***
(10)lrgdp lragriculture	lragriculture	-1.524815 (13.66987)
* Significant at 1% level; ** Significant at 5% level; *** Significant at 10% level		

The equations for error correction models established to determine short-run causality between variables are as follows:

$$\Delta lrgdp_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrgdp_{t-i} + \sum_{i=0}^p \delta_i \Delta lrtransfer_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (11)$$

$$\Delta lrtransfer_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrtransfer_{t-i} + \sum_{i=0}^p \delta_i \Delta lrgdp_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (12)$$

$$\Delta lrgdp_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrgdp_{t-i} + \sum_{i=0}^p \delta_i \Delta lrhouse_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (13)$$

$$\Delta lrgdp_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrgdp_{t-i} + \sum_{i=0}^p \delta_i \Delta lrsocial_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (14)$$

$$\Delta lrgdp_t = \alpha_0 + \sum_{i=1}^k \beta_i \Delta lrgdp_{t-i} + \sum_{i=0}^p \delta_i \Delta lragriculture_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (15)$$

The results of the Error Correction Models established to determine the short-run relationships between variables are presented in Table 4. According to these results:

- The coefficients of the error correction terms (ECT (-1)), which express one lag of the error terms, as expected are between 0-1, negative, and significant at 1% level for all models. However, the error correction terms coefficients are quite low. This result shows that there is a low convergence towards equilibrium in the long run among the variables in the models.
- The third lag of the transfer payments variable is positive and statistically significant at 5% level. This result shows that the transfer payments variable has a positive and delayed effect on economic growth in the short run.
- The third lag of the economic growth variable is negative and statistically significant at 10% level. This result indicates that there is a weak, negative, and delayed causality in the short-run from economic growth to transfer payments.
- The coefficient of the real household transfer payments variable is positive and significant at 1% level. This result indicates that there is a positive causality in the short run from real household transfer payments to economic growth.
- The third lag of the real social purpose transfer payments variable is negative and statistically significant at 1% level. This result indicates that there is

a negative and delayed causality in the short-run from real social purpose transfer payments to economic growth.

- Finally, the coefficient of the real agricultural support variable is negative and not statistically significant. This result shows that there is no causality relationship from real agricultural supports to economic growth in the short run.

Table 4: Error Correction Models Results

Dependent Variable: Δ lrgdp		ARDL(1, 4)
Variables	Coefficient	Std. Error
Δ lrtransfer	-0.015926	0.036750
Δ lrtransfer(-1)	-0.055208	0.051664
Δ lrtransfer(-2)	-0.026703	0.051178
Δ lrtransfer(-3)	0.083861	0.042494**
ECT(-1)	-0.088811	0.026501*
R-squared: 0.246729 Durbin-Watson stat: 1.924622		
Dependent Variable: Δ lrtransfer		ARDL(2,4)
Variables	Coefficient	Std. Error
Δ lrtransfer(-1)	-0.447223	0.108030
Δ lrgdp	0.036592	0.400682
Δ lrgdp(-1)	0.023655	0.415847
Δ lrgdp(-2)	-0.708852	0.422848
Δ lrgdp(-3)	-1.230986	0.434155*
ECT(-1)	-0.345995	0.070791*
R-squared: 0.507430 Durbin-Watson stat: 2.046093		
Dependent Variable: Δ lrgdp		ARDL(1, 1)
Variables	Coefficient	Std. Error
Δ lrhouse	0.028607	0.011992*
ECT(-1)	-0.078240	0.019965*
R-squared: 0.289540 Durbin-Watson stat: 1.860380		
Dependent Variable: Δ lrgdp		ARDL(1, 3)
Variables	Coefficient	Std. Error
Δ lrsocial	0.003578	0.013609
Δ lrsocial(-1)	0.004151	0.013398
Δ lrsocial(-2)	-0.050390	0.013801*
ECT(-1)	-0.040720	0.008802*
R-squared: 0.233800 Durbin-Watson stat: 1.974856		
Dependent Variable: Δ lrgdp		ARDL(1, 1)

Variables	Coefficient	Std. Error
Δ agriculture	-0.003443	0.004552
ECT(-1)	-0.001939	0.000512*
R-squared: 0.004575 Durbin-Watson stat: 1.934573		
* Significant at 1% level; ** Significant at 5% level; *** Significant at 10% level		
Δ represents difference operator		

5. Conclusion and Assessment

In this study, the impacts of transfer payments and sub-items on economic growth have been examined for the 2006Q1-2019Q4 period in Turkey. The first empirical implication of the research is that *both transfer payments and sub-items, excluding agricultural support payments, have a positive effect on economic growth in the long term.* Another empirical result is that *only real household transfer payments among sub-items have a positive and statistically significant effect on economic growth in the short term.*

The evaluations of empirical inferences according to the theoretical background are as follows:

The first assessment is that Keynes Law is valid in Turkey in the period 2006Q1-2019Q4. Keynes Law expresses the existence of positive causality from public spending to economic growth. In this study, it has been determined that the real transfer payments have a positive effect on economic growth both in the short and long term.

As an opposing view, the Wagner Law states that the expansion in public expenditures is a product of economic development. *The second assessment is that Wagner Law is confirmed only in the long-run.* Because, in this study, although positive causality has been found in the long run from economic growth to transfer payments, this relationship has not been observed in the short run.

Mill (1848) expresses a redistribution process of receiving income from some and paying others as a “zero-sum game” that has no effect on total wealth production. *The third assessment is that the transfer payments system is not a “zero-sum game”.* Because, in this study, it has been determined that the transfer payments and some of the sub-items have positive effects on long-run economic growth.

The final assessment is that The Endogenous Growth Approach which argues that payments for improving the quality of human capital contribute

positively to economic growth is valid in Turkey. Because, in this study, it has been determined that household transfer payments, which are mostly composed of scholarships, education, and health-related payments, have a positive effect on economic growth both in the short and long term.

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CHAPTER X

THE BLUE ECONOMY IN THE GROWTH, DEVELOPMENT, GREEN ECONOMY CYCLE: THE WASTE ISSUE

Melahat Batu Ağırkaya

*(Dr. Öğr. Görevlisi), Iğdır Üniversitesi,
e-mail: melahatagirkaya@hotmail.com,
ORCID :0000-0002-8703-5622*

1. Introduction

Economic growth, development, and sustainability approaches have brought significant changes in the environmental pollution dimension. Although considerable accomplishments have been achieved in the political field and technological resource utilization thanks to immense development, the same success has not been achieved in natural resource management. Waste generated as a result of industrial activities, disturbances in the ecological balance, concerns about fossil fuel depletion have been diminishing the confidence in industrially-economic thinking. The understanding of economic development has undergone various changes over time, and growth cycles have been questioned in terms of population, income, and consumption. Thus, the concept of sustainable development, which includes meeting the needs of today's generations without endangering future generations, improving quality of life, increasing income and reducing poverty, and equality of individuals, has been brought to the agenda. It is necessary to provide measures compatible with environmental policies to ensure sustainability, such as prevention of excessive natural resource utilization, maintaining the rate of self-renewal of the resources to be above the rate of pollutants, and advising the optimal population level.

The new economy concept adopted to minimize the damage to the natural environment is “green economy.” This concept is also defined as an innovation process to reduce environmental pollution, increase energy efficiency, and make investments for biodiversity and losses in the ecosystem. Green economy brings the positive externalities to the fore and suggests the negative externalities damaging ecological structure should be eliminated.

The sea-based sustainable development approach of the green economy is called the blue economy. The blue economy concept has gained identity by being defined as the ocean economy. It is a life support system that aims to reduce environmental risks and ecological shortages considerably. Oceans support life by producing oxygen, absorbing carbon dioxide, recycling nutrients, and regulating the global climate and temperature. It also has a meaningful place in world trade, tourism, and energy resources, which are driving forces of the economy. Renewable resources, especially from the oceans and seas, offer great potential in blue energy generation. For sustainable development, it is imperative to take measures to manage marine resources effectively, reduce fishing, marine pollution, and ocean acidification. Thus, enabling ecological system continuation in the sea and oceans will provide the welfare of future generations.

In this study, the blue economy and waste problem associated with the marine-based sustainable development approach of the green economy were evaluated in terms of growth, development, and sustainability. First, conceptual explanations and their inter-relationships were addressed. Then, considering the understanding of the green economy, it was mentioned about reducing environmental pollution and increasing energy and resource efficiency. The third section contains the definitions of the development process, purpose, scope, necessity, and potential sources of the blue economy. In the fourth, the waste types creating pollution in the seas, their damages, and their effects on living life have been examined. The results and suggestions of the study were given in the last part.

2. Growth, Development and Sustainability Concepts

Economic growth is the increment in real national income per capita due to the continuous increase in production factors (Üstünel, 1988: 5). The increase in national income, which is the most significant growth indicator, shows the

welfare level (Köklü, 1972: 85). On the other hand, economic development is a material welfare improvement due to the enhancing production volume, structural changes, political, social, cultural, and environmental factors. Economic development has been aimed by developing countries at long-term growth after the Second World War. The concept also includes the nations and individuals increasing welfare and their ability to provide a safe future, modern production techniques, healthy decisions, and independent experiences (Güven, 1995: 5; Tunalı and Yılmaz, 2016: 301).

The environmental damage to the World's natural life has started a re-discussion on the welfare concept used to measure development and economic growth. As a result of unlimited development ideas, although significant achievements have been achieved in technological resource utilization, desirable results in natural resource management could not have been reached. Industrial activities, wastes, ecological balance deteriorations, the exhaustion of fossil-based fuels have gradually reduced the confidence in existing economic approaches (Özçağ and Hotunluoğlu, 2015: 306; Jacob and Abel 2002: 639). The understanding of economic development has left its place in social, humanistic, and environmental changes. In this process, growth cycles have been questioned from increasing world population, income, and consumption perspectives. Besides, development has been discussed in terms of environment, economy, socio-demographic structure, natural resources, and humanitarian aspects. The change in the development phenomenon's content has brought a new concept, namely sustainable development, to the discussion field. Sustainability is a social perspective based on the reasonable use of social, cultural, scientific, natural, and human resources (Tıraş, 2011: 59). According to the Environment and Development Commission report, the sustainable development concept is defined as the ability to meet today's generation's needs without risking future generations' ability to meet their needs (Thirlwall, 1994: 226). Sustainable development also focuses on the equality of individuals and generations including, income growth, quality of life, and poverty reduction (Price and Dube, 1997: 8). Sustainable development emerges in economic, social, and environmental aspects and affects each other mutually. Its economic dimension is related to the limited resources' appropriate distribution among the economic units. Its social aspect emerges in cultural continuity, poverty reduction, pluralism, and protection of cultural diversity. The environmental dimension came to the fore with the impossibility of solving environmental

problems created by the economic policies (Goodland, 1999: 713; Moffat, 1996: 112). To ensure sustainable development, the volume of natural resource utilization should not exceed the existing potential, and the renewal speed of the resources should be above the rate of pollutants (Kaypak, 2011: 26). However, for sustainable development to be compatible with environmental policies, it is necessary to increase the growth quality, to ensure the optimal population level, to harmonize technology, and to develop joint decisions for the environment and economy (Ceylan, 1995)

3. Green Economy Strategy

Today, world countries aim to switch to an economic model which both produces and saves at the same time and also minimizes environmental damages. The new economy concept adopted in this direction is called the green economy (Mahmut et al., 2015: 86). This concept has recently been associated with sustainable development. Although it was first included in the “Green Economy Draft” report in 1989 for the first time, this report has been considered only as an awareness effort because it did not cover the green economy in its content (Kasztelan, 2017: 490). The foundations of the green economy were laid at the Seoul Environment and Development Ministerial Conference in 2005 (Kararach et al., 2018: 440). Later United Nations Conference’s Rio+20 report on Sustainable Development, the green economy was accepted as a development strategy (UNESCAP, 2012: 12). The Green Economy is the prevention of environmental pollution by reducing carbon emissions, supply of biological diversity through investments, eliminating losses in the ecosystem, and increasing energy efficiency, employment, and income (Özçağ and Hotunluoğlu, 2015: 315). In short, it is also defined as the innovation process that ensures sustainable socio-economic development (Schlore et al., 2017: 2312). The primary purpose of the green economy is to ensure economic growth by increasing investments and to make a difference in environmental quality (Yalçın, 2016: 754). The green economy also includes efficient use of resources and positive externalities, namely the recycling of wastes generated after use. Besides, negative externalities, namely, the need to compensate for the damage introduced to the ecological continuity, have taken place in the green economy approach (Kuşat, 2013: 4897). The understanding of the green economy deals with the adverse effects of economic activities on nature.

4. Blue Economy

The blue economy, which is the marine aspect of the green economy, plays a significant role in the sustainable development realization and draws attention to some possible problems in the seas and oceans (Önder, 2018: 199; Çaban and Ölmez, 2016: 158). The concept of the blue economy was defined as ocean economy at the United Nations Conference held in Rio de Janeiro, Brazil, in 2012. The blue economy gaining an identity with this definition, aims to reduce environmental risks and ecological scarcity significantly by protecting the marine and ocean ecosystem, improving sustainability for human benefit, welfare, and social justice (Bari, 2017:6; Ebarvia, 2016:1). The center of the concept is the separation of socio-economic development from environmental deterioration and traditional evaluation of a global situation. The concept arises from the need to harmonize economic activities, and integrate protection and sustainability in maritime management (Smith-Godfrey, 2016: 9). The ocean economy, or in other words, the blue economy, is also a life support system. This life support is also called “ecological system services.” This system can be classified as supply (food, oxygen, and water), regulatory (climate temperature regulation, coastal stabilization), supportive (pollution filtering, waste processing, goods transport), and cultural services (aesthetics, recreation, entertainment, and inspiration) (Spalding, 2016: 2).

Protecting our oceans, which is a requirement of the blue economy, is not an exaggeration but a necessity to the economy, climate, and lifestyles (Spalding, 2016: 2). Oceans are the source of life and compose over 95% of the biosphere. Oceans support all lives by generating oxygen, absorbing carbon dioxide, recycling nutrients, and regulating global climate and temperature, regardless of human damage. The oceans provide food and livelihoods to a significant portion of the population in different ways, such as in sea transports for global trade and sea tourism realized in the coastal countries. Of course, the most important driving force of the economy is energy resources. When considered in this context, it is proper to say, the oceans and seas open new horizons in marine resources, ranging from bio-mining to mining seabed minerals with technological developments. Besides, renewable energy resources such as wind, wave, tide, biomass, etc., obtained from the sea and other waters provide a great potential in the production of “blue energy” (Bari, 2017: 2).

The protection of the sustainability of oceans, seas, and marine resources is one of the fundamentals of the 2030 Sustainable development goals. All changes in sea and ocean areas might affect living areas such as land, forest, etc. Therefore, measures should be taken for the effective prevention of marine resource overuse, excessive fishing, pollution, and acidification for sustainable development. Thus, the ecological system's continuity in seas and oceans can be ensured for future generations' welfare (Önder, 2018: 200; Yalçın, 2016: 754). The blue economy concept standing out with this significant aspect also includes the conservation of the ocean ecosystem and biological diversity and sustainability for economic development (Jafrin et al., 2016: 131).

For the blue economy sustainability, along with the production, use, and disposal process, recycling of resources is also essential (WWF, 2015: 6). With this circular economy, introduce policies that will raise awareness is aimed to mitigate the impact of sectors', such as maritime transport, petroleum, natural gas, mining, biotechnology, etc., on living things, marine resources, and ecological balance (Roberts and Ali 2016: 16). In this direction, the blue economic transformation is critical for economic continuity, especially for countries with sea, ocean, and coastal connections. Thanks to this transformation, the seas and oceans' existence and benefits can be sustainable for humanity (Çaban and Ölmez, 2016: 160).

5. Potential Sources of the Blue Economy

5.1 Fishery and Aquaculture

Fish and various products obtained from fisheries contribute to the economic life of the countries. Worldwide fisheries and consequently the aquaculture industry is constantly growing in several ways. It is seen that China, Indonesia, India, the United States of America, and the Russian Federation stand out in this industry, respectively (FAO, 2018: 104). Since fishery products are one of the most commercially traded products in the food sector, the export of fish and fishery products obtained from sea and inland waters has contributed positively to countries' economies. Among these countries, China is the biggest exporting country, followed by Norway, Russia, Vietnam, and the USA. It is also seen that developing countries play a significant role in these product exports (TAGEM, 2019-2023: 10). However, despite all these facts, per the evaluations made by the United Nations Food and Agriculture Organization (FAO), all sea stocks

have been found biologically unsustainable due to overfishing. At this point, it is seen that aquaculture alternative has come into play. This sector has developed depending on the reasons, such as decreasing sea-fish stocks, the additional technological-resource utilization in sea and inland waters, forming an alternative source for increasing food needs, protecting natural reserves, effective utilization of barren lands and high profit, etc., (Yeşilayer et al., 2013:60). The evaluation of the 2017 data on the aquaculture performances of countries shows that the countries that mostly do aquaculture production are China, India, Indonesia, Vietnam, and Bangladesh, respectively. Table 1 below shows the amount of aquaculture production for the period between 2014-2017.

Table 1: World aquaculture production (million tons)

Years	FISHING			CULTIVATION			TOTAL PRODUCTION
	Sea	Inland Water	Total	Sea	Inland Water	Total	
2014	79,183	11,063	90,246	26,101	44,449	70,549	160,795
2015	80,436	11,119	91,554	26,903	45,910	72,814	164,368
2016	78,095	11,337	89,432	28,379	48,101	76,480	165,912
2017	80,599	11,924	92,523	30,626	49,510	80,136	172,658

Note: Production figures do not include aquatic plants and marine mammals.

Source: TAGEM, 2019-2013

According to Table 1, it is seen that world aquaculture production was 90,246 million tons in total for fishing and inland water production in 2014 and increased by 92,523 million tons in 2017. While it was 70,549 million tons in aquaculture in 2014, it reached 80,136 million tons in 2017. This numerical increase indicates that cultivation gains more importance than hunting.

As in the world, fishing and aquaculture are widespread in Turkey. The sea surrounds Turkey on three sides, and the country has approximately 26 million hectares of usable water area, including the waters on the continental shelf (Yeşilayer et al., 2013: 64-67). With this prominent location, marine resources bear a different significance due to the ecological and geomorphological features. The notable difference between the Black Sea and the Mediterranean explains the species diversity and abundance in fisheries (TAGEM, 2019-2023: 11). Turkey's annual aquaculture production was between 537-704 thousand tons between 2010-2018, depending on hunting fluctuations. In terms of production quantities, aquaculture farming in Turkey increases as in world production (TAGEM, 2019-2023: 12).

5.2 *Coastal Tourism*

Individuals meet their holiday and recreational needs with sea and coastal tourism, which is one of the potential resources of the blue economy. Sea tourism provides the highest income to the tourism sector, which is in a rapid development course (Çoban and Ölmez, 2016: 159-164). The first and most popular touristic areas that come to mind among the holiday destinations in sea tourism are the sea coasts (Özgüç, 1998: 63). Coastal cities have a prominent place for their impact on sea tourism. Particularly coastal city's location characteristics substantially contribute to the coastal tourism development (Li, Guo, and He, 2014: 778). In this context, the coastal city's high sea-tourism capability has a considerable economic impact. However, development in coastal tourism brings out particular costs against high economic benefits. The tourism development in coastal places reflects the interaction of people with the marine environment. Human activities affect marine resources through the continuous increase in demand for sea tourism and the growing use of coastal resources (Wang, Xue, and Zhang, 2016: 1428). However, apart from the increasing speed of the world population and the pollution created by the high population in coastal settlements, the garbage discharge from different sources into the seas causes rise pollution problems. Pollutants include persistent organic contaminants, nutrients, oils, heavy metals, pathogens, sediments, sands, etc. Interrelated pollutants, in whatever form and scale, threaten the environment and living organisms. The vast majority of the world's coastal areas suffer significantly from pollution from coastal trade and marine fishing activities (Williams 1996: 624). Pollution in marine coastal areas is fed by point and non-point land-based sources such as rivers, drainage ditches, undersea discharges, and coastal cities, and these are usually turbulent diffusion, chemical, biological contaminants, etc., coming with the currents (Ganoulis, 1991: 170). Coastal pollution's reasons change the pollution's extent. Human-made plastic residues, which are the primary pollution source, are synthetic organic polymers obtained from petroleum (Shaw and Day, 1994:41; Golberg, 1995:6; Barnes, 2005:18). Plastics pose a significant risk to the marine environment with their light, durable features (Laist, 1987:329; Pruter, 1987:306). The threat of plastics has been neglected for a long time, and its seriousness has been understood recently (Stefatos et al., 1999). Shipping, another source of pollution, is considered a polluting industry (Gennaro, 2004). Ships usually cause pollution by discharging

daily wastes to waters, such as oil spills, bilge, and other garbage. Again, in the researches carried out by the National Oceanic and Atmospheric Administration (NOAA), it has been determined that over 50% of marine pollution is land-based such as septic tanks, vehicles, boats, farm waste. The oil dripping from a car's engine to the roads and parking lots and moving towards the sea can be given as an example of land-based pollution. Pollution fed from various sources causes the deterioration of food chains by killing living organisms (Vikas and Dwarakish, 2015: 385).

5.3 Shipbuilding Industry

Maritime is a bridge to higher world civilization. Old and inefficient ships are out of the blue economy concept because of their harm to the sea and environment. The ship-breaking business recycles scrap ships. The wastes obtained through dismantling old ships provide raw materials such as iron, steel, etc., for other industries. On the other hand, a significant amount of employment and income is generated in the countries where ship-breaking is carried out. Besides recycling old ships for raw material resources, this industry renews some old vessels, turns them into reusable new ships using safe and environmentally-friendly recycling methods, and protects the sea and natural environment in the green economy principles (Bari.2017: 8; Kaya, 2012: 84). The ship recycling sector has been usually ignored by developed countries and generally handled by underdeveloped countries. This situation results from the investment amounts of these businesses are small, they work in labor-intensive systems, the created employment is rather significant in these developing countries. However, primitive working conditions and insufficient supervision in developing countries pose severe risks to worker health, safety, and the environment. When evaluated in terms of developed countries, their approaches to the sector with concern have caused strict legal regulations. As these legal regulations have increased the dismantling costs, the business shifted to the developing countries carrying out the dismantling process at lower prices (Neşer et al., 2008: 352). However, with the increase of global warming and the gradual decrease of natural resources, ship-breaking has become a field of activity that the world countries carefully follow and reconsider in the last instance. This business field has contributed significantly to both the recycling economy and the environment. Against this backdrop, it is seen that ship-recycling is made in many countries worldwide,

China, India, Pakistan, and Bangladesh have the largest share of the business, and some rate of the ship recycling work is held in Izmir/Turkey (Lück, 2010: 98; Çeviker, 2019: 2). Ship-breaking turns a scrap property having completed its economic life into a value and enables the natural resources to be preserved by recycling. This function grants it a right to be called a “green industry” with efficient natural resource use and ecological balance protection. When compared to the processes such as extracting and melting iron metal from natural sources, it is seen that the importance of the sector in question has increased as it creates considerable savings in energy and costs and less environmental pollution. Besides, scrap-iron use in steel production is considered an environmentally friendly technology for eliminating the natural destruction and greenhouse gas emissions (Çeviker, 2019: 1). In this way, the ship-dismantling industry is both a part of the green economy in reducing environmental pollution and increasing resource efficiency, and also it is a part of the blue economy in decreasing the contamination that scrap ships can create in the seas.

5.4 Sea-Based Energy

Energy is the basis of all economic developments. Today, per capita energy consumption is inadequate worldwide, and there is an apparent difference between developed and developing countries. It is necessary to increase the energy resources in the world rapidly to eliminate poverty and to offer a decent life. On the other hand, energy is expensive. The high price of energy is usually due to the dependence on the consumption of natural hydro energy resources. Alternative energy sources, especially renewable energy sources, stand out for the solution. At this point, the blue economy has highlighted the energy obtained from the sea as an enormous energy source among other resources. These energy types are quantum, wave, wind, chemical energy, oil and gas resources, etc. (Bari.2017: 9).

Wave energy is a predictable and coherent source of electrical energy. The fact that 75% of the world is covered with water shows this energy source’s potential. However, besides wind, and solar energy, wave energy covers a tiny share in the energy market (Saraçoğlu et al., 2014: 827). Offshore wind turbines located on the oceans and seas are the sources whose importance has increased with the rapid increase trend in recent years. Especially the north European countries lead in the offshore wind tribunes (Şahin, 2020: 55). Europe’s first modern wind turbines were installed in Denmark in 1991. Later, new ones were

added to these turbines considering their contributions to the economy. Britain's offshore wind energy has a high potential and reserve in the sector. The UK's reserve wealth put an end to Denmark's superiority in this area and brought the UK to the leadership in 2019 (Şahin, 2020: 57).

5.5 Deep-sea minerals

The world population is booming. In parallel to consumer numbers, mineral production increases with the rising living standards on a global scale. It is impossible to foresee all new products that societies will use and develop in the future. For this reason, the world will keep consuming chemical elements and minerals in large quantities and different dimensions since it is not possible to obtain them from another source. Thus, minerals will be the basis of the products people use, and therefore they will maintain their dominant roles in world production and agriculture (Kesler, 2007: 55). The marine minerals' importance in maintaining sustainability cannot be denied. In this context, coral reefs, vital for the continuity of marine and ocean ecosystems, are considered the oceans' lungs. Coral reefs are living organisms and necessary for the carbon cycle, nutrition, and reproduction of marine creatures. In this respect, reefs are crucial for the world ecosystem's continuity (Riegl et al., 2009, p. 136). Over 70 minerals are extracted from the deep seawater body. In addition to massive sulfide deposits, gold-silver, copper, lead, zinc, nickel, and cobalt on the seafloor, other rare metals and minerals are also available resources (Bari, 2017: 10).

The deposit formations on the seafloor or immediately below the land surface emerge with the effects of waves, wave-breakings, tides, and in-stream movements of the sea. The most promising of these minerals for the economy are phosphate and manganese lumps. "Madagascar" and "Crozet Depressions" in the Indian Ocean and the reserves North Pacific region draw attention among mineral deposits. Apart from this, minerals such as salt, magnesium, copper, etc., are also prominent undersea minerals. Besides these minerals obtained from the undersea, metallic magnesium, magnesium oxide, magnesium hydroxide, and magnesium chloride are also widely produced from seawater. There are facilities in many countries processing these products. However, the most significant salt-processing facilities are in the USA, China, India, Japan, the Philippines, Russia, Sweden countries. In Turkey, the Çamaltı facility in İzmir is prominent (Özpeker, 1979: 5-10). The sustainability of these minerals, which

occur in every aspect of human life with different dimensions, is significant. In this sense, the challenge is to sustain the surrounding ecosystems of seabed minerals and protect marine environments from polluting waste.

6. Cause-Effect Relationship in the Waste Problem

For continuous sustainable development, the blue economy points to the seas' and oceans' current and future problems. Accordingly, excessive hunting and industrial wastes cause a decrease in biological diversity by negatively affecting the seas' ecosystems, damaging natural life and marine resources (Çoban and Ölmez, 2016: 158). The most severe damage to the waters is the waste. Wastes are all kinds of materials resulting from the production and use of activities harming people and the environment (Coker et al., 2016: 29).

Today's consumer societies know that plastic-based products of different sizes and characteristics are more harmful. The waste accumulation created by intensive plastic use causes pollution in marine and land ecosystems. Plastic products contaminating the seas and other water areas have serious adverse effects on the environment, energy, economy, and human health. Besides, it damages living creatures feeding in the sea. Plastic pollutants consumed by sea creatures in these ecosystems cause significant harm to people consuming these products due to their toxic effects (Nüket and Çullu, 2020: 15). Microplastics, consumed by many creatures such as marine mammals, invertebrates, and even seabirds, can easily reach seas and lakes through sewage and rainwater (Browne et al., 2010: 3406; Cole et al., 2013: 6648; Desforges et al., 2015: 325). On the coasts, wastes such as pieces of paper, cigarette butts, plastic scraps, glass fragments, lids, metal, glass, or plastic beverage bottles reach the sea and cause pollution (Nüket and Çullu, 2020: 19). Besides, bilge releasing (ship wastewater, oily water leaking from machinery and pumps), ballast operations (water is taken from the sea for the balance of the ship and returned to the sea), and discharging goods to the water in an accident, are among the causes of marine pollution (Çomak, 1991: 78).

That maritime transportation has been carried out with ships and tankers with large capacities in recent years has brought the pollution problem caused by marine vehicles. In accidents that may occur during the oil and hazardous chemical substance transportations, these pollutants mix with seawater and create high marine pollution. These pollutants harm the sustainable generation

and continuation of the sea creatures (Bishop, 1983: 198; Miller 2008: 20-21). Therefore, it is crucial to prevent marine pollution caused by wastes. Ensuring the seas' sustainability positively affects economic growth; thus, necessary projects and policies should support this improvement. It is significant to solve the waste problem to ensure the sustainability of the seas and oceans.

7. Conclusion and Suggestions

New economic approaches are needed to ensure sustainability in growing and developing economies. This need has brought forward the green economy concept to reduce the damage to the natural environment. The green economy is considered a sustainable development strategy and innovation process that ensures socioeconomic development. It aims to increase investment, economic growth, and environmental quality. At the same time, it addresses the need to compensate for positive and negative externalities with the effective use of available resources. Blue economy, which is also defined as the ocean economy, which is a part of the green economy, aims to reduce environmental risks and ecological scarcity significantly and improve human welfare and social justice.

The oceans and seas offer significant resources to the global trade and tourism industry from different angles. Renewable blue energy resources obtained from the sea, bio and mineral mining, and technological developments create new opportunities. Various products obtained from fishing, which is one of the potential resources provided by the blue economy, contribute to human life and the country's economy. This contribution can only be sustained by protecting natural stocks, reducing the pollution created by humans. Sea and coastal tourism is another potential resource and not only meets individuals' holiday needs but also contributes to financial growth. However, the contamination that occurs due to the increasing population affects the seas and human life negatively and at the same time causes enormous losses for the economy.

In order to ensure life's sustainability in the sea and land, it is significant to manage and use marine resources effectively and take measures to reduce sea and ocean pollution. In this sense, a card-tracking system that the authorized public institutions will issue can be used to follow up the existing wastes of vessels coming to ports/coasts. In this way, the income obtained from the service will contribute to the country's economy. Taking necessary precautions will protect

the seas' and oceans' ecological system continuity and the next generation's welfare. In line with this purpose, first, not polluting the seas and oceans and developing the essential technologies in waste recycling will guarantee the continuity of the blue economic transformation. Thanks to the blue economic transformation, the seas' and oceans' healths can be sustainable, and the waters can continue to serve humanity.

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CHAPTER XI

THE IMPORTANCE OF RISK AVERSION MEASURE FOR INSURANCE COMPANIES UNDER DEPENDENT RISKS: RISK PREMIUM CALCULATIONS WITH A SIMULATION STUDY*

Kübra Durukan¹ & Emel Kızıllok Kara^{2,*} & H. Hasan Örkücü³

¹(Dr.), Kırıkkale University, Department of Statistics,

e-mail: kubraba@gmail.com
ORCID: 0000-0002-2977-0901

²(Asst. Prof. Dr.), Kırıkkale University, Department of Actuarial
Sciences, *e-mail: emel.kizilok@kku.edu.tr*
ORCID: 0000-0001-7580-5709

³(Prof. Dr.), Gazi University, Department of Statistics,
e-mail: hhorkcu@gazi.edu.tr
ORCID: 0000-0002-2888-9580

**Corresponding author: emel.kizilok@kku.edu.tr*

1. Introduction

It is very important to correctly determine the premium prices of insurance products in the field of insurance. In determining the risk premiums, the dependency structure of risks has an important role. On the other hand, with the increasing importance given to insurance, individuals' desires to purchase more than one insurance product have got widespread. For example, an

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insured who buys accident insurance may also want to buy disability insurance. In this way, the risks belong to the same insured, which leads to the occurrence of dependent risk structures. In other words, being independent of the risks means that the individual has a policy in a single insurance product whereas the dependence of the risks means that the same insured has policies in more than one insurance product.

Another important factor in determining risk premiums is the measure of risk aversion. It is often used in risk management, financial banking, and insurance fields to decide among risky alternatives. The measure of risk aversion can be determined for univariate and multivariate risks. However, it would be more meaningful to determine premium prices according to the multivariate risk aversion measure for dependent insurance products of the same individuals. For this purpose, copula functions are an important tool to model the dependent risks. Furthermore, risk premiums can be computed by utility copulas based on utility functions.

There are studies on utility function in the literature. In most of these studies, the utility functions are used to model risky alternatives in fields such as economics (Cipu and Gheorghe 2015), finance (Denuit et al. 2011), and insurance (Cherubini et al. 2004, Courbage and Rey 2007, Lai 2015). It is also a helpful tool in the decision-making of investors in the areas of portfolio preferences, fund preferences, and securities investments (Tekin 2016, Taşdemir 2007). On the other hand, the utility copula functions based on the utility functions have been developed firstly by Kettler (2007) to explain the dependency structures of the associated risks. Later, Abbas (2009, 2010a, 2010b, 2013) performed studies on Archimedean utility copulas.

Risk aversion is a basic parameter that determines the benefit obtained from a good or money (Thomas, 2016). On the other hand, the measure of risk aversion helps in determining the least risky choice for a decision-maker who has to decide between risky choices in the field of risk management and insurance. Also, the decision-maker can determine the risk premium coefficients to be paid using the risk aversion measure (Goovaerts et al. 2012).

The choice of utility functions and copula models is important in risk management decisions. The measure of risk aversion can also be determined depending on the utility function and the utility copulas. The first studies based on the risk aversion measure in the literature have been performed according to the utility function. Arrow (1971) and Pratt (1964) described a measure of univariate risk aversion based on the univariate utility function. Duncan (1977) obtained a bivariate risk premium by using a bivariate risk aversion function based on a bivariate utility function.

There are other studies in the literature on univariate and bivariate risk aversion coefficients (Sengupta, 1983, Cardin and Ferretti, 2004, Li et al., 2016 and Thomas, 2016).

Recently, copula functions have been used frequently in the modeling of dependent risks. Tank and Gebizlioglu (2004) modeled the dependence of risks by a new distribution. Kızılok (2010) derived the bivariate Value-at-Risk (VaR) and Conditional Value-at-Risk (CVaR) risk measurements for various parameter values of the dependent risks modeled with Farlie-Gumbel-Morgenstern (FGM) copula. Kemaloglu and Kara (2015) explained the dependency structure of multivariate financial data with copulas. Kemaloglu et al. (2018) studied the dependence structure with FGM copula and interpreted the Pareto distributed demand amount by using the fuzzy logic approach.

This study aims to find a new bivariate risk aversion formula assuming Kettler's (2007) utility copula model for dependent risks, and, hence to derive the bivariate risk premiums for various parameter values. The other aim of this study is to develop a new bivariate copula function that provided the Sklar copula properties using the truncated distribution method. Also, the aim is to perform a simulation study to numerically evaluate in terms of the insurance company the risks that transferred to the reinsurance company.

In the second part of the study, the preliminaries are given for copula, utility copula, risk aversion, and risk premium. Truncated distribution and parameter estimation are also introduced in the same section. The third section is the original part of this study, where a new bivariate copula is obtained by using the truncated distribution method for Kettler's (2007) utility copula model. In the same section, some of the properties of the new copula are examined. In the fourth part of the study, bivariate risk aversion and risk premium coefficients are calculated numerically using generated data by simulation. The results are implicated in terms of insurance companies and exemplified. Conclusions are given in the last section.

2. Preliminaries

2.1. Utility Copulas

In this section, copulas modeling the dependency structure among random variables, utility function, and utility copulas used in the choice of risky alternatives in insurance, actuarial, and risk management are introduced. In addition, preliminaries about risk aversion and risk premium are given.

The copula function was first described by Sklar (1959). According to this Sklar theorem, there exists a copula function, $C: [0,1]^2 \rightarrow [0,1]$ defined as $H(x, y) = C(F(x), G(y))$ for $x, y \in \mathbb{R}$. Here the H function is

a two-dimensional continuous distribution function with marginal distribution functions F and G . Conversely, for any univariate distribution functions F and G and any copula C , the function $H(x, y)$ is a two-dimensional distribution function with marginals F and G . Also, if F and G are continuous, then C is unique (Nelsen, 2006).

Utility functions are often used to make proper decisions under uncertainty in risk and actuarial applications. In other words, it leads individuals to choose from risky alternatives in real life. Therefore, it is an important tool used in the calculation of some important risk measures, such as risk premiums according to the situations of risk aversion and risk-seeking. (Denuit et al. 2005).

By using a utility function $u(x, y)$ defined on $A = [a, \infty) \times [b, \infty)$, the bivariate utility copula $UC(u, v)$ is defined by Kettler (2007) as follows.

$$UC(u, v) = -u\left(u_1^{-1}(u + k), u_2^{-1}(v + k)\right) + (u + k) + k > 0 \tag{1}$$

where $u_1(x) = u(x, b)$ and $u_2(y) = u(a, y)$ are marginal utility functions for all $u(x, y) \in \mathbb{R}^2$. Also $u(a, b) = u_1(a) = u_2(b) = k$.

The $UC(u, v)$ the function must provide the following properties of a utility copula:

- i. The ground condition: $UC(u, 0) = UC(0, v) = 0$
- ii. The uniform margin condition: $UC_1(u) = UC(u, \infty) = u$; $UC_2(v) = UC(\infty, v) = v$
- iii. Utility copula measure: $uc(u, v) := \frac{\partial^2 UC}{\partial u \partial v} = -\frac{\frac{\partial^2 u}{\partial x \partial y}}{\frac{du_1}{dx} \frac{du_2}{dy}}$

2.2. Risk Aversion and Risk Premium

The definition of bivariate risk aversion coefficients based on the copula function is given by Abbas (2009) as follows:

$$R = r^{ij} = -\begin{bmatrix} r_{ii} & r_{ij} \\ r_{ji} & r_{jj} \\ r_j & r_j \end{bmatrix}, \quad i, j = 1, 2 \tag{2}$$

here $r_{ij} = \frac{\partial^2 C(u, v)}{\partial u \partial v}$ and $r_{ji} = \frac{\partial^2 C(u, v)}{\partial v \partial u}$ for $i \neq j$, $r_{ii} = \frac{\partial^2 C(u, v)}{\partial u^2}$, $r_{jj} = \frac{\partial^2 C(u, v)}{\partial v^2}$ for $i = j$. In addition, marginal copula functions for u and v are calculated as $r_1 = \frac{d}{du} C(u, v)$ and $r_2 = \frac{d}{dv} C(u, v)$.

The mixed partial derivative of the utility function or utility copulas is also known as multivariate risk aversion. It is said that a decision-maker has a risk-seeking behavior if the mixed partial derivative is positive, and a risk-aversion behavior if it is negative (Abbas 2009).

The approximate risk premium vector is given by Eq. (3)

$$\pi = \frac{1}{2} dgR\Sigma \tag{3}$$

Here $\Sigma = \begin{bmatrix} \sigma_{11} & \sigma_{12} \\ \sigma_{21} & \sigma_{22} \end{bmatrix}$ is a variance-covariance matrix. If a decision-maker avoids the risk ($R > 0$), a person will agree to pay more premiums. If a decision-maker seeks risk ($R < 0$), they will want to pay fewer premiums (Duncan 1977).

2.3. Truncated distribution and parameter estimation

The truncated distribution function in the range $[a, b]$ and probability density function of a random variable X with the probability density function $f_X(x)$ are defined as follows, respectively (Ahsanullah et al. 2014).

$$G(x) = P(X \leq x | X \in [a, b]) = \frac{P(X \leq x, X \in [a, b])}{P(X \in [a, b])} = \frac{\int f_X(u) du}{\int_a^b f_X(x) dx}$$

and

$$g(y) = \begin{cases} \frac{f_X(x)}{\int_a^b f_X(x) dx}, & x \in [a, b] \\ 0, & dy \end{cases} \tag{4}$$

There are different methods to estimate copula parameters. One of the most used methods is the maximum likelihood (MLE) method. Let $c(u, v; \theta) = \frac{\partial C(u, v; \theta)}{\partial u \partial v}$, $u, v \in [0, 1]$ be a copula density function for two-dimensional sample $U = (u_i, v_i), i = 1:n$. The maximum likelihood estimator of θ parameter, $\hat{\theta}_{MLE}$ is defined with $\hat{\theta}_{MLE}(U) = \operatorname{argmax}_{\theta} \mathcal{L}_U(\theta)$. Here $\mathcal{L}_U(\theta)$ is the maximum likelihood function defined as $\mathcal{L}_U(\theta) = \sum_{i=1}^n \ln c(u_i, v_i; \theta)$, $\theta \in \mathbb{R}^2$ (Weiß 2011).

3. A New Bivariate Copula based on the Truncated Utility Copula

This section, which constitutes the original part of the study, aims to obtain a new copula function defined on $[0, 1] \times [0, 1]$ by truncated distribution method, by using the utility copula $UC_{\theta}(u, v)$ given by Kettler (2007). The procedure is given in the following steps.

Step 1. The utility copula measure, $uc_{\theta}(u, v)$ of a given utility copula, $UC_{\theta}(u, v)$ is obtained as follows by using the property (iii) of the utility copula defined in Section 2 [The proof is given in Appendix A.1].

$$UC_{\theta}(u, v) = \left(u^{\theta} + v^{\theta} - \ln(e^{u^{\theta}} + e^{v^{\theta}} - 1) \right)^{1/\theta} \tag{5}$$

$$uc_{\theta}(u, v) = \frac{u^{\theta-1}v^{\theta-1}}{m^2UC_{\theta}(u, v)^{2\theta-1}} \left((\theta - 1)m + e^{u^{\theta}+v^{\theta}} \left(1 + \theta(UC_{\theta}(u, v)^{\theta} - 1) \right) \right),$$

where $(u, v) \in (0, \infty)^2$ and $m = e^{u^{\theta}} + e^{v^{\theta}} - 1$.

Step 2. $uc_{\theta}(u, v)$ does not provide properties of the probability density function (pdf). Therefore, it is aimed to obtain a probability density function by finding a constant k such that $k \int_0^{\infty} \int_0^{\infty} uc_{\theta}(u, v) dv du = 1$. However, since this integral has no solution, it is solved for $(u, v) \in (0, a)^2$. Thus, by solving the integral equation $k_a(\theta) \int_0^a \int_0^a uc_{\theta}(u, v) dv du = 1$, a new probability density function is obtained as $k_a(\theta)uc_{\theta}(u, v)$. Here $k_a(\theta) = \left(2a^{\theta} - \ln(2e^{a^{\theta}} - 1) \right)^{\frac{1}{\theta}}$.

Step 3. For this obtained pdf, by using the truncated distribution method given in Eq. (4), a new truncated pdf $c_{trun}(u, v; \theta)$, which is restricted over the range $(u, v) \in [0, 1]^2$, is obtained as follows.

$$\begin{aligned} c_{trun}(u, v; \theta) &= \frac{uc_{\theta}(u, v)}{\iint_0^1 uc_{\theta}(u, v) dv du} = \frac{1}{k(\theta)} uc_{\theta}(u, v) \\ &= \frac{(2 - \ln(2e - 1))^{-1/\theta}}{m^2UC_{\theta}(u, v)^{2\theta-1}} u^{\theta-1}v^{\theta-1} \left((\theta - 1)m + e^{u^{\theta}+v^{\theta}} \left(1 + \theta(UC_{\theta}(u, v)^{\theta} - 1) \right) \right) \end{aligned} \tag{6}$$

where $m = e^{u^{\theta}} + e^{v^{\theta}} - 1$ and $k(\theta) = (2 - \ln(2e - 1))^{1/\theta}$ for $a = 1$.

Step 4. The distribution function of this truncated probability density function was found. Thus, a new bivariate copula is obtained which provides the distribution function properties and is indicated by $C_{trun}(u, v; \theta)$ [The proof is given in Appendix A.2]. Here $C_{trun}(u, v; \theta)$ is derived primarily for $\theta = 1$ and $\theta = 2$, then the general case for each θ is given below.

$$C_{trun}(u, v; \theta) = \int_0^u \int_0^v c_{trun}(w, t; \theta) dt dw, \quad 0 < u < 1, \quad 0 < v < 1$$

For $\theta = 1$;

$$C_{trun}(u, v; 1) = \frac{u + v - \ln(e^u + e^v - 1)}{2 - \ln(2e - 1)} = \frac{UC_1(u, v)}{k(1)}$$

For $\theta = 2$;

$$C_{trun}(u, v; 2) = \left(\frac{u^2 + v^2 - \ln(e^{u^2} + e^{v^2} - 1)}{2 - \ln(2e - 1)} \right)^{\frac{1}{2}} = \frac{UC_2(u, v)}{k(2)}$$

Thus, for $\theta > 0$, the truncated copula function containing the utility copula, $UC_\theta(u, v)$ can be written as follows:

$$C_{trun}(u, v; \theta) = \frac{1}{k(\theta)} UC_\theta(u, v) = (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + v^\theta - \ln(e^{u^\theta} + e^{v^\theta} - 1) \right)^{1/\theta} \tag{7}$$

where $0 < u < 1, 0 < v < 1, \theta > 0$ The graphs of $C_{trun}(u, v; \theta)$ for $\theta = 1$ and $\theta = 2$ are given in Figure 1.

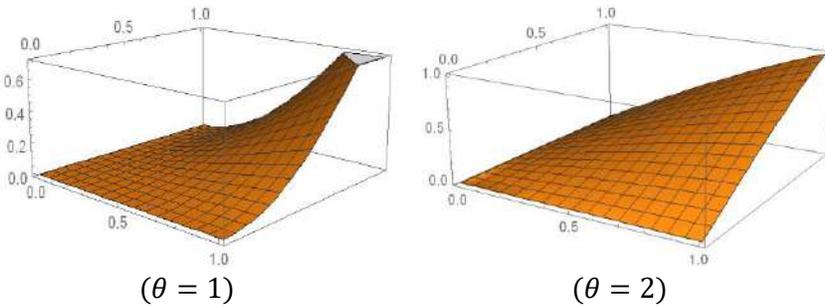


Figure 1. The graphs for $C_{trun}(u, v; \theta)$

3.1. The Parameter Estimation for the New Bivariate Copula

In this section, the maximum likelihood estimator (MLE) is obtained for parameter θ of $C_{trun}(u, v; \theta)$. For the $U = (u_i, v_i) \in [0, 1]^2, i = 1:n$ sample, by using the maximum likelihood function given by $\mathcal{L}_U(\theta)$ of the new bivariate copula, the maximum likelihood estimator of the θ parameter $\hat{\theta}_{MLE}$ is obtained below with the “fminsearch” code based on $max(x) = -min(-x)$ information in Matlab R2016a program.

$$\mathcal{L}_U(\theta) = - \sum_{i=1}^n \ln c_{trun}(u_i, v_i; \theta)$$

Here $c_{trun}(u, v; \theta)$ is given Eq. (6).

3.2. The Intervals for Kendall's τ and Spearman's ρ Correlations

This section gives the intervals for Kendall's τ and Spearman's ρ correlation coefficients for the new truncated copula family, $C_{trun}(u, v; \theta)$ given by Eq. (7). These coefficients for a copula function $C(u, v; \theta)$ are respectively defined as (Nelsen, 2006).

$$\tau(C(u, v; \theta)) = 4 \int_0^1 \int_0^1 C(u, v; \theta) dC(u, v; \theta) - 1$$

$$\rho(C(u, v; \theta)) = 12 \int_0^1 \int_0^1 C(u, v; \theta) dudv - 3$$

However, since there is no explicit solution of these integrals for the new copula function $C_{trun}(u, v; \theta)$, $\tau(\theta)$ and $\rho(\theta)$ values are calculated numerically for some values of θ . The intervals for Spearman's ρ and Kendall's τ correlation coefficients for $0.25 < \theta \leq 4.25$ are determined as $0.2991 \leq \rho \leq 0.7722$ and $0.0263 \leq \tau \leq 0.0567$, respectively.

4. A Simulation Study

An insurance company can determine the bivariate risk premiums based on risk aversion under the dependence risks. In this section, a simulation study is performed to illustrate the model. The following algorithm given by Öztürk and Özbek (2015) is used to generate the random vector from the $C_{trun}(u, v; \theta)$.

Step 1. $X \sim f_X(x)$ and $Y \sim g_Y(y|x)$ are generated by using $f_X(x)$ and $g_Y(y|x)$, respectively.

Step 2. $U_i \sim U(0,1), i = 1, 2$,

$$F_X(x) = U_1 \text{ and } G_Y(y|x) = U_2$$

The solving of this equation system for U_1 and U_2 gives the X and Y .

Table 1 presents the Absolute Bias (Bias), Mean Squares Error (MSE), and θ estimation ($\hat{\theta}_{MLE}$) values for various values of θ and $n = 30, 50, 100, 150, 500$ sample sizes. Here, the mean θ is estimated by repeating each sample 100 times. The results display that Bias values of $\hat{\theta}_{MLE}$ decrease while sample size increases. This means that more proper estimates are obtained for larger samples. On the other hand, since the Bias values are smaller for the higher θ , it can be said that accurate estimates are even in small samples.

The numerical values for the risk aversion matrix and the risk premium vector are obtained by using random vectors generated from the $C_{trun}(u, v; \theta)$ for $n = 30$ and $\theta = 1.25$, and the results are given in Table

2. Spearman's ρ and Kendall's τ coefficients are 0.4047 and 0.3057, respectively, for the generated random vector. The graphs are illustrated in Figure 2 and Figure 3 for $n = 5000$ units.

Now, let give an example to explain the values in Table 2. Here, we consider an insurance company that wants to calculate the risk premium for 17th individuals who have dependent risks ($u = 0.1991, v = 0.1413$). If the insurance company, which ensures a risk-seeking ($r^{12} < 0, r^{21} < 0$) individual (included in both risk groups), chooses to risk aversion, it should be determined a premium more over the existing premium by a premium coefficient of 0.1138 ($\pi_{11} + \pi_{21} = 0.0753 + 0.0385$). Similar comments can be made for policyholders who display other risk behaviors. Also, these examples can be extended to the decision-making situations of bankers with risky customer portfolios.

Table 1. MLE, Bias, and MSE results for the various n and θ values.

	$\theta = 1$			$\theta = 1.25$			$\theta = 1.5$		
n	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE
30	1.1752	0.1752	0.2194	1.2330	0.0170	0.3171	1.7573	0.2573	0.6695
50	1.1432	0.1432	0.1468	1.0126	0.2374	0.0883	1.5989	0.0989	0.1768
100	1.1015	0.1015	0.0103	1.0016	0.2484	0.0617	1.6483	0.1483	0.1283
150	1.1007	0.1007	0.0102	1.0006	0.2494	0.0622	1.6002	0.1002	0.0100
500	1.1000	0.1000	0.0100	1.3000	0.0500	0.0025	1.5500	0.0500	0.0025
	$\theta = 1.75$			$\theta = 2$			$\theta = 2.25$		
n	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE
30	1.7031	0.0469	0.9699	2.4996	0.4996	2.3009	2.2576	0.0076	1.2672
50	1.5818	0.1682	0.3892	2.2033	0.2033	0.6256	2.3260	0.0760	0.7070
100	1.7818	0.0318	0.0276	2.1006	0.1006	0.0120	2.3434	0.0934	0.0734
150	1.7761	0.0261	0.0614	2.1043	0.1043	0.0113	2.3033	0.0533	0.0030
500	1.7505	0.0005	0.0002	2.0500	0.0500	0.0025	2.3000	0.0500	0.0025
	$\theta = 2.5$			$\theta = 2.75$			$\theta = 3$		
n	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE	$\hat{\theta}_{MLE}$	Bias	MSE
30	2.6644	0.1644	1.7442	2.8502	0.1002	2.3549	3.0942	0.0942	1.8853
50	2.5056	0.0056	0.4448	2.8587	0.1087	1.0687	3.0912	0.0912	0.8557
100	2.4614	0.0386	0.0028	2.8268	0.0768	0.0137	3.0475	0.0475	0.0849
150	2.4918	0.0082	0.0038	2.7978	0.0478	0.0455	3.0483	0.0483	0.0093
500	2.4800	0.0200	0.0004	2.8000	0.0500	0.0025	3.0500	0.0500	0.0025

Table 2. The risk aversion matrix and risk premium vector values generated from the $C_{trun}(u, v; \theta)$ for $n = 30$ and $\theta = 1.25$

n	u	v	r^{11}	r^{12}	r^{21}	r^{22}	π_{11}	π_{21}
1	0.3968	0.2314	0.8510	-4.1190	-2.2020	0.7213	-0.0347	-0.0044
2	0.1381	0.0628	0.9466	-15.550	-6.8058	0.8779	-0.2139	-0.0713
3	0.0552	0.2714	0.7721	-3.2481	-17.843	0.9585	-0.0237	-0.2443
4	0.3526	0.7197	0.5745	-1.1196	-2.7907	0.8293	0.0031	-0.0092
5	0.1453	0.1659	0.8650	-5.6567	-6.5307	0.8830	-0.0588	-0.0667
6	0.6185	0.6713	0.6599	-1.3496	-1.5082	0.6956	0.0026	0.0056
7	0.0249	0.6388	0.5341	-1.1315	-40.176	0.9869	0.0014	-0.5999
8	0.9642	0.9307	0.6306	-1.0411	-0.9856	0.6098	0.0064	0.0103
9	0.3602	0.8724	0.5072	-0.8715	-2.7992	0.8466	0.0046	-0.0086
10	0.2026	0.5811	0.6085	-1.3806	-4.8443	0.8884	0.0002	-0.0395
11	0.9783	0.9244	0.6363	-1.0548	-0.9662	0.6029	0.0064	0.0103
12	0.3364	0.1890	0.8706	-5.0556	-2.6302	0.7513	-0.0490	-0.0100
13	0.0872	0.7276	0.5049	-0.9767	-11.471	0.9578	0.0028	-0.1425
14	0.3381	0.4258	0.7254	-2.0918	-2.7601	0.7919	-0.0069	-0.0103
15	0.0539	0.3061	0.7466	-2.8316	-18.313	0.9608	-0.0180	-0.2517
16	0.5650	0.9556	0.5237	-0.8509	-1.7931	0.7740	0.0055	0.0044
17	0.1991	0.1413	0.8894	-6.7471	-4.6489	0.8394	-0.0753	-0.0385
18	0.6670	0.5994	0.7035	-1.5605	-1.3508	0.6575	0.0008	0.0065
19	0.4345	0.5670	0.6693	-1.5466	-2.1683	0.7641	-0.0002	-0.002
20	0.8507	0.1494	0.9356	-6.7399	-0.8100	0.4640	-0.0735	0.0068
21	0.5801	0.1469	0.9186	-6.7255	-1.3532	0.5956	-0.0739	0.0038
22	0.0413	0.1348	0.8783	-6.9627	-23.865	0.9645	-0.0792	-0.340
23	0.4916	0.7970	0.5729	-1.0429	-2.0020	0.7775	0.0043	0.0012
24	0.2978	0.1707	0.8786	-5.5972	-3.0045	0.7737	-0.0573	-0.0150
25	0.6356	0.2852	0.8512	-3.4305	-1.2748	0.5996	-0.0237	0.0052
26	0.1890	0.5277	0.6348	-1.5482	-5.1713	0.8907	-0.0015	-0.0447
27	0.1684	0.4371	0.6834	-1.9298	-5.7699	0.8941	-0.0059	-0.0541
28	0.4095	0.6465	0.6237	-1.3098	-2.3521	0.7904	0.0019	-0.0039
29	0.2478	0.6885	0.5639	-1.1331	-3.9927	0.8762	0.0025	-0.0264
30	0.6587	0.9595	0.5454	-0.8842	-1.5271	0.7368	0.0058	0.0070

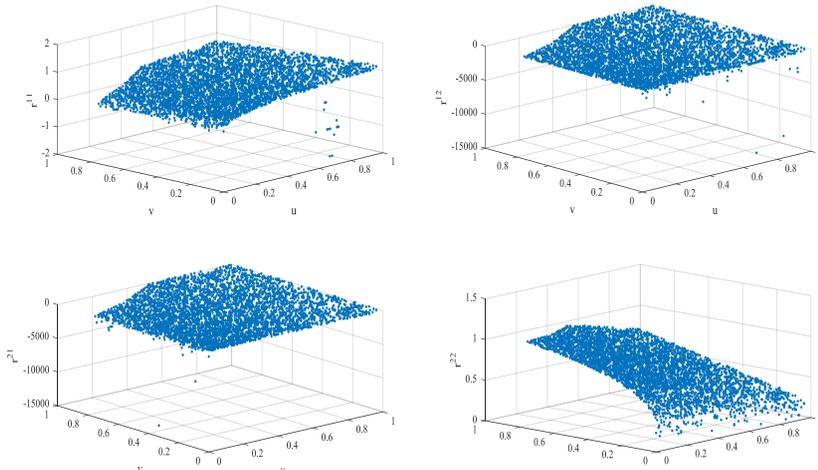


Figure 2. The graphs of the risk aversion matrix of the random vector generated from the $C_{trun}(u, v; \theta)$ for $n = 5000$ and $\theta = 1.25$.

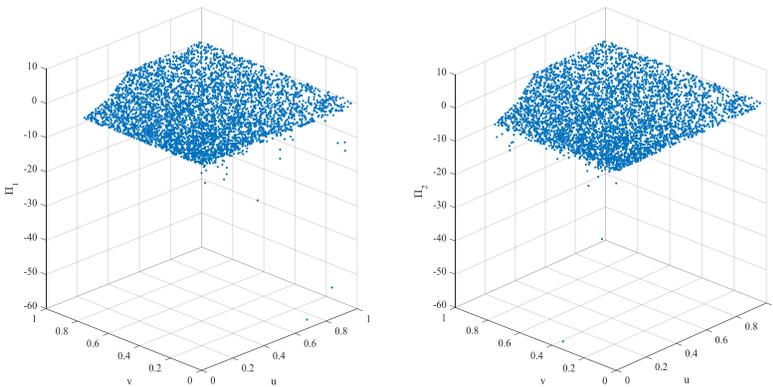


Figure 3. The graphs of the risk premium vector of the random vector generated from the $C_{trun}(u, v; \theta)$ for $n = 5000$ and $\theta = 1.25$.

5. Conclusion

Copula functions play an important role to explain the dependency structure of random variables in insurance, actuarial, and financial risk areas. On the other hand, the risk aversion measure based on utility functions is an essential tool used in the calculation of risk premiums for decision-makers.

In this study, firstly, a new bivariate copula function was constructed for a utility copula by using the truncated distribution method. Later, a

simulation study has been performed by this new copula to evaluate the risk behaviors for the decision-maker's preferences under dependent risks. Finally, bivariate risk aversion coefficients and risk premium vectors were numerically calculated using the simulated data for the selected parameter values. Thus, it is concluded that an insurance company working with dependent risks should determine more premium coefficients if it is risk-averse, and fewer premium coefficients if it is risk-seeking.

In future studies, bivariate risk aversion models will be expanded to other utility copula models using the methodology in this study. In addition, the applications will be made to make decisions by risk managers who have customer portfolios included in the dependent risk groups, especially in the fields of finance and banking.

Appendicies

In this appendix, we first provide the measure of the $UC_{\theta}(u, v)$ utility copula using property (iii) of the utility copula in Appendix A1. Then we show that the $C_{trun}(u, 0; \theta)$ copula, which is given in Eq. (7), provides Sklar copula properties.

A.1. The Measure Function Property of the $UC_{\theta}(u, v)$

The property (iii) is given as $uc(u, v) := \frac{\partial^2 UC}{\partial u \partial v}$ in Sec. 2.

$$\begin{aligned} uc_{\theta}(u, v) &= \frac{u^{\theta-1}v^{\theta-1}}{(e^{u^{\theta}} + e^{v^{\theta}} - 1)^2} (UC_{\theta}(u, v)^{\theta})^{-2+\frac{1}{\theta}} \left((\theta - 1) (e^{u^{\theta}} + e^{v^{\theta}} - 1) + e^{u^{\theta}+v^{\theta}} (1 + \theta(u^{\theta} + v^{\theta} - 1)) - e^{u^{\theta}+v^{\theta}} \theta \ln(e^{u^{\theta}} + e^{v^{\theta}} - 1) \right) \\ &= \frac{u^{\theta-1}v^{\theta-1}}{m^2 UC_{\theta}(u, v)^{2\theta-1}} \left((\theta - 1)m + e^{u^{\theta}+v^{\theta}} (1 + \theta(u^{\theta} + v^{\theta} - 1)) - e^{u^{\theta}+v^{\theta}} \theta \ln(m) \right) \\ &= \frac{u^{\theta-1}v^{\theta-1}}{m^2 UC_{\theta}(u, v)^{2\theta-1}} \left((\theta - 1)m + e^{u^{\theta}+v^{\theta}} (1 + \theta(u^{\theta} + v^{\theta} - \ln(m) - 1)) \right) \\ &= \frac{u^{\theta-1}v^{\theta-1}}{m^2 UC_{\theta}(u, v)^{2\theta-1}} \left((\theta - 1)m + e^{u^{\theta}+v^{\theta}} (1 + \theta(UC_{\theta}(u, v)^{\theta} - 1)) \right), \end{aligned}$$

here $m = e^{u^{\theta}} + e^{v^{\theta}} - 1$ for all $(u, v) \in (0, \infty)^2$.

A.2. The Copula Properties of the $C_{trun}(u, v; \theta)$

It is shown below that the $C_{trun}(u, v; \theta)$ provides the copula properties.

- (i) $C_{trun}(u, 0; \theta) = C_{trun}(0, v; \theta) = 0$ for each $(u, v) \in (0, 1)^2$
- (ii) $C_{trun}(u, 1; \theta) = F(u)$ and $C_{trun}(1, v; \theta) = G(v)$ for each $(u, v) \in (0, 1)^2$
- (iii) $C_{trun}(u_2, v_1; \theta) - C_{trun}(u_1, v_2; \theta) + C_{trun}(u_2, v_2; \theta) \geq 0$, for each $u_1, u_2, v_1, v_2 \in (0, 1)^2$ and $u_1 \leq u_2, v_1 \leq v_2$

Let us show that these equations are provided for all u, v .

(i)

$$\begin{aligned}
 C_{trun}(u, 0; \theta) &= \lim_{v \rightarrow 0} C_{trun}(u, 0; \theta) \\
 &= \lim_{v \rightarrow 0} (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + v^\theta - \ln(e^{u^\theta} + e^{v^\theta} - 1) \right)^{1/\theta} \\
 &= (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta - \ln(e^{u^\theta}) \right)^{1/\theta} \\
 &= (2 - \ln(2e - 1))^{-1/\theta} (u^\theta - u^\theta)^{1/\theta} \\
 &= 0
 \end{aligned}$$

$$\begin{aligned}
 C_{trun}(0, v; \theta) &= \lim_{u \rightarrow 0} C_{trun}(0, v; \theta) \\
 &= \lim_{u \rightarrow 0} (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + v^\theta - \ln(e^{u^\theta} + e^{v^\theta} - 1) \right)^{1/\theta} \\
 &= (2 - \ln(2e - 1))^{-1/\theta} \left(v^\theta - \ln(e^{v^\theta}) \right)^{1/\theta} \\
 &= (2 - \ln(2e - 1))^{-1/\theta} (v^\theta - v^\theta)^{1/\theta} \\
 &= 0
 \end{aligned}$$

(ii)

$$\begin{aligned}
 C_{trun}(u, 1; \theta) &= \lim_{v \rightarrow 1} C_{trun}(u, 1; \theta) \\
 &= \lim_{v \rightarrow 1} (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + v^\theta - \ln(e^{u^\theta} + e^{v^\theta} - 1) \right)^{1/\theta} \\
 &= \lim_{v \rightarrow 1} (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + 1 - \ln(e^{u^\theta} + e - 1) \right)^{1/\theta} \\
 C_{trun}(1, v; \theta) &= \lim_{u \rightarrow 1} C_{trun}(1, v; \theta) \\
 &= \lim_{u \rightarrow 1} (2 - \ln(2e - 1))^{-1/\theta} \left(u^\theta + v^\theta - \ln(e^{u^\theta} + e^{v^\theta} - 1) \right)^{1/\theta}
 \end{aligned}$$

$$= \lim_{u \rightarrow 1} (2 - \ln(2e - 1))^{-1/\theta} \left(1 + v^\theta - \ln(e + e^{v^\theta} - 1) \right)'$$

In particular, the functions $F(u)$ and $G(v)$ for $\theta = 1$ are obtained as follows:

$$F(u) = \frac{u+1-\ln(e^u+e-1)}{2-\ln(2e-1)} \text{ and } G(v) = \frac{1+v-\ln(e+e^v-1)}{2-\ln(2e-1)}$$

Here, the accuracy of the equations $F(u) = u$ and $G(v) = v$ for different values of u and v can be shown numerically. ($F(u) = 0.2385$ for $u = 0.2$ and $G(v) = 0.1216$ for $v = 0.1$). In addition, the approximate accuracy of these equations is shown in the graphs of the marginal functions F and G presented in Figure A.2.1.

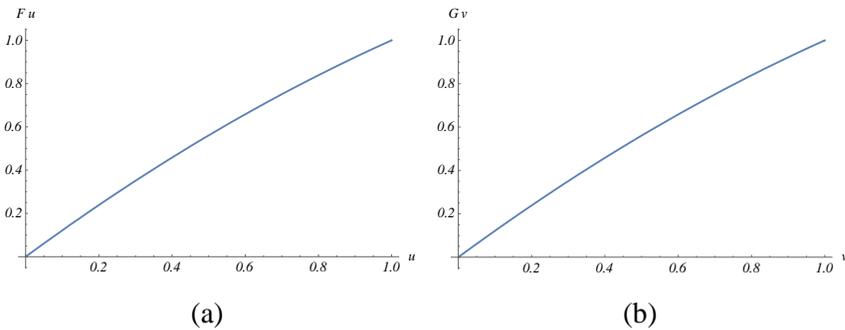


Figure A.2.1. The graphs of mdf $F(u)$ and $G(v)$.

(iii)

$$C_{trun}(u_1, v_1; \theta) - C_{trun}(u_2, v_1; \theta) - C_{trun}(u_1, v_2; \theta) + C_{trun}(u_2, v_2; \theta) \geq 0$$

for each $u_1, u_2, v_1, v_2 \in (0, 1)^2$ and $u_1 \leq u_2, v_1 \leq v_2$.

For $\theta = 1$, it is shown that this property is provided as follows:

$$\begin{aligned} & C_{trun}(u_1, v_1; \theta) - C_{trun}(u_2, v_1; \theta) - C_{trun}(u_1, v_2; \theta) + C_{trun}(u_2, v_2; \theta) \\ &= (2 - \ln(2e - 1))^{-1/\theta} (u_1 + v_1 - \ln(e^{u_1} + e^{v_1} - 1)) \\ & - (2 - \ln(2e - 1))^{-1/\theta} (u_2 + v_1 - \ln(e^{u_2} + e^{v_1} - 1)) - (2 - \ln(2e - 1))^{-1/\theta} \\ & \quad (u_1 + v_2 - \ln(e^{u_1} + e^{v_2} - 1)) \\ & \quad + (2 - \ln(2e - 1))^{-1/\theta} (u_2 + v_2 - \ln(e^{u_2} + e^{v_2} - 1)) \\ &= (2 - \ln(2e - 1))^{-1/\theta} (\ln(e^{u_1} + e^{v_1} - 1) - \ln(e^{u_2} + e^{v_1} - 1) \\ & \quad - \ln(e^{u_1} + e^{v_2} - 1) + \ln(e^{u_2} + e^{v_2} - 1)) \end{aligned}$$

For $(u_1, v_1) = (0, 0)$ and $(u_2, v_2) = (u, v)$ selected values, it can be written as follows:

$$\begin{aligned}
&= (2 - \ln(2e - 1))^{-1/\theta} (\ln(e^u) + \ln(e^v) - \ln(e^u + e^v - 1)) \\
&= (2 - \ln(2e - 1))^{-1/\theta} (u + v - \ln(e^u + e^v - 1)) > 0
\end{aligned}$$

Thus, the function $C_{trun}(u, v)$ is a Sklar copula, since it satisfies the conditions of (i), (ii), and (iii).

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CHAPTER XII

VOLATILITY SPILLOVERS BETWEEN BITCOIN AND OTHER ASSETS IN TURKEY*

Murat Akdağ¹ & Ömer Selçuk Emsen²

¹(Dr.), Central Bank of the Republic of Turkey,

e-mail: Murat.Akdag@tcmb.gov.tr

ORCID: 0000-0003-3559-6177

²(Prof. Dr.), Atatürk University, e-mail: OSEmsen@atauni.edu.tr

ORCID: 0000-0002-1809-0513

1. Introduction

There is strong incentive to escape the local currency, when there is macroeconomic instability or political uncertainty in a country. Especially, increasing budget deficits, weak financial markets and high inflation put developing countries in a vulnerable position against foreign exchange crises. Thus, the demand to foreign currencies of the citizens of developing countries increases. This situation is also known as currency substitution or as dollarization when residents substitute foreign currency instead of the local currency. In cases where the local currency depreciates, cryptocurrencies are seen as a new alternative to fill this gap like a money substitution. Therefore, this new situation is similar to dollarization called Crypto Monetization. We don't use the term crypto dollarization because of the dominant term dollar which implies that dollar is still hegemonic class. This hegemony will be over when product prices are set in sats which is the smallest unit of Bitcoin instead of dollars and the term Crypto Monetization will be more meaningful.

* This paper is based on my Ph.D Dissertation named "Crypto Monetization and an Empirical Study for Turkish Economy". The opinions expressed in this study belong to the authors and should not be interpreted as the opinions of the institutions they work for.

Crypto Monetization means the transition from local currencies, commodities or precious metals to cryptocurrencies for hedging or portfolio diversification due to political instability, macroeconomic imbalance or other extraordinary circumstances such as 2010-2013 European Debt Crisis, 2012-2013 Cyprus Banking Crisis, 2018 Turkish Currency Debt Crisis. The transition to Bitcoin and other crypto currencies can be referred to Crypto Monetization, as the use of Euro, Yen, Dollar, gold or other commodities instead of domestic currency is called dollarization.

Turkey is a country which suffers from dollarization because of inflation, current account deficit and related external financial needs. Households and firms preferred to hold both gold and foreign currency to protect themselves from exchange rate depreciation. One of the methods of measuring dollarization is the ratio of foreign (fx) currency deposits to total deposits and funds. The ratio of total fx deposits to total deposits and funds rate, USD/TRY parity and BTC volume in selected crypto currency exchanges operating in Turkey to total deposit and funds are shown in Figure 1 and Figure 2, respectively. (Data sets abbreviations can be found in Appendix.)



Figure 1: Dollarization in Turkey



Figure 2: Crypto Monetization in Turkey

As seen in Figure 1, dollarization in Turkey are increasing day by day. According to the data obtained from the Central Bank of the Republic of Turkey Electronic Data Delivery System (CBRT EDDS), the ratio of total fx deposits to total deposits was 39,43% on August 19, 2016, whereas this ratio was 55,35% as of May 10, 2019. Cryptocurrency market was taken attention in the second half of 2017 in Turkey. In the period of major upward movement in December 2017, the ratio of BTC volume to total deposits increased to 19,61% (Figure 2). This volume does not include the transaction volume between local buyers and sellers and also other cryptocurrencies which makes the cryptocurrency trading volume bigger than presented here. Bitcoin TL volumes at these levels lead us two conclusions, either investors are diversifying their investments to protect themselves for Turkish Lira depreciation or investing in Bitcoin to benefit from higher returns.

Due to the fact that investors of cryptocurrency are exposed to high risk, it is important to analyze price co-movements between traditional assets and cryptocurrencies. GARCH models are used extensively by the market makers to give better decisions about price volatilities. Volatility dynamics between Bitcoin volume and traditional investment assets in an emerging country have not been previously explored. To the best of our knowledge, this is the first study of volume volatility dynamics between Bitcoin and traditional investment assets in Turkey, since most of the studies focus on price dynamics. Although Bitcoin price dynamics are significant for major assets, Bitcoin trading volume of small countries such as Turkey, where there is no chance to influence the price of Bitcoin. Therefore, we think that taking the data set of Bitcoin trading volume in the cryptocurrency markets in Turkey is a more accurate approach which provides more information for investors. In addition, there is an incentive to use a new term Crypto Monetization which refers to preference of cryptocurrencies over local currencies like dollarization.

We aimed to extend the literature to analyze the return and volatility spillover among Bitcoin volume in Turkey, USD/TRY foreign exchange rate, BIST100 Index and Gold Futures Contracts. The major contribution of this study is investing the Bitcoin volatility spillover and return effects over traditional financial assets in Turkey. We also try to add a new term which explains the cryptocurrency phenomenon, namely Crypto Monetization. Finally, it is important for regulators in Turkey to understand how traditional money is shapeshifting.

The rest of the paper is organized as follows. Section 2 outlines the related literature. Section 3 describes the econometric methodology. Section 4 presents data. Section 5 highlights and discusses the results, and finally Section 6 concludes.

2. Literature Review

Crypto Monetization can be clearly seen in cases of uncertainty or financial instability as an alternative investment asset. It was stated that Bitcoin has gained more popularity in the uncertainty of traditional economic and banking systems because it is regarded as a safe haven. With the European Debt Crisis in 2010-2013 and the Cyprus Banking Crisis in 2012-2013, interest in Bitcoin increased and accelerated its development as an alternative to traditional investment instruments. The BTC price increased from \$5 in April 2012 to \$1.112 in November 2013 due to the fact that cash and bank deposits turned to Bitcoin from countries affected by these crises, in particular Cyprus, Greece and Spain. It was also reported that interest in Bitcoin increased significantly after Cyprus announced that it would accept a rescue invitation on March 16, 2013.

With the emergence of the Grexit situation, which was called Greece's exit from the European Union, the outflow of money from the Greek banks had accelerated, and thus the Euro accounts were blocked by the banks. Lessons were learned from the cessation of Cyprus of withdrawal of deposits and tax on individuals deposits in 2013, with a 124% increase in deposits made from Greek IP addresses to the gold and Bitcoin barter internet platform, Vaultoro. Thus, the price of Bitcoin increased by 700%. It was stated that Bitcoin can be used as a tool for protection against global geopolitical risks. In addition, cryptocurrencies benefit from short term portfolio diversification.

It was investigated the relationship between Bitcoin and stocks, bonds, exchange rates, commodities, hedge funds and real estate sector with data between July 23, 2010 and December 27, 2013. It was stated that Bitcoin has unique characteristics and volatility with very high average returns. It is expressed that Bitcoin, which has a very low correlation with other assets, has a high return on diversified portfolios. It was also compared Bitcoin with exchange rates, which suggested that Bitcoin can be used for diversification against the Australian Dollar, Canadian Dollar and Japanese Yen. Also, Bitcoin can be used as a hedge against Swiss francs, euros and pounds during periods of increased market risk.

It was analyzed whether Bitcoin can be considered as a financial instrument. According to the results of the research by using asymmetric GARCH method, it has been found out that similar to gold and the US dollar, Bitcoin has the ability to hedge. Therefore, it is expressed that it can be classified between gold and US dollar in financial markets and portfolio management. It was also reported that gold and Bitcoin can be used as financial hedging instruments against the

volatility in oil prices. Likewise, Wu et al. (2019) emphasized that Bitcoin may be an alternative protection tool similar to gold against uncertainty.

Bouoiyour and Selmi (2017) stated that Bitcoin offers an attractive option in terms of money substitution due to the demonetization policy and capital constraints implemented by the governments of India and Venezuela. Similarly, it is stated that Chinese investors are turning to Bitcoin due to the depreciation of Yuan against the US Dollar.

According to Stensås et al. (2019) investigated that while developing countries such as Brazil, Russia, India and South Korea are more interested in Bitcoin for hedge purposes, it is used for diversification in developed countries. Also, Wang et al. (2019) suggest that Bitcoin can be used for hedge purposes in developed country markets.

Our study elaborates on previous efforts in cryptocurrencies' literature which examine the interdependencies between Bitcoin and financial assets and explore Bitcoin returns and volatility. Due to lack of studies about Bitcoin and financial assets in Turkey, this study adds another perspective to the literature.

3. Econometric Methodology

We followed up Engle and Kroner (1995) for BEKK-MGARCH methodology of conditional variance-covariance equations. The BEKK model allows us to find out volatility spillover effects. which explains the conditional covariance matrix of BEKK model, is shown as:

$$H_t = W'W + A'\varepsilon'_{t-1}\varepsilon'_{t-1}A + B'H_{t-1}B \quad (1)$$

where A, B and W are matrices of parameters. In addition, the diagonal elements of $H_t, h_{ii,t}$, demonstrate the conditional variance terms, while the off-diagonal elements of $H_t, h_{ij,t}$, where $i \neq j$ and is a representation of conditional covariances. The diagonal elements of matrices A and B show the asset's past shocks and past volatility. Off-diagonal elements of matrices indicate shock transmission effects and volatility spillover effects.

The BEKK model can be expressed as:

$$\begin{pmatrix} h_{11,t} & h_{12,t} \\ h_{21,t} & h_{22,t} \end{pmatrix} = W'W + \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \begin{pmatrix} \varepsilon_{1,t-1}^2 & \varepsilon_{1,t-1}\varepsilon_{2,t-1} \\ \varepsilon_{1,t-1}\varepsilon_{2,t-1} & \varepsilon_{2,t-1}^2 \end{pmatrix} \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix} \\ + \begin{pmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{pmatrix} \begin{pmatrix} h_{11,t-1} & h_{12,t-1} \\ h_{21,t-1} & h_{22,t-1} \end{pmatrix} \begin{pmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{pmatrix} \quad (2)$$

while the equation by equation model is given as follows:

$$h_{11,t} = w_{11}^2 + a_{11}^2 \varepsilon_{1,t-1}^2 + 2a_{11}a_{21} \varepsilon_{1,t-1} \varepsilon_{2,t-1} + a_{21}^2 \varepsilon_{2,t-1}^2 + b_{11}^2 h_{1,t-1} + 2b_{11}b_{21} h_{1,2,t-1} + b_{21}^2 h_{2,t-1} \quad (3)$$

$$h_{22,t} = w_{12}^2 + w_{22}^2 + a_{12}^2 \varepsilon_{1,t-1}^2 + 2a_{12}a_{22} \varepsilon_{1,t-1} \varepsilon_{2,t-1} + a_{22}^2 \varepsilon_{2,t-1}^2 + b_{12}^2 h_{11,t-1} + 2b_{12}b_{22} h_{1,2,t-1} + b_{22}^2 h_{22,t-1} \quad (4)$$

$$h_{12,t} = h_{22,t} = w_{12}w_{11} + a_{11}a_{12} \varepsilon_{1,t-1}^2 + (a_{12}a_{21} + a_{11}a_{22}) \varepsilon_{1,t-1} \varepsilon_{2,t-1} + a_{21}a_{22} \varepsilon_{2,t-1}^2 + b_{11}b_{12} h_{11,t-1} + (b_{12}b_{21} + b_{11}b_{22}) h_{1,2,t-1} + b_{21}b_{22} h_{22,t-1} \quad (5)$$

The conditional correlation between two assets can be also analyzed by the following equation:

$$r_{12,t} = \frac{h_{12,t}}{\sqrt{h_{11,t}} \sqrt{h_{22,t}}} \quad (6)$$

where $h_{11,t}$ and $h_{22,t}$ show the two assets' conditional variances, while $h_{12,t}$ denotes the corresponding conditional covariance.

4. Data

In the local trading markets where foreign exchange transactions are made, no transactions can be made on weekends and holidays, whereas Bitcoin transactions can be made 7/24. In this study weekend and holidays were not included in the data set similar to the Manahov et al. (2014) and Smales (2018).

Even if Bitcoin was invented in 2008, the emergence of large-scale crypto currency exchanges was found in mid-2010. The cryptocurrency market in Turkey has begun to emerge in the third quarter of 2017. The highest volume of the first three crypto exchanges in Turkey are Btcturk, Paribu and Bithesap. Bitcoin volume data belonging to these exchanges were included in the study.

USD/TRY which shows the US Dollar/Turkish Lira parity is one of the most traded financial asset by local investors in Turkey. Also, BIST100 Index is another traditional investment asset in Turkey. Therefore, Gold Futures Contracts which trades in Borsa Istanbul were chosen for a hedge instrument against uncertainty. All variables have daily observations sourced from Investing.com spanning from August 14, 2017 to August 29, 2019. The return series – 100 x

$[\ln(p_t) - \ln(p_{t-1})]$ where p_t is the price at day t – are used in the empirical analysis.

5. Empirical Findings

The BTC/USD parity which shows the value of Bitcoin against the US Dollar and the USD/TRY parity which shows the value of the Turkish Lira against the US Dollar are shown in Figure 3. BTC increased sharply to \$20,000 in December 2017, while the sharp depreciation of the Turkish Lira occurred in August 2018.



Figure 3: The levels of BTC/USD and USD/TRY

The BTC volume graph due to the Bitcoin transaction in Turkish Lira versus USD/TRY parity is shown in Figure 4. Due to the sharp rise in BTC volume in December 2017, BTC transactions in Turkish Lira increased significantly and reached to 7,000 BTC (approximately ₺560 million at the relevant date).

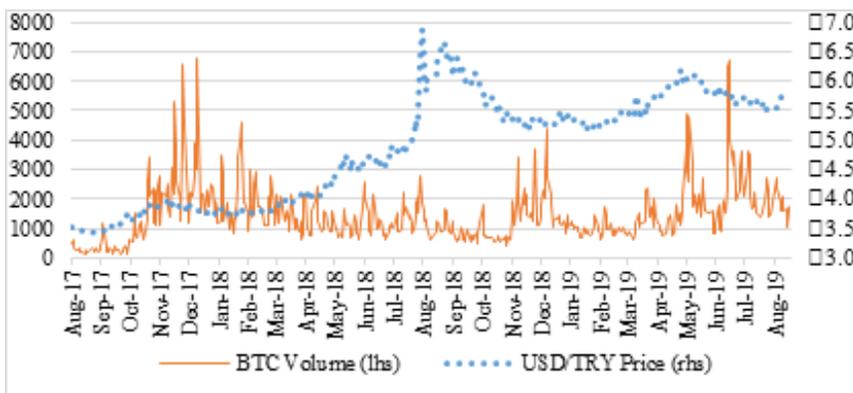


Figure 4: The levels of BTC Volume and USD/TRY

There has been an exchange rate shock established in August 2018 in Turkey. According to Investing data, USD/TRY parity which was 4,5957 on July 1, 2018 increased 57,52% on August 13, 2018 and reached its peak of 7,2393 and then decreased to 6,5835 on September 2, 2018. With this foreign exchange rate shock, BTC volume increased. Similarly, the volume of BTC transactions in Turkish Lira increased at the end of 2018, and BTC transactions gained momentum as of May 2019.

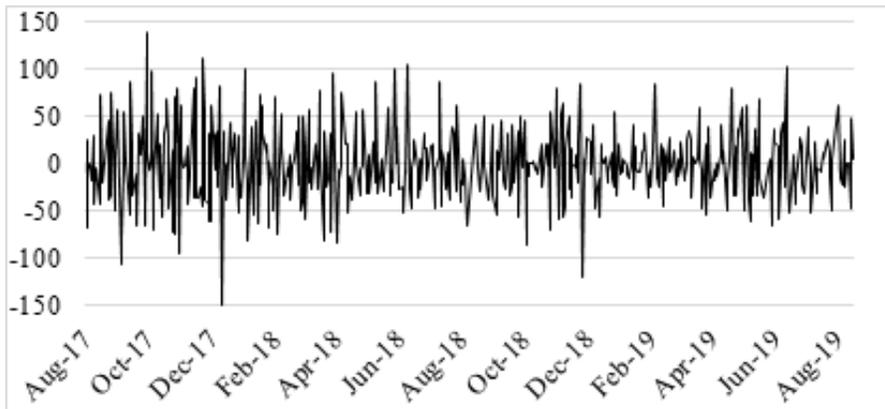


Figure 5: Daily BTC Volume Returns

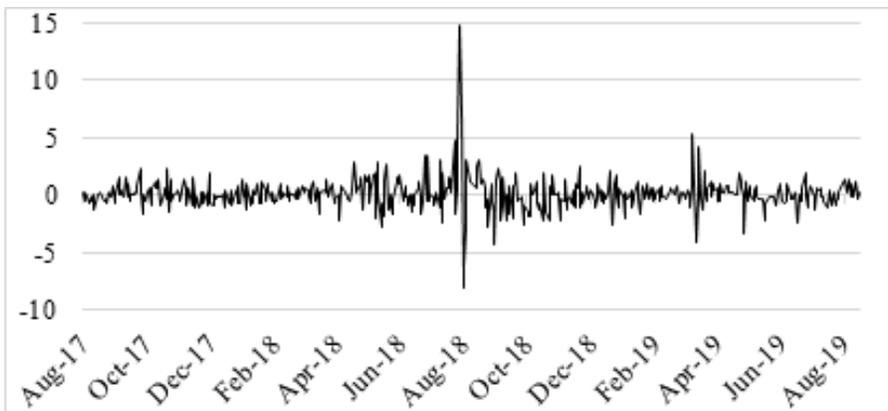


Figure 6: Daily USD/TRY Price Returns

The graphs of the daily return series obtained by taking the difference of logarithms are given in Figure 5 for BTC Volume series and Figure 6 for USD/TRY parity. Figure 7 and 8 show BIST100 Index and Gold Futures return volatility, respectively.

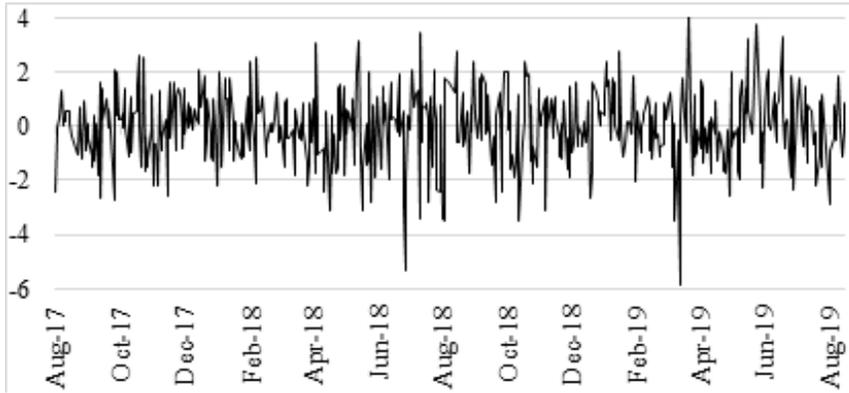


Figure 7: Daily BIST100 Index Returns

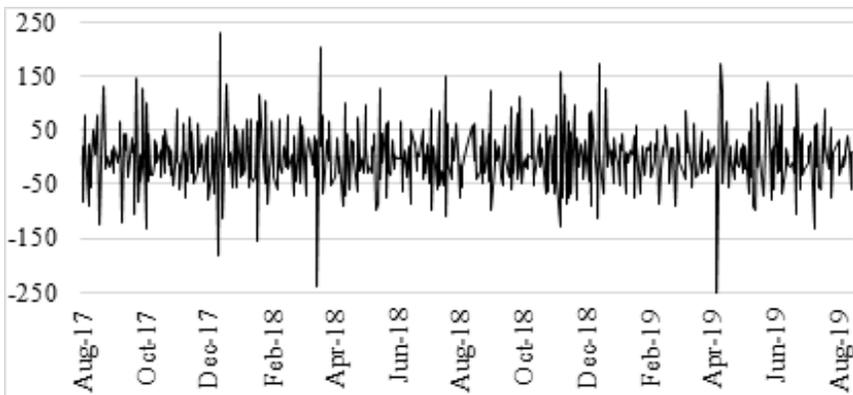


Figure 8: Daily Gold Futures Returns

Descriptive statistics of the daily returns of BTC volume, USD/TRY parity, BIST100 Index and Gold Futures have been given in Table 1 in Appendix.

Table 1 represents descriptive statistics for the price returns series of four assets considered in this study. The average price returns are positive for all the assets ranging from 0,09% (USD/TRY) to 0,25% (Gold Futures). Furthermore, Gold Futures is the most volatile asset, as measure by a standard deviation of 57,46%, while BIST100 is the least volatile (1,34%). It can also be noticed that USD/TRY returns are leptokurtic. Moreover, the price return of BIST100 is negatively skewed, indicating that it has a longer left tail. The departure from normality for all the four price return series is also confirmed by the Jarque-Bera (JB) test results, which reject the null hypothesis of normally distributed returns for all the four return series. In addition, the ARCH(5) and ARCH(10) test results show evidence of ARCH effects in the price returns of USD/TRY,

BIST100 and Gold Futures. We can therefore proceed by modelling the assets' volatility. The results from unit root tests are presented in Table 2.

Stationary test statistics indicate whether the series have a unit root. In this study, stationarity analysis of related data sets was analyzed with Augmented Dickey and Fuller –ADF– (1979), Philips and Perron –PP– (1988) and Zivot and Andrews –ZA– (2002) unit root tests. The results of ADF, PP and Zivot-Andrews unit root test results are presented in Table 2.

As can be seen in Table 2 ADF, PP and ZA unit root test results indicate that all the series are stationary. Test results state that the null hypothesis, showing that the series is not stationary, is rejected for return series are stationary at the level.

In addition, we analyzed correlation return series and found that Pearson correlation coefficients for Bitcoin-USD/TRY and Bitcoin-Gold Futures have positive, but Bitcoin-BIST100 Index coefficient has negative value.

Moreover, there is autocorrelation in both BTC Volume and USD/TRY series returns, 5 and 10 delays in return squares in Table 3. In this respect, BTC and USD/TRY series can be said to be related to the past value as in all financial series.

ARCH-LM (5-10) and ARCH-LM2 (5-10) tests, which are based on Engle (1982) study, examine the presence of ARCH effects. According to the results given in Table 3, it is seen that the BTC and USD/TRY series have an ARCH effect on both the 5 and 10 delays of the return squares. Therefore, it is appropriate to use ARCH-GARCH models in the analysis.

The dynamic conditional correlation model was calculated as follows according to the BEKK-GARCH parameter estimates stated in the Table 4.

As can be seen in Table 4, only the 4th and 5th lags have a statistically significant effect on the USD/TRY exchange rate. According to this result, 1% increase in the 4th lag of the BTC volume decreases the exchange rate by 0,004%, which is almost close to zero. A similar result is valid for the 5th lag. On the other hand, if we look at the effect of exchange rate on BTC volume, 1% increase in exchange rate in the 1st lag increases BTC volume by 2,01%. It can be stated investors buy and sell BTC due to both hedging and speculative movements with the increase in exchange rate. Thus, investors can profit from both BTC and exchange rate increases.

$$h_{BTC,t+1} = c_{22}^* + (1,453\varepsilon_{1,t}^2 + 0,633\varepsilon_{2,t}\varepsilon_{1,t}) + (0,068\varepsilon_{2,t}^2) + (1,281h_{1,t} + 0,473h_{2,t}) + (0,043h_{2,t}) \quad (7)$$

$$\begin{aligned}
h_{USD,t+1} = & c_{11}^* + (0,351\varepsilon_{1,t}^2 - 0,001\varepsilon_{2,t}\varepsilon_{1,t}) + (0,000\varepsilon_{2,t}^2) \\
& + (0,536h_{1,t} - 0,009h_{21,t}) + (0,000h_{2,t})
\end{aligned} \quad (8)$$

When the variance equation between BTC and exchange rate is analyzed, it is seen that there is a transition between short term shocks and long term variances. Due to the structure of the BEKK model, the marginal effects of shocks and volatilities obtained as a result of the delta model are given below Table 4. According to the equations, exchange rate volatility is positively and statistically affected by its short-term shocks (0,351) and long-term volatility (0,536). On the other hand, the conditional variance of the exchange rate is negatively affected by the short-term shocks of the exchange rate and the short-term shocks of the BTC (-0,001) and this seems very low. The similar situation is also valid for the covariance effect between the BTC and the exchange rate. The conditional variance of BTC is positively and statistically significant which is influenced by its short-term shocks and long-term delayed volatility. The short-term shocks of the exchange rate have a positive (1,453) and statistically significant effect on the conditional variance of BTC. This coefficient is higher than BTC's own short-term shocks (0,068) with long-term effect of volatility (0,043) which shows the volume of BTC in Turkey depending on the exchange rate volatility. This situation can be expressed as an indicator that investors are protecting themselves from exchange rate risk.

Figure 9 shows the dynamic conditional correlation between BTC Volume and USD/TRY obtained from the BEKK-GARCH model. The relationship between the data sets, which generally had a positive correlation during the period examined, turned into negative in some periods.

Due to the increasing numbers of crypto currency markets in the last quarter of 2017 in Turkey, there is an increase in Bitcoin transaction volumes made with Turkish Lira. As can be seen in Figure 9, USD/TRY parity remained stable between 3,40 to 3,56 price range between 2017 August and September; thus a positive correlation has been observed. As of October 2017, USD/TRY exchange rate movements increased and its price increased to 3,82. A clear increase was seen in BTC transaction volumes in the related period, therefore, there is an upward movement in the conditional correlation graph.

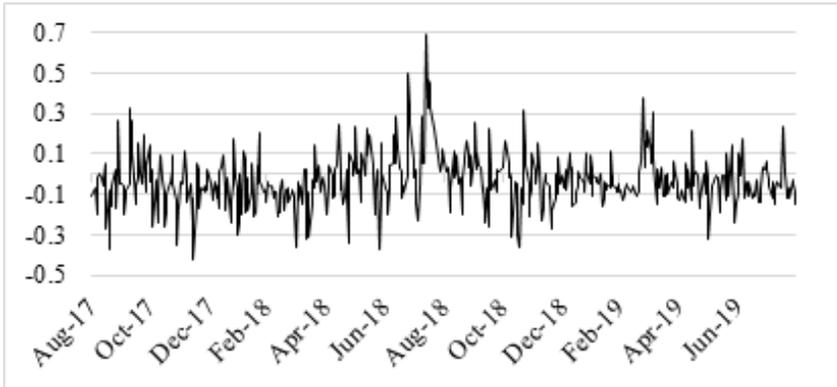


Figure 9: Conditional Correlation between Bitcoin and USD/TRY

The USD/TRY parity, which started in August 2018 with 4,99, reached 5,24 in the first week, 5,99 in the second week, 6,07 in the third week and 6,65 at the end of the month. In August 2018 alone, the Turkish Lira depreciated against the USD by 33%. Due to the depreciation, BTC volume movements also reached their highest levels. In the first week of August, there were 6.970 BTC traded, 11.250 BTC in the second week, 4.910 in the third week and 6.700 BTC in the last week of the month. The positive correlation in Figure 8, which started in May 2018, continued until August and remained positive but decreased in September and October.

The correlation, which increased steadily until March 2019, started to decline as of April. This can be attributed to the volatility in April with the stable movements in the exchange rate in March. The USD/TRY parity, which moved between 5,37-5,59 in March 2019, reached 5,97 in April. In May, the exchange rate began to decline after testing the level of 6,10. However, it is seen that investors evaluating the historical data still continue to buy BTC. The volume movement of 59.280 BTC in May 2019 can be shown as a proof of investors' purchase.

In addition, the high peak in the conditional correlations occurring in August 2018 appears to be associated with the same period of time when foreign exchange rate shock occurred. It can be stated here that investors are switching to BTC to avoid the volatility in the dollar and to gain from BTC price increases, that is, BTC is an alternative investment tool to protect against exchange rate risk.

As can be seen in Table 5, none of the lags in Bitcoin volume of mean equation has statistically significant effect on BIST100 Index. On the other hand, when the effect of BIST100 Index on BTC volume is considered, the 1% decrease in BIST100 Index's 3rd lag increases the BTC volume by 2.37%. The reason for this is that investors can wait T + 2 days to exit the stock market.

$$h_{BTC,t+1} = c_{11}^* + (0,022\varepsilon_{1,t}^2 + 0,349\varepsilon_{2,t}\varepsilon_{1,t}) + (1,328\varepsilon_{2,t}^2) + (0,968h_{1,t} - 2,508h_{21,t}) + (1,624h_{2,t}) \quad (9)$$

$$h_{BIST,t+1} = c_{22}^* + (0,000\varepsilon_{1,t}^2 - 0,001\varepsilon_{2,t}\varepsilon_{1,t}) + (0,081\varepsilon_{2,t}^2) + (0,000h_{1,t} + 0,001h_{21,t}) + (0,746h_{2,t}) \quad (10)$$

When the variance equality between BTC and BIST100 Index is analyzed, it is seen that there is a transition between short term shocks and long-term variances. Due to the nature of the BEKK model, the marginal effects of shocks and volatilities obtained as a result of the delta model are given below Table 5. According to the equations, the volatility of BTC volume is positively and statistically affected by its short-term shocks (0,022) and one-term delayed long-term volatility (0,968). On the other hand, conditional variance of BTC volume is positively (0,349) affected by the short-term shocks of the BTC volume and the short-term shocks of the BIST100 Index. However, it is understood from the table that the conditional covariance between BTC volume and BIST100 Index has a negative effect (-2,508) on BTC conditional variance. The conditional variance of BTC is influenced by its short-term shocks and long-term lagged volatility in a positively and statistically significant way. The short-term shocks of the BIST100 Index positively affect the conditional variance of BTC (1,328). In the figure below, the conditional correlation graph between the two variables is given in order to better understand the volatility transition between BTC Volume and BIST100 Index.

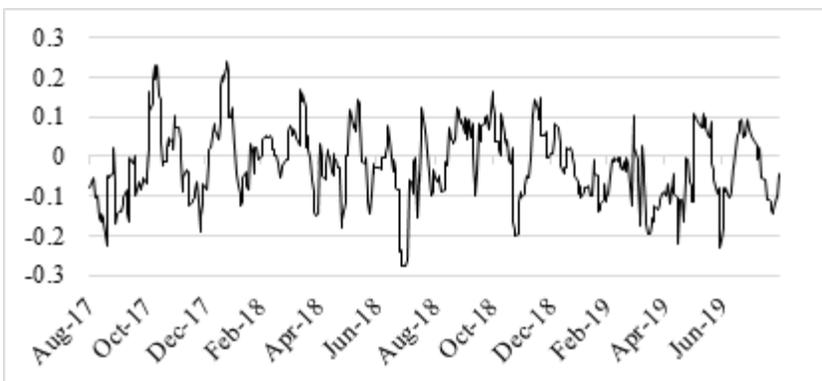


Figure 10: Conditional Correlation between Bitcoin and BIST100

Figure 10 shows the conditional correlation between BTC Volume and BIST100 Index obtained from BEKK-GARCH model. The relationship between the data sets,

which generally has a negative correlation in the examined period, does not have a fixed structure throughout the periods. According to the results, the increase in volatility in BIST100 Index decreases the volatility in BTC Volume. It can be stated here that investors are moving towards BTC to protect themselves from the increase in volatility in the BIST100 Index. The 1% decrease in the 3rd lag of BIST100 Index increases the BTC volume by 2,37%. The reason for that is investors can wait $T + 2$ days to exit the stock market. We can say that there is a relationship between BTC and BIST100 Index as Cikrikci and Ozyesil (2018) stated.

As can be seen in Table 6, there is no significant effect of BTC on any delay in the average equality established for Gold. Gold has a significant and negative effect on the 4th lag in itself. BTC has a negative and significant effect on all delays. No lags in Gold has a statistically significant effect on BTC.

$$h_{BTC,t+1} = c_{11}^* + (0,0001\varepsilon_{1,t}^2 + 0,002\varepsilon_{2,t}\varepsilon_{1,t}) + (0,013\varepsilon_{2,t}^2) + (0,003h_{1,t} + 0,115h_{21,t}) + (0,967h_{2,t}) \quad (11)$$

$$h_{Gold,t+1} = c_{22}^* + (0,036\varepsilon_{1,t}^2 + 0,150\varepsilon_{2,t}\varepsilon_{1,t}) + (0,155\varepsilon_{2,t}^2) + (0,327h_{1,t} - 0,038h_{21,t}) + (0,001h_{2,t}) \quad (12)$$

The effect of gold's short-term shocks (0,191) on its own conditional variance is significant and positive. The effect of gold's long-term volatility (0,573) on its conditional variance is positive and significant. BTC's short-term shocks (0,394) increase the conditional variance of Gold. An increase in BTC's long-term volatility (-0,034) decreases the conditional variance of Gold. An increase in gold short-term shocks (0,011) does not have a statistically significant effect on BTC conditional variance. On the other hand, Gold's long-term volatility increases BTC's conditional variance (0,059).

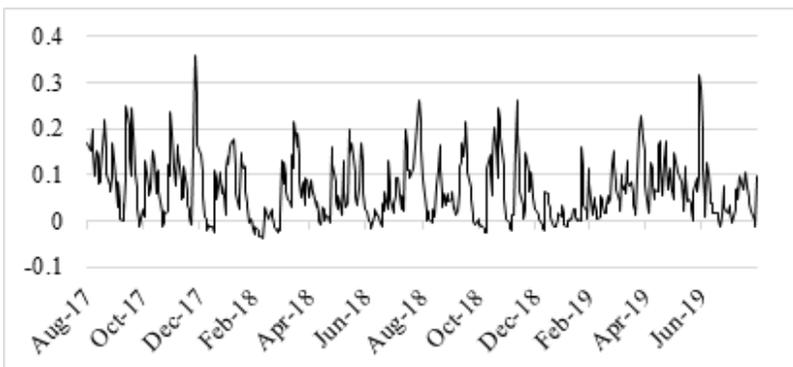


Figure 11: Conditional Correlation between Bitcoin and Gold

Figure 11 shows the conditional correlation between the BTC Volume and the gold futures obtained from the BEKK-GARCH model. The relationship between the data sets, which generally had a positive correlation during the studied period, did not have a fixed structure throughout the periods. According to the results, the escalation in volatility in Gold Futures increases the volatility in BTC Volume. It can be stated that investors have made a transition to BTC, which seems another secure asset during uncertainty. When the rise in December 2017 is analyzed, it is seen that both the BTC price and the purchase of gold futures contracts increased. Similarly, total gold futures contracts and BTC volume increased due to FED's interest rate cut on June 20, 2019.

The plots confirm dynamic conditional correlations between three pairs of assets, with the correlations taking both positive and negative values, although positive correlations are mostly observed. In addition, the high peaks in the conditional correlations occurred in December 2017 and June 2019 appear to be associated with the same period of time when Bitcoin price is the highest of all time and FED signals an interest rate cut, respectively. It can be stated here that investors are switching to BTC and Gold for hedging uncertainty. This result is consistent with the findings in the studies of Selmi et al. (2018), Wu et al. (2019) and Fang et al. (2019).

6. Conclusion

Through the application of bivariate BEKK models for the pairs of Bitcoin-USD/TRY, Bitcoin-BIST100, and Bitcoin-Gold Futures, this paper analyzed not only conditional volatility dynamics, but also linkages and conditional correlations between pairs of assets. It was found that Bitcoin's own past shocks and volatility significantly affect its own current conditional variance.

But most importantly, we found evidence of bi-directional shock transmission effects between Bitcoin and USD/TRY. Further, we identified volatility spillover effects between Bitcoin and BIST100 Index. Finally, it was shown that Bitcoin and Gold Futures contracts have both volatility spillover and shock transmission effects which means that both assets can be used for hedging. These results provide strong evidence supporting the progress of cryptocurrency market integration and further support earlier studies' findings on interdependencies within the cryptocurrency market.

Appendix A

Data sets which are the ratio of total fx deposits (TP.YPMEVD.M01), total deposits and funds rate (TP.BO.SBIL16) and USD/TRY parity (TP.DK.USD.S.YTL) can be found in CBRT EDDS.

Table 1: Descriptive statistics for return series

	BTC	USD/TRY	BIST100	Gold Futures
Mean	0,245	0,098	-0,024	0,257
Median	-2,151	0,043	0,038	-1,316
Maximum	138,629	14,756	4,042	229,757
Minimum	-149,821	-7,996	-5,839	-272,898
Std. Dev.	38,465	1,403	1,339	57,462
Skewness	0,185	2,098	-0,346	0,048
Kurtosis	0,717	27,169	0,928	2,107
JB	13,863***	16061,004***	28,517***	94,541***

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 2. Unit root tests

	Bitcoin	USD/TRY	BIST100	Gold Futures
<i>Panel A: Constant</i>				
ADF	-13.303*** (0.000)	-11.884*** (0.000)	-21.987*** (0.000)	-13.628*** (0.000)
PP	-31.691 *** (0.000)	-18.900*** (0.000)	-22.054*** (0.000)	-51.685*** (0.000)
Zivot-Andrews	-15.052*** (0.000)	-16.582*** (0.000)	-22.097*** (0.000)	-18.832*** (0.000)
<i>Panel B: Constant and Linear Trend</i>				
ADF	-13.304*** (0.000)	-11.894*** (0.000)	-21.965*** (0.000)	-13.624*** (0.000)
PP	-31.696*** (0.000)	-18.911*** (0.000)	-22.054*** (0.000)	-51.720*** (0.000)
Zivot-Andrews	-15.086*** (0.000)	-16.589*** (0.000)	-22.094*** (0.000)	-18.901*** (0.000)

Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively. The values in parentheses shows P-value.

Table 3: Autocorrelation and ARCH Test Results

	BTC	USD/TRY	BIST	Gold Futures
$Q(5)$	38.385 (0.000)	45.028 (0.000)	4.690 (0.454)	113.023 (0.000)
$Q(10)$	39.499 (0.000)	48.699 (0.000)	11.857 (0.294)	116.981 (0.000)
$Q^2(5)$	8.307 (0.140)	137.220 (0.000)	10.568 (0.060)	65.037 (0.000)
$Q^2(10)$	13.404 (0.201)	139.138 (0.000)	26.387 (0.003)	68.407 (0.000)
ARCH LM (5)	1.451 (0.204)	19.386 (0.000)	2.138 (0.059)	17.279 (0.000)
ARCH LM (10)	0.973 (0.466)	9.602 (0.000)	2.227 (0.015)	8.727 (0.000)
ARCH LM2 (5)	-	1.062 (0.380)	0.713 (0.613)	-
ARCH LM2 (10)	-	0.521 (0.875)	1.160 (0.315)	-

Note: The values in parentheses show P-value.

Table 4: BEKK model estimates for BTC Volume and USD/TRY

	Cons.	T-stats	Prob	Cons.	T-stats	Prob
<i>Panel A: Mean Equation</i>	Model (USD/TRY) $i=1$			Model (BTC) $i=2$		
BTC_{t-1}	0.000	0.005	0.996	-0.308	-7.623	0.000
BTC_{t-2}	-0.001	-0.638	0.523	-0.339	-8.166	0.000
BTC_{t-3}	-0.001	-0.968	0.333	-0.241	-6.660	0.000
BTC_{t-4}	-0.004	-3.839	0.000	-0.192	-5.569	0.000
BTC_{t-5}	-0.002	-1.807	0.071	-0.111	-3.049	0.002
USD / TRY_{t-1}	0.042	0.046	0.358	2.018	2.009	0.045
USD / TRY_{t-2}	-0.003	0.044	0.945	-0.791	-0.683	0.494
USD / TRY_{t-3}	-0.067	0.042	0.113	1.599	1.557	0.120
USD / TRY_{t-4}	0.069	0.04	0.081	0.377	0.345	0.730
USD / TRY_{t-5}	-0.031	0.043	0.476	-1.171	-1.009	0.313

Constant	0.071	1.755	0.079	0.274	0.178	0.858
<i>Panel B: Variance Equation</i>						
c_{1i}	0.393	27.726	0.000			
c_{2i}	-1.302	-0.738	0.461	33.363	40.439	0.000
a_{1i}	0.593	20.939	0.000	1.205	3.912	0.000
a_{2i}	-0.001	-0.754	0.451	0.263	3.773	0.000
b_{1i}	0.732	154.56	0.000	1.132	4.343	0.000
b_{2i}	-0.006	-24.652	0.000	0.209	6.656	0.000
<i>Panel C: Test Statistics</i>						
Ljung-Box Q(5)	4.147 (0.528)		1.760 (0.881)			
Ljung-Box Q(10)	7.037 (0.721)		5.582 (0.849)			
Ljung-Box Q ² (5)	11.921 (0.035)		6.240 (0.283)			
Ljung-Box Q ² (10)	14.514 (0.150)		13.417 (0.201)			
ARCH-LM(5)	2.333 (0.041)		1.140 (0.337)			
ARCH-LM(10)	1.553 (0.117)		1.150 (0.323)			
ARCH-LM ² (5)	1.420 (0.215)		3.424 (0.004)			
ARCH-LM ² (10)	0.799 (0.629)		1.910 (0.041)			

Note: The values in parentheses show P-value. While the ARCH-LM effects show Lagrange tests, Ljung-Box Q refers to the Q-statistic for the sequential dependence test on residuals.

Table 5: BEKK model estimates for BTC Volume and BIST100 Index

	Cons.	T-stats	Prob.	Cons.	T-stats	Prob.
<i>Panel A: Mean Equation</i>	Model (BIST) $i=1$			Model (BTC) $i=2$		
BTC_{t-1}	0.003	1.858	0.063	-0.289	-6.626	0.000
BTC_{t-2}	0.001	0.422	0.673	-0.330	-7.823	0.000
BTC_{t-3}	0.000	0.209	0.835	-0.217	-5.241	0.000
BTC_{t-4}	0.002	1.341	0.180	-0.186	-4.963	0.000

BTC_{t-5}	0.001	0.502	0.616	-0.119	-3.053	0.002
$BIST_{t-1}$	0.017	0.359	0.719	-1.730	-1.461	0.144
$BIST_{t-2}$	0.041	0.875	0.382	1.130	0.939	0.348
$BIST_{t-3}$	0.058	1.470	0.141	-2.372	-2.115	0.034
$BIST_{t-4}$	0.035	0.775	0.438	-0.169	-0.151	0.880
$BIST_{t-5}$	-0.059	-1.274	0.203	-0.825	-0.703	0.482
Constant	-0.023	-0.385	0.700	0.435	0.288	0.773
<i>Panel B: Variance Equation</i>						
c_{1i}	0.547	3.421	0.000			
c_{2i}	1.486	0.748	0.454	0.0003	0.00001	0.999
a_{1i}	0.285	4.640	0.000	1.152	0.972	0.331
a_{2i}	-0.002	-0.986	0.324	0.152	3.005	0.003
b_{1i}	0.864	13.942	0.000	-1.275	-1.917	0.055
b_{2i}	0.001	0.785	0.433	0.984	101.668	0.000
<i>Panel C: Test Statistics</i>						
Ljung-Box Q(5)	0.113 (0.999)			1.830 (0.872)		
Ljung-Box Q(10)	7.7641 (0.651)			5.425 (0.861)		
Ljung-Box Q ² (5)	12.950 (0.023)			1.830 (0.872)		
Ljung-Box Q ² (10)	24.829 (0.005)			8.314 (0.598)		
ARCH-LM(5)	2.396 (0.036)			0.860 (0.507)		
ARCH-LM(10)	2.051 (0.026)			0.824 (0.605)		
ARCH-LM ² (5)	3.303 (0.006)			1.371 (0.233)		
ARCH-LM ² (10)	1.987 (0.032)			0.934 (0.501)		

Note: The values in parentheses show P-value. While the ARCH-LM effects show Lagrange tests, Ljung-Box Q refers to the Q-statistic for the sequential dependence test on residuals.

Table 6: BEKK model estimates for BTC Volume and Gold

	Cons.	T-stats	Prob	Cons	T-stats	Prob
<i>Panel A: Mean Equation</i>	Model (Gold) i=1			Model (BTC) i=2		
BTC _{t-1}	-0.032	-0.568	0.570	-0.290	-6.833	0.000
BTC _{t-2}	-0.018	-0.334	0.738	-0.318	-7.607	0.000
BTC _{t-3}	-0.057	-1.211	0.226	-0.238	-5.247	0.000
BTC _{t-4}	0.017	0.330	0.742	-0.200	-5.004	0.000
BTC _{t-5}	-0.025	-0.471	0.638	-0.115	-2.735	0.006
Gold _{t-1}	-0.692	-20.110	0.000	0.013	0.553	0.580
Gold _{t-2}	-0.497	-17.689	0.000	-0.017	-0.798	0.425
Gold _{t-3}	-0.373	-11.497	0.000	0.006	0.318	0.751
Gold _{t-4}	-0.202	-5.519	0.000	0.002	0.090	0.928
Gold _{t-5}	-0.049	-1.459	0.145	-0.005	-0.209	0.835
Constant	0.390	0.189	0.850	0.723	0.484	0.629
<i>Panel B: Variance Equation</i>						
c _{1i}	33.890	15.953	0.000			
c _{2i}	-1.223	-8.619	0.000	0.000	0.000	1.000
a _{1i}	0.191	6.086	0.000	0.011	0.484	0.628
a _{2i}	0.394	5.364	0.000	0.115	57.639	0.000
b _{1i}	0.573	16.107	0.000	0.059	19.171	0.000
b _{2i}	-0.034	-3.736	0.000	0.983	474.655	0.000
<i>Panel C: Test Statistics</i>						
Ljung-Box Q(5)	6.329 (0.275)			0.883 (0.971)		
Ljung-Box Q(10)	11.474 (0.321)			4.919 (0.896)		
Ljung-Box Q ² (5)	4.184 (0.523)			3.130 (0.679)		
Ljung-Box Q ² (10)	6.353 (0.784)			9.299 (0.503)		
ARCH-LM(5)	0.810 (0.542)			0.673 (0.644)		

ARCH-LM(10)	0.635 (0.784)	0.884 (0.548)
ARCH-LM ² (5)	0.036 (0.999)	0.686 (0.634)
ARCH-LM ² (10)	0.026 (1.000)	0.633 (0.786)

Note: The values in parentheses show P-value. While the ARCH-LM effects show Lagrange tests, Ljung-Box Q refers to the Q-statistic for the sequential dependence test on residuals.

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CHAPTER XIII

STATISTICAL ANALYSIS OF ORGANIZATIONAL SOCIALIZATION IN YOUNG EMPLOYEES ACCORDING TO DEMOGRAPHIC CHARACTERISTICS

Muhammed Çubuk¹ & Kamil Abdullah Eşidir²

*¹(Dr.), Fırat Development Agency Elazığ
Investment Support Office,
e-mail: muhammedcubuk23@gmail.com
ORCID: 0000-0002-3655-8036*

*²(Dr.), Fırat Development Agency
Elazığ Investment Support Office,
e-mail: abduallahesidir@yahoo.com
ORCID: 0000-0002-8106-1758*

1. Introduction

One of the main consequences of modernization is the increase of human needs. The scarcity of resources necessitates the rational elimination of these increasing needs. This rationality is achieved through organizations (Can, 2002,3). Both the organization and the employees have their own unique attitudes, values and behaviors. The achievement of organizational goals (organizational effectiveness) can be achieved by reconciling organizational and individual attitudes, values and behaviors. This process of reconciliation is achieved through a series of activities known as organizational socialization (Can, 2002,342). Organizational socialization is about how the core values that

constitute an organization's identity, such as purpose, mission, vision, talent, culture, etc. are understood and adopted by the employees in the organization (Ergün and Taşgit, 2011;97). In order to achieve the harmony between the organization and the individual, it is possible to achieve a balance between the individual value judgments of the individual and the organizational culture that dominates the organization, only through socialization activities. Socialization provides this balance and combines individual and organizational interests by making the employee an effective member of the organization (Sökmen, 2007, 173). Individuals who are a part of social life go through a process of information and formation starting from the moment they are born in order to obtain the information they need about the societies in which they live and to adapt to those societies in question. The content and nature of this process is determined by the society in which the individual resides (Yıldız, 2012, 334).

Socialization in terms of sociology (sociology) is the process of transferring the values system and ideals of the society to the individual and teaching the "roles" that he or she will play in social life. (Memduhoğlu, 2008, 138). Socialization is the phenomenon of "joining an individual to a social group" (Silah, 2005, 328). Socialization is a type of learning process that enables the individual to internalize the cultural models of the society in which they live (Çıvgın and Yardımcı, 2007, 17).

The socialization process has an important role in the employee's ability to adapt to the organization and act according to the values and norms existing in the organization (Kartal, 2005). In the socialization process, while the individual gains something from the society, she or he also adds something to the society, and this process is a lifelong, two-way interaction process (Cantekin, 2013). Socialization is a process that allows a person to integrate with the social culture and facilitates their adaptation to the society they live in (Dönmezer, 1999). From the point of view of society, this process makes it easier for new members to adopt the established culture and lifestyle (Özkalp, 2005; Erdoğan, 2012). Employees are one of the most basic elements that create organizations (Yıldız, 2012). Employees join the organization with their attitudes and expectations gained through their different experiences and have to learn the functioning of the organization and how to act within the organization. (Çalık, 2006). This learning process takes place through organizational socialization. Organizational socialization is the process of learning the attitudes and behaviors necessary for the employee to assume the roles in the organization (Güçlü, 2004).

Organizational socialization refers to a process in which both old attitudes and values are abandoned and new ones are acquired and organizational goals, tools, responsibilities, values and norms necessary to achieve these goals are learned (Çapar, 2007). Organizational socialization is a process that begins before the individual enters the organization and then continues to concentrate, when the individual changes job, gets a promotion or joins another Organization (Balci et al., 2012). Organizational socialization is a kind of process of learning and adapting to organizational culture (Çelik, 1997). The main purpose of organizational socialization is to make the employee an effective member of the Organization (Can et al., 2001). Socialization is a process in which the newcomer changes their perceptions and perspectives “to be able to see as others see” (Balci, 2000; Erdoğan, 2012). Socialization is a process that continues as long as the individual works in the organization and starts again when the individual changes place or duty within the organization. (Yüksel, 1997; Erdoğan, 2012).

The aim of this study is to statistically analyze the organizational socialization scales of the young employees between the ages of 24-35 working in public institutions and organizations according to their demographic characteristics. The study is important in terms of raising awareness of the analysis of the organizational socialization levels of public employees in the activities of researchers and organizations whose target audience is public employees, and working on issues such as education, work motivation, future planning and improvement.

2. Scope, Methodology and Data

The population of the study consists of young employees working in public institutions in Antakya district of Hatay province. According to official data, the number of public employees of Hatay is 44,197. Due to time and cost constraints, a survey was applied to 155 employees representing the main population. Since there was no questionnaire excluded from evaluation, the results of a total of 155 questionnaires were included in the evaluation process.

Survey was used as data collection tool in the study. The first part of the questionnaire, which consists of three parts, includes questions about the demographic variables of the young employees participating in the study (gender, educational status, work experience and working time in the organization). In the second part of the questionnaire, questions related to organizational socialization

were used. This scale measures the degree of socialization of employees with the organization. In order to determine the organizational socialization levels of the employees, the “Organizational Socialization Inventory” prepared by Taormina (1994, 2004) and adapted into Turkish by Zonana (2011) was used. The questionnaire consists of 20 questions in total. The 5-point Likert type rating scale (1-Strongly Disagree, 2-Disagree, 3-Undecided, 4-Agree, 5-Strongly Agree) was used to answer the questions of the participants. The data obtained from the research were analyzed using the SPSS 25.0 package program. Cronbach Alpha values were checked to test the reliability of the organizational socialization scale. One-way analysis of variance (One Way ANOVA) was used to determine the differences of the organizational socialization scale in terms of demographic characteristics of young employees participating in the study.

The reliability analysis results of the scale are presented in Table 1.

Table 1: Reliability Analysis

	Organizational Socialization
Cronbach Alpha	0,92

The reliability test of the scales used in the study was performed by analyzing the Cronbach alpha reliability coefficient. The alpha reliability coefficient of the organizational socialization scale consisting of 20 questions was obtained as 0.92. The results obtained show that the organizational socialization scale is highly reliable.

3. Results

The demographic characteristics of the young employees who participated in the survey study are shown in Table 2 below.

Table 2: Demographic Characteristics of Young Employees Participating in The Study

Gender	n	%	Experience	n	%
Male	106	68,4	Less than 1 year	8	5,2
Female	49	31,6	1-2 years	26	16,8
Total	155	100	3-5 years	38	24,5
			6-12 years	53	34,2
			More than 12 years	30	19,4
			Total	155	100

Education	n	%	Working time in the current workplace	n	%
High School	13	8,4	Less than 1 year	23	14,8
Associate Degree	9	5,8	1-2 years	40	25,8
Bachelor Degree	81	52,3	3-5 years	59	38,1
Master Degree	42	27,1	6-12 years	32	20,6
Doctorate	10	6,5	More than 12 years	1	0,6
Total	155	100	Total	155	100

According to Table 2, 68.4% of the young employees participating in the research are men and 31.6% are women. 8.4% of young employees are graduated from high school. 5.8% of them are associate's degree graduates, 52.3% of them are bachelor degree graduates, 27.1% of them are master degree graduates and 6.5% of them are doctorate degree graduates. When the total working hours in the current workplace and previous workplaces are examined, it is seen that the rate of those who work less than 1 year is 5.2% and the rate of those with more than 12 years is 19.4%. It is observed that the time worked in the current workplace is 3-5 years with a maximum rate of 38.1%.

The frequency and percentage distributions of the organizational socialization scale in young employees are given in Table 3.

Table 3: Organizational Socialization Frequency Distribution Among Young Employees

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total
I received an excellent training for my job in this organization	n	31	44	31	41	8	155
	%	20,0	28,4	20,0	26,5	5,2	100
I know very well how to do things in this organization	n	1	16	34	74	30	155
	%	0,6	10,3	21,9	47,7	19,4	100
Other employees have helped me in a variety of ways	n	8	7	30	92	18	155
	%	5,2	4,5	19,4	59,4	11,6	100
There are many chances and opportunities to make a good career in this organization	n	39	42	35	30	9	155
	%	25,2	27,1	22,6	19,4	5,8	100

The training I received at this organization enabled me to do my job very well	n	25	49	32	40	9	155
	%	16,1	31,6	20,6	25,8	5,8	100
I fully know my duties in this organization	n	4	18	27	75	31	155
	%	2,6	11,6	17,4	48,4	20,0	100
My colleagues often help and share their suggestions with me	n	7	14	32	82	20	155
	%	4,5	9,0	20,6	52,9	12,9	100
I am satisfied with the awards offered at this organization	n	41	50	36	21	7	155
	%	26,5	32,3	23,2	13,5	4,5	100
This organization offers excellent training to improve the business skills of its employees	n	35	50	43	20	7	155
	%	22,6	32,3	27,7	12,9	4,5	100
The goals of this organization are very clearly defined	n	19	30	42	46	18	155
	%	12,3	19,4	27,1	29,7	11,6	100
Most of my colleagues have accepted me as a member of this organization	n	3	6	16	91	39	155
	%	1,9	3,9	10,3	58,7	25,2	100
Opportunities for promotion in this organization are available to almost everyone	n	37	42	29	31	16	155
	%	23,9	27,1	18,7	20,0	10,3	100
Instructions given by my supervisor helped me do my job better	n	17	18	43	55	22	155
	%	11,0	11,6	27,7	35,5	14,2	100
I have a good knowledge of how this organization works	n	3	8	24	82	38	155
	%	1,9	5,2	15,5	52,9	24,5	100
My colleagues have shown great interest in helping me to adjust to this organization	n	7	23	38	73	14	155
	%	4,5	14,8	24,5	47,1	9,0	100
In this organization, I can easily anticipate my expectations regarding promotion	n	35	42	42	23	13	155
	%	22,6	27,1	27,1	14,8	8,4	100
This organization provides very effective training for its employees	n	27	57	34	27	10	155
	%	17,4	36,8	21,9	17,4	6,5	100
The goals of this organization are understood by almost all employees	n	19	34	43	42	17	155
	%	12,3	21,9	27,7	27,1	11,0	100
My relations with other employees in this institution are very good	n	6	8	29	85	27	155
	%	3,9	5,2	18,7	54,8	17,4	100
I think this organization will employ me for many years	n	9	20	41	53	32	155
	%	5,8	12,9	26,5	34,2	20,6	100

When the table is examined, it is seen that the rate of agreeing with the above statements of young employees varies between 17.4% (*this organization provides very effective training for its employees*) and 83.9% (*most of my colleagues have accepted me as a member of this organization*). In terms of all propositions, the rates of the answer I agree are higher than the rates of the answer I strongly agree. In the “*this organization provides very effective training for its employees*”, “*instructions given by my supervisor helped me do my job better*” and “*the goals of this organization are understood by almost all employees*” propositions, the percentage of undecided is at the highest level with 27.7%. Therefore, it can be said that young employees have low hesitations about in-service training, subordinate-superior relationship and future goals of the institution.

Young employees’ views on organizational socialization according to their demographic characteristics are presented below.

3.1 Gender

Descriptive statistics and analysis of variance (ANOVA) results regarding organizational socialization by gender are shown in Table 4.

In order to determine whether there is a difference between the organizational socialization degrees of young male and female employees working in the Hatay, independent two samples t-test were applied. Analysis results are presented in Table 4.

Table 4: The Attitude of Young Employees Towards Organizational Socialization by Gender

	Gender					
	Male (n=106)		Female (n=49)		ANOVA	
	\bar{x}	S	\bar{x}	S	F	Sig.
I received an excellent training for my job in this organization	2,69	1,198	2,67	1,248	,005	,942
I know very well how to do things in this organization	3,72	,934	3,82	,858	,399	,529
Other employees have helped me in a variety of ways	3,61	,942	3,82	,882	1,621	,205
There are many chances and opportunities to make a good career in this organization	2,52	1,228	2,57	1,225	,061	,805

The training I received at this organization enabled me to do my job very well	2,72	1,169	2,78	1,212	,082	,775
I fully know my duties in this organization	3,67	1,021	3,82	,950	,720	,397
My colleagues often help and share their suggestions with me	3,52	1,026	3,80	,841	2,725	,101
I am satisfied with the awards offered at this organization	2,34	1,112	2,45	1,226	,304	,582
This organization offers excellent training to improve the business skills of its employees	2,39	1,100	2,57	1,137	,924	,338
The goals of this organization are very clearly defined	3,01	1,167	3,27	1,271	1,522	0,219
Most of my colleagues have accepted me as a member of this organization	3,99	,811	4,06	,876	,242	,624
Opportunities for promotion in this organization are available to almost everyone	2,58	1,271	2,82	1,409	1,036	0,310
Instructions given by my supervisor helped me do my job better	3,19	1,164	3,55	1,191	3,200	0,076
I have a good knowledge of how this organization works	3,96	,804	3,86	1,041	,473	,493
My colleagues have shown great interest in helping me to adjust to this organization	3,33	1,021	3,59	,934	2,320	0,130
In this organization, I can easily anticipate my expectations regarding promotion	2,54	1,181	2,71	1,323	,694	,406
This organization provides very effective training for its employees	2,52	1,089	2,73	1,287	1,171	0,281
The goals of this organization are understood by almost all employees	2,96	1,103	3,16	1,375	,948	,332
My relations with other employees in this institution are very good	3,80	,920	3,69	,962	,449	,504
I think this organization will employ me for many years	3,50	1,062	3,53	1,276	,024	,876

When the table is examined, the lowest averages are seen in the “*I am satisfied with the awards offered at this organization*” proposition for both males and females.

The highest average is seen in the “*most of my colleagues have accepted me as a member of this organization*” proposition with an average of 3.99 for males and 4.06 for females. According to the results of variance analysis, the group averages show a statistically significant difference at 10% only for the “*instructions given by my supervisor helped me do my job better*” proposition, and no such difference occurs in other propositions. The average of the “*instructions given by my supervisor helped me do my job better*” proposition is 3.19 for males and 3.55 for females. Analysis results revealed statistically that women defended this statement more than men.

3.2 Education

Educational status was expressed in 5 groups in questionnaire. In the analysis phase, it was deemed appropriate to gather “high school” and “associate degree” groups and “graduate” and “doctorate” groups in one group. Thus, the total number of groups was reduced to 3. Table 5 shows the organizational socialization descriptive statistics and variance analysis results of the young employees according to their regrouped education status.

Table 5: The Organizational Socialization Attitude of Young Employees According to Their Education Level

	Education							ANOVA	
	High School and Associate Degree (n=22)		Bachelor Degree (n=81)		Master and Doctorate Degree (n=52)		F	Sig.	
	\bar{x}	S	\bar{x}	S	\bar{x}	S			
I received an excellent training for my job in this organization	2,86	1,457	2,56	1,129	2,80	1,221	,97	,38	
I know very well how to do things in this organization	4,00	1,113	3,57	,865	3,92	,837	3,51	,03	

Other employees have helped me in a variety of ways.	3,68	1,211	3,62	,943	3,76	,757	,42	,66
There are many chances and opportunities to make a good career in this organization.	2,82	1,368	2,40	1,137	2,63	1,284	1,30	,28
The training I received at this organization enabled me to do my job very well.	3,14	1,521	2,59	1,127	2,78	1,073	1,94	,15
I fully know my duties in this organization.	3,86	1,207	3,54	,975	3,92	,904	2,63	,08
My colleagues often help and share their suggestions with me.	3,45	1,438	3,58	,934	3,71	,800	,59	,55
I am satisfied with the awards offered at this organization.	2,59	1,333	2,25	1,067	2,48	1,180	1,12	,33
This organization offers excellent training to improve the business skills of its employees.	2,86	1,521	2,26	,959	2,55	1,092	3,04	,05
The goals of this organization are very clearly defined.	3,27	1,453	3,07	1,093	3,03	1,267	,31	,74
Most of my colleagues have accepted me as a member of this organization.	4,45	,596	3,91	,925	3,98	,700	3,88	,02
Opportunities for promotion in this organization are available to almost everyone.	2,82	1,402	2,68	1,253	2,55	1,392	,32	,73

Instructions given by my supervisor helped me do my job better.	3,64	1,329	3,20	1,134	3,32	1,184	1,21	,30
Instructions given by my supervisor helped me do my job better.	4,14	,990	3,81	,896	4,01	,804	1,56	,21
My colleagues have shown great interest in helping me to adjust to this organization.	3,50	1,300	3,47	,950	3,28	,936	,61	,54
In this organization, I can easily anticipate my expectations regarding promotion.	2,91	1,342	2,57	1,095	2,50	1,365	,90	,41
This organization provides very effective training for its employees.	2,68	1,287	2,52	1,108	2,65	1,186	,30	,74
The goals of this organization are understood by almost all employees.	3,55	1,371	2,99	1,078	2,86	1,253	2,65	,07
My relations with other employees in this institution are very good.	4,09	1,019	3,74	,919	3,67	,901	1,64	,20
I think this organization will employ me for many years.	3,77	1,343	3,51	1,085	3,40	1,107	,82	,44

When the table is examined, the lowest averages are seen in the “High School and Associate Degree”, “Bachelor Degree” and “Master and Doctorate Degree” groups with 2.59, 2.25 and 2.48, respectively, in the “*I am satisfied with the awards offered at this organization*” proposition. The highest averages are seen in the “*most of my colleagues have accepted me as a member of this organization*” proposition with an average of 4.45 and 3.91 in the “High School and Associate Degree” and “Bachelor Degree” groups, respectively. In the “Master and Doctorate Degree” group, with an average of 4.01, the highest

average is seen in the “instructions given by my supervisor helped me do my job better” proposition.

According to the results of variance analysis, the “I know very well how to do things in this organization”, “this organization offers excellent training to improve the business skills of its employees” and “most of my colleagues have accepted me as a member of this organization” propositions show a statistically significant difference at 5%. The proposals “the goals of this organization are understood by almost all employees” and “I fully know my duties in this organization” also show a statistically significant difference at 10%. It is seen that such a difference does not occur in other propositions.

3.3 Experience

Experience time was expressed in 5 groups in our questionnaire. In order to facilitate the analysis phase, it was deemed appropriate to express it in two groups as “5 years and less” and “6 years and above”. In Table 6, descriptive statistics and variance analysis results regarding the organizational socialization of young employees according to their regrouped experience periods are given.

Table 6: Young Employees’ Views on Organizational Socialization According to Their Experience Periods

	Experience					
	5 years and less (n=72)		6 years and above (n=83)		ANOVA	
	\bar{x}	S	\bar{x}	S	F	Sig.
I received an excellent training for my job in this organization	2,58	1,230	2,77	1,193	,93	,34
I know very well how to do things in this organization	3,63	,895	3,85	,912	2,50	,12
Other employees have helped me in a variety of ways.	3,74	,964	3,62	,893	,54	,46
There are many chances and opportunities to make a good career in this organization.	2,58	1,207	2,49	1,243	,20	,65
The training I received at this organization enabled me to do my job very well.	2,75	1,219	2,72	1,151	,02	,89

I fully know my duties in this organization.	3,75	,931	3,68	1,058	,15	,70
My colleagues often help and share their suggestions with me.	3,72	1,051	3,50	,902	1,90	,17
I am satisfied with the awards offered at this organization.	2,53	1,198	2,24	1,089	2,44	,12
This organization offers excellent training to improve the business skills of its employees.	2,47	1,138	2,42	1,095	,08	,78
The goals of this organization are very clearly defined.	3,47	1,126	2,75	1,175	14,77	,00
Most of my colleagues have accepted me as a member of this organization.	4,08	,801	3,95	,854	,97	,33
Opportunities for promotion in this organization are available to almost everyone.	2,88	1,266	2,47	1,337	3,72	,06
Instructions given by my supervisor helped me do my job better.	3,40	1,122	3,21	1,230	,96	,33
Instructions given by my supervisor helped me do my job better.	3,85	,899	4,00	,870	1,15	,28
My colleagues have shown great interest in helping me to adjust to this organization.	3,53	1,061	3,31	,936	1,79	,18
In this organization, I can easily anticipate my expectations regarding promotion.	2,92	1,184	2,31	1,199	9,88	,00
This organization provides very effective training for its employees.	2,71	1,168	2,48	1,141	1,49	,22
The goals of this organization are understood by almost all employees.	3,26	1,210	2,82	1,149	5,49	,02
My relations with other employees in this institution are very good.	3,79	,978	3,75	,895	,09	,77
I think this organization will employ me for many years.	3,58	1,123	3,45	1,140	,57	,45

When the table is examined, it is seen that in the “5 years and less” group, the lowest average is in the “*this organization offers excellent training to improve the business skills of its employees*” proposition with 2.47 and the highest average in the “*most of my colleagues have accepted me as a member of this organization*” proposition with 4.08.

In the “6 years and above” group, the lowest average was found in the “*in this organization, I can easily anticipate my expectations regarding promotion*” proposition with 2.31 and the highest average in the “*instructions given by my supervisor helped me do my job better*” proposition with 4.00.

According to the results of the variance analysis, it was seen that the group averages showed a statistically significant difference at 1% only for the proposition “*in this organization, I can easily anticipate my expectations regarding promotion*”. It is seen that such a difference does not occur in other propositions. In the table, the average of the proposition “*in this organization, I can easily anticipate my expectations regarding promotion*” is 2.92 in the “5 years and less” group and 2.31 in the “6 years and above” group. The results of the analysis revealed statistically that employees with 5 years or less of experience defended this proposition more than those with 6 years or above of experience.

3.4 Working Time in the Current Workplace

It was deemed appropriate to express the working periods in the current workplace, which were gathered under 5 groups in our survey, in two groups as “5 years and less” and “6 years and above” in order to facilitate the analysis phase.

In Table 7, the descriptive statistics and variance analysis results regarding the organizational socialization of young employees according to their working time in the current workplace, which are regrouped, are given.

Table 7: Views of Young Employees on Organizational Socialization According to Their Working Time in the Current Workplace

	Working Time in the Current Workplace					
	5 years and less (n=122)		6 years and above (n=33)		ANOVA	
I received an excellent training for my job in this organization	2,61	1,263	2,93	,966	1,88	,17
I know very well how to do things in this organization	3,70	,926	3,93	,827	1,86	,17
Other employees have helped me in a variety of ways.	3,71	,913	3,54	,971	,85	,36

There are many chances and opportunities to make a good career in this organization.	2,58	1,232	2,36	1,194	,83	,36
The training I received at this organization enabled me to do my job very well.	2,73	1,186	2,75	1,173	,01	,90
I fully know my duties in this organization.	3,70	1,018	3,75	,936	,07	,79
My colleagues often help and share their suggestions with me.	3,70	,995	3,27	,839	5,02	,03
I am satisfied with the awards offered at this organization.	2,39	1,181	2,33	1,021	,05	,82
This organization offers excellent training to improve the business skills of its employees.	2,48	1,144	2,34	,990	,42	,52
The goals of this organization are very clearly defined.	3,25	1,203	2,48	1,004	11,34	,00
Most of my colleagues have accepted me as a member of this organization.	4,03	,852	3,93	,747	,33	,57
Opportunities for promotion in this organization are available to almost everyone.	2,76	1,355	2,27	1,098	3,65	,06
Instructions given by my supervisor helped me do my job better.	3,37	1,201	3,06	1,088	1,78	,18
Instructions given by my supervisor helped me do my job better.	3,88	,896	4,12	,820	2,00	,16
My colleagues have shown great interest in helping me to adjust to this organization.	3,49	1,022	3,12	,857	3,64	,06
In this organization, I can easily anticipate my expectations regarding promotion.	2,68	1,261	2,28	1,039	2,91	,09
This organization provides very effective training for its employees.	2,64	1,193	2,39	,998	1,17	,28
The goals of this organization are understood by almost all employees.	3,16	1,209	2,51	1,004	8,01	,01
My relations with other employees in this institution are very good.	3,80	,924	3,63	,962	,83	,36
I think this organization will employ me for many years.	3,61	1,118	3,15	1,121	4,30	,04

When the table is examined, in the “5 years and less” group, the lowest average is 2.39 in the “*I am satisfied with the awards offered at this organization*” proposition, and the highest average is 4.03 in the “*most of my colleagues have accepted me as a member of this organization*” proposition. In the “6 years and above” group, the lowest average is 2,27 in the “*opportunities for promotion in this organization are available to almost everyone*” proposition, and the highest average is 4,12 in the “*instructions given by my supervisor helped me do my job better*” proposition.

According to the results of the variance analysis, it was seen that there was a statistically significant difference in 1% of the proposals “*the goals of this organization are understood by almost all employees*” and “*the goals of this organization are very clearly defined*”. “*My colleagues often help and share their suggestions with me*” and “*I think this organization will employ me for many years*” suggestions were found to differ statistically significant at 5%.

4. Conclusions

The organizational socialization levels of the employees generally do not differ according to the variables of gender, education level, work experience and working time in the organization.

Considering the suggestions for future studies, the importance of organizational socialization among research topics increases in the context of the results obtained from this study. As a result, it is seen that organizational socialization plays an important role in the overall performance of the organization. In order to perform this process effectively, the following strategies can be suggested to organizations:

1. The organization should explain the importance of the work done in line with the goals of the organization when the new employee starts work.
2. Carefully planned training and orientation programs should be provided by the organization.
3. Implementation of an open and fair performance evaluation system by the organization will be an effective factor in increasing performance.
4. Finally, the employee should be placed in a highly motivated work group.

Similarly, it is important to follow policies to increase the work motivation of all employees in the organization. Making arrangements that will enable

employees to have knowledge about different fields and to do academic studies is also important for the future planning of the organization and employees.

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CHAPTER XIV

HOW DO NETWORKS AND THEIR POLITICAL ANTECEDENTS AFFECT SUBJECTIVE CAREER SUCCESS?¹

Orkun Demirbağ¹ & Uğur Yozgat²

*¹(Asst. Prof. Dr.), Gümüşhane University, ,
e-mail: orkundemirbag@gumushane.edu.tr*

ORCID: 0000-0001-9889-3406

*²(Prof. Dr.), Nişantaşı University,
e-mail: ugur.yozgat@nisantasi.edu.tr*

ORCID: 0000-0001-9893-3551

1. Introduction

The politics that have been in existence in all areas of life is as old as the history of humanity (Tankut, 2007). Although politics was defined as activities for the common good in ancient Greece (Aristoteles, 2007), it is now described as “social reality” (Alvesson,2003), which includes both negative (Pfeffer 1981; Mintzberg, 1985; Porter, Allen, and Angle, 1981; Ferris and Treadway, 2012; Hochwarter, 2012) and positive meanings (Ferris, Perrewé, Anthony and Gilmore; Perrewé, Ferris, Frink, and Anthony, 2000; Meriac and Villanova, 2006; Buchanan, 2008; Ellen III, Ferris, and Buckley, 2013). Researchers and practitioners have recognized that politics exists due to the nature of organizations for quite some time (Ferris and Hochwarter, 2011; Ferris and Judge, 1991; Mintzberg, 1983; Pfeffer, 1981). Many

¹ This study is based on the doctoral dissertation entitled “The effect of political intelligence, political skill and network resources on subjective career satisfaction: A research on banking sector” from Orkun Demirbağ under the supervision of Prof. Uğur Yozgat.

organizations are political inherently, and although “organizational politics disgusts us” (Mintzberg, 1985, p. 152), it helps to advance in our professional life. Organizations are political jungles (Klein, 1988), and individuals struggle to gain superiority over each other in today’s wild world. The components behind how individuals struggle, survive, and win in these jungles should be revealed (McAllister, Ellen III, Perrewe and Ferris, 2015). While survival is determined by other organizations in a competitive environment, politics serves as a shield and provides a variety of advantages to organizations. Therefore, the struggle for survival concerns adaptation to the competitive environment (Klein, 1988). Based on the assumption that resources are scarce and needs are unlimited, there is a deep struggle to survive in organizations where the rational organization approach is ignored, and competition and conflict of interest prevail among individuals. The underlying assumption of the theory of Social Darwinism, which is based on the principle that the strong survive and develop, finds its place in organizational life, as well. Because of the inequalities within the social hierarchies, where conflicts and competition are intense, those who are socially more capable than others will be subject to natural selection and adaptation; in other words, the stronger individuals will survive, develop and advance in an environment of intense competition (Crook, 1994; 2007). Since employees know that stronger people survive and advance in their careers, they need the skills to develop relations, mobilize resources, and influence (Finkelstein et al. 2009). Most employees know that political behavior is a requirement, which must exist in organizations, and use politics to succeed in the workplace (Buchanan, 2008; Gandz and Murray, 1980).

Recent research has focused on the social competence of individuals who are influential in organizations because of the persistent political nature of organizational life. The expression ‘whoever has the gold makes the rules’ is also valid in organizations that are also political arenas (Ferris et al. 2000). That is, individuals who want to acquire power must have various competencies, and one of the personality traits that provide this is political skill (Mintzberg, 1983; Pfeffer, 1981) that is briefly “the ability to influence others to achieve outcome at the workplace.” (Cullen, Fan and Liu, 2014). As a result of the literature review, it is seen that political skill, which focuses more on behavioral characteristics, is limited in explaining the elements related to cognitive characteristics (Wei, Chiang, and Wu, 2012). Although

there is an implicit emphasis on the fact that people have political intelligence if they have political skills, no research on the components establishing the structure of political intelligence (Blickie, Kramer, Schneider, et al. 2011a), which is thought to be the antecedent of political skill, is found in the literature. Cole (1994) differentiates the concepts of political skill and political intelligence in his study, which lists leadership characteristics. Another essential competence considered as the antecedent of political skill is political intelligence. The political intelligence is defined as the cognitive capacities of individuals struggling for survival in organizations, which are social structures where political games are played because of competition and conflicts, before synthesizing the elements in the political environment and their aims, opportunities, interests, and motives and influencing others by being aware of the mutual dependence and the necessity of carrying out joint activities. It provides an understanding of the strategic activities necessary for the individuals in the organization to reach their goals for the struggle for survival. A political workplace is a hazardous environment (Cropanzano, Howes, Grandey, and Toth, 1997), and individuals can be harmed if they behave the same to everyone without actively evaluating the characteristics and conditions of people in the organization (Jones, 1990; Yukl and Tracey, 1992). Although the influence is not an instant process, it will succeed with the creation of in-depth accumulation. Due to the political nature of organizations, individuals who have the right tools thanks to political intelligence and political skill and who prefer informal structure when the efficiency and productivity of the formal structure are low, show behaviors that will be beneficial for them by using informal social networks.

Political skill increases the network capabilities of people (Blass et al. 2007), and it allows them to acquire social capital (Perrewe et al. 2000). Political intelligence, which is one of the political competences of the individuals, and the political skill, which makes people behave impressively, allow people to accumulate valuable communities (Ferris et al. 2007), in other words, to increase network resources, to gain valuable resources and competitive advantage (Braendle, Gasser and Noll, 2005). Individuals who reach resources and gain competitive advantage through their networks will achieve success and make progress in their careers owing to their political competences (Cropanzano et al., 1997; Kapoutsis, Papalexandris et al., 2011). We build our study based on the underlying assumption of Social

Darwinism, which argues that strong people will survive and make progress in the struggle for life. Based on the above statements, in competitive organizations, individuals with specific competencies such as political skill, and political intelligence, which is one of the antecedents of political skill, accommodate themselves easily. The sum and the substance of it, people who adjust on the fly in organizations can survive and increase their network resources through their competencies, such as political intelligence and political skill. Also, they can advance in their careers thanks to their network resources. The main research problem of the current paper is based on these arguments.

2. Theoretical Background: From Evolution To Social Darwinism

The popularity of organisms, namely ecological thinking, contributed to the evolutionary theory of Darwin in biology and Social Darwinism theory of Spencer in sociology (Zuboff, 1988; Hofstadter, 1944). Darwin, who put forward the Theory of Evolution in order to become the Newton of the field of biology (Taşçı and Koç, 2006) revealed that ‘the great chain of being,’ which was expressed by ancient philosophers of nature existed in a hierarchy and that all living creatures evolved from the simplest to the most complex under pressure and influence of their environment. The relevant theory not only strengthened the evolutionist approach but also provided an essential critique of the Judeo-Christian thesis with the theory that it contributed to the field of biology (Simonnet, 1993). Thereby, Darwin revealed that the universe is not a structure formed by God and that simple forms continuously evolve and change on complex forms in the universe (Marshall, 1999). Inspired by the ‘adaptation’ of Lyell (Gale, 1972; Vorzimmer, 1969), ‘the natural selection’ and ‘war of existence’ of Malthus (Penrose, 1952; Rapoport, 1960; Tullock, 1977), and ‘the struggle for survival’ and ‘group selection’ of Adam Smith (Torun, 2013), Darwin shaped the general framework of his theory.

An intriguing book, “On the Origin of Species,” represents a particular part of Darwin’s theoretical work. Spencer, who drew this framework by way of Darwin’s work, revealed the theory of Generalist Darwinism through “evolutionary principles” and “natural selection” in order to provide a more

general understanding of social and personal life. Although the evolution put forward by Spencer or social Darwinism coincides with Darwin's idea of evolution in specific points, there are differences between the two ideas. Despite Darwin's contributions, the expression of the survival of the best one that was put forward by Spencer for the first time was used very limited in Darwin's theory of social evolution. Although Darwin criticized Spencer's use of the concept in a social context after 25 years, Spencer and Social Darwinism will always be remembered when it comes to social evolution. The principal representatives of the theory, such as Spencer, Huxley, and Sumner, suggest that strong people in the social context will survive and make progress. Social Darwinism transfers the concepts that Darwin used regarding nature into social processes. As a result of this transfer, the theory attributes the concepts such as 'struggle for survival' and 'selection' to individuals and classes in society (Tosun, 2010). While the superior and strong ones are supported in society, the social sphere is defined as an inevitable area of struggle and competition (Doğan, 2003, p. 292) and it is possible to characterize the natural order of social life as the survival of the strong one (Tosun, 2010). In other words, in parallel with these ideas, it is argued that individuals must struggle for their existence, only strong ones have the right to life, and these are inevitable universal values (Mutlu and Kahraman, 2011).

Capitalism, one of the cornerstones of liberal economic understanding, is seriously influenced by the Social Darwinist approach. The understanding based on competition and conflict of interest in the organizations, which is an essential part of the liberal economic system, has pushed the organizations into a struggle for survival. This struggle, which lives between the organizations, is also experienced among individuals inside the organizations. Because the arguments regarding the power and money-based motivations put forward by the capitalist system surrounding the countries, organizations, and individuals fed by the same environmental dynamics (Coser, 1977) are supported by the basic arguments of Social Darwinism. Because of the inequalities within the social hierarchies, where conflicts and competition are intense, those who are socially more capable than others will be subject to natural selection and adaptation. Those who are skilled in the struggle; in other words, strong ones, will survive will develop in competitive environments. Therefore, in organizations composed of social

hierarchies, people, who are stronger and more talented than others, thanks to their political intelligence and political skill developed by their political intelligence, will be quite successful in terms of career advancement. That is to say, individuals who increase their social capital through their political competencies will develop and advance in their careers by surviving career battles in their organizations.

3. Conceptual Clarification and Literature Review

3.1 Political Intelligence

The famous claim of Aristotle, who puts forward that human is a ‘political animal’ (Aristoteles, 2007; Mulgan, 1987; Sokolon, 2006), is based on the moral sentiment that being a member of society requires (Orbell, Morikawa and Allen, 2002). In recent years, evolutionary psychologists (Cosmides and Tooby, 1987; Cosmides, Tooby, and Barkow, 1992) have developed a contemporary thinking of the development of political intelligence (Westen, 2008) as a result of social co-existence. It has been suggested that this cognitive feature of individuals will develop during ‘the natural selection’ (Darwin, 2015) process when individuals struggle with complex conditions. Goffman described the world as a theater scene with his quote inspired by Shakespeare (Goffman, 1978). It is emphasized that political animals who successfully play political games on the stage of daily life will develop their intelligence through these political games (Orbell et al. 2002).

Odyssey, one of the main characters of the Iliad and the Odyssey epics, where Homer describes the Trojan War, has carved out a niche for itself in the history scene as a symbol of political intelligence (Yüksel, 1993). From Thrasymachus to Odyssey, Napoleon to Talleyrand, from Atatürk to Mitterand, the most significant characteristic of many successful people is to have political intelligence and to turn their intelligence into behavior. So, what is the meaning of the concept of political intelligence? The concept comprises terms of politics and intelligence. When the epistemological origins of the word of politics are investigated, poli means ‘many’ and tics means ‘blood-drinking creatures’ in Latin (Ferris et al. 2000). Politics and political behavior have a negative meaning in organizational science from a historical perspective (Ferris and Treadway, 2012; Hochwarter, 2012). According to Dulebohn (1997), politics can be seen as usual; it is considered as a part of organizational life, and

therefore, is not perceived as a negative concept. In short, the consensus that politics is neither utterly destructive nor wholly constructive cannot be provided by researchers (Ferris and Hochwarter, 2011). Gardner (2011) states intelligence as the problem-solving ability or the ability to create value that is important in cultural settings. Gardner, who put forward the ‘multiple intelligence theory,’ has divided the types of intelligence into seven categories as musical, linguistic, mathematical, spatial, environmental, individual, and physical. Sternberg (1996, 1997) proposed that the triadic model of human intelligence divides intelligence into analytic, practical, and creative intelligence. Political intelligence emerges as one of the types of practical intelligence in Sternberg’s (1996, 1997) ‘triadic model of human intelligence.’ Kramer (2006) argues that political intelligence is a distinct and powerful form of leadership intelligence and is mostly ignored by management theorists and practitioners.

The concept of political intelligence is a neglected concept in the field of management and is limited in the literature (Post, Murray, Dickie and Mahon, 1983; Ferris, Fedor, and King, 1994; Joplin and Daus, 1997; Ferris et al. 2000; Ciampa, 2005; McIntyre, 2005; Reardon, 2005; Kramer, 2006; Maritz, Poggenpoel and Myburg, 2009; Reynolds, 2014; Reffo and Wark, 2014). Post et al. (1983) specify that political intelligence provides a viewpoint for inside and outside of the environment and help to identify the problems, their priorities and starting points, and analyzing them. Joblin and Daus (1997) state that political intelligence requires some knowledge and understanding of the hierarchical structure of the organization, both formally and informally. Boehm (1997, pp. 342) defined the concept as power and leadership issues and the capacity for decision-making that provides convenience to individuals by supporting self-interest in a competitive environment. Political intelligence was first conceptually scrutinized by Orbell et al. (2002). The authors stated that political intelligence differed significantly from these types of intelligence, which are conceptualized as Machiavellian (Byrne and Whiten, 1997), and social intelligence (Thorndike, 1920). Machiavellian intelligence is often interested in deceit, bluff, threat, and manipulation for self-interest in social games, but do not consider mutualism and co-operation in a good cause. Conversely, the ‘social intelligence’ involves neither the conflicting nor the co-operative potentials that are inherent in social games (Orbell et al. 2002). Political intelligence was defined by Orbell et al. (2002, pp. 614-616) as evolving of the human brain through the natural selection process in the social life where competition and conflicts are intense

and fictionalizing political games for personal benefits with the consciousness of the necessity of mutual dependence and joint activities in the social life. As can be understood, political intelligence represents a cognitive element based on concepts like self-interest, competition, conflict, mutual dependence, and awareness of joint activity. Political intelligence is called a particular type of intelligence that complements the areas that are lacking in Machiavellian intelligence and social intelligence. Political intelligence, like emotional and social intelligence, helps individuals to achieve the desired results in a highly competitive, challenging, and political environment (Kramer, 2006).

A careful examination of the literature regarding politics and organizational politics reveals several vital aspects that should be included for the conceptualization of political intelligence. This examination indicates five critical dimensions of political intelligence that are strategic thinking, power, empathy for self-interest or others' interest, trust, and variability (Reffo and Wark, 2014). Subsequent conceptual and empirical development will support the robustness of this formulation of political intelligence. Strategic thinking is a cognitive process in which the identified opportunities are incorporated with self-interest. People with political intelligence who use this structure effectively are masters of strategic thinking. These masters can review all strategically essential elements regarding the people and events in the political environment of the organization, and provide the right answers by asking the right questions from a holistic perspective. While people with political intelligence construct their vision for the future, they consider the current circumstances from different perspectives and achieve their best results by linking their aims with new opportunities. The concept of empathy for self-interest or others' interest is expressed as the capacity to imagine yourself as someone else, to understand how others feel emotionally, and to see the world cognitively (Reffo and Wark, 2014). It helps people with political intelligence to find the right password. In order to realize their goals, people try to see their environment from the perspectives of their target people. Persons with such characteristics operate their mental processes to achieve the desired results by integrating their aims into this activity. Trust is the foundation of all relationships. Relationships begin with building trust and end because of trust issues. Individuals with political intelligence have a deep understanding of how important trust is in interpersonal relations and have a highly developed cognitive capacity to receive signals on how they will gain or lose the trust of people they target. If a person has the feature of variability, on

the organizational stage where political games are played, he/she knows when to stop, how to evaluate the clues, how to take the floor or stay silent, how to hide his/her deficiencies, who the dominant character of the game is. Versatile people have cognitive factors that adjust their multiple roles to behave accordingly. The need for power is the trigger of political intelligence. In another saying, political intelligence is based on this motivator. Politically-intelligent individuals discover their will to power and make their arrangements as required (Heckhausen, 1991).

In organizational life, people will often need political intelligence to mitigate conflicts and prevent potential mistakes that make them lose their job (Adams and Zanzi, 2006). Leaders know the importance of issues such as communication, political intelligence, and conflict prevention and improve themselves in these areas (Joplin and Daus, 1997). Because it is essential to understand that the political environment is always active, and people have to adapt to this and create a balance of power (Douglas, Ferris, Buckley, and Gundlach, 2002). Political intelligence gives a point of view to learn the characteristics of organization members, create and develop networks for access to information (Adams and Zanzi, 2006). While it is frequently mentioned in the literature that the employees struggling to survive in organizations that are considered as political arenas by their nature will achieve success in their jobs and careers through their political competence (Ferris et al. 2000; Perrewe et al. 2000), the relevant literature describes political competencies only through political skill. Political skill reflects behavioral flexibility and emotional variability (Ferris et al. 2007) and emphasizes activities during the attempt to influence, but it does not provide sufficient information about cognitive processes before the attempt to influence (Wei et al. 2012). Individuals who can think strategically will interpret both the environment and themselves correctly, and therefore, they will have more social astuteness to perceive social interactions better (Ferris et al. 2007). Individuals who think strategically know which networks create opportunities for them and operate in parallel with their goals. Thanks to this characteristic, people can predetermine how to approach others with sincerity. Before political influence attempts, the person who can look at the world through the eyes of his/her target will adapt to the social situations with flexibility and will be more successful in influencing them. Also, this will have a positive impact on the network capabilities of the people and allow them to be seen as sincere. The need for power triggers the political skills of individuals to take action (Ferris et al. 2007), and there is a significant

relationship between them (Ferris et al. 2002; Randel and Wu, 2011). If the need for power increases, the desire for social astuteness will increase, as well. Thanks to this feature of political intelligence, people will be more willing to have interpersonal influences and formulate sincerity styles to achieve their goals. The need for power encourages people to use their network capabilities within the organization. Within the political context, individuals have to think carefully about the signals that give confidence to their environment. By this means, social resourcefulness, interpersonal influence, and networking skills are utilized better to interact easily with the people they target and achieve the results they want. Considering all of these, the following hypothesis is formulated.

H₁: There is a significant positive relationship between the political intelligence and political skills of individuals.

3.2 Political Skill

Over the last two decades, organizations have changed and become almost indescribable. New trends, such as globalization, downsizing, re-engineering, redesign, communication, mergers and acquisitions, and transfers of the companies, changed the structure of organizations. Therefore, business schools needed new concepts and theories to identify and explain the new business world (Daft and Levin, 1993; Ferris et al. 2005a). Social/political influence theory, which is one of the mentioned theories, has been developed with the contribution of researchers such as Tedeschi (1981), Jones (1990), Leary (1995), Levy et al. (1998), and Higgins, Judge, and Ferris (2003). According to the theory of social/political influence (Levy et al. 1998), politically-skilled people can influence others in achieving the desired results and goals. The theory claims that people make an effort to develop meaningful social relationships and to maintain these relationships (Cialdini and Goldstein, 2004), and they achieve the desired goals by using influencing tactics (Levy et al. 1998). People who are better at achieving high-quality workplace relationships are often satisfied with their careers and lives. Politically skilled employees are better at building strong social relations, influencing people, and appearing sincerely, and thus, they improve their career and life satisfaction (Todd et al. 2009). From this point of view, the political skill that helps individuals who build and maintain their social relations is seen as a 'missing part' of social influence theory (Treadway et al. 2014).

It is well-accepted in the literature that organizations are political arenas (Mintzberg, 1983). Success in organizations requires political skill, which was first proposed by Pfeffer in 1981. Political skill is expressed as an ability that is needed by individuals in the organizations to be effective in an uncertain and often fluctuating political environment (Pfeffer, 1981). Researchers argue that having an intuitive perception of the political dynamics of organizations is critical to surviving in the organizations (Ammeter et al., 2002). Mintzberg (1983, 1985) conceptualized the concept of political skill for the first time and argued that political skill is essential for effective use of influence behavior in organizations through persuasion, negotiation, and manipulation. Also, other researchers emphasized how important political skill is in the political context of organizations (Ferris et al. 1994; Perrewe et al. 2000; Luthans et al. 1988; Mainiero, 1994; Spencer and Spencer; 1993). It has been demonstrated that in today's organizations, being willing to exhibit political behavior is not enough, but also having the ability to present these behaviors is critical (Mintzberg, 1983, 1985) and it is a positive force and a must for success in career and organizations (Ferris et al. 2000; Ferris et al. 2005a). Ferris et al. (2005, pp. 127) defined political skill as "the ability to effectively understand others at work, and to use such knowledge to influence others to act in ways that enhance one's personal and/or organizational objectives". According to these researchers, it involves four dimensions as social astuteness, interpersonal influence, networking ability, and apparent sincerity (Ferris et al., 2005, 2007). In previous research, it was argued that high political skill is related to stress, career success, social capital, job effectiveness, and work performance (Ferris et al., 2002; Pfeffer, 1981). Empirical evidence has supported this way of thinking since political skill was found positively related to income levels, hierarchical position, network resources, reputation, and performance (Blickle et al., 2011; Ferris et al., 2008; Liu et al., 2007, 2010; Wei et al. 2012; Todd et al., 2009). Besides, political skill is positively related to job performance and team performance of organizational leaders (Ahearn et al., 2004; Douglas and Ammeter, 2004;).

Politically skilled people tend to have better networking skills (Ferris et al. 2005a), and therefore, social astuteness and networking ability will be useful activities in the development of social capital (Wei et al. 2010). Taking into account the personality characteristics of the person they want to network, politically skilled people who want to develop network resources perform upward tactics such as solutions, bargaining, assertiveness, resorting to higher

autonomy, coalition, and friendship. Interpersonal influence is a method that is often used by politically skilled people (Blickie et al. 2010; Wei et al. 2012), and they engage in more proactive behavior and influence to accumulate network resources (Ferris et al. 2005b). Politically skilled people can access network resources easily through access, bridging, and broadband networks, and benefit from both weak and strong ties for this (Wei et al. 2012). Employees acquire network resources with their political skills. In this way, the person can possess knowledge and understanding of the informal structure of the organization through tactics of influencing (Kilduff and Tsai, 2003), and those who develop expressive and instrumental network resources within the organization through their political skills will have notable advantages. Hypotheses on these issues are presented below.

H2_a: There is a significant positive relationship between the political skill and expressive network resources of individuals.

H2_b: There is a significant positive relationship between the political skill and instrumental network resources of individuals.

3.3 Network Resources

Social capital is an advantageous resource in organizations (Burt, 1997), and there are two critical transferors of social capital within the organization, named as 'mentorship' and 'network resources' (Seibert, Kraimer ve Liden, 2001; Bozionelos, 2003; Bozionelos and Wang, 2006; Wei et al., 2012). Mentoring can be explained as a very intense relationship between a stronger and experienced organization member and a focus person (Phillips-Jones, 1983; Kram, 1985). Granovetter (1973) mentions mentoring as strong ties formed by a high degree of reciprocity, closeness, emotional intensity, and a high level of frequency of interaction. Network resources (Seibert et al. 2001) are the sum of interpersonal ties and networks of individuals, except fundamental mentoring relationships (Burt, 1992). Therefore, network resources include the power of relations between peers, subordinates, and superiors in an organization. Networks that help the individual's development include all components that provide career and psychosocial support (Higgins and Kram, 2001). Network resources are divided into two groups as expressive and instrumental network resources. (Fombrun, 1982). They may consist of obligation or commitment, or instrumental or opportunity-based relationship ties (Su and Littlefield, 2001,

p. 201-202). Instrumental networking is defined as proactive and purposeful efforts to build, manage, or leverage relationships toward professional goals (Casciaro et al., 2014; Wolff and Moser, 2009). The acquisition of instrumental networks is the primary objective of the organization and helps them advance in their careers (Higgins and Kram, 2001). In other words, it represents an attempt to develop and maintain relationships with networks that have the potential to support career development (Forrett and Dougherty, 2001). The primary function of expressive network resources is to create strong ties that provide a safe path to anxiety and emotions (Bozionelos, 2003), and people do this through friendship, emotional support, work feedback, and approval (Ibarra, 1993; Krackhardt, 1992). In other words, expressive network resources are an attempt to develop and maintain relationships with people who have the potential to give support in business and social life (Treadway et al. 2010) and individuals may try to build networks and create social ties in non-governmental organizations, churches or social clubs (Forret and Dougherty, 2001). Politically skilled people tend to create interpersonal relations in obtaining network resources. They also consider this as an opportunity rather than a threat within the organization (Perrewe et al., 2000). Network resources increase personal benefits and provide various advantages through their social relationships (Brass, 1984). For this reason, individuals who want to obtain the network resources that are the root of relationships should continue to influence others and to maintain interaction with them. Previous studies have focused on whether there is a distinction between expressive and instrumental networks (Kram and Isabella, 1985; Bozionelos, 2003; Bozionelos ve Wang 2006; Wei et al. 2012; Moeller and Harvey, 2011). Social network theory shows that networks provide positive outcomes such as creating social capital, obtaining resources and opportunities, and reputation (Baron and Markman, 2000; Burt, 1997; House, 1995). Besides, several studies in the literature reveals the relationship between career success and informal networks (Olson and Becker, 1983; Pfeffer, 1989; Morrison and Von Gilow, 1990; Zanzi, Arthur and Shamir, 1991; Whitely, Dougherty and Dreher, 1991; Ferris and King, 1991; O'Leary and Ickovics, 1992; Bozionelos, 2003; Bozionelos and Wang, 2006; Breland et al. 2007; Wei, Chiang and Wu, 2012). Two main perspectives dominate the discussions in this field. Studies from the first perspective focus on the relationship between career progression and network resources (Brass, 1984, 1985; Luthans, Tesenkratz and Hennessey,

1985; Ibarra, 1995). According to the others, network resources do not have a central role, but there is relationship between network resources and career success (Pelechutte, 1993; Seibert et al. 2001; Higgins and Kram, 2001; Eby et al. 2003; Bozionelos, 2003; Forret and Dougherty, 2004). Therefore, two hypotheses are formulated.

H_{3a}: There is a significant positive relationship between the expressive network resource and subjective career success of individuals.

H_{3b}: There is a significant positive relationship between the instrumental network resource and subjective career success of individuals.

3.4 Career Success

Career success is a primary concern for employees who are willing to spend their resources and make an effort to achieve their goals (Kapoutsis, Papalexandris, Thanos and Nikolopoulos, 2012). This concept is defined as ‘the summary of the cumulative positive psychological experiences one gains as a result of the job.’ (Ng et al., 2005; Seibert et al., 1999). In another definition, career success is the achievement of the desired work-related outcomes at any point in the work experience over time (Arthur, Khapova and Wilderom, 2005, pp. 179). Career success is a concept regarding career (Aryee, Chay ve Tan, 1994) and is a political process in which individuals evaluate organizational contexts (Khapova, Artur and Wilderom, 2007). From an organizational politics perspective, career can be considered as political campaigns (Inkson, 2004), contract hunting (Granovetter, 1995), self-advertising (Higgins, Judge, and Ferris, 2003) and the use of power tactics. Achieving a career is a political process (Kapoutsis, Papalexandris, Thanos and Nikolopoulos, 2012), and thus, the political perspective is needed to achieve career success (Pfeffer, 1989). The relationship between organizational politics and career success was examined in several studies (Ferris and Judge, 1991; Judge and Bretz, 1994; Wayne et al. 1997; Ferris et al. 2002b).

Career success is divided into two categories as external (objective) and internal (subjective) (Judge, Cable, Boudreau and Bretz, 1995; Schein and Van Maanen, 1977; Seibert et al. 1999). Traditionally, it is objective and based on external criteria such as promotion, hierarchical superiority, and reputation (Heslin, 2005). In other words, career success is seen only

as objective conditions, representing the progress and salaries of employees (Kirchmeyer, 1998). Bartolome and Evans (1980) emphasize the importance of career success, and state that this may depend on the level of work and life satisfaction. Individuals who achieve objective career success will probably perceive themselves as unsuccessful if they do not experience satisfaction in their careers (Platt and Pollock, 1974; Schein and Van Maanen, 1977; Korman et al. 1981; Judge and Bretz, 1994). Thus, Schein and Van Maanen (1977) and Phillips-Jones (1982) claim that career success is a multidimensional concept and consists of objective and subjective criteria. While objective career success is determined by wage level, the number of promotions and position; subjective career success represents the evaluation of employees concerning the criteria of own personal success (Gattiker and Larwood, 1988). Although subjective and objective types of career success are seen as similar concepts, these structures have different antecedents and consequences (Korman et al. 1981; Ng, Eby, Sorensen and Feldman, 2005; Nicholson, West and Cawsey, 1985; Langan-Fox and Omodei, 1993).

The current literature suggests that demographic variables, such as age, gender, and marital status (Ng et al. 2005), human capital variables, such as education and experience (Wayne, Liden, Kraimer and Graf, 1999), mental traits, such as personality and self-assessment (Judge and Kammeyer Muller, 2007), and workplace behaviors, such as influencing tactics (Higgins et al. 2003), can increase or decrease career success. Political skill, which is one of the influencing behaviors, is suggested to be an essential indicator of subjective career success (Ferris, Davidson and Perrewe, 2005a). Thus, political skill, a human capital that has been put forward by past research (Seibert et al. 2001) and theoretical debates (Ferris et al. 2007), has been investigated by various researchers to understand whether it has a substantial impact on career success (Breland et al. 2007; Ferris et al. 2008; Blickie et al. 2010a, 2010b; Liu et al. 2010; Wei et al. 2010; Blickie, et al. 2011c; Treadway et al. 2013; Sibunruang et al. 2014). Political skill is an essential skill for effectiveness in daily work (Mintzberg, 1983) and a strong indicator of career success (Blickle, Witzki and Schneider, 2009; Ferris et al., 2008; Wolff and Moser, 2009). Because of the scarcity of rewards and resources, influencing requires the ability to manage competition and conflict effectively (Kapotsis, Papalexandris, Thanos and Nikolopoulos, 2012), and it is thought

that individuals who manage competition and conflict in organizational life can achieve career success.

Network building is a social process, and political skill is the ability to effectively interpret (Ferris et al. 2002b; Ferris, Treadway, et al. 2005) and realize social ties and improve interpersonal quality (Perrewe et al. 2000). Political skill is related to building strong social networks and subjective career success (Breland vd. 2007). Politically skilled employees will achieve better networks through tactics of influence and impression management. Thus, these individuals create more network resources (Treadway et al., 2004) and this affects their career and performance outcomes (Burt, 2004, 2005; Mehra et al., 2001). Recent research has explored the benefits of network resources and their impact on career success and job performance (Bozionelos, 2003; Burt, 2004, 2005; Bozionelos and Wang, 2006; Wei et al. 2010; Wei et al. 2012). Although network resources have many benefits (Forrett ve Dougherty, 2001; Bozionelos, 2003; Forrett and Dougherty, 2004; Bozionelos and Wang, 2006; Breland et al. 2007; Wei et al. 2012), researches on the antecedents of network resources is limited (Kilduff and Tsai, 2003; Zhang et al. 2009). Social network researchers assume that individual characteristics are effective in the development of networks (Douglas and Ammeter, 2004; Burt, 2005; Thompson, 2005; Ferris et al. 2007). Network building is a social process, and political skill is the ability to effectively interpret (Ferris et al. 2002b; Ferris, Treadway, et al. 2005) and create social ties and improve the quality of interpersonal relations (Perrewe et al. 2000). Political skill is related to building strong social networks and subjective career success (Breland et al., 2007). Politically skilled employees will achieve better networks through tactics of influence and impression management. Thus, these individuals create more network resources (Treadway et al., 2004), and this affects their career and performance outcomes (Burt, 2004, 2005; Mehra et al., 2001). Recent research has explored the benefits of network resources and their impact on career success and job performance (Bozionelos, 2003; Burt, 2004, 2005; Bozionelos and Wang, 2006; Wei et al. 2010; Wei et al. 2012). Although network resources have many benefits (Forrett and Dougherty, 2001, 2004; Bozionelos, 2003; Bozionelos and Wang, 2006; Breland et al. 2007; Wei et al. 2012), research on the antecedents of network resources is limited (Kilduff and Tsai, 2003; Zhang et al. 2009). Social network researchers assume that individual characteristics are effective in the development of networks (Douglas and Ammeter, 2004;

Burt, 2005; Thompson, 2005; Ferris et al., 2007). Individual network resources are closely linked to the individual's capabilities and characteristics (Bozionelos, 2003). Why are some employees more successful than others in forming coalitions, networking, and accessing the information? According to the most of the previous studies, elements such as demographic characteristics (Galaskiewicz and Shatin, 1981; Ibarra, 1993), personal characteristics (Bozionelos, 2003), and self-monitoring (Mehra et al. 2001) are the reasons of success. However, the behavior and skills used in shaping network resources are not explained adequately (Zhang et al., 2009). Demographic and personal characteristics are inherently more stable since they are innate, but without skills, it is unlikely to attempt to influence or act (Hogan ve Shelton, 1998). As skills are learnable and developable processes (Perrewe et al. 2000; Ferris et al. 2000; Ferris et al. 2005a, 2005b; Blass et al. 2007; Ferris et al. 2007), they are more related to the acquisition and development of network resources and are essential for achieving career success. Therefore, the following hypotheses are formulated.

H_a: Expressive network resources have a significant mediating role in the relationship between political skill and subjective career success.

H_b: Instrumental network resources have a significant mediating role in the relationship between political competence and subjective career success.

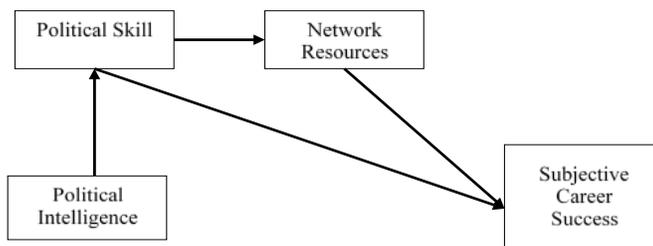


Figure 1: The Hypothesized Model

4. METHOD

4.1 Procedure and Sample Characteristics

Data were collected from 517 salespersons who work in the banking sector in Turkey. Holland's theory of the business environment (1973, 1997) is

considered one of the most influential work-based typologies in occupational psychology (McDaniel and Snell, 1999). According to Holland's theory, the business environment consists of six categories: realist, research, artistic, social, traditional, and enterprising. Enterprising jobs, business, promotion and advertising, salesperson, and their managers can be given as an example (Holland, 1997). The reason why salespersons form the research population is that sales management is a type of business with a high demand for jobs (Blickie et al. 2012), and people with political characteristics are more likely to choose social and enterprising careers (Kaplan, 2008). By using a purposive sampling method, the survey was sent to the target participants through the salespersons of the private banking branch. Out of 1,300 surveys face to face distributed, 672 were returned, representing a response rate of 44.8 percent. Ultimately, a total of 672 participants were picked up, which were obtained the 517 responses for the final data analysis. In the demographic profile, 50.9 % of respondents were female, and 49.1 % of respondents were male. The majority of participants had a bachelor's degree (82.0 percent). The final sample was the average age of 32 (SD = 6.56), and the average number of years of working experience was 9.2 (SD = 6.77).

4.2 Measures

Also, all items in the survey were formed using a six-point Likert scale of (1) definitely false and (6) definitely true.

Political intelligence ($\alpha=0.88$). A 25-item political intelligence scale was developed by Demirbağ and Yozgat (2019). The measure consisted of strategic thinking, the need for power, empath for self-interest, and others' interest, understand the trust and versatility. Some items are as follows: (1) I can look at the world from their perspective by identifying key people in my organization; and (2) I evaluate events from different perspectives and sophisticatedly. Political skill ($\alpha=0.94$). It was measured using political skill inventory by Ferris et al. (2005) and was adapted to twelve items. The measures comprise four dimensions of social astuteness, interpersonal influence, network ability, and apparent sincerity. The wordings of some items are as follows: (1) I try to show a genuine interest in other people; (2) I understand people very well.

Network Resources ($\alpha= 0.85$). A 6-item networking source scale developed by Bozenoleos (2003). The measure consisted of expressive and instrumental

network resources. Some items are as follows: (1) There are individuals in the organization whom I consider as best friends and share any issue, professional and personnel; and (2) I have a network of friendship in the organization that can help to further my career progression.

Subjective Career Success ($\alpha = 0.88$): The scale was developed by Greenhaus et al. (1990), and it was measured with twelve items. An example was “I am pleased with my progress in career success.” and “I am pleased with my progress in my promotion goals.”

For the demographic profile, respondents provided information on gender (Ferris, Frink, Bhawuk, Zhou and Gilmore, 1996), age (Todd et al. 2009), experience (Kipnis and Schmidt, 1988) and political climate (Drory, 1993; Treadway et al. 2004).

4.3 Data Analysis

Since the study investigates the relationships among political intelligence, political skill, network resources, and reputation, we carry out a common method variance bias to analysis whether there is common variance bias, confirmatory factor analysis (CFA) to establish uni-dimensionality for each factor (Lu, Chang, and Chang, 2015) and after that, we use mediation analysis to test the model. In the first stage, we computed the validity and reliability of the scale using confirmatory factor analysis. After that, the hypothesis was tested using a structural equation model and was analyzed using Amos 23 and SPSS. Although surveys collected from a single source are both cheap and easy to reach a large number of participants, this method can cause to common method variance bias (Podsakoff, MacKenzie, Lee, and Podsakoff, 2003). According to Podsakoff (2003; 2012), it is possible to divide it into two groups as procedural and statistical obviation. In this study, it will be demonstrated that there is no CMV statistically since the data is collected from a single source. In the first step, we committed to the confidentiality of the participants' information in the cover letter of the survey. In the second step, we used Harman's single-factor test, and if there is a CMV, Harman's single-factor test should explain a single dominant factor (Gu, Song, and Wu, 2015; Zhai, Wang and Weadon, 2017; Turulja and Bajgoric, 2018; Singh and Singh, 2019). For this test, a principal component analysis was performed using 58 items in the study. The analysis results without rotation demonstrated

that there are ten factors with eigenvalues >1 , which together clarified 64.2 % of the total variance. The first factor clarified 29.3 % of the variance. Different fit indices were utilized to assess the goodness of fit of the model (Hu and Bentler, 1999; Quang, Sang and Peng, 2015): (a) χ^2/df , (b) the Standardized Root Mean Square Residual (SRMR), (c) the Root Mean Square Error of Approximation (RMSEA), and (d) the Comparative Fit Index (CFI). In this study, a model was considered to have a good fit if all the path coefficients were significant at the level of 0.05, χ^2/df was below 5, SRMR was below 0.08, RMSEA was below 0.08, and, CFI and GFI was 0.90 or more (Byrne, 2001).

4.4 Results

Using analysis of confirmatory factor analysis (CFA) was implemented to state the severalty of different constructs used in the research, respectively. The results showed that the political intelligence model fitted the data (χ^2 : 628.259; χ^2/df : 2.26; $p < 0.01$; CFI: 0.93; GFI: 0.91; SRMR: 0.07; RMSEA: 0.057), and we argued that all five variables, strategic thinking, need for power, empath for self-interest and others' interest, understand the trust and versatility were different from each other. Also, one variable with factor load less than 0.50 were excluded from the analysis. All the factor loadings were significant for the indicators on latent variables ($p < 0.001$), indicating that the indicators well represented all latent structures. Factor loadings ranged from 0.67-0.84 in strategic thinking, 0.64-0.74 in need for power, 0.64-0.81 in empath for self-interest and others' interest, 0.57-0.71 in understand the trust, and 0.61-0.77 versatility.

The results indicated that the political skill model fitted the data (χ^2 : 510.452; χ^2/df : 2.6; $p < 0.01$; CFI: 0.95; GFI: 0.92; SRMR: 0.04; RMSEA: 0.056), and we argued that all four variables, social astuteness, interpersonal influence, networking ability and sincerity were different from each other. All the factor loadings were significant for the indicators on latent variables ($p < 0.001$), indicating that the indicators well represented all latent structures. Factor loadings ranged from 0.56-0.72 in social astuteness, 0.61-0.78 in interpersonal influence, 0.60-0.77 in network ability, and 0.60-0.77 in sincerity. The results indicated that the network resources model fitted the data (χ^2 : 11.631; χ^2/df : 2.0; $p > 0.01$; CFI: 0.99; GFI: 0.99; SRMR: 0.02; RMSEA: 0.043), and we argued that all

Table 1: Means, standard deviations, and correlations

	Loadings	Mean	.	AVE	1	2	3	4	5	6	7	8
1. Age	-	32.54	6.56		-							
2. Gen	-	1.49	.500		.15**	-						
3. Ten	-	9.18	6.7		.86**	.12**	-					
4. PC	-	3.74	1.28		-.80	-.54	-.66	-				
5. PI	0.57-0.84	4.19	.658	.49	.39	.10	.53	.12**	-			
6. PS	0.56-0.78	4.43	.62	.56	.38	-.38	.07	.04	.55**	-		
7. NET	0.75-0.93	4.28	.90	.76	-.03	-.09*	.02	.10*	.51**	.51**	-	
8. SCS	0.63-0.95	4.12	1.06	.64	.52	-.01	.06	.07	.48**	.31**	.43**	-
α									0.90	0.94	0.86	0.90
CR									0.79	0.85	0.90	0.89

Note: Gen, Gender; Ten, Tenure; PC, Political Climate; PI, Political intelligence; PS, Political skill; Net, Network resources; SCS, Subjective career success. *Correlation is significant at the 0.01 (1-tailed). **Correlation is significant at the 0.01 (2-tailed).

Table 2: Hierarchical regression analysis results
(Political Intelligence→Political Skill)

Variables	Political Skill (PS)			
	Model 1		Model 2	
	β	t	β	t
Age	-.08	-.90	-.07	-.95
Gender	-.04	-.94	-.05	-1.27
Tenure	.15*	1.68	.15*	1.45
Political Climate (PC)	.04	.96	-.02	-.65
Political Intelligence (PI)			.55***	14.682
R ²	.011		.30	
R ² Δ			.29	
F	1.39		44.69***	

Notes: a) PC: Political Climate, PI: Political Intelligence, PS: Politik Skill. b) $p < .05 \rightarrow *$, $p < .01 \rightarrow **$, $p < .01 \rightarrow ***$.

two variables, expressive and instrumental network resources. All the factor loadings were significant for the indicators on latent variables ($p < .001$), indicating that the indicators well represented all latent structures. Factor loadings ranged from 0.75-0.92 in expressive network resources, and 0.82-0.93 in instrumental network resources. The results indicated that the subjective career success model fitted the data (χ^2 : 3.216; χ^2/df : 1.1; $p > 0.01$; CFI: 0.99; GFI: 0.99; SRMR: 0.01; RMSEA: 0.012). Factor loadings ranged from 0.63-0.95 in one-factor model. In order to test H1 hypothesis the regression analysis is conducted in first stage. As shown in Table 2, firstly, age, gender, tenure, political climate were added in Model 1 and as tenure ($\beta = .15$, $p < .05$) have positive effect, age ($\beta = -.08$, n.s), gender ($\beta = -.04$, n.s) and political climate ($\beta = .04$, n.s) has not significant on positive emotions. Secondly, age, gender, tenure and political climate as control variables and political intelligence were added analysis. The result presented that while tenure ($\beta = .15$, $p < .05$) under control, it has been shown that political

intelligence has a significant positive effect on political skill ($\beta = .55, p < .001$). H1 hypothesis was supported in Model 2. Thereafter, we revealed means, standard deviations, average variance extracted (AVE), composite reliability (CR), Cronbach's alpha and intercorrelations for all the variables in Table I. This analysis has been demonstrated for reliability, convergent and structure reliability, average variance extracted (AVE) and validity of scale indicators related to the quality of each item. Table I was presented that both the Cronbach α coefficient that indicated internal consistency and reliability of all scale and composite reliability (CR) that showed convergent validity of measurement model went over the limit threshold value of 0.7 (Nunnally, 1978; Fornell and Larcker, 1981), and value of average variance extracted (AVE) that had 0.5 limit (Hair et al. 2010) was higher than the squared correlation between each construct and all other latent variables (Hatcher, 1994; Fornell and Larcker, 1981). Cronbach's α coefficient ranged from 0.86 to 0.94, which are above the higher than 0.60 cut-off limit, and it was seen that the internal consistency values of each variable value were at proper levels. Additionally, the composite reliability (CR) of all latent constructs surpassed the 0.7 threshold limit ranging from 0.99 to 0.90. All construct's average variance extracted (AVE) scores range from 0.49 to 0.76, which are higher than the 0.5 thresholds. Zait and Betaea (2011) state that convergent validity will be confirmed in cases where the square root correlation coefficients of AVE are higher. Furthermore, the indicators related to the sub-dimensions of the main structures were reduced to a single dimension and Cronbach's alpha AVE and CR values are shown in the table. After that, we used to approach proposed by Fornell and Larcker (1981) to evaluate discriminant validity. They suggested that the square root of the average variance extracted (AVE) of each construct was greater than the correlation among the constructs (see Table I). All variables were

Table 3: Hierarchical Regression Analysis Results (Political Skill → Expressive Network Resources → Subjective Career Success)

	Expressive Network Resources (ENET)						Subjective Career Success (SCS)							
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 3	
	β	t	β	t	β	t	B	t	β	t	β	t	β	t
Age	-.06	-.73	.04	-.43	.02	.27	.04	.49	.02	.27	.05	.57	.05	.63
Gen	-.13	-2.9	-.01	-2.8	-.02	-.53	.07	-.36	-.02	-.53	-.01	-.26	-.01	.13
Ten	.01	.12	-.04	-54.	.04	.49	.04	-.30	.04	.49	-.01	-.02	.05	.06
PC	.08	1.71	.06	1.45	.07	1.60	.05	.60	.07	1.60	.06	1.38	.05	1.18
PS			.37**	9.01							.30**	7.17	.25**	5.54
ENET							.24**	12.84					.15**	3.21
R2	.03		.16		.01	.01	.06		.01	.01	.10		.12	
R2Δ			.13				.05				.09		.02	
F	3.80		19.74		1.15	1.15	7.02		1.15	1.15	11.31		11.31	

Notes. a) Gen: Gender, Ten: Tenure, PC: Political Climate, PI: Political Intelligence, PS: Politik Skill, ENET: Expressive Network Resources, SKB: Subjective Career Success. b) p<.05 → *, p<.01 → **

found to have discriminant validity in the study. Consequently, the research model has suitable discriminant validity, internal consistency and reliability, and convergent validity. As indicated in Table I, PI is positively related to PS ($r = 0.55$, $p < 0.01$), NET ($r = 0.51$, $p < 0.01$), and SCS ($r = 0.48$, $p < 0.001$). In addition to this, PS is positively related to NET ($r = 0.63$, $p < 0.001$), and SCS ($r = 0.70$, $p < 0.001$). Lastly, NET are positively related to SCS ($r = 0.43$, $p < 0.001$). These results are quite consistent and provide a starting point for testing our hypothesis.

To test for the mediation effects theorized in Hypotheses 2, 3 and 4, respectively, we followed the procedures outlined by Baron and Kenny (1986), which are the most frequently cited in mediation tests (Wood, Goodman, Beckmann, and Cook 2008). First, to test for mediation, the independent variable (i.e. political skill) must be shown to be significantly related to the dependent variable (i.e. subjective career success). In Table 3, suggests that this condition is satisfied, as political skill is positively related to subjective career success ($\beta = .30$, $p < .001$). Second, the independent variable should be related to the potential mediator (i.e. expressive network resources).

In Table 3, suggests that political skill is positively related to expressive network resources ($\beta = .37$, $p < .001$), satisfying the second condition. Third, the mediating variable (i.e. expressive network resources) should be related to the dependent variable. In Table 3, suggests that the use of expressive network resources is positively related to both subjective career success ($\beta = .24$, $p < .001$). Finally, the fourth condition implies that the direct path from the independent variable (i.e. political skill) to the dependent (i.e. subjective career success) when controlling for the effects of the mediating variable. Model suggests that the effect of political skill on subjective career success ($\beta = .25$, $p < .001$) when controlling for the effects of expressive network resources. ($\beta = .15$, $p < .001$). The latter suggests that expressive network resources act as a partial mediator on the relationship between political skill and subjective career success. Finally, as recommended by Baron and Kenny (1986), we used the Sobel (1982) test, which determines the magnitude of the change in the beta-coefficient for a predictor variable after the entry of another predictor variable into the model, to assess the significance of the mediating effect. The effect of political skill was statistically significant in subjective career success (Sobel test statistic $z = 2.41^{**}$ and $p < 0.01$; Tolerance $> 0.23 \rightarrow 0.839$; VIF $< 10 \rightarrow 1.193$; Durbin Watson: $1.5-2.5 \rightarrow 1.752$). The results from the above steps indicate that Hypothesis 2a, H3a, H4a were supported.

First, to test for mediation, the independent variable (i.e. political skill) must be shown to be significantly related to the dependent variable (i.e. subjective career success). In Table 3, suggests that this condition is

Table 4: Hierarchical regression analysis results (Political Skill→Instrumental Network Resources →Subjective Career Success)

	Instrumental Network Resources (INET)						Subjective Career Success (SCS)							
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 3	
	β	t	β	t	β	t	β	t	β	t	β	t	β	t
Age	-.03	-.32	.01	.14	.02	.27	.04	.49	.02	.27	.05	.57	.04	.56
Gen	-.02	-.44	.00	.02	-.02	-.53	-.01	-.36	-.02	-.53	-.01	-.26	-.01	-.29
Ten	.13	1.52	.06	.79	.04	.49	-.02	-.30	.04	.49	-.01	-.02	-.03	-.38
PC	.10	2.20	.08*	1.98	.07	1.60	.02	60	.07	1.60	.06	1.38	.02	-.61
PS			.49**	12.77							.303**	7.17	.08	1.79
INET							.50**	12.84					.46**	10.3
R2	.02		.26		.01		.25		.01		.10			126
R2 Δ			.24				.24				.09			.16
F	2.84		35.38		1.15		34.16		1.15		11.31			29.118

Notes: a) Gen: Gender, Ten: Tenure, PC: Political Climate, PI: Political Intelligence, PS: Politic Skill, INET: Instrumental Network Resources, SKB: Subjective Career Success. b) $p < .05 \rightarrow *$, $p < .01 \rightarrow **$.

satisfied, as political skill is positively related to subjective career success ($\beta = .30, p < .001$). Second, the independent variable should be related to the potential mediator (i.e. instrumental network resources) condition. Third, the mediating variable (i.e. instrumental network resources) should be related. In Table 3, suggests that political skill is positively related to expressive network resources ($\beta = .49, p < .001$), satisfying the second to the dependent variable. In Table 3, suggests that the use of instrumental network resources is positively related to both subjective career success ($\beta = .50, p < .001$).

Finally, the fourth condition implies that the direct path from the independent variable (i.e. political skill) to the dependent (i.e. subjective career success) when controlling for the effects of the mediating variable. Model suggests that the effect of political skill on subjective career success ($\beta = .08, n.s.$) when controlling for the effects of instrumental network resources. ($\beta = .46, p < .001$). The latter suggests that instrumental network resources act as a fully mediator on the relationship between political skill and subjective career success. Finally, as recommended by Baron and Kenny (1986), we used the Sobel (1982) test, which determines the magnitude of the change in the beta-coefficient for a predictor variable after the entry of another predictor variable into the model, to assess the significance of the mediating effect. The effect of political skill was statistically significant in subjective career success (Tolerance $>0,23 \rightarrow 0,750$; VIF $<10 \rightarrow 1,334$; Durbin Watson: $1,5-2,5 \rightarrow 1,784$). The results from the above steps indicate that Hypothesis 2b, H3b, H4b were supported.

5. Discussion and Conclusion

Individuals in organizations strive for survival based on both internal and external factors based on competition and conflict created by the system. Due to the inequalities within these social hierarchies, where conflicts and competition are intense and resources are scarce, those who are stronger and more capable than others will adapt and survive. In organizations that are political arenas where interest groups compete and alliances are formed (Cobb and Marquies, 1981; Mintzberg, 1983, 1985; Ferris et al., 2000), individuals who want to eliminate inequalities within the social hierarchy must have political abilities. Thanks to these political capabilities, individuals struggling in organizational life will adapt and survive. In the current study based on Social Darwinism Theory, it is argued that abilities such as political intelligence, an antecedent of

political skill, play an essential role in building, using, and enhancing networks (Wei et al., 2012). Our findings show that political intelligence is different from and is an antecedent of political skill, and if employees have these abilities, they can access network resources easily for career success. Also, the research reveals the mediating role of network resources in the relationship between political skill and subjective career success. In other words, employees who want to achieve career success will obtain networks through their abilities such as political intelligence and political skill and make progress in the political arenas where career battles take place. This study contributes to both political skill and network resources. In this paper that reveals the effect of political skill on network resources, it is found that political skill has a significant impact on instrumental and expressive network resources. While 25.7% of instrumental network resources are explained by political skill, 16.2% of expressive network resources are explained. Therefore, it can be argued that individuals mostly prefer obtaining instrumental network resources in organizations. Compared to the previous research in the related literature, the effect of political skill on expressive and instrumental network resources is higher in the current paper (Wei et al. 2010; 2012; Treadway et al. 2010). As can be understood, one of the most important contributions of this study is making the classification of informal network resources and the determination of which network resources are used more by individuals in the organizations. Besides, politically-skilled individuals serve for organizational purposes through network resources, as they utilize opportunities both within and outside the organization for themselves and the organization through the social capital they acquire. The case contributes to the firm's behavioral theory based on political skill and social networks (Wei et al., 2012). Seibert et al. (2001) showed that network resources and subjective career success were correlated ($r = .11, p < .01$). Moreover, Eby et al. (2003) concluded that networking behavior is associated with perceived career success. Bozionelos (2003) argues that employees with strong social networks perceive their careers more successfully than others. According to the results of the study, mentoring and network resources explain perceived career success by 14%. Forret and Dougherty (2004) found that networking behavior for career explained 31% of perceived career success. Ng et al. (2005) found that subjective career success positively affected by good relationships with supervisors in their study from a meta-analytical perspective. The findings of this research are in line with the other studies in the literature and show that

employees with valuable network resources within the organization achieve more subjective career success.

In this study, political skill explains subjective career success by 10%, while in the study of Breland et al. (2007), political skill with LMX explains subjective career success by 19%. Munyon et al. (2015) confirm that political skill has a positive relationship with career satisfaction. If so, this finding is in line with the findings in the literature. Although studies regarding political skill have been investigated for a long time and individual research outcomes have made significant contributions (Ferris et al. 2007), limited information is available about the career benefits of political skill (Wei et al. 2012). In order to put forward the answer to the question “how does social network theory influence the impact of political skill on one’s career outcomes?” that was asked by Ferris et al. (2007) and Liu et al. (2007), in this research, the mediator role of network resources in the effect of political skill on subjective career success is investigated. As a result of the research, instrumental network resources mediate the relationship between political skill and career success, while expressive network resources have a partial mediating effect. Previous research in the literature explores the direct relationship between political skill and individual outcomes (Perrewe et al. 2000, 2005; Hochwarter et al. 2006), current paper has an important place in terms of revealing the mechanism that mediates these relationships.

Individuals will have better interactions and access to resources through abilities such as political intelligence and political skill. In this way, they will have a direct impact on organizational outputs by showing success in activities such as collaborations and teamwork both inside and outside the organization. In this study, companies are advised to include training and development programs and coaching techniques on political abilities. Because of the fact that it will lead to the neglect of works in countries that network activities are commonly used, such as Turkey, such applications should be designed rigorously with the appropriate coach.

This study has several limitations. First of all, the research was not conducted on people who are in the network center in organizations. Since people at the center of the network already have different merits than other employees, more accurate results can be demonstrated if the future research focus on these people. Secondly, the lack of data from multiple sources may

raise the problem of common error variance. In further studies, data may be collected from the person, his/her subordinates, and superiors. Another significant limitation is that although the scale has been developed in many different sectors, the research focuses only on salespersons in the banking sector. Since the research may give different results in different sectors, it may be useful to repeat it in other sectors with a sociable business environment. The last limitation is that the measurement of subjective success regarding career success is preferred. The comparison of objective criteria by testing them in another study may make essential contributions to the relevant theory. Furthermore, in future research, relationships with variables such as personal and social influence tactics, reputation management, and performance outputs can be measured. Both cross-sectional and longitudinal studies should be performed.

Our results reveal the relationship between political skill and political intelligence, which is a structure that differs from political skill. In addition, it contributed to the literature by showing the mechanism underlying the relationship between political skill and subjective career success from the basic assumption of Social Darwinism Theory in the field of organizational behavior.

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