

ADMINISTRATIVE AND ECONOMIC SCIENCE RESEARCH, THEORY

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Assoc. Prof. Dr. Yuksel Akay UNVAN

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PREFACE

Dear Readers,

We are together again in a new book. The economy is going through a difficult period both in the world and in Turkey. Different approaches and evaluations are needed in this period. Therefore, it is extremely important to follow current issues. Theoretical studies, analyzes and results are also valuable in this sense. Universities must be involved in the solution process. This is only possible with these works. This book contains 17 valuable chapters. These studies, which have a solid theoretical foundation and are based on data, that is, evidence, are also important in terms of being objective evaluations. We would like to thank the valuable academicians who contributed and produced. We are happy if we were able to contribute a little to you, who met with us as readers.

Best Regards.

Assoc. Prof. Dr. Akay UNVAN

CONTENTS

	PREFACE	I
CHAPTER 1	OIL PRICE VOLATILITY AND FOREIGN EXCHANGE RATES NEXUS: EVIDENCE FROM EMERGING COUNTRIES IN COVID-19 PERIOD	1
CHAPTER 2	THE ROLE OF JOB SATISFACTION IN THE RELATIONSHIP BETWEEN PERCEIVED OVERQUALIFICATION AND BORE-OUT SYNDROME	23
CHAPTER 3	INVESTIGATION OF THE EFFECT OF BOSS PHUBBING ON ORGANIZATIONAL ALIENATION ACCORDING TO THE PERCEPTIONS OF HEALTHCARE WORKERS	41
CHAPTER 4	IMPRESSION MANAGEMENT TACTICS THROUGH SOCIAL NETWORKS: SAMPLE OF TWITTER	61
CHAPTER 5	UNDERSTANDING TURKISH FEMALE ENTREPRENEURS' DEMANDS TO INCREASE THEIR BUSINESS PERFORMANCE: BAYESIAN ROUGH SET APPROACH	77
CHAPTER 6	CLASSIC, NEO-CLASSIC, MODERN AND POST MODERN ERAS CONTEMPORARY APPROACHES IN PRODUCTION MANAGEMENT	99
CHAPTER 7	PURCHASING TECHNOLOGIES IN ACCOMMODATION BUSINESSES AND E-PROCUREMENT	131
CHAPTER 8	AN INTEGRATED MCDM APPROACH TO EVALUATE FINANCIAL PERFORMANCE OF TEXTILE AND LEATHER FIRMS LISTED IN BIST	157
CHAPTER 9	EFFICIENCY OF PUBLIC HOSPITALS WITHIN THE SCOPE OF SPATIAL DEPENDENCE IN HTP PERIOD	183
CHAPTER 10	CRYPTOCURRENCIES IN FINANCIAL MARKETS: THEIR RISKS, OPPORTUNITIES AND THREATS	207
CHAPTER 11	EFFECT OF MONETARY GROWTH IN USA ON SELECTED ASSETS: S&P500, GOLD & BITCOIN ESTIMATES WITH FACEBOOK PROPHET	219

CHAPTER 12	WHAT DO WE KNOW ABOUT BRAND SYMBOLISM?	235
CHAPTER 13	THE NECESSITY OF SUSTAINABLE MARKETING AND SOCIOECONOMICS OF GLOBAL FOOD CRISIS	247
CHAPTER 14	SECTOR-BASED EFFECTS OF COVID-19 PANDEMIC IN TURKEY: AN EVENT STUDY ANALYSIS OF THE STOCK MARKET SECTOR INDICES	263
CHAPTER 15	COMPARATIVE ADVANTAGE OF POLAND IN THE FURNITURE SECTOR AND ITS IMPACT ON EU28'S COMPETITIVENESS	285
CHAPTER 16	THE ARAB SPRING AND ITS REFLECTION ON SYRIA	305
CHAPTER 17	LUXURY HOUSING TAX IN TERMS OF TAXATION PRINCIPLES	319

CHAPTER 1

OIL PRICE VOLATILITY AND FOREIGN EXCHANGE RATES NEXUS: EVIDENCE FROM EMERGING COUNTRIES IN COVID-19 PERIOD

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1. Introduction

Emerging countries' dependence on oil will continue as long as they continue to grow. Therefore, emerging countries' economies are closely affected by fluctuations in oil prices due to the most important input of the production process. Although technology and productivity gains in OECD countries have been flat in recent years, the demand for oil is increasing due to rapid growth in emerging markets. For example, oil consumption in emerging countries such as China, Brasil, Argentina, India, Turkey, Rusia and South Africa has increased by about 16% in the last five years (CFR, 2021).

In 1987, a major crisis occurred in the United States, and demands for the risk to be measured due to uncertainties in the financial markets in the crisis environment began to increase. Thus, volatility indices have started to be created to measure risk. The first uncertainty measurement was in 1993 with the first volatility index (VIX index), using the implicit volatility of stock index options by the Chicago Board Options Exchange (CBOE). In 2004, CBOE began to simplify the volatility index calculation methodology even further and to create a volatility index in emerging countries. After increasing volatility between 2007 and 2008, three new uncertainty indices began to be calculated in July 2008 to measure the uncertainty in oil and gold prices and the Euro / Dollar parity. The

calculation method of this new index uses the VIX index calculation method, which measures uncertainty in the stock market. The CBOE Crude Oil Volatility Index (OVX), which is the main subject of this study, is calculated over the US oil fund option prices and measures the market expectation for the 30-day volatility of crude oil prices. The GVZ index is calculated through options written on SPDR gold shares, which reflects the 30-day volatility of gold prices, while another index, the EVZ, is based on the currency shares euro confidence options and measures the market expectation for the 30-day volatility of the Euro/Dollar exchange rate. (Siriopoulos and Fassas, 2013, p. 234).

As a result of this study, the relationship between the OVX index, which is an indicator of the uncertainty in oil prices, and the currencies of developing countries are tried to be determined during the covid-19 pandemic period. Therefore, the OVX index and the exchange rates of ten developing countries – Turkey, Argentina, Brazil, Indonesia, Philippines, South Africa, India, Mexico, Poland and Russia – are chosen as examples to examine the causal relationship between exchange rates.

2. Literature Review

In the literature section, examples of studies between the OVX index and exchange rates, academic studies on oil prices and stock market, gold and other macroeconomic relations are also included.

Maghyereh (2006) used VAR analysis in study, which included daily price data of the stock indices of 22 emerging countries with the changes in oil prices between 1998-2004. According to VAR analysis, changes in oil prices did not cause significant changes in stock prices of emerging countries. In addition, it was determined that the effect of oil price shocks on stock indices is higher in countries with high energy consumption. It has been determined that fluctuations in oil prices affected the emerging country stock indices for two days and started to decrease after the fourth day.

Apergis and Miller (2009) analyzed the results of oil price volatilities on the developed countries' - such as USA, UK, France, Germany, Italy, Japan, Australia, Canada - stock markets by using VAR model. Authors used monthly observations between 1981-2007 and it was determined that the stock returns of developed countries did not react to oil market shocks.

Coudert et al. (2013) researched the relations between oil prices and real exchange rates by using the panel smooth- transition regression model in their studies that used the annual data between 1980-2012 for 17 oil-exporting countries and 52 commodity-exporting countries. In cases where volatility

is low, long-term co-integration relationship has been determined between oil prices volatilities and real exchange rates. In the event that volatility in oil prices increased, it was observed that commodity-exporting countries diverged from the long-term balance in their exchange rates.

Shafi et al. (2015) investigated the relationship between Germany's currency and oil prices by using the annual data between 1971-2012. They have used Johansen Cointegration Analysis and VECM and have found that increases in oil prices increase the fluctuations in currency..

Ahn (2015) Ahn (2015) examined the effects of demand-driven oil prices on macroeconomic variables using financial information contained in refinery products and forward asset prices. As a result of their analysis, they found that shocks occurring in demand-driven oil prices affect the FED funding interest rates.

Yılmaz and Altay (2016) used the data of crude oil prices and exchange rates for the period of 1985-2015, and examined the relationships between these two series in Turkey. In the study, first of all, the long and short term relationships between the series were analyzed with the ARDL cointegration approach and the cointegration relationship between the series was determined. According to the long-term analysis, the effect of crude oil prices on exchange rate volatility was found to be negative and statistically significant. In the short-term analysis result, the coefficient of error correction term was found to be statistically significant and negative. Consequently, it can be said that the deviations between the variables converge to the long-term equilibrium level. Finally, the causality relationship between the series was examined by using the causality test in variance and the presence of a volatility spillover effect from crude oil prices to exchange rates was determined.

Kaplan ve Yapraklı (2017) examined the relationship between real exchange rates of 7 countries which are producing both gold and oil (USA, Russia, Brazil, Indonesia, Australia, China and Mexico) and gold and oil prices. Toda - Yamamoto and Khatami J (H) symmetric causality tests were used in the study. The authors used monthly data between 2008-2015, there was no causality between gold/oil parity and the real exchange rate in China, Russia and Brasil, the results of the H test show that real exchange rates react in different directions (fall-up) in the countries that were dealt with against negative and positive shocks in the gold/oil parity. As a result, they state that the causal relationship between gold and oil prices in real exchange rates can change according to the analysis method used.

Mollick and Sakaki (2019) examined the relationship between 8 developed and 6 emerging countries' exchange rates and oil prices, and used weekly data between January 1, 1999 and July 1, 2017. According to the results of the study they use the DCC-GARCH model, there was a correlation between oil prices and exchange rates.

Yıldırım and Çekiç (2018) used 2332 daily price data between 01.01.2010 and 01.01.2018, BIST 100 index and Dollar/TL exchange rate, gold, crude oil, GVZ and OVX. The Authors conducted two different analyzes to examine the relationships between them. In the first part of the study, linear Granger Causality Test and many different causality tests were used to investigate the existence and the directionsn of the relationships. In the second part, the dynamic structure of the relationships is modeled using the DCC-GARCH model. In conclusion of their study, while there is a bidirectional nonlinear causality relationship between BIST100 and crude oil, there is a one-way asymmetric relationship from BIST100 to crude oil. As for BIST100 and OVX, a one-way non-linear asymmetric causality relationship was found from BIST100 to OVX. It was also determined that the relations between BIST100 and Dollar/TL, gold, crude oil and OVX display dynamic structure depending on time, but the relationship between BIST100 and GVZ was not dynamic but fixed.

Bouri et al. (2018) examined relationship between the stocks of the USA and BRICS countries and VIX as well as the OVX and GVZ indices, They concluded that the US and BRICS country stock markets are affected by the uncertainty indices, OVX, VIX and GVZ indexes.

Sarwar et. al. (2018) have examined the volatility between stock returns and the returns of crude oil in the three largest oil-importing countries in Asia and for the period between January 01, 2000 and December 27, 2016. Consequently, only a bilateral relationship has been detected in India.

Kurt (2019), used daily data between March 15th, 2010 to February 15th, 2018. Johansen cointegration test, VECM, Wald analysis and Variance decomposition techniques are used and investigated the effects of GVZ, OVX and Fed funding interest rates on emerging country stock indexes. A relationship between emerging stock markets and independent variables has been determined in the long-term. GVZ and OVX are determined to affect stock market indices when they are handled together or alone, but the effect of GVZ has been seen to be much more.

Narayan (2020), used daily 6590 observations for the sample period between January 02, 1995 and May 05, 2020. The author divided the sample

period into two sub-periods as pre-pandemic (before 31 December 2019) and post-pandemic (after 31 December 2019). It is examined whether the amount of COVID-19 infection and oil price news are important on oil prices by comparing them with each other. With the number of new COVID-19 infections reaching 84,479, the impact of COVID-19 infection on oil prices is greater than the impact of oil price news. News has limited impact on price due to COVID-19 cases.

Prabheesh et. al. (2020) examined the relationship between oil price and stock price returns for four major oil-importing countries and used the DCC-GARCH Model. As a result of their analysis, it was determined that the COVID-19 outbreak strengthened oil price returns and stock price returns in all four countries, especially during March.

3. Empirical Methods

The data of this study covers the period from March 11, 2020 to June 16, 2021, and includes 274 observations obtained from the Bloomberg data services. These are the observations of the days when all markets are open at the same time. E-views 9 econometric analysis program is used in order to perform the empirical analysis..

Table 1. The Definition of Variables

OVX Index	CBOE Crude Oil ETF Volatility Index
TL	Turkish Lira / US Dollar
ARS	Argentina Peso / US Dollar
BRL	Brazil Real / US Dollar
IDR	Indonesia Rupiah / US Dollar
PHP	The Philippines Peso / US Dollar exchange rate
ZAR	South Africa Rand / US Dollar
INR	India Rupiah / US US Dollar
MXN	Mexico Peso / US Dollar
PLN	Poland Zloty / US Dollar
RUB	Russia Ruble / US Dollar

Figure 1 includes the graphical presentation of the OVX Index and the foreign exchange rates of emerging countries.

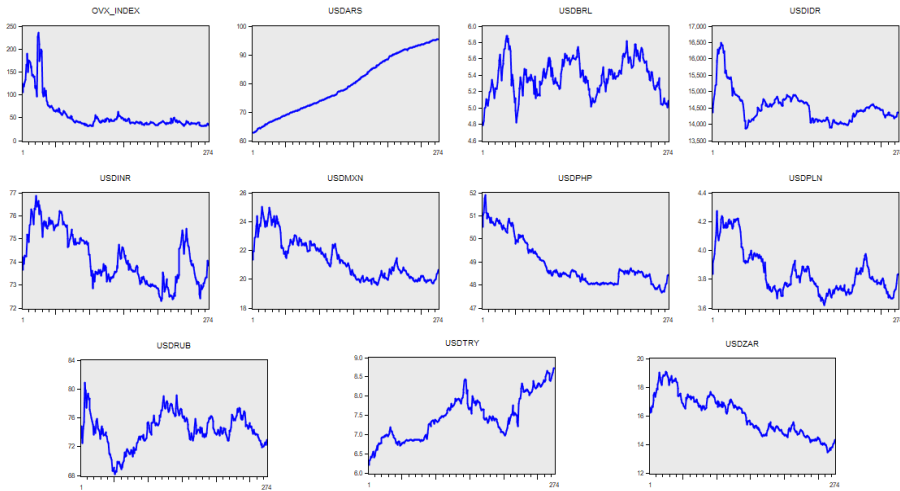


Figure 1. Graphical Presentation of The Variables

Source: Authors' Compilation

The macroeconomic time series contain a stochastic trend and the mean of the series may change over time. Analyzes to be performed by ignoring the changes of the series over time can eliminate the validity of the hypotheses. In this case, the series should be stationary. The stationary nature of time series means that their mean, variance, and covariance do not change over time and therefore it is defined as weak stationarity. (Darnell, 1994, p. 386). If the common and conditional probability distribution of a stochastic process does not change depending on time, it is stated that this series is strongly stationary (Charemza and Deadman, 1993, p. 118).

Macroeconomic time series are generally not stationary. Therefore, the first or second differences or logarithms of these series are become stationary. Although many methods are used in the stationary analysis of the series, ADF, PP and KPSS tests are the methods most used by researchers. In this study, time series are analysed by ADF test (Dickey Fuller, 1979 and 1981) and PP test, which is based on the addition of the correction factor (Correction Factor / CF) recommended by Perron into the ADF test (Philips and Perron, 1988, p. 335-346).

The three-model estimation of the ADF test is as follows:

$$\text{Model 1: } \Delta y_t = \beta y_{t-1} + \sum_{i=1}^n \alpha_i \Delta y_{t-i} + u_t$$

$$\text{Model 2: } \Delta y_t = \alpha + \beta y_{t-1} + \sum_{i=1}^n \alpha_i \Delta y_{t-i} + u_t.$$

$$\text{Model 3: } \Delta y_t = \alpha + \beta y_{t-1} + \gamma T + \sum_{i=1}^n \alpha_i \Delta y_{t-i} + u_t.$$

The t statistic values (probability values) are compared with Mackinnon 1%, 5% and 10% critical values. As a result of comparison with Mackinnon critical

values, it is commented whether it is stationary for the series. It is desirable that the t statistical values obtained as a result of the analysis are lower than the Mackinnon critical value. In this study, Mackinnon 5% critical value, which is the most used significance value, is used. The results of the analysis are tested against zero and alternative hypothesis for stability testing (Mackinnon 1996).

The definitions of the null hypothesis (H_0) and alternative hypothesis (H_1) equations are as follows;

$H_0 = 0$ Null hypothesis, Y_t has unit root.

$H_1 < 0$ The alternative hypothesis, Y_t has not any unit root

In the unit root test analysis, the t statistic values are lower than the Mackinnon 5% critical value, and the condition is necessary for the Granger causality test analysis to be continued. If the t statistic values are not lower than the Mackinnon 5% critical value, ADF and PP unit root test analysis is repeated until the analysis results are less than the 5% critical value of Mackinnon. In order to apply unit root test, it is necessary to determine the delay length of the variables that are released from the unit root. For this purpose, delay lengths that minimize the Akaike, Hannan-Quinn and Schwartz information criteria are determined.

Following the determination of the number of lags, the Granger causality test is

$$y_{1t} = \alpha_{10} + \beta_{11}y_{1t-1} + \beta_{12}y_{2t-1} + \gamma_{11}y_{1t-1} + \gamma_{12}y_{2t-2} + \delta_{11}y_{1t-3} + \delta_{12}y_{2t-3} + u_{1t}$$

$$y_{2t} = \alpha_{20} + \beta_{21}y_{1t-1} + \beta_{22}y_{2t-1} + \gamma_{21}y_{1t-1} + \gamma_{22}y_{2t-2} + \delta_{21}y_{1t-3} + \delta_{22}y_{2t-3} + u_{2t}$$

Are y_{1t} and y_{2t} the reason for y_{1t} and y_{2t} as a result of using delayed “y” values in the above two models? The answer to the question is being examined. If changes in y_{1t} cause changes in y_{2t} then there is Granger causality from y_{1t} and y_{2t} (Brooks, 2002: 339-340). In Granger causality, there may be a one-way and two-way causal relationship between y_{1t} and y_{2t} , or there may be no relationship between variables (Öner and Satici, 2020: 264). Instead of y_{1t} and y_{2t} variables in the model, causality relationship is investigated by using the main subject of this study, the OVX index and nominal exchange rates of emerging countries.

4. Empirical Analyses

Before the empirical analyses Table 2 presents the descriptive statistics of variables

Table 2. The Descriptive Statistics of Variables

OVX_ IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
Mean	79.5250	5.38518	14545.	74.1798	21.403	48.940	3.8523	74.319	7.4599	16.0383
Median	77.9021	5.37790	14482.	73.882	21.115	48.550	3.8039	74.343	7.4117	16.2065
Maxim	95.3754	5.8860	16495.	76.867	25.014	51.926	4.2730	80.878	8.7352	19.0815
Minimu	62.6682	4.79440	13878	72.325	19.604	47.660	3.6194	68.200	6.2099	13.4316
Std. De.	10.0453	0.21592	513.70	1.12379	1.4172	0.9963	0.1597	2.3628	0.5786	1.42773
Skewns	0.09467	-0.1144	1.7434	0.37481	0.6893	0.9653	1.0197	-0.258	0.2210	0.23085
Kurtosi	1.64246	2.68489	6.6813	1.99879	2.4225	2.6505	3.0782	3.1028	2.1071	2.02443
Jarque- Bera	684.8831	21.4490	1.7326	17.8597	25.511	43.950	47.55	3.1667	11.331	13.2992
Probab.	0.000000	0.00002	0.4205	0.0000	0.0000	0.0000	0.0000	0.2052	0.0034	0.00129
Sum	15743.17	21789.8	1475.54	39855	20325.2	13409	1055.5	20363	2044	4394.50
Sum Sq.	409464.2	27548.1	12.7279	72043	344.778	271.03	6.9703	1524.1	91.418	556.492
Observ.	274	274	274	274	274	274	274	274	274	274

Source: Authors' Compilation

The level values and first differences of the OVX index and the exchange rates of the emerging countries were compared with the MacKinnon 5% critical values.

Table 3. ADF and PP Unit Root Test Results of Variables

Variables	ADF Test Prob.*	PP Test Prob.*	Result	ADF Test Prob.*	PP Test Prob.*	Result
OVX_INDEX	0.0629	0.1115	I(0)	0.0000	0.0000	I(1)
USDARS	0.9841	0.9736	I(0)	0.0000	0.0000	I(1)
USDBRL	0.0625	0.0579	I(0)	0.0000	0.0000	I(1)
USDIDR	0.5307	0.1315	I(0)	0.0000	0.0000	I(1)
USDINR	0.0869	0.0605	I(0)	0.0000	0.0000	I(1)
USDMXN	0.0785	0.0591	I(0)	0.0000	0.0000	I(1)
USDPHP	0.8575	0.8618	I(0)	0.0000	0.0000	I(1)
USDPLN	0.4948	0.3335	I(0)	0.0000	0.0000	I(1)
USD RUB	0.2709	0.3494	I(0)	0.0000	0.0000	I(1)
USDTRY	0.5411	0.4732	I(0)	0.0000	0.0000	I(1)
USDZAR	0.0722	0.0585	I(0)	0.0000	0.0000	I(1)

*MacKinnon (1996) one-sided p-values.

Source: Authors' Compilation

The level values and first differences of the OVX index and the exchange rates of the emerging countries were compared with the MacKinnon 5% critical values of the exchange rates of the emerging countries and it was examined whether they had a unit root. The unit root problem disappears when the first differences of the variables that have a unit root in the level values are taken.

ADF unit root test analysis results show that the first difference values of the variables are below the MacKinnon 5% critical values. According to these results, the null hypotheses of the first differenced variables are rejected and the alternative hypotheses are accepted and the variables become stationary in the first order. The goal is to achieve this result. The graphical presentation of the OVX index, which is made stationary by taking the first difference, and the exchange rates of emerging countries is presented in Figure 2. Variance and covariance of variables between two periods do not change depending on time.

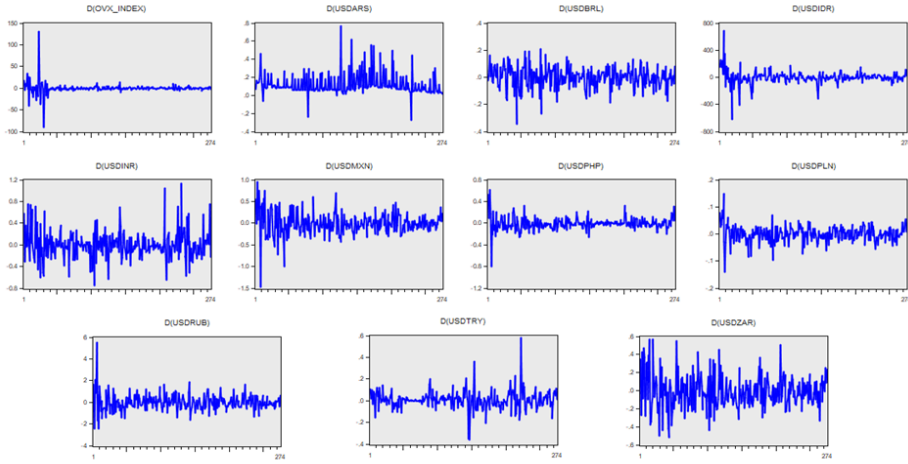


Figure 2. Graphical Presentation of First Difference Results

Source: Authors' Compilation

Finally, for the stationary variables, it should also be tested whether all the characteristic polynomial roots are contained within the unit circle to test the stability of the VAR model. As seen in Figure 3, the unit circle consist of all its characteristic roots. This situation indicates that the VAR model is stationary and there is no problem in terms of stationarity.

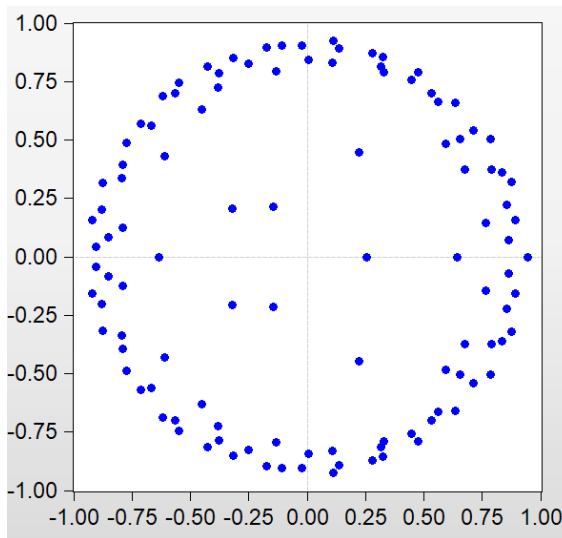


Figure 3. AR Characteristic Inverse Polynomial Roots in The Unit Circle

Source: Authors' Compilation

After the variables of VAR model become first order stationary, it is necessary to find the delay length of these variables. The lag length analysis results of the variables are given in Table 4.

Table 4. VAR Lag Order

	LR	FPE	AIC	SC	HQ
0	-737.7397	NA	7.89e-12	5.650866	5.799458*
1	-615.4567	233.4913	7.82e-12*	5.641183*	7.424293
2	-551.5118	116.7900	1.21e-11	6.071787	9.489416
3	-465.3085	150.2864	1.59e-11	6.334404	11.38655
4	-375.2578	149.5181	2.05e-11	6.567984	13.25465
5	-281.7542	147.4887	2.61e-11	6.775504	15.09669
6	-202.8892	117.8511	3.78e-11	7.093503	17.04920
7	-82.71191	169.6087*	4.09e-11	7.099713	18.68993
8	27.02363	145.7619	4.93e-11	7.184727	20.40947

Notes: LR: Test Statistics FPE: Final Prediction Error Criterion, AIC: Akaike Information Criterion, SC: Schwarz Information Criterion, HQ: Hannan-Quinn Information Criterion

Source: Authors' Compilation

According to the lag length analysis results in Table 4, the numbers with an (*) sign indicate the lag length of the relevant information criterion. The lag length indicated by the Akaike information criterion (Akaike, 1974), which is the most widely used information criterion in econometric analysis, was preferred in this study.

After using the lag lengths in the Granger causality test, the following Granger causality test hypotheses are formed:

Null Hypothesis (H_0): OVX index is not the cause of the dependent variable.

Alternative Hypothesis (H_1): OVX index is the cause of the dependent variable.

If the values are above 0.05, the H_0 is accepted and the H_1 is rejected. If the probability values of the dependent variables are below 0.05, H_0 is rejected and H_1 is accepted. Accepting the H_1 shows that there is a Granger causality relationship between the variables.

Table 5. VAR Granger Causality Test Results

Independent Variable: OVX Index		
Dependent Variable	Chi-square	P-value
USDARS	2.900500	0.0486
USDBRL	0.149829	0.6987
USDIDR	0.155680	0.6932
USDINR	1.488037	0.2225
USDMXN	0.184516	0.6675
USDPHP	0.013409	0.9078
USDPLN	0.000527	0.9817
USDRUB	1.184056	0.2765
USDTRY	0.624285	0.4295
USDZAR	0.012207	0.9120

Source: Authors' Compilation

According to the Granger Causality Test results that are presented in Table 5, causality relationship was determined only from the OVX Index to the Argentine Peso.

Impulse-response functions and variance decomposition are used to reveal dynamic relationships between variables. Impulse response functions show the responses of the current and future values of the variables in the model against the shock that occurs in any variable in the model. (Brooks, 2001, p. 341).

The shock effects of OVX index occurred on emerging countries foreign exchange rates can be analysed by looking at impulse-response functions in Figure 4 in a 10-day period. The shock effect from the OVX index had a positive effect on all emerging market currencies in the first days, except for the The Philippines peso. The shock effect ends after the 5th day on all emerging market countries' foreign exchange rates.

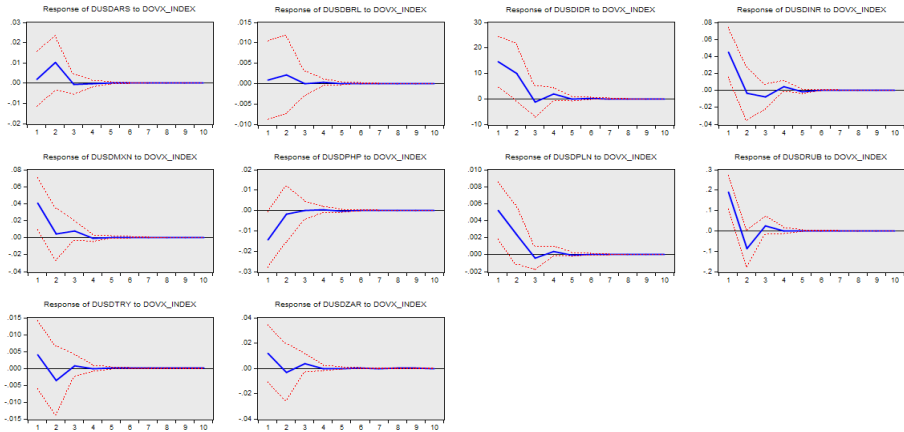


Figure 4. Impulse-Response Functions of Variables

Source: Authors' Compilation

After examining the impulse-response functions, variance decomposition analysis is performed to determine the source of the change in variables. Variance decomposition analyses indicates that how much of the change in the variables is caused by itself and how much of it is caused by other variables (Enders, 1995, p. 311).

According to the variance decomposition analyses; while the changes in the Argentine peso are explained by the effect of the OVX index by 0.03% on the first day, it can be explained by the effect of the OVX index around 0.80% on the second day. While the changes in Brazilian real can be explained by the effect of the OVX index at a rate of 0.01% on the first day, it can be explained by the effect of the OVX index around 0.87% on the second day. Similarly, the changes in Turkish Lira can be explained by the effect of the OVX index at a rate of 0.40%, while this effect is stronger on other foreign exchange rates: on average 3.38% for Indonesia Rupiah, 3% for India Rupiah, 2.52% for Mexico Peso, 1.57% for The Philippines Peso, 3.71% for Poland Zloty and 7.51% for Russia Ruble..

5. Conclusion

This study aims to contribute to the academic literature on the analysis of the relationship between the OVX Index - an indicator of the uncertainty in oil prices - and the exchange rates of developing countries during the pandemic period. Therefore, the causality relationship between the OVX Index and emerging countries' exchange rates was examined by using the Granger Causality Test as the first step.. Then, the response of emerging countries

exchange rates to the changes in the OVX index was analyzed with impulse-response functions and finally variance decomposition methods were applied.

According to the causality results, only the causality effect of the OVX index on the Argentine peso could be determined. On the other hand, the impulse-response analysis reveals that the shock effects from the OVX index had a positive effect on all emerging market currencies in the first days, except for the The Philippines peso. Then, the shock effect ends after the 5th day on all emerging countries currencies.

Finally, as a result of the variance decomposition analysis, it was concluded that the changes in the Russian Ruble and Poland Zloty can be explained by the effect of the OVX Index at the highest rate while the changes in the Turkish Lira at the lowest rate.

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Annex

Annex 1. Variance Decomposition of Variables (%)

OVX_IND.

Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	93.68016	0.016974	0.105542	0.864978	0.557149	1.653507	2.488908	0.005181	0.512201	0.10283	0.012566
3	93.43630	0.020137	0.111407	0.881803	0.568252	1.749963	2.512995	0.030857	0.532516	0.11815	0.037616
4	93.42342	0.020208	0.112635	0.881693	0.568227	1.751209	2.513681	0.031629	0.539568	0.11846	0.039260
5	93.42157	0.020220	0.112697	0.881748	0.568948	1.751255	2.513893	0.032022	0.539563	0.11846	0.039623
6	93.42143	0.020232	0.112724	0.881749	0.568971	1.751298	2.513897	0.032025	0.539563	0.11846	0.039652
7	93.42142	0.020232	0.112724	0.881750	0.568974	1.751298	2.513898	0.032026	0.539563	0.11846	0.039652
8	93.42142	0.020232	0.112724	0.881750	0.568974	1.751298	2.513898	0.032026	0.539563	0.11846	0.039652
9	93.42142	0.020232	0.112724	0.881750	0.568974	1.751298	2.513898	0.032026	0.539563	0.11846	0.039652
10	93.42142	0.020232	0.112724	0.881750	0.568974	1.751298	2.513898	0.032026	0.539563	0.11846	0.039652

ARS

Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	0.033740	99.96626	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000
2	0.801721	94.64898	2.156838	0.231657	0.372510	1.289784	0.178122	0.002865	0.004951	0.20608	0.106489
3	0.801971	94.24781	2.226734	0.295800	0.404782	1.293138	0.369130	0.042193	0.006784	0.25229	0.106430
4	0.803168	94.23688	2.230412	0.298234	0.405158	1.293623	0.369412	0.042213	0.007720	0.20542	0.107753
5	0.803190	94.23597	2.230752	0.298232	0.405226	1.293737	0.369410	0.042213	0.008055	0.20544	0.107769
6	0.803191	94.23586	2.230758	0.298236	0.405255	1.293737	0.369432	0.042234	0.008061	0.25446	0.107796
7	0.803193	94.23584	2.230761	0.298236	0.405256	1.293739	0.369432	0.042234	0.008061	0.20446	0.107796
8	0.803193	94.23584	2.230761	0.298236	0.405257	1.293739	0.369432	0.042234	0.008061	0.20544	0.107796
9	0.803193	94.23584	2.230761	0.298236	0.405257	1.293739	0.369433	0.042234	0.008061	0.20544	0.107796
10	0.803193	94.23584	2.230761	0.298236	0.405257	1.293739	0.369433	0.042234	0.008061	0.20544	0.107796

BRL											
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	0.010007	0.143803	99.84619	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000
2	0.086525	0.176330	98.01369	0.364291	0.077840	0.684155	0.559623	0.007550	0.000482	0.02844	0.001076
3	0.086461	0.176784	97.96901	0.370491	0.087482	0.683811	0.569740	0.019895	0.001370	0.03193	0.003025
4	0.087925	0.177095	97.96219	0.371048	0.087544	0.686348	0.570415	0.020067	0.001645	0.03228	0.003438
5	0.087938	0.177094	97.96158	0.371151	0.087748	0.686344	0.570621	0.020140	0.001646	0.03229	0.003447
6	0.087943	0.177096	97.96153	0.371153	0.087749	0.686355	0.570630	0.020140	0.001647	0.03229	0.003455
7	0.087943	0.177096	97.96153	0.371154	0.087749	0.686356	0.570631	0.020141	0.001647	0.03228	0.003455
8	0.087943	0.177096	97.96153	0.371154	0.087749	0.686356	0.570631	0.020141	0.001647	0.03225	0.003455
9	0.087943	0.177096	97.96153	0.371154	0.087749	0.686356	0.570631	0.020141	0.001647	0.03228	0.003455
10	0.087943	0.177096	97.96153	0.371154	0.087749	0.686356	0.570631	0.020141	0.001647	0.03229	0.003455

IDR											
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	3.027515	0.021074	0.453415	96.49800	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000
2	3.448866	0.179522	7.299793	75.31861	0.496094	6.498797	0.801227	0.040854	5.885596	0.00051	0.030123
3	3.361361	0.175812	7.083400	73.45229	1.689557	6.320300	1.153388	0.560293	5.743243	0.00747	0.452883
4	3.386083	0.193850	7.125252	73.23026	1.686192	6.363011	1.188826	0.558463	5.730950	0.01512	0.521988
5	3.385231	0.194198	7.125469	73.21561	1.690962	6.364186	1.195774	0.560072	5.730300	0.01526	0.522935
6	3.385229	0.194235	7.125527	73.21428	1.691015	6.364288	1.196390	0.560153	5.730187	0.01536	0.523333
7	3.385236	0.194240	7.125553	73.21416	1.691014	6.364316	1.196430	0.560154	5.730179	0.01537	0.523341
8	3.385235	0.194240	7.125554	73.21416	1.691016	6.364316	1.196435	0.560154	5.730178	0.01537	0.523342
9	3.385235	0.194240	7.125554	73.21416	1.691016	6.364316	1.196435	0.560154	5.730178	0.01537	0.523342
10	3.385235	0.194240	7.125554	73.21416	1.691016	6.364316	1.196435	0.560154	5.730178	0.01537	0.523342

INR												
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR	
1	3.314943	0.092175	4.272124	3.616820	88.70394	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	
2	2.943986	0.084272	4.888885	3.485796	79.32323	2.092653	2.421045	0.143908	3.709116	0.28681	0.620296	
3	2.961740	0.087933	5.111127	3.457384	78.04096	2.501652	2.516389	0.467520	3.759251	0.28129	0.814750	
4	2.987857	0.096842	5.142260	3.449307	77.91838	2.546741	2.511376	0.491120	3.757806	0.28132	0.816988	
5	2.989602	0.096977	5.142097	3.449325	77.91432	2.546818	2.511833	0.493072	3.757374	0.28144	0.817132	
6	2.989672	0.096988	5.142095	3.449308	77.91401	2.546829	2.511835	0.493073	3.757398	0.28147	0.817314	
7	2.989672	0.096989	5.142099	3.449309	77.91400	2.546833	2.511835	0.493073	3.757402	0.28147	0.817316	
8	2.989672	0.096989	5.142099	3.449309	77.91400	2.546833	2.511835	0.493073	3.757402	0.28147	0.817316	
9	2.989672	0.096989	5.142099	3.449309	77.91399	2.546833	2.511835	0.493073	3.757402	0.28147	0.817316	
10	2.989672	0.096989	5.142099	3.449309	77.91399	2.546833	2.511835	0.493073	3.757402	0.28147	0.817316	
MXN												
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR	
1	2.561571	0.126545	31.95089	0.113695	0.599343	64.64795	0.000000	0.000000	0.000000	0.00000	0.000000	
2	2.451871	0.119966	30.27346	0.770845	2.626476	61.43693	0.269188	1.980136	0.037121	0.01427	0.019733	
3	2.528992	0.136738	30.22985	0.807859	2.633186	61.18898	0.287321	1.981553	0.099156	0.02108	0.085275	
4	2.528862	0.136895	30.21464	0.813844	2.654218	61.15623	0.299362	1.986602	0.100794	0.02114	0.087408	
5	2.529056	0.137035	30.21366	0.814137	2.654101	61.15403	0.300536	1.986580	0.100841	0.02139	0.088631	
6	2.529064	0.137045	30.21365	0.814174	2.654097	61.15391	0.300604	1.986575	0.100852	0.02139	0.088635	
7	2.529063	0.137045	30.21364	0.814178	2.654102	61.15390	0.300613	1.986576	0.100852	0.02139	0.088637	
8	2.529063	0.137045	30.21364	0.814178	2.654102	61.15390	0.300613	1.986576	0.100852	0.02139	0.088637	
9	2.529063	0.137045	30.21364	0.814178	2.654102	61.15390	0.300613	1.986576	0.100852	0.02139	0.088637	
10	2.529063	0.137045	30.21364	0.814178	2.654102	61.15390	0.300613	1.986576	0.100852	0.02139	0.088637	

PHP											
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USD RUB	USDTRY	USDZAR
1	1.596247	0.106309	0.530906	10.15135	3.836263	0.395438	83.38348	0.000000	0.000000	0.00000	0.000000
2	1.577449	0.103848	1.237709	10.47868	3.726687	1.201096	80.99569	0.104952	0.333757	0.18036	0.059769
3	1.571478	0.109271	1.324784	10.43819	3.719486	1.268581	80.70596	0.108312	0.487636	0.18850	0.077797
4	1.572304	0.109395	1.327165	10.43491	3.735651	1.269702	80.66710	0.119707	0.487799	0.18839	0.087875
5	1.573033	0.109713	1.328203	10.43443	3.736095	1.270954	80.66293	0.119795	0.487845	0.18844	0.088557
6	1.573038	0.109713	1.328205	10.43443	3.736204	1.270959	80.66276	0.119831	0.487856	0.18844	0.088557
7	1.573038	0.109713	1.328206	10.43443	3.736204	1.270961	80.66275	0.119832	0.487857	0.18844	0.088564
8	1.573039	0.109713	1.328206	10.43443	3.736204	1.270961	80.66275	0.119832	0.487857	0.18844	0.088564
9	1.573039	0.109713	1.328206	10.43443	3.736204	1.270961	80.66275	0.119832	0.487857	0.18844	0.088564
10	1.573039	0.109713	1.328206	10.43443	3.736204	1.270961	80.66275	0.119832	0.487857	0.18844	0.088564

PLN											
Period	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USD RUB	USDTRY	USDZAR
1	3.430820	2.293173	16.21883	0.839255	2.555783	10.43235	0.347111	63.88268	0.000000	0.00000	0.000000
2	3.745413	2.159342	15.91629	0.932763	3.194893	11.38346	0.383161	58.06691	3.223592	0.04446	0.949709
3	3.704384	2.139152	15.66316	1.071847	3.570980	11.23594	0.753742	57.38615	3.172163	0.04545	1.257021
4	3.715425	2.144946	15.66935	1.074960	3.572544	11.26719	0.768231	57.29319	3.169267	0.04825	1.276639
5	3.715202	2.144776	15.66816	1.076066	3.575424	11.26648	0.770772	57.28917	3.169035	0.04828	1.276627
6	3.715240	2.144778	15.66814	1.076108	3.575401	11.26650	0.770923	57.28880	3.169020	0.04832	1.276763
7	3.715240	2.144778	15.66815	1.076115	3.575401	11.26651	0.770934	57.28877	3.169020	0.04832	1.276763
8	3.715240	2.144778	15.66814	1.076115	3.575401	11.26651	0.770935	57.28877	3.169020	0.04832	1.276763
9	3.715240	2.144778	15.66814	1.076115	3.575401	11.26651	0.770935	57.28877	3.169020	0.04832	1.276763
10	3.715240	2.144778	15.66814	1.076115	3.575401	11.26651	0.770935	57.28877	3.169020	0.04832	1.276763

RUB												
Period	OVX	IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	7.377518		0.005818	17.49150	0.004353	0.694842	7.680980	1.385506	0.092023	65.26746	0.00000	0.000000
2	7.486414		0.005043	15.21715	0.192756	6.948205	7.521340	3.604238	1.123329	54.97152	0.00312	2.926886
3	7.519796		0.081206	15.12378	0.196030	7.084911	7.579998	3.727070	1.133553	54.41659	0.04217	3.094895
4	7.518103		0.081225	15.12385	0.197401	7.084764	7.585969	3.729200	1.133409	54.40446	0.04218	3.099434
5	7.518004		0.081266	15.12366	0.197431	7.085011	7.585939	3.729380	1.133684	54.40389	0.04226	3.099477
6	7.518035		0.081272	15.12367	0.197431	7.085051	7.585955	3.729372	1.133702	54.40377	0.04226	3.099471
7	7.518036		0.081273	15.12367	0.197432	7.085055	7.585954	3.729373	1.133702	54.40377	0.04226	3.099472
8	7.518036		0.081273	15.12367	0.197432	7.085055	7.585954	3.729373	1.133702	54.40377	0.04226	3.099472
9	7.518036		0.081273	15.12367	0.197432	7.085055	7.585954	3.729373	1.133702	54.40377	0.04226	3.099472
10	7.518036		0.081273	15.12367	0.197432	7.085055	7.585954	3.729373	1.133702	54.40377	0.04226	3.099472
TRY												
Period	OVX	IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	0.240266		0.464819	5.934810	0.304931	0.427737	1.922712	0.013022	0.379725	0.650753	89.6612	0.000000
2	0.399656		0.530111	5.685497	0.459960	1.219034	1.937260	0.463173	2.233153	0.694253	86.3763	0.001524
3	0.407243		0.534988	5.685425	0.459368	1.219058	1.937503	0.464243	2.233566	0.706883	86.2634	0.088247
4	0.407242		0.535749	5.686157	0.459508	1.221019	1.937641	0.464325	2.234538	0.709364	86.2539	0.090555
5	0.407237		0.535791	5.686086	0.459581	1.221142	1.937682	0.464595	2.234647	0.709359	86.2528	0.091049
6	0.407244		0.535798	5.686103	0.459587	1.221141	1.937704	0.464611	2.234646	0.709360	86.2527	0.091068
7	0.407244		0.535798	5.686104	0.459588	1.221142	1.937705	0.464613	2.234647	0.709360	86.2527	0.091069
8	0.407244		0.535798	5.686104	0.459589	1.221142	1.937705	0.464613	2.234647	0.709360	86.2527	0.091069
9	0.407244		0.535798	5.686104	0.459589	1.221142	1.937705	0.464613	2.234647	0.709360	86.2527	0.091069
10	0.407244		0.535798	5.686104	0.459589	1.221142	1.937705	0.464613	2.234647	0.709360	86.2527	0.091069

ZAR	OVX_IND	USDARS	USDBRL	USDIDR	USDINR	USDMXN	USDPHP	USDPLN	USDRUB	USDTRY	USDZAR
1	0.393739	0.041860	38.17790	1.606250	1.272162	19.80447	0.028531	1.292483	0.783042	0.01683	36.58273
2	0.413059	0.309030	37.38217	1.669169	2.773624	19.33190	0.027896	1.706586	0.762108	0.03822	35.58624
3	0.456304	0.315875	37.35848	1.675523	2.781100	19.30031	0.031737	1.705407	0.761784	0.04713	35.56634
4	0.456253	0.316059	37.35492	1.677275	2.782078	19.30076	0.034147	1.705184	0.764547	0.04712	35.56166
5	0.456262	0.316055	37.35441	1.677330	2.782368	19.30050	0.034533	1.705370	0.764605	0.04716	35.56140
6	0.456289	0.316062	37.35439	1.677332	2.782378	19.30050	0.034544	1.705370	0.764604	0.04717	35.56136
7	0.456289	0.316062	37.35439	1.677333	2.782380	19.30050	0.034545	1.705371	0.764604	0.04717	35.56135
8	0.456289	0.316062	37.35439	1.677333	2.782380	19.30050	0.034545	1.705371	0.764604	0.04717	35.56135
9	0.456289	0.316062	37.35439	1.677333	2.782380	19.30050	0.034545	1.705371	0.764604	0.04717	35.56135
10	0.456289	0.316062	37.35439	1.677333	2.782380	19.30050	0.034545	1.705371	0.764604	0.04717	35.56135

CHAPTER 2

THE ROLE OF JOB SATISFACTION IN THE RELATIONSHIP BETWEEN PERCEIVED OVERQUALIFICATION AND BORE-OUT SYNDROME

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1. Introduction

Qualified employees are the key sources that make organizations sustainable and competitive. But for this formula to be valid, the other side of the medallion which is the organization or the job itself should be also qualified. The organization should supply the employees an environment where they can flourish. The tasks should have the skill variety, task identity and task significance as Hackman and Oldham claimed in their job characteristics model, so that employees find them meaningful and motivating (Robbins and Judge, 2009: 250). When this “demand and supply” interacts, holding exogenous factors constant, the internal part of the success (regarding employees) will be achieved. But this is not what always happen. The discrepancy may arise either from the employee or organization or sometimes much extensively from cultural idea, economic situation or employment policies. Brynin (2002: 637) claimed that there is a satisfactorily amount of evidence which reveal that employees are more qualified than their jobs’ demands. For example in countries such as the UK, the US, Canada and Germany, one third of employees are overqualified (Kengatharan, 2020: 33). Similarly, this ratio is 39% in general EU zone according to CEDEFOP’s research in 2018 (Gkorezis et al., 2019: 1), 84% in China and 47% in world-wide (Huang and Hu, 2021: 1). For Chu et al. (2021: 1) the reason is the increasing competition in the labor market and the downturn of

the global economy. With Covid-19 pandemic, this problem seems to play more substantial role in societies (Gong et al., 2021: 1). On the other hand, Jessurun et al. (2020: 6) explain this situation as the result of a social inclination to expertise in education to survive in modern economy. Similarly, according to Verhaest and Verhofstadt (2015: 457), the reason why people accept and stay in a position where they are counted as over-educated lays on the existence of the imbalances and rigidities in labor market. LaRochelle-Coté and Hango (2016: 1-2) claim that in Canada, because of the increase in graduating students from universities and Canadian economy's not creating new job opportunities has led these grads to have to work in lower-level occupations and for ones who do not prefer these kind of jobs shall face the risk of unemployment, lower earnings, lower job satisfaction and even skill loss. In Turkey, the situation is the same. According to statistics, the number of bachelor grads is 468.640, master grads is 103.811 in 2019 while these numbers were 439.042 and 83.020 in 2018 relatively (OECD, 2021). So the increase in bachelors is 6.7% and in masters is 25% (TSI, 2021). Meanwhile, based on the same source, the seasonally adjusted unemployment rate is 11.7% at total population in third quarter of 2021 and 39.7% of this unemployed people are constituted by higher education grads. Furthermore according to same database, in potential labor force, 1.523.000 people are counted as "discouraged workers" who do not have a hope to be employed. Moreover, in Turkey, young people are in great competition to be employed by credited organizations. Mostly having less knowledge about the reality of business world, affected by top management's white-collared people's attitude and behaviors, what possessions they have and state of art of the buildings and offices, they give considerable efforts to be a part of these groups. These young people need to graduate from university, should learn English and one other if possible, have job experience, and join personal and professional growth seminars and so on. Meanwhile they are becoming qualifying in their fields of expertise. When their expectancy and qualification levels are so high, the chance of getting disappointed as they face the realities of the business world increases. The worse of this situation happens when the field of interest and specialty do not match the job field they have to accept in order not to become unemployed. Especially at the lowest level, where they start working in organizations, the tasks would seem meaningless, the job might be boring and they could feel hopeless about how to thrive. This situation may even get stronger when the job itself is not satisfying.

According to Jessurun et al. (2020: 1), underutilization of employees' talents leads to underperformance. Fisher (1993: 4) suggests that occupational

conditions which do not meet employees' interest or needs would possibly lead to boredom. Supporting this idea, Sanchez-Cardona et al. (2019) and Kim et al. (2021) found a positive relationship between overqualification and boredom. Liu and Wang (2012: 18) claimed that the research which has been conducted to investigate the results of overqualification is rare. Similarly, according to Kim et al. (2021: 400), scholars and practitioners have been much interested in the attitudes and behaviors of overqualified employees recently due to the topic's being pioneer phenomenon. According to Sanchez-Cardona et al.'s study (2019: 258), job boredom which is one of the dimensions of bore-out syndrome, is the result of dissatisfaction, which is also the outcome of perceived overqualification. Furthermore, they claim that limited learning opportunities, unsatisfying tasks and lack of individual capabilities lead to job boredom. When the employees feel overqualified against what they do, it will enhance the chance of bore-out syndrome via dissatisfaction. Bore-out syndrome is such a new phenomenon in the literature (Abubakar, 2020: 68) that the number of empirical study is quite limited (Özsungur, 2020: 2015). Bore-out syndrome could lead to severe results for employees at individual level and organizations at organizational level (Abubakar, 2020: 68). Thus, in this study, in the context of person-job fit theory and person-organization fit theory, the relationship between perceived overqualification and bore-out syndrome will be analyzed. Additionally, the mediation role of job satisfaction will also be investigated. To the best of my knowledge, there is only one research (Jessurun et al., 2020) in the literature concerning this study's context. But this is a theoretical study and is investigating the relationship between overqualification and bore-out in P-E fit theory.

2. Conceptual Framework

2.1. Job Satisfaction

Job satisfaction (JS) is defined as the situation when employees react positively and pleasurable towards the job by appraising it (Gul et al., 2018: 69). The fact that employees' appraising the job actually reveals the relationship between perceived overqualification and JS. JS is basically an emotional response towards multi-facets of the job (Kasimati, 2011: 321). It is simply high when the employees like the job (Millan et al., 2013: 653). Because depending on personal perception, JS becomes complicated, affected by both instant internal and external powers and affects individuals' vocational and social behaviors (Weymer et al., (2014: 98). According to Robbins and Judge (2009: 118), employees are most satisfied

when they enjoy the work they do, which means that interesting jobs that provide them training, variety, independence and control. JS has many individual and organizational benefits such as performance, effectiveness, customer satisfaction and achievement in a positive way and absenteeism and employee turnover in a negative way (Millan et al., 2013: 651). According to Robbins and Judge (2009: 119) when employees are dissatisfied and if they are active and constructive they raise their voices in terms of improving conditions, if they are active but destructive they respond as leaving, if they are passive and destructive they neglect the situation and if they are both passive and constructive then they keep staying loyal. Thus, deficiency of JS would create some problems for both employees and organizations at all, especially when the employees are active.

2.2. Perceived OverQualification

Perceived overqualification (POQ) is an business phenomenon describing that when employees' assets or qualifications such as educational background, knowledge, skills, abilities (KSAs), talents and experiences exceed the requirements of the job (Kim et al., 2021: 401). It is becoming world-wide problematic situation as people strengthen their qualifications to have a better career life in an increased competition in economies where the supply of jobs or the opportunities that companies can provide to their employees are not satisfactory. According to Chambel et al. (2020: 1338), labor market does not always embrace the qualified employees which leads those people to be hired by organizations requiring less than they have. The issue is divided into two segments as objective overqualification and perceived overqualification (Zhang et al., 2021: 2). According to Maynard et al. (2006), who also developed the scale of this concept, argue that POQ is more suitable than objectively measuring due to its being more proper indicator of work attitudes and behaviors. In this study the perceived overqualification is discussed to be consistent with this idea. The concept of POQ has been handled in studies with deprivation theory in an organization setting (e.g. Erdoğan and Bauer, 2009; Hu et al., 2015; Maynard et al., 2015) which was introduced to literature by Crosby (1984) that claims when employees desire something and feel like they deserving for it, e.g. better job conditions or better status, but unable to reach it, they feel deprivation which results in negative job attitudes and behaviors (Gkorezis et al., 2019: 1; Chambel et al., 2020: 1340). To date, research about POQ has revealed that these negative attitudes and behaviors are job dissatisfaction, turnover intention, job search behavior, lower commitment, counterproductive behaviors, well-being and job burnout (Arvan et al., 2019: 1; Chambel et al., 2020: 1338; Chu et al., 2021: 1; Huang and Hu, 2021: 2; Zhao et al., 2021: 682).

2.3. Bore-out Syndrome

Bore-out syndrome, which was used for the first time by P. Werder and P. Rothlin in 2007 (Abubakar, 2020: 69), was brought into the literature by Stock (2015) and is defined as a “negative psychological state of low job related arousal due to boredom, insignificant tasks and lack of growth” (Stock, 2015: 575). Despite sounding similar, bore-out syndrome is more extended than job boredom which is one of its dimensions (Harju et al., 2016) in addition to crisis of meaning at work and crisis of growth (Stock, 2015: 574) or content plateauing (Stock, 2013: 159). Job boredom is a state where incentives are quite in low level that employees are unsatisfied while crisis of meaning is employees’ perception of the senseless about the job itself and the crisis of growth is the lack of opportunities to advance (Stock, 2013: 159). Bore-out syndrome is opposite to burnout syndrome (Abubakar, 2020: 79). In burnout syndrome employees are suffering from heavy burden of duties which are over their capacities (Santiago et al., 2019: 170) while in bore-out syndrome they are in a situation of intense boredom and totally under-stimulation (Fielder, 2015: 55). There are some underlying reasons of this syndrome. These are ongoing occurrence of physical situations, perceptual discrimination, continuously caution, lack of innovation, monotony (Misun and Hudakova, 2010) and mobbing (Özsungur, 2020: 203). Employees who suffer from bore-out syndrome may feel like they already achieved all the steps of Maslow’s needs of hierarchy at work, thus suspended in emptiness by doing nothing meaningful. The employees will experience disappointment about their jobs as they start to think their job will not contribute to their development (Akdeniz, 2017: 477). They hesitate of revealing innovative work behavior (Stock, 2015: 584; Özsungur, 2020: 210). It affects their performance and well-being negatively while prevents them from attending their responsibilities and even decreasing motivation and productivity (Karatepe and Kim, 2020: 1-2). Furthermore, these employees could feel themselves vulnerable and hopeless (Pines and Keinan, 2005), dissatisfied and low self-esteem (Moris and Nedosugova, 2019: 138) and unimportant which result in resigning (Karadal and Erdem, 2018: 31). On the other hand, increasing financial burden and decreasing loyalty by the employees are important issues for the organizations (Moris and Nedosugova, 2019: 138).

3. POQ, JS and BOS in Context of P-J and P-O Fit Theories

Maynard et al. (2006) suggested that overqualification should be considered in person-job (P-J) fit model. Similarly, according to Zhang et al. (2021: 2) and Wassermann et al. (2018: 77) POQ could be considered as kind of P-J misfit.

According to Kim et al. (2021: 402) poor P-J fit is in line with lower job satisfaction, higher intention to quit and lower performance such as employees of POQ would do. On the other hand, Gul et al. (2018: 70) suggest that to develop attitudinal and behavioral outcomes of employees in terms of POQ, both person-organization (P-O) fit and P-J fit are necessary. In this regard, person-environment (PE) fit theories claim that when there is a match between the person and the environment, positive responses occur (Carless, 2005: 411). P-E fit is important in understanding the attitudes and behaviors of employees at workplace (Gul et al., 2018: 68). Two specific notion of person-environment fit are person-job (P-J) fit which is the congruence between the person and the job characteristics and requirements (Memon et al., 2015: 313) and person-organization (P-O) fit that is the compatibility between the individual's characteristics and organization's values (Hilmiana et al., 2020:109). According to Arvan et al. (2019: 2), due to the fact that while for some studies P-E fit theory properly works for explaining POQ on psychological strain outcomes, for some studies it does not for exploring the relationship between POQ and some organizational behaviors. Thus, P-E fit theory is required to be examined more whether it is the right theory to explain the results of POQ. According Rynes and Cable (2003) an individual would like to evaluate how one self's features and those of the job and organization fit each other before applying for a job. Carless (2005: 412) claims that evaluating both P-J and P-O fit jointly brings more realistic results. In addition, according to Memon et al. (2015: 317), when P-J and P-O fit occur, positive job-related attitudinal and behavioral outcomes arise. Thus in this study, in the concept of P-J and P-O fit, it is claimed that an employee who does not feel overqualified will be satisfied with the job, which does not lead to bore-out syndrome. On the contrary where P-J and P-O do not fit, it will be possible for an employee to perceive oneself as overqualified. In that situation job will not satisfy him / her exactly because of inadequate characteristics that lead to bore-out syndrome. Inconsistency in P-J fit results in stress, decreasing job performance, producing harmful work attitudes and job searching behavior (Sanchez-Cardona et al., 2019: 259). Drawing on the P-J fit theory, Kengatharan (2020) found a negative relationship between perceived overqualification and job satisfaction. Furthermore, in that study job satisfaction mediated the relationship between perceived over qualification and job search behavior which could be the next step after bore-out syndrome. According to Sanchez-Cardona et al.'s study (2019: 258), although there are qualitative researches which study P-J fit as a precondition to job boredom, there is not any quantitative research except for the study itself.

An overqualified employee seems to do nothing in laziness concept but can still achieve the goals (Jessurun et al., 2020: 2). This dilemma actually arises from bore-out syndrome. On the other hand according to Moris and Nedosugova (2019: 139), this syndrome sufferers use some escapist behavioral strategies to look busy at workplace such as keeping the document files open in computer, carrying the briefcase between home and office, arriving office earlier and leaving later, extending a task over a time and pretending to be too busy. But actually they are aware of doing nothing meaningful which meets their skills at all. Thus, what they do is just to cover the exposed face of the glacier. In concept of these explanations, the first hypothesis is:

H₁: There is a positive relationship between perceived overqualification and bore-out syndrome.

In addition to this direct relationship, employees who perceive themselves as overqualified will be unsatisfied with their jobs which lead to augmented chance of bore-out syndrome. Stock (2016: 4259) claims that lack of challenging work can lead to job dissatisfaction. According to Arvan et al. (2019: 3-4), lack of fulfillment of psychological needs (autonomy, competence and relatedness), which are inherent in everyone based on psychological need fulfillment theories, shape person's desired values which person after then cognitively compares them with the actual values provided by the job. In the concept of P-E fit theory, when the actual values provided exceed the desired ones and this situation collaborates with POQ, then dissatisfaction occurs. Employees who are dissatisfied with their jobs show negative attitudes and behaviors such as absenteeism, turnover and workplace deviance (Robbins and Judge, 2009: 124). Abubakar (2020: 78) found that there is a negative relationship between job satisfaction and bore-out syndrome. Studies show that great amount of working population perceives they are overqualified for their jobs or organizations which translate into lower level of JS (Alfes et al., 2016: 84). The reason is the feeling of deprivation of those employees towards having a job with better conditions (Feldman et al., 2002: 454). The fact that there are substantial part of overeducated employees working for organizations requiring below their educational levels result in earning and satisfying less than adequately educated colleagues (Verhaest and Verhofstadt, 2015: 456). According to Herzberg, while work itself as a motivator factor plays the key role in highly satisfying employees, working conditions as a hygiene factor can make employees highly dissatisfied (Bové et al., 2007: 329). Considering a job in which the employee feels overqualified, because of the deficiencies in those two factors, it would be expected from him to have lower level of JS. According to Stock (2015: 576), especially for employees in

service sector, standardization and fragmentation leads to bore-out syndrome. In Turkey, hierarchy and limited routine tasks in public service officers' jobs and employment policies regarding of simplifying and increasing the number of tasks to create more job fields in order to reduce unemployment rates may cause this situation. Just like POQ and BOS, public sector employees are expected to have lower JS due to high bureaucracy and relatively low wages (Kasimati, 2011: 321). Especially in crisis of growth part, it can be claimed that public service officers have rather higher job security than other sectors which may result in a feeling of unnecessary to improve oneself. In order to motivate employees, a job should provide what Hackman and Oldham suggested; autonomy, task identity, skill variety, task significance and feedback (Robbins and Judge, 2009: 250). When the job is not challenging to employees, that could be accomplished with "low level intelligence", and that hinders autonomy or requires routinely the same skills, the employee will feel like bore-out syndrome (Fielder, 2015: 55). If the challenging or skill variety requiring level is higher than average then the employee may feel burnout. Thus, there should be a balance between employee and the job or employee and the organization itself. A job and the organizational environment should meet the requirements of the person's talents. On the other hand, According to Gul et al.'s study (2018: 69) employees are happier when they get what they desire in cultures in which the power distance is high. Turkey is among the countries where the perception of power distance is high (Hofstede and Hofstede, 2005: 129). Thus, because of POQ is a situation where there is a misfit and employees cannot get what they desire for in terms of deprivation theory, the high level of POQ results in lower level of JS and BOS in the end. So, the second hypothesis is:

H₂: Job satisfaction has a mediating role in the relationship between perceived overqualification and bore-out syndrome.

4. Methodology

4.1. Scales

Bore-out syndrome scale was operationalized by using 12 items scale developed by Stock (2015). This scale consists of three factors, each of which has 4 items such as "My work seems meaningless" in crisis of meaning at work, "In my job, I feel bored" in job boredom and "My job offers for personal growth and development at work" in crisis of growth. Only the last dimension of the scale has reverse logic items totally. The scale was measured with 5-points Likert scale (1=Strongly Disagree; 5=Strongly Agree). The reliability of the scale was found as (Cronbach's α) .861. For validity of the scale, confirmatory factor

analysis (CFA) was conducted. The model fit indices were found as follow after three modification indices (e3-e4; e5-e7; e7-e8); $\chi^2/df=2.029$, CFI=.94452, GFI=.929, RMSEA=.072.

Perceived overqualification scale was found by Maynard et al. (2006). The scale consists of 9 items such as “My job requires less education than I have”, none of which is reverse logic. The scale was measured with 5-points Likert scale (1=Strongly Disagree; 5=Strongly Agree). The reliability of the scale (Cronbach’s α) was found as .817. For validity of the scale, confirmatory factor analysis (CFA) was conducted. The model fit indices were found as follow after two indices (e4-e8; e6-e9); $\chi^2/df=2.000$, CFI=.95, GFI=.948, RMSEA=.071.

Job satisfaction scale was found by Weiss et al. (1967) and is actually the short form of Minnesota Job Satisfaction Questionnaire. The questionnaire consists of 20 items, 12 of which are measuring internal satisfaction such as “I am satisfied with the chance to work alone on the job” and 8 of which measuring external satisfaction such as “I am satisfied with the way my boss handles his/her workers” with 5-point Likert scale (1=Strongly Dissatisfied; 5=Strongly Satisfied). None of the items is reverse logic. The reliability of the scale (Cronbach’s α) was found as .869. For validity of the scale, confirmatory factor analysis (CFA) was conducted. Because the standard regression weights of two items (4th and 5th external dimensions of job satisfaction) were too low, they were extracted. The model fit indices were found as follow after seven modification indices (e10-e11; e7-e8; e4-e5; e5-e6; e2-e3; e1-e6; e13-e15); $\chi^2/df=2.235$, CFI=.917, GFI=.900, RMSEA=.079. While good fit indices are <2 ; $>.95$; $>.95$; $>.95$; $<.05$ for χ^2/df ; GFI, AGFI, CFI and RMSEA respectively; acceptable fit indices are <5 ; $>.90$; $>.90$; $>.90$; $<.08$ in order (Çapık, 2014: 199). Thus it can be claimed that all the scales have acceptable fit indices.

4.2. Sample and Process

This study was conducted with the ethical permission provided by Kırıkkale University’s ethical approval committee. As the sample, public tax offices’ employees who work in Ankara / Turkey were chosen. The reason why the sample was chosen from public tax officers is that the employees are employed in the public service sector and the POQ and BOS within the scope of the study are likely to be encountered more in the public sector due to the characteristics of the job. The questionnaires were distributed physically to the employees and collected after they were given sufficient time. Before answering the questionnaires, each item was explained to them in detail. The size of the sample is constituted of 199 employees. 52.8% (n=105) of the sample are female, 43.7% (n=87) are 26-40 years old, 69.35 (n=138) are married, %84.4 (n=168)

are bachelor graduated, 55.3% (n=110) work as a taxman, and 31.7% (n=63) have been working for 6-15 years.

Results

Before starting testing hypotheses, the normality of distribution of data were analyzed.

Table 1: Normality Test

Kolmogorov-Smirnov					
Variables	Statistic	df	Sig.	Skewness	Kurtosis
POQ	.079	199	.004	-.09	-.15
JS	.074	199	.011	.52	.30
BOS	.068	199	.026	-.36	.29

It is seen that the significance levels are below the value of .05 for all variables in Kolmogorov-Smirnov Test. In social sciences, when Likert scale is used, this situation is acceptable (Saruhan and Özdemirci, 2016: 237). Thus the skewness and kurtosis values should be more proper to check normality. As it is seen in Table 1, all of skewness and kurtosis values of variables are in the range of -1.5 and +1.5 which leads to conclusion of the data are normally distributed (Tabachnick and Fidell, 2013).

Table 2: Descriptive Statistics and Correlation Analysis

	M	SD	1	2	3	4	5	6	7	8	9
Gender (1)	1.47	.50	1								
Age (2)	2.57	.77	.32**	1							
Marital Status (3)	1.31	.46	-.02	-.044**	1						
Education Level (4)	2.08	.39	-.03	-.25**	.30**	1					
Status (5)	1.62	.82	.06	-.10	.11		1				
Duty Period (6)	2.91	1.12	.29**	.84**	-.44**	-.26**	-.17*	1			
POQ(7)	3.46	.56	-.29**	-.52**	.41**	.38**	.11	-.46**	1		
JS (8)	2.81	.52	.12	.31**	-.27**	-.25**	-.15*	.35**	-.54**	1	
BOS (9)	3.31	.58	-.16**	-.37**	.27**	.31**	.16*	-.36**	.72**	-.75**	1
			*p<0.05			**p<0.01					

In Table 2, means and standard deviation of variables are provided. It is clear that participants have POQ and BOS more than average with a means of 3.46 and 3.31 respectively while job satisfaction level are around average with a means of 2.81. In addition, the table gives also the correlation between variables. According to results, there is a statistically significant moderate negative relationship between POQ and JS ($r=-.54$; $p<0.01$), strong negative relationship between JS and BOS ($r=-.75$; $p<0.01$) and strong positive relationship between POQ and BOS ($r=.72$; $p<0.01$). Thus H_1 is supported.

Table 3: The Mediating Role of JS in the Relationship between POQ and BOS

	Model 1 (DV: JS)	Model 2 (DV: BOS)	Model 3 (DV: BOS)
Constant	4.547	.717	3.0884
Gender			.0372
Age			.0143
Marital Status			-.0874
Education Level			.0524
Status			.0315
Working Time			-.0035
POQ	-.503**	.75**	.49**
JS			-.5701**
Adj. R²	.289**	.518**	.7149**
ΔR^2			.1969**
F	81.624**	213.923**	59.5521**
N	199	199	199
Total, Direct and Indirect Effects of POQ on BOS			
	Effect	LLCI	ULCI
Total Effect	.7525**	.6224	.8826
Direct Effect	.49**	.3770	.6030
Indirect Effect	.2625**	.1598	.3701
** $p<0.01$			

In Table 3 there are three models presented. In Model 1, POQ negatively affects JS ($\beta=-.503$, $p<0.01$) and the variance in JS explained by POQ is .289 ($p<0.01$). In Model 2, POQ positively affects BOS ($\beta=.75$, $p<0.01$). In Model 3, with controlling demographic variables, JS is introduced into the regression model and the effect of POQ on BOS decreases ($\beta=.75$, $p<0.01$; $\beta=.49$, $p<0.01$), but not becomes insignificant. In the second part of the table, total, direct and indirect effects of POQ on BOS are given. The absence of a value of 0 between the

confidence intervals for any of the effects is further evidence that the mediation is significant. Thus it can be said that JS mediated the relationship between POQ and BOS partially. At all, H_2 is partially supported.

5. Conclusion and Discussion

This study was conducted to analyze the relationship between POQ and BOS in a developing economy. Furthermore mediating role of JS in this relationship was also investigated. The results showed that there is statistically significant positive relationship between POQ and BOS. That means, when employees perceive themselves as overqualified, the chance of bore-out syndrome they feel increases. This result coincides with literature in a way that Kim et al.'s study (2021: 407) which found the same directed relationship between POQ and job boredom which is sub-dimension of BOS. In the second phase of the study, the results showed that JS partially mediates the relationship between POQ and BOS in a way that POQ negatively affected JS and JS negatively affected BOS. It means that when employees perceive themselves as overqualified, the level of job satisfaction decreases. In addition, while their job satisfaction decreases, the chance of BOS increases. The negative effect of POQ on JS is consistent with literature (Johnson and Johnson, 2000; Weyner et al., 2014; Alfes et al., 2016; Wassermann et al., 2018; Arvan et al., 2019; Garcia-Mainar and Montuenga-Gomez, 2020).

Managers and organizations should not avoid the situation of POQ of employees. Neither have they had a chance to reject overqualified employees who apply for a job. Instead, they need to provide a proper organizational environment and job that meets their expectations and qualifications. In micro scale, employees should be encouraged to take initiatives proactively even if they feel overqualified. The tasks should not be standardized as they dissatisfy employees. Thus managers may do some rotations or even allow employees design their own jobs what is called as "job crafting". According to Sanchez-Cardona et al. (2019: 14), opportunities created for employees to seek new challenges within their jobs would prevent job boredom and increase their motivation. Furthermore, in macro scale, governments should adjust their education and employment policies in order to balance demand and supply of relative workforce. Raising the number of bachelor students by increasing the capacity of universities and facilitating to study in universities would not be fruitful if government could not provide employment areas enough which meet those qualified people's needs, abilities and expectations.

P-J and P-O fit are two important concepts in regards of the fact that there should be a match between the employee and the job and organization. What employees possess in terms of knowledge, abilities, skills, experience and expectations should meet the job demands and its characteristics in addition to organizational culture, structure and climate. Any breakdown in the balance in this relationship would cause problems either in terms of the individual or the organization. When the assets of individual exceed the ones of job or the organization POQ occurs, so does the BOS. In the reverse balance, employee cannot meet the job requirements so s/he feels insufficient, shows lower performance and experiences burnout syndrome.

Although POQ is a phenomenon that academics have recently been interested in, the topic has been mostly studied in Western countries (Kengatharan, 2020: 33-34), so this study fills the gap in the literature by establishing the issue in Turkey. On the other hand, bore-out syndrome is seen to be a new concept and requires to be studied more. In the literature the empirical studies related with this issue handled it mostly as an independent variable (e.g. Stock, 2015; Abubakar, 2020). According to Stock (2016: 4259) the issue is handled with assembly line jobs workers, but it should also be studied with white collar jobs. So this study is important by investigating the antecedents of this concept in white collar employees. In addition the studies related with this problem is investigated in service sector employees (Stock, 2015) as in this study. Thus, for further researches, it should be also analyzed in manufacturing sector. According to Stock's study (2016: 4265) autonomy impedes the detrimental effects of bore-out syndrome. Thus the tasks should have the Jackman and Oldham's JCM as aforementioned. For Moris and Nedosugova's study (2019: 138), coaching provides beneficial outcomes in situations where BOS is experienced.

This study has some limitations. First, it was conducted in a public service sector in a developing economy, Turkey. The analyses with underdeveloped and developed countries would reveal different results. In addition, the results of private sector employees will significantly differentiate from current study's results due to the characteristics of the sector. The scale of the sample should also be extended and even the study may be conducted with multi-sectors to do comparisons. Second, the study is cross-sectional study. For better cause-effect relationships, longitudinal study should be preferred. Finally, because of self-reported survey was conducted, there was a chance of occurring of common method variance (CMV). But, before conducting the questionnaire, each participants were given detail about the items and they were asked for being honest and give answers based on what it is, instead of what it should be in order

to hinder social desirability. They were also ensured about the privacy of their responses. Each variable was placed in different sections. The survey was carried out in a suitable atmosphere in workplace. Furthermore according to Erdoğan et al. (2011) overqualification should be measured with self-reported analysis as POQ instead of an objective measurement because objective overqualification tends to focus on limited range of KSAs. Similarly JS and BOS are both individual attitudes and should be better measured with self-reports.

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CHAPTER 3

INVESTIGATION OF THE EFFECT OF BOSS PHUBBING ON ORGANIZATIONAL ALIENATION ACCORDING TO THE PERCEPTIONS OF HEALTHCARE WORKERS

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1. Introduction

The utilization of smart phones is rising day after day in our country in addition all over the world. Smartphones, shown by research to reduce social communication and interactions between individuals (Chotpitayasunondh and Douglas, 2016), have become an ineluctable constituent of our employment life in addition our social life.

Using a smart phone while communicating is one of the elements that cause distraction and the insufficiency to hear to the other human effectively. This situation can lead to communication problems between individuals. A new concept called phubbing has emerged during studies (McDaniel and Coyne, 2016) investigating the significant effects of excessive use of devices such as smartphones on individuals.

Phubbing was portrayed in the this literature as “the diversion of individual’s attention to their smart phone while communicating with other individuals, their interest in the smart phone and their focus away from interpersonal communication” (Karadag vd., 2016).

The term phubbing is derived from the words “phone” and “snubbing”, and is also expressed as “the act of looking at someone’s phone in a social environment and concentrating on their phone” and, in some contexts, can be interpreted as “belittling” the other person (Ugur and Koc, 2015).

It is known that phubbing negatively affects the relations between individuals from many different angles. Some of these negative aspects are expressed as the inability to establish interpersonal bonds, the inability of the person to fully understand the other person, the inability to establish a healthy communication, and the incompetence to compensate social needs (Chotpitayasunondh and Douglas, 2018).

Individuals can often encounter the phenomenon of phubbing both in their social and working lives. Employees in organizations may be exposed to phubbing by their colleagues or managers. This situation can be expressed as “boss phubbing.”

Boss phubbing is defined as “the employee’s perception of the distraction of the smartphone while talking to his/her manager or being very close to each other in the work environment” (Roberts and David, 2017).

Managers exhibiting phubbing behavior may have difficulty focusing while communicating with their employees. The smartphone used by the manager during manager-employee communication can weaken the communication functionality between the two parties (Ozdemir, 2020).

Boss phubbing has many effects on employees. These can be investigated as the sense of incivility by their managers, the perception of social exclusion, and the decrease in trust in the manager (Ozdemir and Erdem, 2021). Another effect is thought to be organizational alienation.

It is stated that organizational alienation is a situation that originates as a consequence of dissatisfaction of the worker because of the absence of recognition and appreciation of the employee’s professional growth and merit, and their acceptance by their superiors. (Salihoglu, 2014).

In this study, the levels of boss phubbing and organizational alienation of health workers were found, the relationship between boss phubbing and organizational alienation according to the perceptions of health workers was revealed, and the effect of boss phubbing perception on organizational alienation was investigated, and it was also commented whether there was a difference in boss phubbing and organizational alienation perceptions according to demographic data.

2. Theoretical and Conceptual Framework

2.1. *Concepts of Phubbing and Boss Phubbing*

Phubbing; They define it as an individual who interacts with his/her smartphone while communicating with others, avoiding interpersonal communication, ignoring the other person to browse their smart device and continuing this movement (Ballı, 2020). In addition, phubbing is expressed as the practice of using the phone in face-to-face social interactions, a situation in which the person prefers to interact with his phone instead of a physically present person (Hubbert, 2016), the act of ignoring, belittling and silencing the person in front of him by using his phone in a social environment.

According to David and Roberts (2017), phubbing (phubbing) occurs with behaviors in the form of constantly dealing with the smartphone, such as when one party suddenly calls on the phone or interrupts the conversation to write a message, ignores the presence of the other person when they are together, and interrupts the conversation.

It is becoming common, as one or more people in social environments are interested in smartphones rather than each other, and interact with others through their smartphones instead of the other person (Chotpitayasunondh and Douglas, 2016). The fact that managers develop these behaviors towards their employees in organizations has revealed the concept of boss phubbing.

Boss phubbing is defined as “the perception of the worker working in the organization, when talking or communicating with his manager, that his manager pays attention to the smartphone nearby, not to the employee, and as a consequence of this, the employee’s perception” (Roberts and David, 2017).

2.2. *Concepts of Alienation and Organizational Alienation*

When the history of the notion of alienation is viewed, it is a notion that it is discussed in a wide range within the disciplines of philosophical thought, sociology and psychology. This concept can have different meanings in all disciplines in which it is discussed (Gökce, 2021).

Looking at the dictionary of the TLI, the verb ‘to become a stranger’ is ‘not to recognize, to become ignorant, to be a foreigner’; It is seen that he expresses it as ‘not getting used to, being a stranger’ (TLI, 2010).

When the studies on the origination of the notion of alienation are investigated, it has an equivalent in both Greek and Latin languages. The notion

of alienation comes from the word ‘alienatio’, which is the Latin balanced of the Greek words ‘alloiosis’ and ‘ekstasis’. Especially in Ancient Greek philosophy, there are many famous philosophers who examine the word alienation. However, it is said that the philosopher who used the concept with its current meaning was Hegel (Gügercin and Aksay, 2017).

In summary, alienation was initially studied philosophically, but gained many psychological, sociological and economic dimensions in the diachronic process. With the emergence of industrialization, the concept of alienation has gained a different definition. When the definitions are examined, alienation is a process that generally inspires to the alienation of the personal from the ensemble in which a worker from his or her own nature and to become artificial (Celik and Babaoglan, 2017).

Over the years, an rise has been monitored in the number of scientist on the notion of alienation. Therefore, the number of description and studies related to the concept is quite high. Among these studies on the concept of alienation, there is also the concept of organizational alienation.

Organizational alienation is expressed as a situation that arises due to the dissatisfaction of the individual operating in the organization with the expectations of professional advancement and modify in order to be recognized, tolerated and approved by their managers (Salihoglu, 2014). In another definition, organizational alienation is expressed as a situation that occurs when an employee working in the organization is alienated from her work for her job. An employee who is alienated from her effort and labor for the organization gradually begins to distance herself from the organization. It is unfeasible for the alienated employee to subscribe to the targets of the organization. The employee will start to isolate himself from the organization and perform the assigned tasks reluctantly, and as a consequence, he will try to seek new opportunities over time (Basaran, 2008).

2.2.1. Factors Causing Organizational Alienation

The factors that cause alienation within organizations are examined under two headings. These; organizational factors and environmental factors that cause alienation (Demirel and Unal, 2011).

2.2.1.1. Organizational Factors Causing Alienation

Organizational factors leading to alienation are listed below (Demirel and Unal, 2011).

- Management style,
- Manager-Employee Relationship,

- Past events and experiences,
- Organization size, delegation of authority, expert personnel,
- Information flow,
- Group features,
- Modular relations,
- Production style,
- Work sharing,
- Working conditions,
- The position of the employee within the enterprise,
- Beliefs and attitudes.

2.2.1.2. Environmental Factors Causing Alienation

Environmental factors leading to alienation are listed below (Demirel and Unal, 2011).

- Economic structure,
- Technological structure,
- Social structure,
- Cultural structure,
- Industrialization, urbanization and social dissolution,
- Political and legal structure,
- Union organizations,

3. Methodology of Research

3.1. Aim and Significance of This Study

The objective of this study is to prove the levels of perception of boss phubbing and organizational alienation in health workers, to determine the effect of perception of boss phubbing on organizational alienation and to reveal whether these variables alter according to the demographic characteristics of the workers. When the literature was searched, no study investigating the correlation between these two different variables was found. For this reason, determining the correlation between the perception of boss phubbing and organizational alienation and finding the effect of boss phubbing perception on organizational alienation will contribute to the literature.

3.2. Population and Sample of Research

Approximately 520 healthcare professionals work in Biruni University and Biruni Dental Hospital that is the study universe. Convenience sampling method

was preferred as the sampling method in this study. In the power analysis based on the mean and standard deviation of 2.95 ± 0.68 in the boss phubbing literature, it was determined that a total of 162 people should be reached for 80% power. A total of 216 people participated in this study voluntarily.

3.3. Research Hypotheses and Model

Table 1. Hypotheses of Research

H	Type	Hypothesis
H ₀₁	Main Hypothesis	Boss phubbing has an effect on organizational alienation.
H ₀₂	Sub Hypothesis	Boss phubbing has an effect on the disempowerment sub-dimension.
H ₀₃	Sub Hypothesis	Boss phubbing has an effect on the meaninglessness sub-dimension.
H ₀₄	Sub Hypothesis	Boss phubbing has an effect on the self-alienation sub-dimension.
H ₀₅	Sub Hypothesis	According to the gender variable, the perception of boss phubbing and organizational alienation differs significantly.
H ₀₆	Sub Hypothesis	According to the style of occupation variable, the perception of boss phubbing and organizational alienation differs significantly.
H ₀₇	Sub Hypothesis	According to the style of education variable, the perception of boss phubbing and organizational alienation differs significantly.
H ₀₈	Sub Hypothesis	According to the style of hospital variable, the perception of boss phubbing and organizational alienation differs significantly.

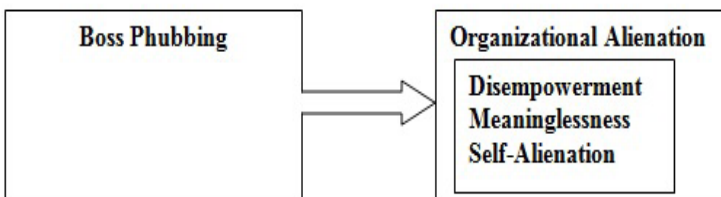


Figure 1. Research model

3.4. Data Collection Tools

Personal Information Form: The personal information form utilized in this study is a form consisting of 5 items that measures the gender, age, occupation type, education level and total duration of duty of health workers.

Boss Phubbing Scale: A one-dimensional, 9-item and 7-point Likert-type boss phubbing scale improved by Roberts and David (2017) was utilized. In the light of the analyzes made to measure the degree of reliability of the scale, it was dug up that the scale was reliable ($\alpha=0.95$). A Turkish adaptation study was carried out (Ozdemir, 2020). The ranges of the survey questions are as follows: 1.00-1.86=Strongly Disagree 1.87-2.71=Disagree 2.72-3.57=Slightly Disagree 3.58-4.43=Neither agree nor disagree 4.44 -5.29=Somewhat agree 5.30-6.14=Agree and 6.15-7=Strongly Agree. The points that can be acquired from the scale alter according to the answers given. A maximum of 63 points can be obtained, a minimum of 9 points.

Organizational Alienation Scale: Organizational alienation scale is a 5-dimensional scale first introduced by Seeman (1964). Then, through Mottaz (1981), it was transformed into a 21-item scale, 7 in the “weakening” sub-dimension, 8 in the “meaninglessness” sub-dimension, and 6 items in the “self-alienation” sub-dimension. In order for the scale to be used in Turkey, Uysaler (2010) carried out an adaptation study. As a consequence, it was concluded that the scale was usable. The trustworthiness value was devised to be 0.85. The ranges of the survey questions are as follows: 1.00-1.80=Strongly Disagree 1.81-2.60=Disagree 2.61-3.40=Undecided 3.41-4.20=Agree 4.21-5.00 = I strongly agree. The points that can be obtained from the scale differ according to the answers given. A maximum of 105 points can be obtained, a minimum of 21 points.

3.5. Analysis of Data

SPSS 24.0 package program was utilized in the analysis phase of the data acquired from the this study. First, frequency analyzes were performed to acquire the demographic information of the participants, and as a result, the percentages of demographic information such as gender, age, education level, type of occupation, total tenure were found. After that, the averages of the scales were acquired. Normality analyzes were performed and the distribution was found to be normal. For the reliability analysis, Cronbach’s Alpha values were found and it was acquired that the scales were reliable. Simple Linear Regression Analysis and Pearson Correlation analysis were performed to find whether there

is a relationship and the effect of the independent variable on the dependent variable. Independent sample t-tests and Anova analyzes were performed to find out whether these two variables differed according to demographic data.

4. Results

Dispersion of Participants' Demographic Characteristics

63.4% of the participations are female and 36.6% are male. When the age distributions are examined, 48.6% are between the ages of 21-26, 19% are between the ages of 27-32, 13% are between the ages of 33-38, and 19.4% are between the ages of 39-44. 68.1% of those who participated in the survey work in a university hospital and 31.9% in a dental hospital. When their educational status is examined, 27.8% of the participants are high school graduates, 15.3% associate degree, 52.3% undergraduate, 3.2% graduate, 1.4% doctorate. 31% of the participants are nurses, 20.4% are dentists, 19% are health technicians, 16.6% are doctors and 13% are midwives. When the total tenure of the participants is analyzed, 92.1% is 0-5 years, 5.1% is 6-10 years, 0.9% is 11-15 years, 1.9% is 15 years and above. is in the range.

Table 2. Reliability Analysis Results of Scales and Sub-Dimensions

Scale	Question Number	The Value of Cronbach's Alpha
Boss Phubbing Scale	1-9	0,84
Organizational Alienation	1-21	0,97
Disempowerment Sub-Dimension	1,2,3,4,5,6,7	0,94
Meaninglessness Sub-Dimension	8,9,10,11,12,13,14,15	0,89
Self-Alienation Sub-Dimension	16,17,18,19,20,21	0,91

The consequences of the reliability analysis of the scales are as above. The cronbach's alpha value of the Boss Phubbing Scale was 0.84, the value of the cronbach's alpha of the Organizational Alienation Scale was 0.97, 0.94 for the disempowerment sub-dimension, 0.89 for the meaninglessness sub-dimension, and 0.91 for the self-alienation sub-dimension. Because of the these results, Scales which used for this study are highly reliable. While evaluating the reliability analysis, the following evaluation criteria were taken as a basis (Köklü et all., 2006):

- $0.00 \leq \alpha < 0.40$ not safe
- $0.40 \leq \alpha < 0.60$ at low reliability
- $0.60 \leq \alpha < 0.80$ quite reliable
- $0.80 \leq \alpha < 1.00$ highly reliable

Table 3. Descriptive Statistics of Scales and Sub-Dimensions

Scale	\bar{x}	Ss	Min.	Max.
Boss Phubbing Scale	4,70	0,79	1,44	6,11
Organizational Alienation	4,37	0,94	1,95	5,00
Disempowerment Sub-Dimension	4,32	1,05	1,71	5,00
Meaninglessness Sub-Dimension	4,44	0,87	2,38	5,00
Self-Alienation Sub-Dimension	4,35	0,98	1,67	5,00

N=216

Descriptive statistics of the scales are as above. The mean value of the boss phubbing scale ($\bar{x}=4.70$), the mean value of the Organizational alienation scale ($\bar{x}=4.37$), the mean of the disempowerment sub-dimension ($\bar{x}=4.32$), the mean of the meaninglessness sub-dimension ($\bar{x}=4.44$) and the mean of the self-alienation sub-dimension was found to be ($\bar{x}=4.35$). The boss phubbing scale average corresponds to the 'Slightly Agree' range on the questionnaire, while the Organizational alienation scale average corresponds to the 'Agree' range on the questionnaire. According to these consequences, the perceptions of boss phubbing and organizational alienation are within the enterprise.

Table 4. Normality Test Results for Scales

	Skewness	Kurtosis
Boss Phubbing Scale General Score	-0,256	0,457
Organizational Alienation General Score	-0,156	-0,512

As can be seen, The skewness and kurtosis values of the measures which were utilized for this study were between -1.5 and +1.5. (Tabachnick and Fidell, 2013). This range is a proof that the data has a normal distribution. Due to the normal distribution, An independent sample t-test was performed for 2-group variables, such as gender. Anova analysis was performed for the variables of 3 groups and above.

Table 5. Comparison of Boss Phubbing and Organizational Alienation Scores in Terms of Gender Variable

Değişken	Groups	N	X	Ss	t test		
					T	Sd	P
Boss Phubbing	Female	137	4,38	0,93	0,155	214	0,877
	Male	79	4,36	0,97			
Organizational Alienation	Female	137	4,71	0,84	-0,048	214	0,962
	Male	79	4,70	0,72			

In Table 5, as a consequence of the independent sample t-test performed to establish whether the levels of boss phubbing and organizational alienation alter according to gender, it is seen that the grades of boss phubbing and organizational alienation do not alter significantly for gender ($p > 0.05$). According to this consequence, because of the fact that the participants' gender are female or male has no effect on boss phubbing and organizational alienation. As a consequence of done this analysis, the H_{05} hypothesis was rejected.

Table 6. Comparison of Boss Phubbing and Organizational Alienation Scores in Terms of Type of Occupation Variable

Groups	N	X	SS	X ²	P
Doctor	36	4,22	0,14	2,780	0.04
Nurse	67	4,65	0,92		
Midwife	28	4,75	0,83		
Health technician	41	4,98	0,97		
Dentist	44	4,63	0,89		

In Table 6, as a consequence of the anova test performed to specify whether the boss' phubbing levels of the subscriber change as regards to the type of occupation, it is seen that the boss phubbing levels differs significantly according to the type of occupation ($p < 0.05$). According to this result, the group with the record high perception of boss phubbing among the participants is health technicians (4.98), and the lowest is doctors (4.22).

Table 7. Comparison of Organizational Alienation Scores in Terms of Occupation Type Variable

Groups	N	X	SS	X ²	P
Doctor	36	3,69	0,31	13,882	0.01
Nurse	67	4,37	0,94		
Midwife	28	4,82	0,36		
Health technician	41	4,94	1,03		
Dentist	44	4,20	1,01		

In Table 7, the grade of organizational alienation changes significantly according to the type of occupation ($p < 0.05$). According to this consequence, the healthcare worker group with the most perception of organizational alienation among the participants is health technicians (4.94), and the lowest is doctors (3.69). According to these results, H_{06} was accepted.

Table 8. Comparison of Boss' Phubbing Scores in Terms of Educational Status Variable

Groups	N	X	SS	X ²	P
High School	60	4,70	1,08	11,416	0.01
Associate	33	4,56	0,44		
Undergraduate	113	4,47	0,88		
Master	7	4,07	0,83		
Doctorate	3	3,42	0,68		

In Table 8, as a consequence of the test of anova performed to establish whether the grade of boss phubbing of the respondents changes according to the variable of educational status, the levels of boss phubbing differs significantly according to the education level ($p < 0.05$). According to this result, the group with the highest perception of boss phubbing among the participants is high school graduates (4.70), and the lowest is doctorate graduates (3.42).

Table 9. Comparison of Organizational Alienation Scores in Terms of Educational Status Variable

Groups	N	X	SS	X ²	P
High School	60	4,79	1,01	18,981	0.01
Associate	33	4,04	0,63		
Undergraduate	113	3,98	0,11		
Master	7	3,17	0,27		
Doctorate	3	2,87	1,06		

In Table 9, as a consequence of the anova test performed to determine whether the organizational alienation grade of the respondents changes according to the educational status variable, the organizational alienation levels change significantly according to the educational status ($p < 0.05$). According to this result, the group with the highest perception of organizational alienation among the participants is high school graduates (4.79), and the lowest is doctorate graduates (2.87). For this reason, the H_{07} hypothesis was accepted.

Table 10. Comparison of Boss Phubbing and Organizational Alienation Scores in Terms of Hospital Type Variable

Variable	Groups	N	X	Ss	t test		
					T	Sd	P
Boss Phubbing	Dental Hospital,	147	4,49	0,87	2,771	214	0,110
	University Hospital	69	4,25	1,03			
Organizational Alienation	Dental Hospital,	147	4,79	0,77	1,479	214	0,141
	University Hospital	69	4,58	0,82			

In Table 10, as a consequence of the independent sample t-test performed to determine whether the levels of boss phubbing and organizational alienation change according to the variable of the institution, the levels of boss phubbing and organizational alienation do not alter significantly according to the variable of the institution they work in ($p > 0.05$). According to this result, the fact that the participants work in a dental hospital or a university hospital has no effect on

boss phubbing and organizational alienation. As a consequence of this analysis, the H_{08} hypothesis was rejected.

Table 11. Correlation Values for Boss Phubbing, Organizational Alienation and Its Sub-Dimensions

Variables	1	2	3	4	4
Boss Phubbing ¹	1				
Organizational Alienation ²	0,540**	2			
Disempowerment Sub-Dimension ³	0,512**	0,987**	3		
Meaninglessness Sub-Dimension ⁴	0,574**	0,976**	0,944**	4	
Self-Alienation Sub-Dimension ⁵	0,497**	0,975**	0,952**	0,921**	5

N=214 *p<0.05 **p<0.01

According to the analysis of correlation performed to evaluate the relationship between the variables, a positive, same and moderate level relationship was found between boss phubbing and organizational alienation ($r=0.540$ $p<0.01$). Accordingly, as the levels of boss phubbing increase in healthcare workers, an increase in organizational alienation levels is also observed.

While interpreting the correlation analysis, the following evaluation criteria were taken as a basis (Köklü ve diğ., 2006):

- | | |
|---------------|----------------------------|
| r value | Relationship |
| • 0.00 | no relationship |
| • 0.01 - 0.29 | low level of relationship |
| • 0.30 - 0.70 | moderate relationship |
| • 0.71 - 0.99 | high level of relationship |

Table 12. Simple Linear Regression Analysis Results

Variables	Beta	T value	P value
Dependent Variable: Organizational Alienation			
Independent Variable: Boss Phubbing	0,540	15,139	0.00

R=0,540 R²=0,292 F=56,300 P=0,000

As a consequence of the simple linear regression analysis, the perception of boss phubbing had an effect on organizational alienation. According to this consequence, the perception of boss phubbing significantly explains the level of organizational alienation ($R=0.540$ $R^2=0.292$ $F=56.300$ $P=0.000$). In the light of these results, since no multicollinearity and covariance problems were encountered and the error terms were normally distributed, it is statistically significant to use the model obtained to explain the levels of organizational alienation. Therefore, the H_{01} hypothesis was accepted.

Table 13. Simple Linear Regression Analysis Results

Variables	Beta	T value	P value
Dependent Variable: Disempowerment Sub-Dimension			
Independent Variable: Boss Phubbing	0,512	62,692	0.00

$R=0,512$ $R^2=0,262$ $F=62,692$ $P=0,000$

As a consequence of this analysis, it was established that the perception of boss phubbing had an effect on the sub-dimension of disempowerment. According to this result, the boss' perception of phubbing explains the level of disempowerment sub-dimension significantly ($R=0.512$ $R^2=0.262$ $F=62,692$ $P=0.000$). In the light of these results, since the problem of multicollinearity and covariance is not encountered and the error terms are normally distributed, it is statistically significant that the model obtained is used to explain the levels of the disempowerment sub-dimension. Thus, the H_{02} hypothesis was accepted.

Table 14. Simple Linear Regression Analysis Results

Variables	Beta	T value	P value
Dependent Variable: Meaninglessness Sub-Dimension			
Independent Variable: Boss Phubbing	0,574	54,783	0.00

$R=0,574$ $R^2=0,330$ $F=54,783$ $P=0,000$

As a consequence of the simple linear regression analysis, it was established that the perception of boss phubbing had an effect on the sub-dimension of meaningfulness. According to this result, the boss' perception of phubbing explains the level of meaningfulness sub-dimension significantly ($R=0.574$ $R^2=0.330$ $F=54,783$ $P=0.000$). In the light of these results, since the problem of multicollinearity and covariance is not encountered and the error terms are normally distributed, it is statistically significant that the model obtained is used to explain the levels of meaningfulness sub-dimensions. Therefore, the H_{03} hypothesis was accepted.

Table 15. Simple Linear Regression Analysis Results

Variables	Beta	T value	P value
Dependent Variable: Self Alienation Sub-Dimension			
Independent Variable: Boss Phubbing	0,497	51,201	0.00

$R=0,497$ $R^2=0,247$ $F=51,201$ $P=0,000$

As a consequence of the simple linear regression analysis, it was established that the perception of boss phubbing had an effect on the self-alienation sub-dimension. According to this result, the boss' perception of phubbing explains the level of self-alienation sub-dimension significantly ($R=0.497$ $R^2=0.247$ $F=51,201$ $P=0.000$). It is statistically significant that the model obtained is used to explain the levels of the self-alienation sub-dimension, since no multicollinearity and covariance problems were encountered as a consequence of the analysis of the regression assumptions and the error terms were normally distributed. Therefore, the H_{04} hypothesis was accepted.

Table 16. Hypothesis Table

H	Hypothesis	Conclusion
H ₀₁	Boss phubbing has an effect on organizational alienation.	ACCEPTANCE
H ₀₂	Boss phubbing has an effect on the disempowerment sub-dimension.	ACCEPTANCE
H ₀₃	Boss phubbing has an effect on the meaninglessness sub-dimension.	ACCEPTANCE
H ₀₄	Boss phubbing has an effect on the self-alienation sub-dimension.	ACCEPTANCE
H ₀₅	According to the gender variable, the perception of boss phubbing and organizational alienation differs significantly.	REJECTION
H ₀₆	According to the type of occupation variable, the perception of boss phubbing and organizational alienation differs significantly.	ACCEPTANCE
H ₀₇	According to the type of education variable, the perception of boss phubbing and organizational alienation differs significantly.	ACCEPTANCE
H ₀₈	According to the type of hospital variable, the perception of boss phubbing and organizational alienation differs significantly.	REJECTION

5. Conclusion, Discussion and Recommendations

In the light of the statistical evaluations, as expected as a consequence of the simple linear regression analysis performed to test the main hypothesis of the research (H₀₁), it was assigned that the perception of boss phubbing had an effect on organizational alienation. According to this result, the perception of boss phubbing significantly explains the level of organizational alienation (R=0.540 R²=0.292 F=56.300 P=0.000). According to the results of the analysis, the H₀₁ hypothesis was accepted.

As a consequence of the analyzes performed to evaluate the intermediate hypotheses H₀₂, H₀₃ and H₀₄, it was assigned that the perception of boss phubbing had an effect on the sub-dimensions of weakening, meaninglessness and self-alienation, as in the H₀₁ hypothesis. In the light of these results, H₀₂, H₀₃ and H₀₄ hypotheses were accepted.

Normality analyzes were applied to the scales in order to determine whether the scale and sub-dimension scores changed according to demographic data. As a consequence of the normality test in both scales ($p > 0.05$), it was determined that the normal distribution was provided. Because of the normal distribution, Independent Sample t-test was applied for 2 groups and Anova test was applied for 3 and more groups.

As a consequence of the independent sample t-test performed to test the H_{05} hypothesis, it was surprisingly seen that the levels of boss phubbing and organizational alienation did not alter significantly by gender ($p > 0.05$). According to this result, the fact that the participants are male or female has no effect on boss phubbing and organizational alienation. As a consequence of this analysis, the H_{05} hypothesis was rejected.

As a consequence of the anova analysis performed to evaluate the H_{06} hypothesis, that the boss' phubbing levels of the participants alters significantly according to the type of occupation ($p < 0.05$). According to this result, the group with the most perception of boss phubbing among the participants is health technicians (4.98), and the lowest is doctors (4.22). Likewise, that the levels of organizational alienation vary significantly according to the type of occupation ($p < 0.05$). According to this result, the group with the highest perception of organizational alienation among the participants is health technicians (4.94), and the lowest is doctors (3.69). According to these results, H_{06} was accepted.

As a consequence of the anova analysis performed to test the H_{07} hypothesis, it is seen that the phubbing levels of the administrators vary significantly according to the education level ($p < 0.05$). According to this result, the group with the highest perception of boss phubbing among the participants is high school graduates (4.70), and the lowest is doctoral graduates (3.42). Similarly, it is seen that the levels of organizational alienation vary significantly according to education level ($p < 0.05$). According to this result, the group with the highest perception of organizational alienation among the participants is high school graduates (4.79), and the lowest is doctoral graduates (2.87). For this reason, the H_{07} hypothesis was accepted.

As a consequence of the independent sample t-test performed to evaluate the H_{08} hypothesis, it was reached that organizational alienation and boss phubbing levels did not significantly change according to the institution ($p > 0.05$). In the light of this information, the fact that the participants work in a dental hospital or a university hospital has no effect on boss phubbing and organizational alienation. Thus, the H_{08} hypothesis was rejected.

When the studies in the literature are investigated, Özdemir and Erdem (2021) found that the perception of boss phubbing causes negative effects on the employees, as we assumed in our research. It can be explained as the perception of incivility by the managers, the perception of social exclusion, and the decrease in trust in the manager in the employees who are exposed to the perception of boss phubbing.

In another study, Roberts and David (2020) determined that the perception of boss phubbing reduces employee performance, job satisfaction and confidence. As determined in our study, the perception of boss phubbing has negative effects on employees. In the study conducted by Eckert (2021), it was found that the perception of boss phubbing decreases the trust of the employees towards their organizations and decreases the commitment of the employees to their organizations.

Yetiş (2013) conducted a study to determine the organizational alienation levels of health workers and found that the alienation level of health workers was at a high level, which also supports our study. In the study done by Çakırlar (2020), the organizational alienation levels of the employees were found to be high, as in our study.

When the literature on this subject is researched, it is reached that the notion of boss phubbing is a very new subject and there is not enough research about this topic. In the light of this information, future researches,

- Investigation of factors that increase and decrease the perception of boss phubbing on employees,
- Investigation of other factors that increase or decrease the perception of organizational alienation,
- Organizing informative training programs for managers on the effects of phubbing and phubbing behavior on employees.

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CHAPTER 4

IMPRESSION MANAGEMENT TACTICS THROUGH SOCIAL NETWORKS: SAMPLE OF TWITTER¹

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1. Introduction

Frequently mentioned in management literature in the 1900s, the concept of impression management can be demonstrated as a method used in establishing the relations between people and organizations. Individuals and organizations try to steer the opinions of internal and external stakeholders about themselves. At this point, the idea of creating an impression becomes crucial. Impression management is described as a process through which persons control their thoughts, opinions, i.e. the impressions that the people around might have about them, (Crane and Crane, 2004). In a world where the internet is an indispensable part of life, individuals and institutions can utilize social media tools actively to create positive impressions and reduce negative impressions about themselves.

Along with the soaring digital transformation, web-based applications enabling people and organizations to communicate have gained more and more popularity in use. In a constantly evolving and developing world, social media tools allow individuals or organizations to introduce themselves to outsiders, create any profile they fancy and post the messages they like to convey, regardless

¹ This study is the extended and updated version of the paper presented in the 7th Organizational Behavior Congress hosted by Mehmet Akif Ersoy University between November 1-2, under the title “*Impression Management Behaviors of Managers Through Social Networks: The Example of Twitter*”.

of time and space. While it is hard to come across someone not using any social media tool, these tools can be considered as a major source of information. In addition, social media tools ensure social interaction as they become a tool for communication. Social media includes online or verbal forums such as blogs, discussion boards, chat rooms, e-mails between consumers, product or service review websites, forums, social networking sites, etc. Signing up is free for most social media accounts and all it takes is a minimum level of internet knowledge in order to use such accounts. Social media happens to be a platform that enables organizations to communicate with their target audience by promoting their products and services, learning new ideas and improving customer relations. Social media plays an important role in the self-promotion of organizations within the service sector (Terrel and Kwoks, 2011). Country leaders, political leaders and corporate executives address the masses using these tools every so often. In addition to the information delivered through social media, the desired impression is created and maintained consciously.

The study discusses primarily the concept and scope of impression management. Then, it gives some information about Twitter that constitutes the subject matter of the study, as a social media tool. To reveal how impression management tactics are used through social media, official Twitter accounts of the rectors who are directors of the universities have been examined in terms of impression management tactics, with a focus on detailing the practical aspect of impression management tactics.

2. Conceptual Framework

2.1. Impression Management

The term ‘impression management’ appears in “*Presentation of Self in Everyday Life*” by Goffman (1959). In this study, Goffman attempted to explain people’s behaviors, based on the stage performances, expressing that people exhibit different behaviors with other people, just like the behavior displayed by a play on stage. According to this point of view, it was until the 1980s that impression management had been defined as merely an effort to make the people look different from what they actually were, then it was introduced in various research at the organizational level in the 1980s; recognized as a multidimensional structure at the individual and organizational level in the 1990s and it began to be investigated more widely in the 2000s thanks to the factors such as internet and social media (Evren and Akoglan Kozak, 2017: 444).

In his work, Goffmann (1959) examined human behavior in terms of drama performance. It was for the first time that Goffman (1959) used the term

impression management through the dramaturgy of social life. He stated that life itself is a drama and the persons try to influence the opinions of other people about themselves, just as the performers in a drama want to create an impression on the audience. Hence, he defined this situation as the “presentation of self”. The persons in social life are the actors and their performances depend on the characteristics of both the situations and the audience. The actors on the stage of life strive to control their images and identities that they represent to other people in an effort to attain the ultimate goal they long for socially, psychologically or materially. Therefore, impression management is shown to comprise intentional and goal-oriented behaviors (Bozeman and Kacmar, 1997: 9).

Impression management is defined as the strategic and dynamic behaviors that a person demonstrates in order to create an impact and impression on others, in line with his/her goals (Basim and Tatar, 2006: 226). Impression management is described as a process through which persons control the impressions of other people about them (Crane and Crane, 2004: 25). This is because the impressions have an impact on how others perceive, evaluate, and treat people. In addition to the opinions of the people about themselves, they sometimes behave in a way that will create a definite impression on others (Leary and Kowalski, 1990: 34). So, impression management can be defined as a combination of the methods, tactics, etc. that people employ to create the impression they wish to create about themselves.

According to Holoien and Fiske (2013), people adopt impression management with a view to producing a decent impression, showing that they keep up with their social environment and retain power. There might be several motivational factors that lead people to impression management. Creating a favorable impression can help people achieve their goals. These purposes can be social factors such as making friends, recognition, approval and gaining power, or material factors such as improved working conditions and pay increases (Basim and Tatar, 2006: 228). Organizational gains such as decent job offers, promotion, positive performance assessment, bonuses and high remuneration are mentioned as the motivations that steer the employees within an organization to impression management (Demiral, 2016: 45).

In their study, Bolina, Kacmar, Thurlney and Gilstrap (2008) stated that although impression management is implemented in terms of how organizations manage their image and impressions at the organizational level, it grabs more attention at the individual level. They also consider that impression management at the individual level can only deal with the perceptions of other people, but impression management to be effectuated by the representatives of an organization will be an effort to influence the opinions of others about

the entire organization. Impression management of organizations, unlike individual impression management, is a collective process that can also involve the managers, employees and professional public relations staff (Simsek Evren and Akoglan Kozak, 2017: 445). Impression management consists of strategic communication designed to create, maintain and preserve the desired identity at the organizations (Bozeman and Kacmar, 1997: 9). Hence, it can be noted that the organizations utilize impression management in order to achieve their goals, survive and create a positive image.

While the efforts and skills demonstrated by the people to present their 'selves' are all different, the image they wish to create is different, too. Furthermore, people can go for diverse methods to create a positive impression. Some people try to create positive impressions by speaking of their competencies, while others look down on their rivals or emphasize the qualifications of the groups they belong to (Schutz, 1998: 611-612). Therefore, the impression management tools used by the people can vary in line with their goals and the impressions they wish to create. Various tactics exist to create an impression and the use of these tactics may vary from person to person or organization to organization.

A good number of classifications about impression management tactics can be found in the related literature. Jones and Pitmann (1982) classified impression management in five categories: intimidation, ingratiation, exemplification, self-promotion and supplication. This classification was combined with the 2x2 taxonomy made in 1984, as assertive & defensive and short-term & long-term. While assertive tactics are used to create an image in the target audience for a specific purpose, defensive tactics are used to respond to poor performance (Zivnuska, et al., 2004: 630-631). Schutz (1998), on the other hand, addressed impression management under four titles: assertive, offensive, protective and defensive.

The most common distinction between the tactics is the one between assertive and defensive tactics. Tactics such as ingratiation, self-promotion, exemplification, supplication and intimidation, etc. are considered assertive tactics and implemented with a proactive management approach. Defensive tactics, on the other hand, are applied reactively in the face of the situation and they often come into play when the organization is in a tight situation. Innocence, recognition of the fact without recognition of responsibility, admission of responsibility and apologizing are shown as defensive tactics. (Crane and Crane, 2002; Basim, Tatar and Sahin, 2006: 3; Bolino, et al. 2008). At the organizational level, Mohammed, Gardner and Palillo (1999) categorized impression management in 2x2: direct & assertive and direct & defensive,

indirect & assertive and indirect & defensive, to guide the future studies. Organizations use direct tactics to inform about their characteristics, abilities and achievements. On the other hand, indirect tactics are used by organizations in an attempt to improve and preserve their images by managing the information about people and other institutions with whom they are in a relationship. Organizations use assertive tactics when they see an opportunity to improve their image, while they use defensive tactics to reduce or minimize the damage when their image is damaged (Terrel and Kwok, 2011).

Impression management can be measured using two approaches. The first approach involves observing and recording the participants' impression management behavior in an experimental context or under natural circumstances. In this approach, certain impression management tactics can be observed and their effects are investigated. While the strength of these studies is that they allow for objective evaluation, the fact that most studies are conducted in a laboratory environment leads to questioning the generalizability in terms of the organizations. The second approach is about the efforts trying to measure the impression management tactics with the help of scales developed (Bolina and Turnley, 1999: 188). Wayne and Ferris (1990) developed the scale aimed at determining impression management tactics with a focus on supervisors and employees. One aspect of the scale developed by Kumar and Beyerlein (1991) measures self-presentation. Bolina and Rurnley (1999) developed an impression management scale based on the taxonomy of impression management tactics, which was presented by Jones and Pittman (1982). It is seen that relevant scale has been used in the literature. Therefore, impression management tactics can be comprehended by examining the words, attitudes, behaviors and attitudes of the people, while they can be measured using scales developed.

Studies on impression management reveal that the concept can be realized both at the individual level and organizational level in the areas such as feedback, performance assessment, career development, job interviews, organizational citizenship behavior as well as leadership and management (Bolino, et al., 2008: 1081; Cetin and Basim, 2010: 257). In the relevant literature, it is seen that the relationship between impression management and the concepts such as political skills, organizational justice, cynicism, life satisfaction, leader-member exchange, transformational leadership, social loafing is examined (Alga and Ozdemir, 2018; Binay and Yildiz, 2017; Demiral, 2016; Mumcu, 2021; Oguzhan and Sigri, 2014; Yildiz, Isci and Tasci, 2016; Peck and Hogue, 2021). Therefore, impression management can be claimed to be a subject investigated in the organizational field. As social media has become a part of life, it can

be said that impression management tactics to be applied through the social media tools will help reach the target in a short time. In their study on the use of impression management tactics in Instagram, Cital and Temel-Eginli (2020) stated that people use social networks for impression management. It is found out that there are only a few studies in the related literature, which address the relationship between social media and impression management. It is therefore believed that this study is significant as it contributes to the field.

2.2. Twitter as A Social Network

Social media is defined as an online platform where the content is created by people, presented through social media websites and the people communicate interactively on the internet, aiming at information and content-sharing, collaboration and easy interaction (Koksal and Ozdemir, 2013:325). The social media environment offers the opportunity to share anything with anyone at any time. Regardless of time and space, we can deliver any message we wish, post announcements, share media and videos, exchange ‘likes’ and comments, offer solutions to problems and establish either one-way or two-way communication. We can perform all these activities through social networks in the social media environment.

Social networking sites as a social media tool are described as the websites where the users can communicate the contents they prepare to each other interactively, with Twitter standing out as the most popular social networking site enjoying slightly more users compared to others (Solmaz, et al., 2013: 25).

Twitter came into service in 2006, as software that recognizes a 140-character syntax called ‘tweets’. Twitter is mostly used for conversation exchanges, collaboration about interests and purposes, coordination of events and transmission of the news. It is preferred by the users and other social media networks for reasons such as that it involves a chat feature, creates an environment for solidarity and exchange, enables self-expression and self-communication, gives the opportunity for updating and controlling the status, enables the sharing of information and news as well as marketing and advertising, in addition to the fact that it can compete with other social media networks (Bayraktutan, et al., 2012: 15-16). According to a study conducted to determine the best of social media; 3 out of 7 hours spent on the internet in Turkey in 2018 were allocated to the social media platforms and the most used social network was found to be Twitter. According to the same report, Turkish users with 2 billion 549 million shares on Twitter sent an average of 7 million tweets a day (www.adbaint.com).

For this reason, it was thought that Twitter accounts would be a good pick as the research subject in the study.

Not only do the social networks facilitate interpersonal communication, but they also have become an important platform in the formation and presentation of self of the persons. These environments have become the experience area for the created selves as well as the real selves, and it is during the communication established in this experience area that the person begins to get the opportunity to reflect the desired image by managing the perception that he/she wants to create on the other side through the communication tactics he/she uses (Heekiz and Gokaliler, 2019: 769). Through the posts on social network applications, individuals and organizations can introduce themselves verbally or visually and create the image they wish to be perceived by their followers. The image to be created can be real or virtual. Since there is no face-to-face communication, the followers can be directed as desired. In addition, the self-presented in virtual environments can be abandoned at any time. A brand new self-presentation can be created in the transition from one social network to another (Citil and Temel-Eginli, 2020: 2515). It is right at this point that impression management tactics are needed to create the desired image through social networks.

3. Research Method

3.1. Aim and Sample of The Research

The research intends to discover the ways impression management tactics are utilized in social media accounts. To this end, Twitter, one of the popular social networks in Turkey, was chosen as the field of study. Within the scope of the research, the posts issued on the official Twitter accounts of the rectors who are the most important actors of the top ten universities in URAP's 2018-2019 list are examined for impression management tactics.

The key question of the research is 'how do people use impression management tactics on social media?' In this context, the impression management tactics of the rectors who are the directors of the university are examined to find out how they use these tactics. The Rectors happen to be the most important source of information for both internal and external stakeholders of universities. Private and public institutions, local governments cooperating with the university, current students as well as potential students and their families, faculty members and lecturers can get to know about the discourses, stances against the situations, actions and promises of the rectors, quickly and easily via the social media environments. Since the rectors in higher education

take the office by way of assignment, it is thought that they ought to create a decent image both for themselves and for the university they lead. In that respect, impression management becomes more noteworthy. Social networks have proven to be an important tool by which the impressions are created, as they allow reaching the large masses instantly.

Founded in 2009 under the Informatics Institute, Middle East Technical University, URAP research laboratory assesses the academic success of higher education institutions based on various criteria (<http://tr.urapcenter.org>). In this study, official Twitter accounts of the rectors of the top ten universities in URAP's 2018-2019 list constitute the sample of the research. Hacettepe University, Middle East Technical University, Istanbul University, Istanbul Technical University, Ankara University and Koc University, Bilkent University, Gazi University, Ege University and Bogazici University are the universities included in the list. The Rectors of these universities were encoded in a mixed way using Roman numerals I, II, III, IV. The posts issued by the rectors in their accounts between April 2019 and August 2019 were examined within the scope of the research.

3.2. Analysis Method

A qualitative research method was used in the study. The posts issued by the rectors on their Twitter accounts were interpreted with the help of discourse analysis. Discourse analysis intends primarily to understand and interpret, rather than give definite answers about a particular subject (Eksi and Celik, 109). Thus, the posts in the accounts were interpreted within the framework of impression management tactics.

The posts were subjected to evaluation within the framework of assertive and defensive impression management tactics. Assertive tactics include ingratiation, self-promotion, exemplification while defensive tactics consist of intimidation, supplication, innocence and apologizing.

4. Findings

The findings from the Twitter accounts that were examined within the scope of the research are given below. The number of followers of the rectors, the number of persons they follow, when they opened their accounts and the account names were examined within the scope of the research. Impression tactics are coded as follows; ingratiation ING., self-promotion SLF., exemplification EXE., intimidation INT., supplication SUP., innocence INNO. and apologizing APOL.

Table 1: Information About the Official Twitter Accounts of The Rectors

Code of rector	Number of followers	Number of follow	Create an account	Use of title	User name
I	10.765	257	February 2015	Yes	Name+Rector
II	16.550	285	September 2011	-	Name+University
III	3	0	February 2016	Yes	Title+Name
IV	21	2	Agust 2016	-	Name
V	-	-	-	-	-
VI	3.160	379	November 2016	Yes	University+Rector
VII	17.6k	47	November 2009	-	Name
VIII	10.7k	1.523	October 2017	Yes	University+Rector
IX	6559	102	December 2016	-	Name
X	7.082	93	February 2012	-	Name

According to Table 1, the Twitter account of rector #V could not be found. It is found that rector #IV did not share anything on his Twitter account. Rector #VII opened his account much earlier than others. The Rectors #I, III, VI and VIII use their titles in their accounts, while other rectors do not. The fact that the Rectors do not use any title may be an indication of creating an image of ‘*we are one of you*’, so it can be said that these rectors adopt the tactic of ingratiation.

It is observed that the last posts of rector #I and #VII were in May 2017 and August 2014, respectively. Examining their existing posts reveals that they mostly shared the activities that took place at the university and the events hosted by the university. Besides, it was discovered that Rector #I retweeted the tweets of the Head of the Council of Higher Education. It is seen that the posts of the same rector shares are related to ingratiation and self-promotion.

Rector #II actively uses his account and mostly retweets. On his page, he retweets the activities and achievements shared by the units, communities and clubs of his university. These posts are deemed to be in SLF. Aspect. Rector #X provides information by sharing the videos that include himself, so these posts are considered under the ING. tactic.

The Rectors #II, VI, IX and X congratulate the achievements of the staff as well as the national and religious holidays through social media, inform about

the enrolments, convey messages “*welcome to our family*” for the newcomers, “*get well soon*” for the victims of disasters, “*felicitations*” for the football teams and share their favorite movies. Such posts were examined under the aspect of ING. Sending invitations for seminars and summits and offering job opportunities for students with minimum wage fall under the aspect of EXE. The tweets like “*You haven’t seen us yet*”, “*we are not like any other university*” are in the aspect of INT. Analysing the posts of rectors by months, it can be said that they generally use SLF., ING., EXE. and INT. tactics, respectively. No post could be evaluated under defensive tactics. Only the account of rector #VIII, among the rectors examined, was a hidden account; so those who do not follow him are not allowed to view his posts.

5. Conclusion and Discussion

The fact that the rectors establish interactive communication with their internal and external stakeholders through social media is considered important for an accurate, fast and effective sharing of information. Twitter, one of the social networks, is stated to be the medium with the highest level of communication. However, many rectors either do not have an account or do not use it, even if they do have one. Active use of accounts will render them accessible.

In this study, which examines the top ten universities in URAP list, all rectors, except one, have a Twitter account, but only five rectors actively use their accounts. In an overall assessment, it is seen that the most used impression management tactics are self-promotion, ingratiation, exemplification and intimidation. It was found out that offensive tactics and defensive tactics were not used. In that respect, it can be said that the rectors usually prefer posts that will create a good image.

In the relevant literature, it is possible to come across studies that investigate the impression management tactics of managers and employees in various sectors. In their study examining the impression management tactics of the managers and employees working in the public sector, Basim and Tatar (2006) concluded that managers resort to impression management tactics more often than the employees. It is found that the managers and employees use the tactics of ingratiation, exemplification through self-promotion, more often as compared to the other tactics. In the research conducted on teachers, Bozbayindir (2020) concluded that teachers prefer tactics that will create a positive impression. It is observed that teachers use the tactics of setting a role model by developing friendly relations, and exemplification by respecting different opinions, suggestions and diversities, working overtime and participating in additional tasks.

When the studies addressing impression management are examined, it is seen that impression management through social media has not been investigated as it should be. Cital and Temel-Eginli (2020) examined the way and tactics that Instagram users utilized to perform impression management. In the study, it was concluded that the participants mostly used self-promotion, ingratiation, identity development and protection tactics. In their study, Zhang and Mooney Murhpy (2021) examined the viewers' responses to the impression management of the CEOs via Twitter. It was concluded that the managers who share more often are perceived more positively.

In his study examining the impression management tactics of Garanti Bank through Youtube videos, Gurbuz (2018) determined that the bank uses impression management tactics of ingratiation, self-promotion and exemplification. Soncu and Tan (2015), on the other hand, examined the impression management tactics of the individuals through the selfie photos. Simsek Evren and Akoglan Kozak (2017) examined the websites of hotel businesses in terms of impression management tactics they apply to the potential employees. Terrel and Kwok (2011) evaluated the impression management tactics used the service industry managers via Facebook.

The studies examining the social media use of the rectors in Turkey seem to be limited. In the study conducted by Atilla and Ozcan (2018) in an attempt to investigate the political skills of the rectors of the Western Mediterranean Region by examining their Twitter accounts, it was determined that the rectors mostly tried to look openhearted and informed about the activities of the university. Some congruence can be achieved with the findings of the relevant study.

Given the fact that social media is fast and easy in reaching out the people, it can be claimed to be a handy tool for impression management. For this reason, it is believed that impression management tactics should be followed in social media channels. Hence, it follows that the study will contribute to the field of impression management. In future studies, the posts issued by the institutions, executives, political leaders, local administrators through social networks such as Twitter, Facebook or Instagram can be examined to find out about the impression management tactics they use.

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CHAPTER 5

UNDERSTANDING TURKISH FEMALE ENTREPRENEURS' DEMANDS TO INCREASE THEIR BUSINESS PERFORMANCE: BAYESIAN ROUGH SET APPROACH

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1. Introduction

Entrepreneurship is playing an important role in global development progress. Women's participation in general economic life, particularly entrepreneurial life has been dramatically increasing so far. Yet the limited number of studies have focused on women entrepreneurs.

Women's participation to labour market is as low in Turkey as in other developing countries. It is known that women challenge many difficulties in the workplace. They earn a lower wage than men, they experience glass ceiling barriers while promoting, and most of them work informal sectors since they have insufficient education. Entrepreneurship enables them to gain autonomy, support the family financially, improve standards of living (Ahl, 2006; Minnity 2009; Rindova, Barry and Ketchen, 2009).

The majority of women entrepreneurs are married and most of them have children (Froger, 2010; Morrison 2013). Since the socially and culturally defined gender role, women spend more time on household and parental work. Thus, women entrepreneurs need to balance their family and work life, in order not to live a conflict in any part. Large numbers of women start a business to balance these two parts of their life (McGowan, 2012). Because starting their

own business typically offers greater autonomy and flexibility in work schedule, a number of hours worked, and physical work location than most wage and salaried jobs (Thebaud, 2015).

Being a mother is one of the most important roles in female life. On the other hand, female entrepreneurs taking risks when they invest. Thus, they dedicate themselves to both their family and business. Mumpreneur integrates the demands of motherhood and business ownership (Ekinsmyth, 2011). Researchers have been focusing mostly on differences between male and female entrepreneurs so far (as noted by James, 2012). Their way of doing business and characteristic approach have been indicated (Ahl, 2006; Jennings and Brush 2013; Ekinsmyth, 2013). This study is focusing on the differences of mothers' and not mothers' effect on business performance, yet non-financial criteria are also used to judge business success (Walker and Brown, 2004). Success can have different meanings for different people. Therefore, it wouldn't be enough to ask for profit of their enterprises. In this study, performance was measured with independent 6 questions. Comparison of present and the previous year was wanted from women entrepreneurs for their profits, sales, the number of workers, business success when they compare with competitors, satisfaction from business success, and competitive power of the main product of their business. Their answers were noted as "decreased", "stable", "increased lower than 20%", and "increased more than 20%".

This paper focuses on the question of either women entrepreneurs without children or with children have the same performance on their venture. Demographic factors such as marital status, education level, age of the youngest child and number of children that they have and questions about their firms such as the age of enterprise, partnership structure of an enterprise, weekly working hours, were researched of which influence women entrepreneurs' performances.

Even real situations cannot be described precisely, most of the tools for formal modelling are crisp, deterministic, and precise. So, it becomes an issue for data scientists to tackle the problem of imperfect knowledge. There are many approaches to this problem. One of them is the rough set theory. It was introduced by Pawlak (1982, 1991) as a mathematical approach to vagueness. The rough set theory is used as a method for this investigation. Rough set theory is a mathematical approach to uncertainty and vagueness (Pawlak, 2000).

In this study Bayesian approach of rough set theory is used. Bayesian theory is the essence of statistical inference. In the rough set approach, Bayes theory consists of decision rules and reveals data patterns (Pawlak, 2004).

Strength, certainty, and coverage factors are calculated for each decision rule. The degree of dependency is measured and commended. Female entrepreneurs and mumpreneurs were evaluated separately. Comparison is made between two groups.

2. Literature

Mumpreneurship is almost a phenomenon in business performance. In the framework of this investigation, the mumpreneurs concept is introduced and literature on both methodology and theory is summarized in this section.

2.1. Mumpreneurship Concept and Business Performance

The entrepreneur has vital importance for economic development. 76% of employment, 50% of investment, and 56% of production are formed by enterprises in Turkey (10th Development Plan 2014-2018, 2013). Without women's participation to labor life, it is not possible to sustain development in national size, because women form half of the population. Several works have been done to encourage them. Nevertheless, an employment participation rate of women, with 33.1%, is not at the desired level in Turkey (TUIK, 2020).

Even though women have started to run a business a long time ago worldwide, the first academic article was published in 1976 by Schwartz; the first policy report was written in 1979, the first academic conference presentation was made in 1981 by Hisrich and O'Brien and first academic-oriented book which devoted to the topic was published in 1985 by Goffee and Scase (Jennings and Brush, 2013).

Mumpreneurship is the subtitle of women entrepreneurship. We can use this concept generally to describe women entrepreneurs who have a child or children. The concept is including balancing work and family, making money, being respectable and productive.

Women can decide to be an entrepreneur in order to balance their business and family life. Mumpreneur can be defined as an individual who discovers and exploits new business opportunities and seeks to integrate the demands of motherhood and business ownership (Ekinsmyth, 2011). Each of the roles requires plenty of time, full concentration, and sacrifice. So, being a mother becomes a question tag as a phenomenon on business success. Their business is embedded in their family (Brush et al., 2009). This argument is not proved by a large scale of research (McGowan, 2012). Balancing work and family life are just one of the push factors for women's entrepreneurship.

2.1.1. Summary of Existing Reviews of the Mumpreneurship Literature

Patricia Cobe and Ellen H. Parlapiano were conceptualized the term of “mumpreneurs” on their website and press the first book in 1996 named “Mumpreneurs: A Mother’s Practical Step-by-Step Guide to Work-at-Home Success”. Writers wrote their own entrepreneurial experiences in their books. They published their second book named “Mumpreneurs Online” and they emphasized how to build an internet-based, and kid-friendly business in their book (www.mompreneuronline.com, 2001).

The first research was made by doctorate student Korsgaard in 2007. In his research, he discourses analysed of the 17 information-rich internet documents about mumpreneurs. He presented shortly mumpreneurs, discussed the elements which are related to growth.

Nel, Maritz, and Thonprovati worked on three mini case studies in order to explore mumpreneurs’ strategies to overcome problems that they faced (2010).

Leung (2011), research gender role identity and constraining and enabling forces of institutions. The writer make research in Japan where motherhood is heeded and works on two case studies. She finds out that gender roles of Japanese mumpreneurs’ define ventures, influence outputs of their ventures and organizational structure and practices.

Another research, on the topic is made by Ekinsmyth in 2011. In her research she gathers 39 questionnaire data from mumpreneurs in the UK and exhibits their everyday spatiality in which their entrepreneurial activities are embedded through that they operate. Due to her findings, she suggests policy implications.

Jean and Forbes (2012) undertook semi-structured interviews with 20 mumpreneurs and they tried to explore motivations and expectations gaps of mumpreneurs in their research.

Duberly and Carrigan (2013) interview 20 mumpreneurs and they exhibit their career narratives and their home-based working experiences. They research mumpreneurs’ individualized strategies for time management and business growth.

Ekinsmyth (2013) interviewed 29 mumpreneurs and found out how geographic factors influence their entrepreneurial decisions. In her other research (Ekinsmyth, 2014) she analysed 330 mumpreneurs and explored discursive definitions, uncertainties and politics are also influence their enterprises.

Richomme-Huet, Vial, and d’Andria (2013) used quantitative and qualitative techniques in their study. They used standard data for entrepreneurs and interviewed 8 mumpreneurs in France. They defined mumpreneurs and

alleged differences from women entrepreneurs, compare mum with fathers and childless entrepreneurs and they conclude that mumpreneurs' identity and dual role emerge strong affirmative action.

Richomme-Huet and d'Andria (2013), emphasized the importance of entrepreneurial support. They use an in-depth case study approach and found out that mumpreneurs ensure their needs by networking under the umbrella of association.

D'Andria (2014) made an exploratory study with 4 mumpreneurs in France and she suggested that the act of implementation is an appropriate and innovative perspective in order to understand mumpreneurs.

Richomme-Huet and Vial (2014), study on French mumpreneurs network and put forward by establishing an organization, how they communicate and cooperate with each other.

Casteleijn-Osorno (2014), wrote a master thesis on the topic and compare Maltese and Finnish mumpreneurs. She interviewed three mumpreneurs from each country and wrote their self-narratives on liberty, pride, work-life balance, feeling of guilty and mumpreneur identity.

Sheikh and Yousafzai (2015), wrote challenges of mumpreneur business in the light of government family policies in the UK. They interviewed 12 mumpreneurs and used a qualitative approach.

Gumbo and Distshupo (2016), researched empirically on the issue and interviewed 13 mumpreneurs in Botswana both who working at or out of the home. They write their challenges and suggest possible strategies.

Markowaka (2016), argued reasons for choosing entrepreneurship of women after becoming a mother and she investigated if becoming a mother is the springboard for women entrepreneurs or not.

Litter (2017), mentioned mumpreneurs in case studies in her book which is about the conceptualization of meritocracy.

Surangi and Ranwala (2017), examined how entrepreneurial mothers are built-in research articles. They made discourse analysis and made a sample from examined articles. Due to their findings, they reveal hegemonic statements.

Khan and Rowlands (2018), carried eight semi-structured interviews from New Zealand. They found out mumpreneurs face time, growth, finance, stigma, and achieving family balance challenges.

2.1.2 Business Performance

Business growth is essential for economic development, since the importance of entrepreneurship as a factor of economic growth (Schumpeter, 1947),

nevertheless an academic world hasn't achieved consensus on "performance measurement" definition. It has many meanings; it can be defined as the regular measurement of the results and efficiency of services or programs (Hatry, 2006 in Zhang and Jiang, 2016).

Firm performance generally indicates of firm success or failure. Success expresses the achievement goals and objectives. In business studies, success generally associates with financial performance. However, research has shown that available human capital, social capital and financial capital (Manolova et al., 2007; Menzies et al., 2004; Williams, 2004) affect business growth. According to women entrepreneurs as well as mumpreneurs venture growth is a choice (Brush and Cooper, 2012). Some research shows that many women entrepreneurs prefer to limit the growth rate and size of their firms (Cliff, 1998; Orser and Hogarth-Scott, 2002).

Enterprise's performance can be affected by several factors. Those factors are related to each other and all of them should be taken into consideration. Mika Pasenen (2003), proposes to evaluate firm performance by five measures. Those are (1) firm age, (2) growth in terms of turnover, (3) the entrepreneur's self-evaluation of firm success, (4) the entrepreneur's satisfaction with firm success, (5) the firm's competitive power in the market of the main products.

The number of employees hired also can be an indicator for business growth (Morris et al., 2006; Bullough et al. 2015).

2.2. *Rough Set Theory*

Rough set theory is a non-statistical tool for analysing data (Pawlak, 1991). It has widespread applications in different areas, such as data mining, computer science, decision making, conflict analysis. The theory works well even with imperfect data.

2.2.1 *Basic Concepts*

The base assumption of this theory is each object of the universe is associated with a certain amount of information expressed by means of some attributes of objects. When objects have the same available information as each other it calls indiscernible. This is the reason for vagueness. Indiscernibility relation is the mathematical basis of rough set theory. Two or more objects can have identically the same conditions while they belong to different decisions. This decision can define roughly by two kinds of sets: the lower approximation and the upper approximation. Objects which surely belong to that decision are in a lower approximation set. Whereas objects which possibly belong to

that decision are in the upper approximation set. Definition of rough set can be given by boundary region as well. Boundary set is the difference of upper and lower approximations. If this difference is empty, let's say zero, then set is crisp otherwise it is rough. When our knowledge is insufficient to define the set, we can say that the boundary set is not empty. It means that we cannot describe the set precisely (Pawlak, 2004).

Approximations can be defined by granules of knowledge and rough membership function as well.

Beside approximations, decision rules are another way of expressing the properties of data. When we work on the data's topological properties, it is more appropriate to use approximations (Pawlak, 2002).

The first step for rough set data analysis is a data table called an information table. Information table consists of data about the object of interest and attributes about those objects. It is possible to discover dependency between *condition attributes* (C) and *decision attribute* (D) from the information table. The decision table separately shows each object's condition and the decision attributes and "if... then..." rules can be defined due to decision table. Decision rules define hidden patterns in data (Pawlak, 2002). Decision rule describes when some condition attributes exist within their given values then decision attribute occurs within that value. For example, if a woman entrepreneur has no child (C_1), has a partner (C_2), and has a high education level (C_3), then profitability (D) is high. We can form many decision tables. When we express data in a table, we call it a decision table. All decision tables are related to the decision algorithm. A set of decision rules is called a decision algorithm (Pawlak, 2004).

2.2.2 Bayesian Rough Set Model

Bayesian rough set model is proposed as a new probabilistic approach to Pawlak rough set theory, and after Pawlak retrospective (1982) many scientists work on this issue (Greco, Matarazzo and Slowinski, 2005; Slezak, 2005; Slezak and Ziarko, 2003).

Bayes theorem is a mathematical approach to determine conditional probability. It consists of containing prior probability distributions to generate posterior probability. The rough set theory works on data sets that design in a decision table and does not refer to prior knowledge. The strength of decision rules can be calculated with rough set theory. This is called a new approach to Bayesian theory. Because it is a new form of Bayesian inference method and calculations are easier.

Decision tables assemble from conditions and a decision for every condition. Each row of the decision table has conditions and a decision. These

specifications have emerged some characteristics as strength, certainty factor, and coverage factor of the rule.

The decision rule is shown as $C \rightarrow_x D$, and the strength of its' calculation is shown below:

$$\sigma_x(C, D) = \frac{\text{supp}_x(C, D)}{\text{card}(U)} \quad (1)$$

In this formula, supp_x is the cardinality of conditions and decision intersection and mathematically can be shown as $\text{supp}_x(C, D) = \text{card}(C(x) \cap D(x))$.

Each decision rule associate with the certainty factor, which is denoted as $\text{cer}_x(C, D)$. Certainty can be defined as:

$$\text{cer}_x(C, D) = \frac{|C(x) \cap D(x)|}{|C(x)|} = \frac{\text{supp}_x(C, D)}{|C(x)|} \quad (2)$$

When certainty factor, $\text{cer}_x(C, D)$ is equal to 1, it means that decision rule $C \rightarrow_x D$ is certain. If $0 < \text{cer}_x(C, D) < 1$ then it means that the decision rule is uncertain. Certainty factor can define as the conditional probability (Pawlak, 2002).

The coverage factor which is denoted as $\text{cov}_x(C, D)$ for decision rule is defined as

$$\text{cov}_x(C, D) = \frac{|C(x) \cap D(x)|}{|D(x)|} = \frac{\text{supp}_x(C, D)}{|D(x)|} \quad (3)$$

Certainty factor is the degree of membership of x to the decision class $D(x)$ when C is given, on the other hand, the coverage factor is the degree of membership of x to condition class $C(x)$ when D is given (Pawlak, 2005).

These characteristics are directly related to the Bayesian inference methodology without using prior and posterior probabilities (Greco, Pawlak and Slowinski, 2004). Because we can discover patterns in data in the sense of Bayes' theorem (Pawlak 2002, Greco et al., 2002).

Dependency factor defines the degree of dependency and can be understood as if correlation coefficient in statistics (Pawlak, 2005). For every $(x, y) \in B$, dependency factor is shown as $\Omega(x, y)$ and can be calculated as

$$\Omega(x, y) = \frac{\text{cer}(x, y) - \sigma(y)}{\text{cer}(x, y) + \sigma(y)} = \frac{\text{cov}(x, y) - \sigma(x)}{\text{cov}(x, y) + \sigma(x)} \quad (4)$$

When $\Omega(x, y) = 0$, it means that x and y are independent. When $-1 < \Omega(x, y) < 0$, it means that x and y are negatively dependent. And when $0 < \Omega(x, y) < 1$, it means that x and y are positively dependent on each other.

3. Methodology

The Bayesian approach of rough set theory is used as a method in this investigation.

3.1. Sample and Data Collection

319 female entrepreneurs participated in our survey. They were from İstanbul, Kocaeli, and Bursa cities, which are economically the most developed region of Turkey. Those cities are highly industrialized and known as locomotives of the Turkish economy. Besides, these cities have the lowest gender inequality due to the report for 2016 (TEPAV, 2016).

Differences between the two samples were assessed by comparing responses of women entrepreneurs by focusing on their firms' performances. They were asked to evaluate the differences of the last 2 years in the cover of their firms in the framework of profit, sales, number of employees, firm success when compared with competitors, their satisfaction from business success, and competitive capacity in the market. Their answers were noted as "diminished"; "didn't change"; "increased less than 20%" and "increased more than 20%".

3.2. Analyses and Results

3.2.1 Descriptive Statistics

Female entrepreneurs separated into two groups as being mum or not being mum. The same questions were asked them but, two additional questions were asked to mumpreneurs which are about their number of children and the age of the youngest children since we believe these may make a difference among them. 111 of responders declared that they are not a mother and 208 of the responders declared that they have at least one child. Due to their answers, tables were consisted as below.

As summarised in Table 1, most of the female entrepreneurs without a child are single. They are graduated mostly from high school and university. Their ventures are young and most of them (68%) have no partners. They have busy working time.

Table 1. Demographic Information about Female entrepreneurs without child

Marital Status	Number of Responders	Percentage
Married	34	0,31
Single	67	0,60
Divorced	10	0,09
Education Level		
Primary School	4	0,04
Middle School	5	0,05
High School	47	0,42
University	39	0,35
Master Degree	16	0,14
PhD	0	0,00
Age of Enterprise		
Less than a year	19	0,17
1-5 years	43	0,39
5-10 years	23	0,21
10-20 years	17	0,15
More than 20 years	9	0,08
Partnership Structure of Enterprise		
Own full company	75	0,68
Partner with her husband	7	0,06
Partner with her family members	17	0,15
Partner with others	9	0,08
Partner with family members and has other partners too	3	0,03
Weekly Working Hours		
Less than 45 hours	8	0,07
45-55 hours	38	0,34
55-65 hours	52	0,47
More than 65 hours	13	0,12
Total	111	1,00

Table 2. Demographic Information about Female entrepreneurs with child(iren)

Marital Status	Number of Responders	Percentage
Married	183	0,88
Single	3	0,01
Divorced	22	0,11
Education Level		
Primary School	18	0,09
Middle School	26	0,13
High School	81	0,39
University	61	0,29
Master Degree	18	0,09
PhD	4	0,02
Age of Enterprise		
Less than a year	10	0,05
1-5 years	59	0,28
5-10 years	54	0,26
10-20 years	50	0,24
More than 20 years	35	0,17
Partnership Structure of Enterprise		
Own full company	150	0,72
Partner with her husband	22	0,11
Partner with her family members	17	0,08
Partner with others	16	0,08
Partner with family members and has other partners too	3	0,01
Weekly Working Hours		
Less than 45 hours	12	0,06
45-55 hours	86	0,41
55-65 hours	79	0,38
More than 65 hours	31	0,15
Age of Youngest Child		
Younger than 6 years old	27	0,13
6-18 years old	106	0,51
18-22 years old	43	0,21
Older than 22 years old	32	0,15
Number of Children		
1	119	0,57
2	75	0,36
3	12	0,06
4 or more	2	0,01
Total	208	1,00

As listed in Table 2, mumpreneurs are mostly (88%) married. Their education level is a little bit lower than female entrepreneurs without a child. Their working hours are as much as the first group. They dominantly have one or two children and their children are mostly at school age.

Firm performance is investigated both for entrepreneurs without children and mumpreneurs. Their answers are noted in Table 3 and Table 4.

Table 3. Female Entrepreneurs' (without children) firm performance comparisons for last 2 years (%)

	<i>Decreased</i>	<i>Stable</i>	<i>Increase less than 20%</i>	<i>Increase more than 20%</i>
Profit	0,39	0,28	0,17	0,16
Sales	0,35	0,27	0,23	0,15
Number of Employee	0,18	0,62	0,15	0,05
Firm success	0,15	0,51	0,19	0,14
Satisfaction	0,21	0,44	0,20	0,15
Competitive Capacity	0,23	0,49	0,16	0,12

Table 4. mumpreneurs' firm performance comparisons for last 2 years (%)

	<i>Decreased</i>	<i>Stable</i>	<i>Increase less than 20%</i>	<i>Increase more than 20%</i>
Profit	0,44	0,31	0,13	0,12
Sales	0,39	0,33	0,15	0,13
Number of Employee	0,20	0,66	0,05	0,09
Firm success	0,13	0,50	0,18	0,18
Satisfaction	0,21	0,54	0,10	0,15
Competitive Capacity	0,20	0,51	0,12	0,17

3.2.2. Rough Set Analysis:

Condition and Decision attributes are defined separately both for female entrepreneurs with children (mumpreneurs) and female entrepreneurs without a child. *Condition* attributes are civil status, education level, age of enterprise, partnership structure, enterprise age and working hours. A number of children, and the age of the youngest child are added as condition attributes for mumpreneurs. *Decision* attributes are the same for both groups: profit, sales, number of employees, firm success, entrepreneur's satisfaction, and competitive capacity. For all those conditions and decision attributes cardinalities are calculated for each answer category.

The first step for the analysis is to check if the set can define roughly. Our set has been rough since for all x , $0 < \mu_X^R(x) < 1$ and $R_*(X) \neq R^*(X)$ The boundary region is not empty both for two decision attributes.

As a second step, strength, certainty, coverage, and dependency factors are calculated. Therefore, 36 tables for female entrepreneurs without child and 48 tables for mumpreneurs are consist. One of these tables is shown below as an example.

Table 5: Example for calculation of mumpreneurs' profit remarks according to their civil status

Event	Civil Status	Profit	Support	Strength	Certainty	Coverage	Dependency
1	Single	Decreased	1	0,00	0,33	0,01	-0,14
2	Single	Stable	2	0,01	0,67	0,03	0,36
3	Single	Increase less than 20%	0	0,00	0,00	0,00	-1,00
4	Single	Increase more than 20%	0	0,00	0,00	0,00	-1,00
5	Married	Decreased	79	0,38	0,43	0,86	-0,01
6	Married	Stable	55	0,26	0,30	0,85	-0,02
7	Married	Increase less than 20%	24	0,12	0,13	0,92	0,02
8	Married	Increase more than 20%	25	0,12	0,14	1,00	0,06
9	Divorced	Decreased	12	0,06	0,55	0,13	0,10
10	Divorced	Stable	8	0,04	0,36	0,12	0,08
11	Divorced	Increase less than 20%	2	0,01	0,09	0,08	-0,16
12	Divorced	Increase more than 20%	0	0,00	0,00	0,00	-1,00

Due to the table, lets show how married entrepreneurs compare the last two years for their company and explain the profit as “stable”. As can be seen in table 3, support is the cardinality of the related category of the answers. Support of the decision rule $supp_x(C,D) = card(C(x) \cap D(x))$. We can see that 55 of the responders are married and their profit was stable.

The strength of the decision rule is the ratio of support and cardinality of the universe. Therefore, it can be calculated as:

$$\sigma_x(C, D) = \frac{\text{supp}_x(C, D)}{\text{card}(U)} = \frac{55}{208} = 0,26$$

The certainty factor can be interpreted as a conditional probability (Pawlak, 2004). It is the ratio of support of the decision rule, which is 55 in our example, and the cardinality of condition attribute.

$$\text{cer}_x(C, D) = \frac{|C(x) \cap D(x)|}{|C(x)|} = \frac{\text{supp}_x(C, D)}{\text{card}(C(x))} = \frac{55}{183} = 0,30$$

Certainty factor is found as 0,30. It can be interpreted as the decision rule is uncertain in S. We can make our comment as 30% of the mumpreneurs who are married expressed their profit is stable.

Coverage factor is the ratio of support of the decision rule and cardinality of the decision attribute.

$$\text{cov}_x(C, D) = \frac{|C(x) \cap D(x)|}{|D(x)|} = \frac{\text{supp}_x(C, D)}{\text{card}(D(x))} = \frac{55}{65} = 0,85$$

This coverage result can be commented as when decision expressed as “stable” responder mumpreneurs’ civil status are most probably (85%) married.

The dependency factor is the counterpart of the correlation coefficient in statistics (Pawlak, 2004).

$$\eta(x, y) = \frac{\text{cov}(x, y) - \sigma(x)}{\text{cov}(x, y) + \sigma(x)} = \frac{(0,85 - 0,88)}{(0,85 + 0,88)} = -0,02$$

It is calculated as -0,02. Since this result is negative, we can say that being married is negatively dependent on “stable” profit. Even it is negative, dependency is quite weak for this item.

All the factors are calculated in a similar manner. Interesting results are summarised below.

The first performance indicator is profit for this research. When female entrepreneurs compare the last two years for profit, we see that it decreased for both groups of entrepreneurs generally. We can clearly say that when education level increase profit performance increase as well again both for these two groups. Entrepreneurs who have partners out of the family have a better profit levels. 66% of single entrepreneurs without a child expressed “an increase more than 20%” in their profit. 73% married and mumpreneurs declared decreased or stable profit level.

The sales amount is asked to female entrepreneurs as a second indicator for firm performance. Again, education level is found as significant for sales amount. It has a positive and strong relationship with sales for both groups. Another interesting finding for this category is for working hours. Entrepreneurs with children spend less time at work and it affects firm's sales seriously. Mumpreneurs who express diminish (40%) or stable (57%) sales, have school-age (between 6-18 years old) children. Female entrepreneurs without a child generally respond to their sales condition as "decrease" or "stable". Sales performance is better for mumpreneurs with a non-family partnership than entrepreneurs working without a partner or have family member as a partner with a total certainty factor of 63%. Mumpreneurs who own the business themselves or partner with their husband, declared sales amount as to diminish or stable. This group, who declared decrease or stable sales, then with 79% coverage factor they have no partnership.

A number of workers is asked and entrepreneurs for all marital statuses expressed "stable" change for this category. Having children has no effect on this performance indicator. Other factors also were checked and no meaningful result is found.

As a fourth indicator firm success is asked when they compare themselves with competitors. Without difference between mumpreneurs and female entrepreneurs, more than half of the responders are evaluated firm success as "stable". If female entrepreneurs without a child expressed an increase in their firm success, then with a 76% coverage factor they graduated from university or higher degree. For this group, certainty factor is clearly significant. When their degree from high school or below then certainty factors are high for "decrease" and "stable" declarations. Entrepreneurs from both two groups who have non-family partners mostly evaluated their enterprise as successful. Another interesting finding for this segment is the certainty factor for working hours. While increasing working hours of entrepreneurs, satisfaction from firm success is increasing.

Satisfaction from firm success is another performance criterion that is asked. In general, looking more than half of the entrepreneurs expressed their satisfaction as stable. Results for each demographic factor are an approach to the mean. For all of the demographic factor's results are evaluated but there is no significant output for this item.

The last segment for firm performance is the competitive capacity in the Market. In general looking, we can see no difference between these two groups. Most of the female entrepreneurs evaluated their competitive capacity as stable

when they compare the last two years. High certainty factor in education observed for entrepreneurs who graduated from university (35% for without child and 40% with child) or higher degree (43% for without child and 38% and 50% with child) expressed an increase in their competitive capacity. Decreasing expressions are mostly from Own bosses mumpreneurs (coverage factor is 78%), on the other side who is a partner with her husband declared the highest increase (certainty factor 61% for without a child and 63% for mumpreneurs) in their competitive capacity.

4. Conclusion

Entrepreneurship is a very attractive issue in recent years. Female entrepreneurship is the fastest-growing segment of this issue. Since entrepreneurial activity is embedded in the family (Jennings and Brush, 2013) many factors influence female entrepreneurs more than their male counterparts.

In this study, how being mum influences the firm performance of female entrepreneurs is investigated. Questions about demographic factors and firm performance were asked. Firm performance questions were the comparison of the last two years in profit, sales, employee number, firm success evolution, satisfaction, and competitive capacity status. Questions about performances are the self-evaluations. 309 responses are evaluated. Female entrepreneurs are separated in two groups as mothers and not a mother. 208 of the responders have at least a child and 111 responders do not have any child. These findings confirm Froger (2010) and Morrison (2013). Being a mum is full-time responsibility and family-oriented life can change entrepreneurs' performance. A comparison of these two groups is made.

The rough set approach for Bayes Theorem is used as a method. Strength, certainty, coverage, and dependency factors are calculated for each demographic factor and performance indicator. Because of the high number of cross tables in this research, not all of the results but the only significant ones are given.

In general looking for the performance criteria of profit, sales, employee numbers, firm success is declared more increment by female entrepreneurs without a child than mumpreneurs. It is interesting that mumpreneurs' satisfaction level from firm success is not as much as female entrepreneurs without a child. Employee number has no meaningful result for none of the demographic criteria for both groups of entrepreneurs.

It is obvious that education level is decisive for all performance indicators. We can clearly say that when the education level is increased entrepreneur's performance increase as well. Education plays an important role for

entrepreneurs' skills of project planning, management, problem-solving, and time management. Those contribute positively to their entrepreneurship career.

Being marry and having a child or children have a negative impact on entrepreneurs' performance. Due to coverage and certainty factors, mumpreneurs' profit and sales declarations are less than female entrepreneurs without a child. Nevertheless, their satisfaction level from firm performance is equal to each other for these two groups. In Turkey, supporting mechanisms for working females are not satisfactory. Babysitters who serve at home, have no education in their job. Before age of 3, it is not possible for a child to attend nursery so, generally women get away from their work. Since entrepreneurship provides more flexible time for women this difference is expected less before this research but, it seems that it still emerges as a barrier for women. When the number of children increases performance declarations for each indicator as "decrease" or "stable" mostly. This is more visible for children ages. Mumpreneurs' child age influences their performance. When the youngest child age less than 6 or between 6-18 years old (school age) mumpreneurs performance declarations noticeability less than who have elderly age of child or children.

Having a partner out of from family has a great impact on business performance according to results. Since mumpreneurs have many responsibilities at home having a partner is vital. Making a partnership with their husband or with family members probably influences professions of doing business together. This can be the reason for the declaration of lower performance indicators for each criterion.

All in a nutshell, being a mum as an entrepreneur in a business have many drawbacks. Responsibilities at home influence the performance of their business. Female entrepreneurs may hire professional support for home-based works but it seems it is not enough for mumpreneurs to concentrate on their business as much as female entrepreneurs without a child. Those drawbacks can be reduced by governmental incentives by increasing childcare services. It is also possible to empower female entrepreneurs' performance by giving them educational guidance and consulting services to build the right partnership.

5. Discussion

Responders are from economically the most developed region of the country so; results do not represent all of the Turkish female entrepreneurs.

Research is done before the pandemic progress. We cannot make any comment on how this extraordinary progress influences women entrepreneurs' performance. Nevertheless, this situation can emerge as a new research question.

Restrictions during Covid-19 influenced all the enterprises for sure but, it probably influenced mumpreneurs deeper. This research is not shedding a light on this research question. Researchers can investigate this issue further.

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CHAPTER 6

CLASSIC, NEO-CLASSIC, MODERN AND POST MODERN ERAS CONTEMPORARY APPROACHES IN PRODUCTION MANAGEMENT

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1. INTRODUCTION

In order to understand contemporary management concepts, it is necessary to examine the historical development of management. Management sciences have been presented with different approaches since its inception. It is known that most of today's management practices are based on developments in management theories. When the management theories from the past to the present are examined, each approach has been carried out with the aim of closing the deficiencies of the previous one, achieving better, increasing the effectiveness and efficiency of the managements.

It is accepted that the historical process of management was born depending on the cooperation of people. Classical management theory focused more on organizational structure and goals and saw employees as a tool to achieve organizational goals, whereas neo-classical theory, unlike classical theory, gave importance to human relations and discussed the factors that are effective in the organizational behavior of employees. Modern management theories, on the other hand, have examined the relations between the organization's own subsystems and the relations with its environment. Postmodern management theories, on the other hand, have revealed non-traditional perspectives in management so that the organization can keep up with rapid changes. In order to better understand the historical development of management, classical management theory,

neoclassical management theory and modern and postmodern are examined. The aim of this section is to examine these theories and compare them with new approaches, and then the place of theories in contemporary approaches in the research is examined.

The concept of management, which has existed since the periods when individuals started to work together, was considered as a science with the industrial revolution in the 19th century. In this context, the combination of production factors and new production techniques in order to make profit in the administrations revealed the period called the classical administration period.

After the classical period, processes called neoclassical and modern management periods have been experienced. The classical management approach is represented by the bureaucratic approaches shaped by Max Weber. Central administration, a strict hierarchy approach, adherence to rules, scientificness, objectivity and vertical organizations are defined as the characteristics of this period (Yıldırım, 2010).

Today, there is a period that we call post-modern or postmodern management processes. The concept of postmodern is a concept that is on the agenda in many areas. Postmodernism, which affects many different fields of study, includes approaches with modern period influences such as performance management, strategic planning, outsourcing, reengineering, total quality management, knowledge management and learning organizations in the management literature in organizations (Erdemir, 2006). It is also a concept directly related to information technologies. It is stated that the development of information technologies, which have an impact on wide areas in today's world, is the catalyst of postmodern movements and triggers its development (Wells, 1996).

For much of the past century, government has focused on how to get people to think and act like an ant colony. Management theory and practices have been reinvented over the years. However, business processes have always come before individuals. Pioneers such as Frederick Winslow Taylor and Henry Ford, who is regarded as the father of mass production, with their applications such as on-the-job measurement and chronometer, brought an analytical approach to the workplace at the expense of individual creativity.

The concept of modernism, which expresses the transition from the old to the new, expresses a process that includes the differentiation of lifestyles, individualization, a social structure that is not dependent on the traditional structure, and shapes the individual-society-state relationship socially, economically and politically. The concept of postmodernism, which was put

forward as a solution to the impasse of modernism, reflects a period in which radical changes were experienced in the forms of production and consumption, as in many areas related to social change and transformation, with the effect of factors such as globalization, change in information and communication technologies, and the spread of mass media. 21st century business has changed rapidly. Businesses are adopting business models that tend towards smaller business units run by empowered employees. Machines are no longer the most important resource of businesses. The human factor has become one of the most important factors determining competitive power.

Modernization has brought about the transition from a production society to a consumer society. The increase in production capacity and the change in production patterns, the removal of borders in every sense with globalization made it necessary to change consumption patterns. Along with postmodernism, consumption has gone beyond obligatory needs such as eating, drinking and sheltering, and has led to the emergence of a consumption culture by influencing an extremely wide area including lifestyle and recreational activities.

2. PRODUCTION MANAGEMENT CONCEPT

Production management deals with the conversion of various inputs into outputs in the desired format. Production management is the development of a system that will enable the company that produces goods or services to produce in the most functional, economic and value-added way. It is very important to work on the production management of the enterprises in order to produce the desired amount of product / service, at the desired quality and at the desired time, by using the available resources such as machinery and manpower in the most economical way.

Objectives of Production Management; “Which goods /services? How much? What features? Where and by whom?” This business function, which tries to find the answers to questions such as the lowest cost or the highest profit, has many purposes. These goals affect every field from design to product development, from resources to distribution, from marketing to sales.

One of the most basic purposes in production management is to meet consumer demands in the best way in terms of price, time, quantity and quality. Another aim is to keep the stock level as low as possible or to increase its turnover. Thanks to the production management, the degree of utilization of the resources of the enterprise such as manpower and machinery will be effectively increased.

Functions of Production Management; The functions of the production management department in an enterprise are determined depending on various factors such as enterprise size, management policy, organizational structure, production type or methods, industry branch, production amount.

Duties of Production Management are; The duties assigned to the production management department in an enterprise consist of the details of their functions. Therefore, duties are determined depending on various factors, especially the organizational structure. However, it is possible to classify the typical tasks undertaken by managers responsible for production management. These; product design, demand forecasting, technology selection, establishment site selection, workplace arrangement, logistics management, capacity planning, repair - maintenance planning, inventory control, job analysis, wage management and control, project management, quality management, production planning.

Benefits of Production Management; Production management has many benefits for the business. One of them is reporting. In other words, production management reports whether goods and resources are used in the most effective way, and enables the product/service to be made efficient by providing improvement opportunities in possible cases. Production management also creates a positive effect on productivity as it helps to use scarce resources in an effective and solution-oriented manner.

The Most Important Task of the Managers Responsible for Production Management: Selecting the type of production system and then the process related to the next decisions, the process step; decisions such as the type of machines, automation level and layout, capacity step; decisions such as the volume of the production system, the amount of labor, working order, spare capacity, stock step; creation of optimum balance between stock level and holding, ordering costs and efficiency of stock recording systems, workforce step: efficient use of existing workforce; work simplification, work measurement and training, quality step accordingly; although it is not under the direct responsibility of the production management, it is the determination of the inspection points and the interpretation of the measurement results to make the right decisions.

2.1. Historical Development Of Production Management By Period

“Manufacture”, which is the equivalent of the word “manufacture/production” in English, is a combination of the Latin words manus (hand) and factum (to make). The concept of production, from the first ages to the present; It has the meanings

of creating something or changing the physical properties of the product. The pyramids of the Egyptians, the Great Wall of the Chinese, the city arrangements of the Incas, manufacturing techniques, and the use of production factors within the framework of a plan and program are known as classic examples.

In the 1770s, Adam Smith's identification of the improvements to be made in the increase of production by the division of labor or division of labor, and in the 1830s he detailed the benefits to be derived from the application of Charles Babbage's division of labor principle; His experiments on job simplification, specialization and reorganization and increasing productivity are the first known scientific studies in the field of production management.

Between 1900 and 1920, Frederick Taylor's introduction of the rules of scientific management with her classic work "Principles of the Scientific Management" led to almost revolutionary developments. In production management; It can be accepted that basic concepts such as productivity increase, organization, manpower efficiency, workplace order and similar basic concepts emerged with Taylor. One of the most important figures in the development of modern production management is Henry Ford. American engineer Henry Ford is considered to be the father of "mass production" and "assembly line" concepts.

With these methods, it produced the original A model car in 1903 and then the T model car in 1908. The T model automobile was being produced with a modern production style, even in its current sense. Ford's real achievement is the standardized and simple presentation of a product to the masses that was only available to the elite until the beginning of the 20th century. Its success laid the foundations for today's giant motor vehicle industry. For this reason, it would be appropriate to take a closer look at Henry Ford's contributions and some developments in the automotive industry since the 20s. In the beginning, the essential element of mass production was not a moving or continuous assembly line, but rather the complete and consistent interchangeability of any part with a new one and simplicity in assembly.

In 1913, Ford's new Highland Park factory in Detroit made a significant improvement, putting the car in front of the worker with the "mobile assembly line" and as a result, the assembly cycle time was cut in half. Statistics, quality control, inventory models, capacity planning methods with the 1930s, facility planning, in-plant material handling, layout methods, statistical analysis, engineering economics and later linear programming simulation, network planning techniques since the 1940s. advances have been made.

From 1960 to the present, the use of the total system concept and wide-ranging simulation models in the design of production systems, and the use of

computers in communication, planning and research have been ensured. Again in this process, giant steps were taken in the tools used in manufacturing, such as machine tools, robots and the first computer samples. The automotive industry has played an important role in all these developments. In the historical perspective of production management, it is seen that the phenomena of “mechanisation” and “automation” come to the fore. These concepts are already at the base of modern production management dynamics with the Industrial revolution.

The modern management period and approach, which emerged after the classical and neoclassical management periods, gains importance as a result of the shift of the perspectives of the enterprises towards their internal environment to the external environment and the change in external environment and market conditions, which will cause them to turn from the closed system understanding to the open system understanding. In the classical and neoclassical periods, businesses could easily sell what they produced because the demand was higher than the supply in the markets. However, as the supply exceeds the demand as a result of the increase in competitors, the rapid increase in the number of enterprises, and the change in technological, economic and social conditions, customers have started to be more selective. In this context, the main features of the modern and postmodern management periods, in which external environmental conditions have gained great importance, will be mentioned.

The period in which management began to be studied systematically is called classical management thought. It is stated that scientific management, which is the basic approach of classical management thought, started with the work titled *Principles of Scientific Management* published by F. Taylor in 1911. Henri Fayol, who made important studies in this field after Taylor, looked at management from the perspective of top management. The management approach, in which Henri Fayol revealed the general principles, is called the management process approach. In this approach, Fayol focused on the principles of efficiency and rationality, just as in the scientific management approach, and tried to develop principles related to all areas of management. The third approach, which is considered within the classical management approaches, is the bureaucracy approach put forward by the German sociologist Max Weber. In this approach, Weber proposed a management model based on rational rather than personal grounds, and this is called bureaucracy. Weber argued that this organization, in which there is a rational authority based on a formal structure with continuity, is more efficient and can adapt to changes more easily.

3. BASIC CONCEPTS REGARDING MANAGEMENT AND DEFINITION AND SCOPE OF MANAGEMENT

The concept of management is one that has been in development for more than a century. It refers to the most appropriate management and administration of the physical, financial and workforce resources of businesses established for an economic purpose. All of these businesses have specific goals and they need management and management to achieve the goals. In order to achieve common goals, individual efforts must be carried out in a coordinated manner. As Hodgkinson states, man is born into the family, which can be called the smallest social group, and survives and dies in larger communities, including the family. Naturally, people manage and/or are managed in this process (Hodgkinson, 2008).

Management has the feature of being both science, art and universal. The history of administration is as old as the history of humanity. However, considering management as a science and the profession of professional manager is quite new. Understanding, following and applying the development of management thoughts and practices in organizations is of great importance for businesses in gaining sustainable competitive advantage in the age of information economy.

The reason why the concept of management is so new is the absence of large production-based organizations until the industrial revolution that began in the 18th century. From this point of view, it is possible to characterize the long history until the start of the industrial revolution as “pre-business concept era” or “pre-scientific era”. However, considering that there were people and communities who ruled and ruled in these past periods, it is possible to say that the concept of administration existed in very ancient times, even in the first ages.

To give another definition of the concept of management, management is “cooperating with others to achieve a goal”. Management is, first of all, the activity of reaching a certain goal together with others, in other words, getting others to work. With this feature, the management should be able to reach the goals intended to act together with others while reaching the goal, only with the help and cooperation of others. Indeed, if human abilities were more advanced, the help and cooperation of others would not be needed.

There is an important difference between social sciences and technical sciences in terms of birth and development. Technical sciences are based on inventions and start with some inventions. These inventions are subsequently developed and put into a form for widespread use. Social sciences, on the other hand, aims to establish the specific and common aspects of existing social

practices as a theory. In other words, it aims to explain social events. From the perspective of this approach, management is a social science.

Successful management practices have been observed since ancient times. The scientific study of business management was started by Frederick Winslow Taylor in the last quarter of the 1800s. From Taylor to Chester Barnard, business management has been considered as a sub-type of general management. Seeing management as a profession took place after the second world war (Drucker, 2014). “Management is the process of directing and guiding employees to achieve the goals of the organization” (Leslie, 1983).

The universal feature of management is that today’s society has a very wide area of responsibility. The universal feature prevents the management from being squeezed into narrow molds. There are management activities not only in enterprises such as a factory or store, but also in homes, nightclubs, schools, sports clubs. The activities performed by the manager in the enterprise are called management functions and these functions are grouped as planning, organizing, directing, coordinating and controlling.

Development of Management Thought and Practice: By examining the development of management science, it is seen that the development of management science is not very old. That is, the development of modern business management is new. Especially in the 18th century, as a result of the growth of businesses, new situations showed themselves. The phenomenon of the study of management is as old as civilization. It would be more useful to examine the development of management on a timeline rather than an overview. Indeed, the administration has made significant progress so far.

Business management, on the other hand, gives a different appearance in terms of this approach, as it makes use of many methods developed by technical sciences, although it is a social science. According to this, business management is a specialized science that examines social events in a certain subject and is a branch of the general management discipline according to this approach, but has much different and complex aspects from the old management understanding due to the technical methods it uses. With the historical development, the approach to business management has begun to differ.

3.1. The Birth And History Of Management Science

When we look at the development of management theory, although the science of management is not a very old science, the emergence of businesses appears as a relatively new process. With the growth of businesses in the 18th century, the

concept of modern business management emerged. The management has made significant progress until reaching this position. It is possible to examine these stages in four groups (Ertürk, 2013).

Pre-Contemporary Management (Before 1880): This period lasted until 1880 and the workers were in an autocratic relationship based on the social caste system, completely under the rule of their supervisors. While the craftsmen doing the same job formed the guilds, the guilds were the pioneers of the tradesmen and craftsmen unions that exist today (Ertürk, 2013).

Contemporary Management Period: This period includes the “classical” and “neoclassical” theories that started in the 1880s and continued until today. Classical theory includes the “Scientific Management Period” initiated by Taylor between 1880-1930 and later developed, the “Management Process” developed by Fayol, and the “Bureaucracy” theories developed by Weber. Neoclassical management thought system emerged as a new theory under the name of human relations approach by developing the classical management understanding in the 1930s (Budak and Budak, 2016).

Modern Management Era: While the classical movement presented a rational system by examining the work, activity and organizational structure with a technical approach, the neoclassical movement emphasized the human, which the classicists did not. The “Modern Management” approach, on the other hand, handled and interpreted the proposals of classical and neoclassical management thought from a different perspective and tried to reach a synthesis of them (Budak and Budak, 2016). Modern management thought is divided into two as “System Approach” and “Contingency Approach” (Gürüz and Gürel, 2006).

Postmodern Management Period: Although a new era has been entered in industry and trade in the second half of the 20th century, the phenomenon of globalization is one of the concepts that emerged in this period. The abolition of protectionism in foreign trade and the reduction of customs rates, the opportunity for foreign capital, as well as the result of many developments, provided the opportunity for large enterprises to sell their products in international markets. In this new era, that is, in the postmodern management system, businesses have started to use organizational understandings and techniques such as total quality management (TQM), benchmarking and learning organizations by making changes in their organizational structures and practices in order to maintain their existence and provide competitive advantage in the markets (Budak ve Budak, 2016).

3.2. *Theories of Management*

The development of management theories can be examined in two parts as pre-scientific management and scientific management period, or by dividing the scientific management approach into pre-industrial management approach and scientifically accepted period into classical, neoclassical and modern theories.

Pre-Industrial Management Thinking: This process, which is the period before scientific management, dates back to BC. starting before BC. The long term, which lasted until 1770, can be described as “Pre-Scientific Management Pre-Industrial Management Approach”. It is accepted that the pre-scientific management and pre-industrial period emerged when people began to live and work together and lasted until the 1880s.

It is seen that those who were in the position of manager in the pre-scientific method period generally carried out their work with unlimited authority, and the relations between superior and subordinate were mostly in autocratic leadership. It is accepted that the scientific development of management in its current sense was laid in the classical management period of the 1800s. However, not only the classical and later approaches, but also the ideas that were put forward until this period in the oldest ages of history had a significant impact on its development. In this context, civilizations from the past to the present have made great contributions to the development of management science. For example; Sumerians, Egyptians, Romans, Ottomans...

Classical Management Thinking: It is accepted that the scientific development of management started in the classical management period of the 1800s. Classical management thought, which is effective on management thoughts and practices; From the industrial revolution to world war II by James Watt’s construction of the first usable steam engine in 1778. These are the practices seen in the period up to world war II. The classical management approach, which considers the organization as a technical and economic unit, is divided into three subsections; It can be analyzed as scientific management, management process and bureaucracy approach. Classical management thought; focused on factors other than human factors. Rationality and mechanical processes have been the starting points of her classical theories.

1-Scientific Management Approach (classical method); The pioneer of the scientific management approach was put forward by the American manager Frederick Winslow Taylor in his book “Scientific Management Principles” in 1911. Scientific management approach has been widely accepted and productivity has increased significantly in enterprises. Taylor gathered the basic

principles of scientific management approach in four (4) general principles. We can list these principles as follows:

- I. Use and development of scientific methods in management practice (finding the best method for doing the job),
- II. Selection, training and development of employees with scientific methods,
- III. Providing the worker with scientific, teaching, training and self-development opportunities and thereby developing a sincere cooperation with workers,
- IV. Separating the duties of management and workers and, with this separation, promoting friendly relations and cooperation between these two groups.

She carried out studies on doing the work with more advanced methods, giving rest periods at work, time studies to provide output at the determined standard, piece wage system (incentive wages) in payments to be made for output. In her works, she included efforts to increase technical efficiency in business. The contribution of the scientific management approach is that it shows the importance of incentives in terms of performance, the need for careful examination of jobs and duties, and the importance of personnel selection and training.

Criticisms of this theory are as follows: The social content of the job and only the material needs of the employees are given importance, the opinions and suggestions of the employees are not given importance, and according to Mahmood and Basharad (2012), the labor unions think that this theory focuses on the work rather than the labor with less pay. The acceleration and lack of sound during work were also condemned by the union. The benefits of increasing productivity are not shared with the worker. Since specialized work in a particular field can become tedious over time, it is also thought that when this theory is applied in industrial units, the theory reduces rather than increases overall productivity. In this theory, man is considered a machine. This theory, “Man will be first in the past and system will be first in the future” has proven to be anti-human.

2-Management Process Approach (classical method); Henri Fayol pioneered this approach of classical theory. Fayol examined business activities in terms of main divisions and grouped them into 6 groups. These activities are; technical activities, commercial activities, financial activities, accounting activities, security activities and management activities.

3- Bureaucracy Approach (classical method); Max Weber, a German-born scientist and sociologist, has done extensive research on administrative authority (authority), charismatic authority and legitimate authority, and has used these

in his works by dealing with management science. Afterwards, Weber clarified the foundations of the bureaucracy model as a form of government of the legitimate order based on rational rules and principles, which she put forward as the ideal authority and social order. Bureaucracy also has a negative and disparaging meaning. In this sense, bureaucracy; these are negative behaviors and actions such as inefficiency, slow work, rule-making, paperwork, avoidance of responsibility, confidentiality in management, unwillingness to delegate authority, and excessive commitment to authority. However, with the dictionary meaning of bureaucracy, it is defined as “stationery, the state giving too much importance to correspondence in the conduct of affairs”.

Weber and the Bureaucracy Model: The “Bureaucracy Model”, which is accepted as the third and last approach of the classical management model, was developed by Max Weber in the early 1900s. It was further developed after being studied in detail by writers and scientists such as Alvin Gouldner, Peter Blau, Robert Merton, Philip Selznick, who came after Weber. Bureaucracy, which was developed by Weber by revealing its rules and concepts; contrary to the meaning of “go today, come tomorrow”, which is used in everyday language and mentioned relatively in the previous sections, it expresses an organizational structure. “According to Max Weber, a bureaucratic structure is an ideal organizational structure in terms of efficiency.” Weber argued that by following the principles she put forward, an ideal organization could be established and an effective, ideal, unchanging and rational organizational structure would be formed.

Neo-classical Management Thinking: This approach was effective in the period starting from the 1940s until the 1960s, when it was understood that management problems could not be solved with classical management theory, and a behavioral approach that emphasized the human element was brought to the management. During this period, related to management; A maturation approach has been developed with X theory, Y theory, Z theory and System 1, System 4 approach (Acılioğlu, 2017). She focused on human behavior and relationships to increase the effectiveness of the organization. Neoclassical theory, rather than being a reaction to the classical view, tended to fill its gaps, thus aiming to increase the effectiveness of the organization. Hawthorne’s research has been influential in the birth and development of this idea.

This period came as the only theory that guided the classical management and theory, organizational structure and functioning until the 1930s. Like the classical theory that preceded it, neo-classical theory has evolved over the

centuries. The emergence of negative views and reactions to the “scientific management movement” and the deficiencies of the classical management theory brought up two important points. First, classical management theory was not an effective management system. Second, this theory did not always work as intended. The biggest lack was the lack of consideration of the human element and the human aspect of the business. Human problems were viewed as a “machinery problem” or a “sales problem”, and man was seen as an emotionless and impersonal being. Neoclassical theory focused on the human element and tried to complete the deficiencies instead of rejecting the principles of classical management.

The greatest contribution of the neoclassical approach to the organization has been to explain how people behave and why they behave in the organizational structure, and the relationships between structure and behavior. The neoclassical approach is also called the human relations approach.

Modern Management Era: It was initiated in parallel with the neo-classical approach. Eliminating the deficiencies of classical and neo-classical administrations and benefiting from their positive aspects constitute the main effort of modern theory. II. The rapidly developing technology after the world war II also influenced the management science. Technological developments have paved the way for the development and growth of organizations, so the management of growing and developing organizations has become difficult. In 1952, computers began to enter the field of management with the release of the computers known as “first generation”. The “modern organization” theory considers the organization as a whole and evaluates it as an open system with environmental conditions. The main approaches in this theory are; system, contingency and shaping (holistic) approach.

System Concept: It is explained in different ways in different sources. It is possible to rank the common emphases in these explanations differently. This new way of thinking, known as the systems approach, derives from the “general systems theory” initiated by the biologist Von Bertalanffy in the 1920s. When the system approach in management is mentioned, it is an approach that deals with management events and the units where these events occur in relation to each other. In other words, the basis of the systems approach is the realization of the purpose of the whole, which is considered as a system. What is important here is the whole, and the parts are important to the extent that they contribute to this whole. An organization is defined as an open system consisting of a number of interdependent subsystems and having an input-output relationship with its

environment. On the other hand, the systems approach considers the organization as a whole. For example; Marketing, production, R&D and personnel can be considered as sub-systems of the organizational system. The important thing in the system is that the parts that make up the whole have their own unique functioning, but the effectiveness of each is dependent on the other. Here, the systems approach is to examine the parts that make up the whole and their relations with each other. This is the most important feature that distinguishes the systems approach from other approaches.

The modernization approaches to systems approach, management and organization were initiated in parallel with the neoclassical approach in modern management thought between the years 1950-1960. The system approach, which forms the basis of this theory, which accepts the business organization as a system, has an analytical structure.

According to general systems theory, systems have very complex structures and processes. Each system interacts directly with its immediate environment and indirectly with its distant environment. In addition, systems are composed of interrelated units. These units function in conjunction with each other to achieve the purpose of the system.

For this reason, it is not possible to explain the units independently of each other with precise and strict rules. The structure and functioning of a unit is directly or indirectly affected by the structure and operation of other units. For example, the marketing department of an enterprise is positively or negatively affected by the structure and functioning of the production department, the structure and functioning of the production department, the structure and functioning of the top management, the structure and functioning of the national economy, and the national economy by the structure and functioning of the global economy.

General System Theory: She sees the universe as subsystems that interact with each other. Therefore, this theory tries to explain an integrated structure and functioning by making use of the findings of all sciences. To understand the philosophy of systems, it is necessary to consider the findings of sciences such as astronomy, mathematics, biology, physics, chemistry, physiology, architecture, computers, economics. For example, the human organism is a system. In terms of architecture, this complex system is a structure in which all organs are fit in harmony in a tiny space called the human body and ideal functioning is ensured. In terms of biology, they are related genes, DNAs, cells, tissues, organs and organisms. In mathematics, it is a set of variables in which the components are in equilibrium. To summarize, the human organism is a natural system with a flawless structure and functioning, in which all sciences are represented.

Each system has a specific structure and operation. For example, the structure and operation of the computer, which is a system, was designed by the computer manufacturer business. The aim is to achieve a competitive advantage by realizing a flawless structure and operation. The basic units of this structure and functioning are the central processing unit, input devices, output devices, primary memory, secondary memory and communication tools.

Open and Closed Systems: Systems that are directly affected by their environment positively or negatively are called open systems, and they exchange information, energy, raw materials, auxiliary materials, operating materials, parts, technology and similar activities from their surroundings. All living things, including humans, families, institutions, businesses and states are examples of open systems.

The benefits of using the system approach in management, on the other hand, have to avoid interpreting the manager's duty only in terms of its own function, and have to take into account the other sub-systems and environmental conditions on which his system is dependent. It gave the manager the opportunity to relate the goals of her own system to the goals of a broader system. While evaluating the sub-systems, the manager has the opportunity to determine the contribution of these systems to the main system. Managers' attention is drawn to the interrelationships between sub-systems rather than to the internal dynamics of a particular sub-system.

The purpose of such an approach is; to examine the relationship between the management event and its units and the nature of these relations, to investigate the effects of developments in a particular unit on other units, in short, to examine management events in relation to other events and external environmental conditions.

Contingency approach: This approach also considers the organization as a system. She argues that all factors should be taken into account in the subject of interest. Its basic idea is that a valid form of government cannot be found everywhere and under all conditions. The contingency management approach has left its place to the contingency approach since the late 1960s, among the modern management approaches. The fact that the contingency approach considers many issues that the management decides to be dependent on the characteristics of the conditions naturally led to researching the relations between conditions and management and organization variables.

The situational approach is a complementary approach based on the systems approach. The contingency approach argues that everything related to the organization can change with the effect of internal and external environmental factors, and therefore, not a single truth, but more than one truth can be found

depending on the current situation and condition. It can also be defined as the ability of management to adapt to the specific situations and limitations faced by the firm.

According to the contingency approach, an effective management focuses on increasing relations depending on the strength of the organization and environmental conditions. Management has to arrange its plans, objectives, organizational compositions according to the circumstances. Orientation systems will change according to changes in the environment. There is no single best organizational structure that works in all places and conditions. With the application of the systems approach, the organization is divided into subsystems and from subsystems to more subsystems.

The shaping (holistic) approach: It is basically an extension of the contingency approach. However, unlike the contingency approach, the shaping approach brings a holistic perspective that tries to synthesize rather than analyze the information gathered about the organization. This approach tries to explain compliance with variables related to environmental conditions.

Modern Management Era: It sees every business as a system and tries to examine each event in relation to other events, rather than examining events from a single perspective and in isolation from environmental conditions. It is a management theory that gives a different perspective to the positive aspects of management theories by taking into account the changing environmental conditions.

There is an organic structure in the system and man is not a part of the machine, but the most important element of the system. There are elements in the system that are influenced by each other, directed towards a common goal. Various parts, processes and goals are discussed and concluded. The modern management approach is a synthesizing approach to building models and systems, based on certain scientific concepts, with a perspective and an analytical basis.

Post-Modern (Contemporary) Management Period: The boom in demand after the second world war suddenly confronted businesses with rapid growth and the financing problems it brought. The emergence of capacity utilization as an important problem has also been the starting point of these problems. Afterwards, discussions began on the organizational structures of growing organizations. While these problems were experienced in enterprises, production technologies and processes began to develop rapidly and the borders between markets began to disappear since the late 1970s. In this environment where

competition gains importance, change has become the unchanging rule of the business world.

With the postmodern understanding, complex organizational structures have begun to give way to simple and individualistic organizational structures. However, the aim is not to completely abolish organizational structures. The aim is to develop organizational structures that can take more flexible decisions and quickly adapt to the environment and gain an advantage over their competitors.

Contemporary management approaches tend to the extreme issues that modern approaches ignore and produce approaches on these issues. In other words, postmodern approaches, unlike modern approaches, do not focus on any particular subject, but on the details of that subject.

Postmodern approaches are developing under names such as total quality management, reengineering, downsizing, benchmarking, and learning organizations. The approaches developed after the modern management period for the purpose of recognizing and explaining the world in which the organizations are located are called post-modern approaches.

3.3. Post Modern Management Theories

Depending on the social changes, such as globalization, international competition, loss of meaning of national borders, developments in communication and information processing technologies and the increase in the value given to human beings, which have been making their effects felt since the last quarter of the 20th century, the concept of management has been discussed more broadly and new views have been put forward in this regard. The science of management, which reacts quickly to all kinds of developments in the world and develops its solutions, has allowed the emergence of new management ideas, which are called post-modern management theories, especially the inevitable wind of change brought by technology (Bakan, 2011).

Today, environmental uncertainties and changes have made it very difficult to act in a planned and programmed manner. The idea that managers can plan and control future events in advance has lost its validity. Instead, a rational, harmonious management idea that attaches great importance to relations with customers, competitors and the environment, and that plans it, has come to the fore. According to the new managerial mentality, management styles in which more creative and more innovative face-to-face communication gain importance, especially focusing on units close to the customer (strengthening), giving importance to teamwork, learning organization style, came to the fore (Eren, 2012).

These important changes in organizations are in new management styles; temporary employment, hybrid-hybrid organizational structures, lean organization, learning organization, aggregation organization, joint ventures, network organizations, downsizing, self-directed workgroups, virtual organization, outsourcing, core talent approach and total quality management. (Kocel, 2010).

4. MANAGEMENT PROCESSES AND ITS EFFECTS ON CONTEMPORARY APPROACHES

The concept of management, which is defined as activities carried out to achieve predetermined common goals, has been evaluated on a scientific basis with the industrial revolution (Ergün, 1997). The emergence of new management techniques has led to the emergence of studies to carry out the processes within this scope on scientific basis. Along with the different theories put forward over time, different management approaches have emerged that complement each other. Scientific management processes are basically examined in four stages. These processes, which are called classical, neoclassical, modern and postmodern periods in the literature, are shaped by the theories that form the basis of management science (Wehrich ve Koontz, 1993; Şimşek, 2002; Fredericson ve Smith, 2003; Erdemir, 2006; Yıldırım, 2010).

The process, which is called the classical period of scientific management, covers a period that started in the 1880s and continued until the 1930s. As stated before, the classical period, whose pioneer was Frederic Taylor, is analyzed in three parts as scientific management approach (Frederic Taylor), bureaucratic approach (Max Weber) and management process approach (Henry Fayol) (Akat, Budak ve Budak, 1999, Ertürk, 2000, Myrick, 2012). In this process, which is called the classical period in management, it is generally planning of works, standard business methods, business processes and control.

After the economic crisis in the 1930s, the increase in problems in businesses caused the deficiencies in classical management approaches to be felt. In these periods, approaches called neoclassical period began to be put forward. In the studies of this period, which emerged towards the criticism of classical management approaches, concepts such as human resources management and organizational behavior were introduced by considering human factors in organizations. In this period, the most important goal was to increase the efficiency and effectiveness of the organization by increasing the

effectiveness of the human factor. In the neoclassical era, which was shaped within the framework of the studies of Elton Mayo, Abraham Maslow and Douglas McGregor, the effect of human motivation in production, human needs and leadership studies were revealed and the human factor in the management of organizations was also taken into consideration (Barca, 2002).

Considering the effects of the neoclassical period within the scope of production management; In the studies carried out in the 1930s, it is understood that in parallel with the neo-classical management approaches, studies on the human dimensions of management were carried out and the processes in question were applied in this context (Yontar, 1995). The neoclassical period has been criticized because it only deals with the human factor, and because it tries to establish human behaviors and relations in organizations with theoretical structures. Along with the criticisms brought to the classical and neoclassical management approaches, management approaches have been discussed under the name of modern management approaches that evaluate organizations as a whole since the 1950s.

According to modern management theorists, the best way to understand organizations is to see the organization as a system and to examine it as a whole in this context. According to the systems approach, organizations should be examined in a way that will form a whole, by considering the relations between the factors within the organization and the elements related to the environment. In this context, modern management is based on examining the events and the relations of the units with each other in environmental conditions (Koçel, 2015). In the classical and neo-classical periods, while the organizations were considered as a closed, central and mechanical structure, the external environment of the organizations was also taken into account with the modern periods, and studies in this context were intensified. Organizations have begun to be evaluated as a whole together with their internal and external environments (Özcan & Barca, 2010). The internal environment of the business changes, at the same time the external environment changes more quickly and every change in the external environment affects the business managers positively or negatively.

In the 1960s, applications for the system approach were introduced in management approaches. In this period, studies were conducted on the relations between internal and external factors affecting production management (Stueart and Moran, 2007). This process, which is put forward as a system approach, is evaluated in modern period management processes.

The aim of the approach is to consider a phenomenon, situation or problem in the management process as a whole within the scope of environmental effects, relations and ties, to reveal their effects on each other and to examine them in detail (Koçel, 2015). The most important reason for the acceptance of the system approach is perceived as the effect of the management processes affected by the technological developments in the information processing centers and the effectiveness of the system approach in this context.

In the 1970s, the contingency approach in administrations was put forward with the thought that a single approach would not be sufficient in all conditions. The contingency approach argues that management processes and styles should be shaped according to situations and conditions, and that a single management approach cannot be valid for all conditions (Saylı, Mengenci, and Börcü, 2015). Technological impact, institution size, external factors and other factors play a role in defining organizational structures. When evaluated in general in this context, it is seen that different management and organizational strategies can be put forward for different conditions. While economics focuses on how to distribute resources most efficiently among needs, business management tries to balance between the resources and needs of the enterprise.

When the practices and approaches that are generally considered within the framework of modern management approaches are evaluated, it is thought that although the productivity is high in terms of organizations in the modern period, the importance of the human element has increased and the administrations cannot be effective in dealing with modern problems in this process (Erdemir, 2006). In this framework, although efficiency has been achieved in modern management processes, the need to revise the understanding of this period has arisen due to the increase in the importance of the human element and the reflections of the problems of the modern period on the organizations.

Postmodern management approaches, which emerged as a criticism of the modern period, emerged after this period. Many of the concepts in the management literature were introduced in this period. Many concepts such as total quality management, performance-based compensation, benchmarking, change management, strategic planning, outsourcing are shown within the scope of postmodern management approaches.

4.2. Comparison Of Management Theories

Sarker and Khan (2013) said the following for the comparison of classical and neoclassical theory. In the classical approach, attention is focused on work

and machinery. On the other hand, the neoclassical approach to management emphasizes increasing production by understanding people. Classical theory emphasizes task and structure, while neoclassical theory emphasizes people's point of view.

Önday (2016) explained that the classics only examine the organization formally, while the neoclassicals naturally examine the organization, whereas organizations should be examined as a whole instead of separating them, and that this is the synthesis feature of the moderns. In addition, he stated that the classics set out with rationality (scientific methods) and the neoclassicals with limited experience, and they divided the organization into sections and examined only one side, and instead the organization should be considered as a whole and a problem-solving methodology should be applied. She also stated that while classical and neoclassical approaches treat the organization as a closed system, the modern approach considers the organization as an open system in communication with its environment.

In the neo-classical approach, human is not only considered as a biological being, but also as a psychological, social and physiological being. As in the classical approach, it has been stated that the employees are not a machine, but individuals with different characteristics, therefore there are different factors that motivate each individual. It is argued that these different characteristics of people play a decisive role in increasing productivity (Atıgan 2011; Cited by Öztürk, Demirci, 2017).

Table 1: Differences Between Classical, Neo-Classical and Modern Management Thought

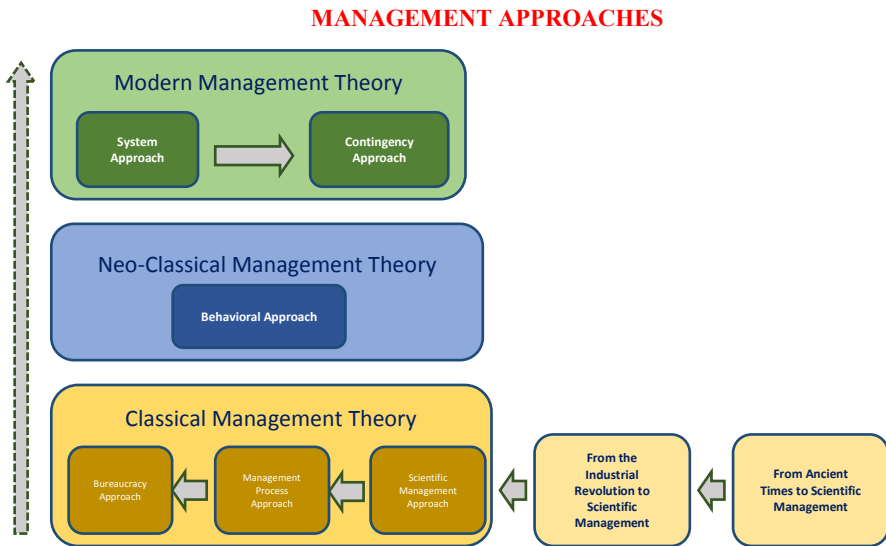
DIFFERENCES BETWEEN CLASSIC, NEO-CLASSIC AND MODERN MANAGEMENT THOUGHT		
Classical Management Thinking	Neo-classical Management Thought	Modern Management Thought
Classical management thought sees man as a machine and does not include human emotions.	Neo-classical management thought is of the opinion that human emotions are effective on work efficiency.	While classical and neo-classical management ideas consider the organization as a closed system, modern management thought considers the organization as an open system interacting with its environment.
Classical Management Thinking consists of three approaches, and the main purpose of these approaches is to create an effective and efficient order in enterprises in accordance with scientific criteria with rational methods.	Neo-classical management thought brought many new gains and concepts to the management, but focused all attention on human behavior and made a mistake by neglecting other areas.	It is not possible to separate modern management thought from other management ideas with certain lines. Because this thought system tried to interpret the principles and principles of previous thought systems with a new perspective.
In classical management thought, profit is at the forefront.	In neo-classical management thought, human welfare is aimed.	Modern management sees every business as a system.
In classical management thinking, employees are not involved in the decision-making process.	In neo-classical management thinking, employees can participate in the decision process.	Modern management approaches are a continuation of classical and neoclassical management and have brought different dimensions to management.
There is a very strict hierarchical structure in classical management thought.	In neo-classical management thought, the hierarchical structure is more flexible.	It is generally geared towards building models and systems and draws on specific scientific concepts and empirical research.

Source: Compiled by the author.

Öztürk and Demirci (2017) state that the systems approach, instead of creating a specific theory as in classical and neo-classical management approaches, reveals the organization, its internal-external environment in a conceptual dimension and explains all internal and external environmental elements related to the organization, classical and neo-classical approaches are internal. It has stated that it has an integrative quality by considering it as an environmental element.

In the classical management approach, the understanding that all conflicts in organizations is destructive and one of the duties of the management is to save the organization from these conflicts; In the neo-classical approach, conflict has been accepted as a natural and inevitable event that takes place in all organizations and groups. The neo-classical approach explains the existence of conflict, that it cannot be eliminated, and that this positively affects the labor productivity of the organization. The modern approach, on the other hand, not only accepts conflict, but also argues that a cooperating group will be insensitive to development and advocated deliberately encouraging conflict when necessary (Taslak 2001; Quoted by Topaloğlu 2011).

Figure 1: Management Approaches



Source: Adapted from A. Baransel’s book, *The Evolution of Contemporary Management Thought* (1993).

The classical approach has made important contributions to the development of management theories. In this perspective, there are three main driving forces (Griffin 2006; cited by Sarker, Khan, 2013). Scientific management is

focused on employees in organizations and ways to increase their productivity. Management principles (process) theory is focused on the overall organization and making it more efficient. Bureaucratic management remains focused on eliminating managerial inconsistencies, meaning it emphasizes position rather than person and organization, even if there are individual differences. The classical approach emphasized the universal character of management principles (Berdayes 2002; cited by Sarker, Khan 2013). The classical approach made a clear distinction between operative activities and managerial activities. He also stated the application of the scientific method to management problems and included the need for mutual cooperation between employers and employees (Sarker, Khan 2013).

Neo-classical theory has three elements. These are the Hawthorne experiment, the human relations movement, and organizational behavior. According to the results of Hawthorne studies, it is stated that the effect of the social system on individuals is more than physical factors. A series of studies taking a cue from the Hawthorne essays form the basis of the human relations approach. The human relations approach argues that satisfied employees will work more and jobs should be designed in a motivational way for employees to work at full capacity. Chris Argyris, Homans Kurt Lewin etc. developed the field of organizational behavior. In the contributions of neo-classical theory, the importance of the concept of “human groups” formed within the organization was emphasized. The number of concepts and tools that can shed light on the solution of problems has increased. For example; such as human behavior and reasons, motivation, satisfaction, participation in decisions.

After the classical and neo-classical management approaches, a modern management approach has been developed in order to combine these approaches. Modern organization theory considers the organization as a whole and evaluates it as an open system with environmental conditions. While classical and neo-classical approaches treat the organization as a closed system, the modern approach considers the organization as an open system in communication with its environment (Önday, 2016).

All of the classical, neo-classical and modern management approaches have tried to respond to the needs of their era in the field of management. These needs can take many different forms, from seeking to increase productivity to making different decisions according to the current conditions, and a wide variety of research has been done while searching for solutions to the needs. As a result of these researches, various ways and methods that can be considered as the building blocks of management science have been developed (Öztürk, Demirci 2017).

4.3. Contemporary Management Approaches

At the beginning of the 2000s, many concepts have been redefined and new concepts have emerged. While the previously valid concepts for production management lost their importance, new ones came to the fore. Some of these concepts will be briefly discussed below.

Global Competition: Businesses until the mid-1980s; They were classified as national enterprises, international enterprises and multinational enterprises. After these years, new structures began to emerge in both economies and businesses. American businesses initially separated their domestic activities from their activities in foreign countries by establishing international units or affiliated companies. The development of transportation and communication technology to cover the whole world and its effective use all over the world have made it necessary to look at the world with the concept of “globality” by eliminating the concept of distance. In addition, the transition of the countries called the Eastern Bloc to the free market economy, starting from the 1990s, has accelerated economic globalization significantly. With the understanding of free market economy, all countries in the world and all businesses, large and small, are trying to survive in a global competition. Global competition has led businesses to take decisions that increase product quality, reduce costs, and deliver products to consumers faster. The principle in this approach is to think of the whole world as the target market of the business and to meet the demands and desires of this target market better than the competing businesses.

Advanced Technology Production and Computers: The second dimension brought by the era to the field of production management is the reality of computer and satellite assisted communication. Computer and satellite assisted communication systems provide enormous opportunities and advances in the field of general management and production management all over the world. However, if this possibility is not implemented in a rational way, it also causes confusion at the same rate. With advanced communication systems, people see and perceive the world standards in goods and services, become aware of this issue and want the same level of welfare for themselves.

In the second half of the 20th century, rapid developments were created in science and technology, and these had significant effects on both the economy and businesses. The determinations of the scientists working in the field of business show that these changes in the field of technology and science have completely changed the working methods and environments in the enterprises. In this century, very rapid developments have been achieved especially in the fields of genetics, energy, materials, information technologies and the working

of the human brain. These developments also create extremely important results for businesses (Coates, 1998). Developments in science and technology trigger each other. In addition to the rapid developments, it was believed that the effects of technologies used outside of their own industry on that industry were negligible until today (Drucker, 2000).

Increasing possibilities and widespread use of computers, developments in automation and advanced technology applications are rapidly changing people's daily lives and expectations. Automatic payments, telecommunications and other systems require error-free operation. Any mistake to be made can lead the whole human life to great unhappiness. The use of advanced systems of the era in production, on the one hand, increases the satisfaction of people, on the other hand, it requires a great deal of attention. The problem of resetting errors has put production management under a greater responsibility than ever before.

Demographic Changes: It creates important results on the development levels and income distribution of countries. Countries with a high young population emerge as labor-rich on the one hand, and on the other hand, the characteristics of the products to be produced are subject to change. In addition to the rapid population growth, the prolongation of the average life expectancy, especially due to the developments in the field of medicine and genetics, has important effects on business life.

Natural Resources and Environment: Natural resources are depleted rapidly in parallel with population growth. In addition to the increase in the need for energy in industrial production, the widespread use of technology in daily life has also increased energy consumption. The factors that create environmental problems are not only energy sources. Many environmental changes are occurring, such as the greenhouse effect, chemical pollution, industrialized agriculture and food production. These cause the deterioration of the ecological balance. The rapid depletion of natural resources and the deterioration of the ecological balance have been effective in the spread of a new management approach in the 2000s.

Increasing Importance of Knowledge: The constant renewal of information and the fact that new information has the characteristics that will create revolutionary changes necessitate making learning a continuous process. According to Peter Drucker, 'the merging of information processing and information analysis into a single device (the personal computer) is to some extent as radical a change as the consolidation of the main energy source and machine in the late 19th and early 20th centuries.

Total quality Management: The 1970s were the years when Japanese businesses achieved significant success in the face of American industry and the American management style. The Japanese have achieved significant success, especially in the automotive industry and electronics, and have consolidated their success over the years. As the secret of success was investigated, a new philosophy and a new management style emerged. This is the fact that quality control, which has been known by American companies for years and tried to be strictly implemented, has become a function of the management, leaving its structure in production.

Total quality management is a system based on cooperation with stakeholders (customers, employees, vendors, etc.). In this system, the opinions of each stakeholder are taken and evaluated (Yıldız, Mesci 2014). The aim of total quality management is customer satisfaction, cooperation instead of conflict. It focuses on managing the entire organization for a quality product/service.

Basic elements of Total Quality Management: Employee involvement, benchmarking, customer focus, continuous improvement. When we look at the historical development process of humanity, we see a development from the primitive society, agricultural society and industrial society stages to the information society and from there to the post-information society in terms of scientific and technological development. In the information society, information is produced and shared, and since information is open to continuous development, it keeps people and their living space open to continuous development.

Management principles in accordance with the total quality management approach: Management should be open to development, everyone should be in the idea and tendency of promotion, transparency and participation should be kept at the forefront, decentralization and democratic leadership should be based, flexibility and initiative of the employees should be allowed, motivation by giving importance to group work, management should be human-centered and emphasis on cooperation between people. should give.

In accordance with this management approach, it can be mentioned about total quality management, which is an important understanding valid in the field of management today. Total quality management is a human-centered management approach and approach that aims to meet the expectations of internal and external customers and to continuously develop and improve all processes according to this goal.

5. CONCLUSION

The modern management theory, which emerged as a result of the inadequacy of traditional and behavioral management approaches in solving management and organizational problems, has revealed that the human element is approached from very different and extreme perspectives. Here, modern management theory has tried to reach a synthesis by interpreting the attitudes and suggestions of traditional and behavioral management theory from a new and different perspective, based on a new and different perspective, to compensate for the deficiencies caused by the partiality of the two approaches previously explained and their positive aspects

Significant developments in worldwide trade in recent years have also affected the objectives of production management to some extent. The intensification of international trade, rapid technology transfer and modern communication techniques have added an element of flexibility to these goals. In a flexible production system, factors such as having spare capacity that can respond to sudden changes, choosing the appropriate technology and a well-trained workforce that can easily adapt to changes become important.

In addition to the final product storage and preparation for the market, logistics management and after-sales services, the details of recycling-based, ethical and environmentally friendly production are also within the scope of production management. As it can be understood from all this information, the most distinctive feature of production management in its relations with other departments is that it has a conciliatory and coordinating task without having direct authority. Therefore, people who will take part in production management should have knowledge and experience in other subjects besides their own field, and should be able to establish good human relations.

The production management, which enables the necessary analyzes and planning to determine the production of goods / services in line with the consumer's wishes, also provides the benefit of determining how and how the existing machines and equipment in the enterprise will be used correctly, their maintenance and costs. Thanks to these benefits, the production management program, which helps to carry out the operation of important stages such as quality and stock control in a planned way, and ensures that both orders and stocks are carried out in a healthy order, becomes an indispensable part of an enterprise.

In the contemporary management arena, every manager faces the challenges of the globalization of the business world, the importance of quality and efficiency, property issues, ethical and social responsibility, workforce

diversity, change and improvement. Postmodern processes have caused change in all organizations. In this context, besides the postmodern effects experienced in the management understanding in production affected by this change, it has changed the management processes and services in this direction with the changes brought by information technologies. With the rapid development of information and communication technologies, there have been differences in both the managerial processes and service offerings of production, which produces, collects and puts into use in changing forms.

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- <https://opentextbc.ca/principlesofmanagementopenstax/chapter/taylor-made-management/>
- <https://sbedergi.sdu.edu.tr/assets/uploads/sites/343/files/23-6-16102016.pdf>
- <https://books.google.com.tr/books?hl=tr&lr=&id=NpkJTf0IZhUC&oi=fnd&pg=PP2&dq=peter+drucker&ots=Ko7yxiZ2Tu&sig#v=onepage&q=peter%20drucker&f=false>

CHAPTER 7

PURCHASING TECHNOLOGIES IN ACCOMMODATION BUSINESSES AND E-PROCUREMENT*

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Introduction

Today, production especially in manufacturing businesses is directly affected by whether they can procure the necessary finished and semi-finished products and raw materials from suppliers in the desired quality, quantity, time and price. Realizing this, businesses have begun to attach more importance to purchasing processes in order to increase both their operational and financial performance. In addition, businesses have noticed that the way to gain competitiveness in the markets where they conduct business is to establish a good purchasing system.

It is observed that studies on procurement and purchasing activities mostly focus on manufacturing businesses. However, the developments in the world economy indicate that the added value of the tertiary sector is increasing day by day. The tourism sector, which is one of the tertiary sectors in Turkey, constituted 51% of the revenues of trade in services in 2017 (Kıratlı, 2019). In this context, that a five-star hotel business continuously spends an average of 25-50 trillion TL per year for 30,000 different product items on a large scale shows the importance of purchasing in both the tertiary sector and the tourism sector.

When the literature is reviewed, it is observed that purchasing transactions in accommodation businesses are mostly considered as procurement activities.

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Based on this viewpoint, supply chain management is considered as the interaction between marketing, logistics and production departments within a company, and the interactions between companies included in product flow channel (Presutti, 2003). Purchasing, on the other hand, is a part of procurement process which involves activities such as departmental demands, warehouse controls, seller determination, product and service specifications, performing predetermined purchasing transactions and their distribution, regarding the finished and semi-finished products that the business requires to manufacture products and services (Knudsen, 2003). This cycle can be expressed as demanding products and services from the department, procuring goods or services from the sellers and distributing them to the intended departments. As it can be seen, procurement is a more comprehensive set of operations than purchasing. In other words, purchasing is a part of the supply chain management.

Nowadays, it is observed that companies in various sectors tend to use electronic procurement (e-procurement) in order to increase efficiency in purchasing/supply management and, most importantly, to reduce their costs. Presutti (2003) defines e-procurement as a technology solution that facilitates corporate purchasing by using the internet. Jap (2003) makes a broader definition for e-procurement and states that e-procurement is a purchasing application among businesses that use electronic commerce to identify potential supply sources of supply, purchase goods and services, transfer payments, and communicate with suppliers.

E-procurement is generally business-to-business purchases made online or via some digital networks or platforms. According to this definition, e-procurement appears as platforms that bring buyers and sellers together by using modern technologies (<https://rfp360.com/e-procurement/>).

Technology, together with time, cost, quality and reliability, is one of the five key performance factors used for the procurement process to be successful, and it brings competitive advantage to businesses (Turner, 2011).

Larcinese and Miner (2014) emphasize that e-procurement and e-purchasing applications, which can be evaluated within e-procurement, are still in the infancy period in the accommodation sector, and that the application development of e-procurement is less especially in the hotel industry compared to other sectors. One of the most important reasons for this can be considered as the cost of the e-purchasing system for the business. As a matter of fact, the business management may think that establishing an e-purchasing system in the facility will lead to an additional cost. Another reason is the need for training that will arise in the new situation for both the staff of the business and the suppliers

from whom they purchase products and services. Despite all these seemingly negative situations, Saha and Grover (2011) indicate that e-purchasing can be an important competitive weapon for businesses due to such reasons as changing customer demands, rapid development of technology, increase in production costs, and availability of substitute products etc.

Technologies that are used widely in relations with suppliers can be listed as the Internet, EDI (electronic data interchange), ERP (enterprise resource planning), Barcode, Geographical Information Systems (GIS), and Radio Frequency Systems (RFID) (Özçifçi, 2009). In this study, technologies used by accommodation businesses in purchasing and supply management will be discussed in two dimensions as technologies used in purchasing process and technologies used as integrated with suppliers. In this context, technologies used in the facility during the procurement process are;

- 1) Personal Computers, Tablets, Smartphones, and Other Smart Devices,
- 2) Barcode Scanners,
- 3) Point of Sale (POS) systems,
- 4) Product and Inventory Tracking Systems, and
- 5) Smart Technologies (Cloud, robot etc.).

Technologies used as integrated with suppliers (e-procurement platforms) are;

- 1) E-purchasing (e-order, e-invoice etc.)
- 2) E-inventory,
- 3) E-procurement contract,
- 4) E-supplier evaluation, and
- 5) E-contract.

As it is known, the concept of e-procurement consists of comprehensive (internet-based) procurement applications that include marketing, logistics, customer relations and services as well as ordering, purchasing, and inventory management. In this study, e-procurement will be addressed as e-purchasing activities carried out as specific to accommodation businesses. First, the concepts of organizational markets and organizational buying will be explained in the study, and then purchasing technologies in accommodation businesses, technologies used in the facility during procurement and technologies used as integrated with suppliers (purchasing platforms) will be detailed.

“Businesses do not purchase but establish relationships.”

Charles S. Goodman

1. Organizational Markets and Organizational Buying

Purchasing activities in contemporary marketing are viewed in two categories as industrial purchasing and consumer purchasing. Industrial purchasing examines purchasing activities in markets referred to as producer or business market, industrial market, industrial sales market or mass market. Industrial relations appear as B2B (business to business) buying in the literature, and it is considered as activities for purchasing finished or semi-finished products from suppliers in order to provide products and services to the ultimate consumer.

The concept of organizational (B2B) buying refers to the process of searching and identifying the supply sources that can provide the products and services required by businesses of different sizes maintaining their activities formally, in line with the predetermined specifications. Therefore, organizational buying is the set of relations that ensures purchasing of the raw materials and services that businesses need to produce products or services. Since this study is aimed at accommodation businesses in the tourism industry, it is considered convenient to use the concepts of organizational market and organizational buying.

Businesses continue their operations in an integrated marketing approach. In this context, businesses have customers and need to be aware of their customers' buying behaviors. Moreover, they should know that they, themselves, are also customers in organizational markets. It can be stated that businesses (accounts), as industrial customers, purchase various amounts and types of raw materials and operate in these markets consisting of suppliers such as manufacturers, intermediaries etc. who supply them with products and services.

Different definitions of industrial markets are likely to be encountered. According to Haas, industrial market is constituted by industrial or organizational consumers who purchase goods and services to use in the manufacturing process or to resell. According to another definition, industrial markets are markets where products and services are purchased by businesses, governments, or institutions. In other words, industrial markets can be defined as markets that involve the exchange of products and services, which are marketed in order to put other products into manufacturing processes, be used in these processes and consumed or resold (Arıcı, 2010:2).

Buyers involved in industrial markets can be categorized as producers of goods and services (industrial businesses, restaurants, hotels, etc.), buyers for resale (wholesalers and retailers), government agencies (military, schools, hospitals, municipalities, etc.) and non-profit institutions and organizations (foundations, associations etc.) (Arabacı, 2010:17).

Furthermore, marketing of products and services that help businesses to perform their operations is considered within the scope of industrial marketing activity. For example, McDonald's orders tons of paper for the printed packaging used in the service of its products. These huge uses of McDonald's and similar companies comprise of a large industrial market (Arabacı, 2010:4). In addition, Ülker Food Company carries out a great industrial sale by both selling its products to its distributors, grocery stores and supermarkets to be presented to the ultimate consumers, and providing the same products to patisseries, cafes, hotels, etc. in large packages (Radikal Newspaper, 27.05.2009).

Industrial purchasing, which requires specialization compared to personal purchasing, is a rational decision-making process as opposed to instant and emotional decision-making. The capacity of buyers in this market is larger than that of sellers (suppliers). Since buyers make purchases in large quantities in this market, it is observed that sellers are able to make much more profit in a shorter time in these markets compared to the profit that they gain in the retail market. For this reason, relations with customers in industrial markets are of great importance, and it is necessary to be in constant communication with these customers.

The most important characteristics of industrial markets are as follows (Tek, 2013:230-231& Mucuk, 2010:84):

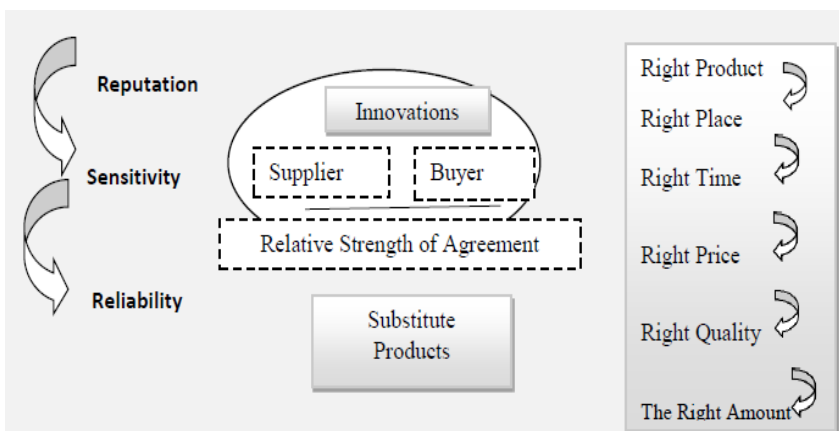
- Even though the number of buyers and sellers is relatively small compared to consumer markets, buyers make significant and high amount of purchases in this market.
- Companies in industrial markets are clustered in certain regions to be close to raw materials and buyers.
- Demands and expectations of consumers directly affect the raw material and service demands of vendor companies. The demand in this context is derived demand.
- The price of demand for industrial products and services is inelastic. Buyers are not affected by the increase in raw material prices as much as the ultimate consumers.
- The increase in demand for industrial goods means an increase in the production volume, which results from the positive change in the ultimate consumer demand.
- Businesses today manage their purchasing transactions through units that they establish and purchasing professionals work in these units.

- The workload of a business indicates the size of purchasing. Therefore, as businesses grow, the products purchased, and their purchasing process become more complex.
- Information obtained in B2B markets is relatively more than that of consumer markets.
- Suppliers involved in B2B markets make direct distributions.
- Personal selling is mostly used in sales relations in B2B markets.
- Trust is an important element in buyer-supplier relations.
- Each customer is important for the supplier in industrial purchases. As a matter of fact, a single customer may be the buyer of a large part of the supplier's total sales in some cases.

Nowadays, the global competition increasing in parallel with the rapid development in information and communication technologies makes it difficult for businesses to survive. The production inputs of the products and services that businesses offer for sale have become one of the prerequisites for their competitiveness. Therefore, purchasing management has strategic importance for businesses.

The importance of organizational purchasing in businesses started with the industrial revolution because procurement of finished and semi-finished products required by factories that commenced mass production became a problem.

Figure 1: Determinants of Purchasing



Source: Hines, T., (2004) Supply Chain Strategies Customer-Driven and Customer-Focused, Linacre House, Jordan Hill, Oxford, Elsevier, Butter World, Heinemann, Amsterdam, p.169.

When the literature is reviewed, it is possible to encounter definitions of purchasing by many authors. Monczka et al. (2009:39) defined purchasing as the process in which the business procures the necessary raw materials from the right suppliers at the right time and cost, with the specified specifications. Erdal (2013:3) made a comprehensive definition of purchasing and described it as receiving the right products and services at the right price, in the right quantity, at the right time, from the right supplier, and in accordance with the identified product specifications. Hines (2004:169) clarified this description by means of the figure above.

Organizational purchasing process has various procedures and practices in each business. They differ from business to business depending on the size of the businesses, the number of people giving purchase approval, the management approach of the business and whether it is a chain business or not. On the other hand, organizational purchasing methods are preferred by businesses based on these differences.

Organizational purchasing methods can be classified as purchasing for needs, purchasing based on market conditions, speculative purchasing, purchasing by bargaining, purchasing by sample, purchasing by sealed tender, cash purchasing, central purchasing, and purchasing via technological applications (purchasing over the internet/portal).

Purchasing for needs is a method preferred by small businesses, in which retail purchasing is carried out when the need for product or service is felt. For example, two- or three-star hotel businesses purchase products from the nearest supplier whenever they feel a need. Even though this practice is expressed as just-in-time (JIT), it will not be possible for businesses to benefit from price reductions and promotions with this method, which may result in higher costs.

Purchasing based on market conditions is a feasible method for businesses with storage areas. In this method, the company makes a high amount of purchases when the raw material prices are at their lowest. Establishments such as five-star hotels may purchase food and beverages including alcoholic and non-alcoholic beverages, legume, etc. during the periods when the prices are at their lowest. Businesses that want to avoid stocking costs buy the products but demand them from the supplier as the products run out.

Purchasing by sample is the process in which a randomly selected product is controlled for the products difficult to receive so that an opinion is formed about the whole product, and the purchase is settled. For instance, in hotel businesses, vegetables and fruit are subject to quality control through

acceptance sampling, and it is identified whether they have the desired quality. This purchasing method is widely used in hotel businesses. It can be stated that they place emphasis on the method because they want to ensure standardization in their businesses by producing food and beverage of the same color, smell, taste and flavor every time.

Purchasing by sealed tender is a method preferred by public institutions and organizations such as hospitals, schools, and universities rather than private sector enterprises. Speculative purchasing is also a method in which businesses make purchases, even if it is redundant, during the periods when prices are at their lowest. Cash purchasing is the method in which small and medium-sized hotel businesses procure a small amount of products from wholesalers, and usually from retailers, by paying cash for their products. The most important feature of this method is that small businesses can procure the desired products from the desired retailer or wholesaler whenever they want. However, since the qualities of the purchased product will change as the supplier changes, it will be difficult to achieve quality standardization.

Central purchasing is a purchasing method encountered in organizational structures where most of the decisions are made by the centre. Therefore, businesses with more than one production site want both to ensure quality standardization and to benefit from the bulk purchase advantages by carrying out quantity purchases from a single source. According to Handfield et al. (2009), large quantities of purchases can be made at once by combining the purchase requests from different departments by means of centralized structuring. Buyer companies that make quantity purchases can get more discounts from suppliers, thereby reducing the shipping costs. Another profit is the reduction in the number of operational transactions. When each department/division/group wants to purchase the same material on its own, all purchasing processes (search for and selection of a supplier, negotiation, invoicing, etc.) will be operated for each individual purchase. This method is preferred by chain accommodation and catering businesses. In this method, the central purchasing department collects and evaluates the demands from the businesses and carries out the purchasing process.

Even though it has not grown to sufficient maturity for accommodation businesses, online purchasing method, in which the purchasing process is carried out by means of a portal over the internet, is widely used in other sectors integrated with its suppliers. Different applications in technology are used in commercial relations with distributors and buyers today. Technological

applications provide convenience to businesses in processes such as purchasing, procurement, receiving, storage, and manufacturing (Feinstein and Stefanelli, 2008: 16).

Purchasing for accommodation businesses is a cyclical process that starts with receiving raw material demands from the units. In this context, it can be stated that the technologies utilized by accommodation businesses in purchasing and supply management work in an integrated manner with the programs used in the business. It is known that there are many different software programs developed for different units of accommodation businesses. These programs are designed by using convenient cloud technologies based on the size of the establishment, the number of outlets and the management approach. The managers can access information in different departments with the help of a common portal. For example, the MC (Materials Control) stock control and cost management program developed by Protel facilitates each purchasing process by enabling real-time stock control and cost management. MC helps hotel businesses reduce their purchasing workload by tracking order intake, purchasing, delivery and receipt information simultaneously with the automation program. In addition, the program controls the order processes and ensures inventory control (www.protel.com.tr).

2. Purchasing Technologies in Accommodation Businesses

One of the most important businesses that comprise of the tourism industry is accommodation businesses, which can be categorized as primary accommodation facilities (hotels, motels, resorts, bed&breakfasts, campings, apart hotels, hostels), health and sports facilities (thermal facilities, wellness facilities, swimming pools, sports facilities, golf facilities), rural tourism facilities (farmhouse, country house, mountain house, chalet), special facilities (boutique hotels), compound facilities (tourism facilities, tourism complexes, holiday centers, chain facilities, personnel training facilities) and other facilities (waysides, holiday sites and villas) (<https://www.ktb.gov.tr/>). Among the accommodation facilities, hotel businesses serve many different purposes with the opportunities that they provide, including business meetings, conferences, and congresses in addition to accommodation and food and beverage. For this reason, hotel businesses make quantity purchases for different products more than other facilities. Even though this study includes purchasing technologies embracing all accommodation businesses, purchasing technologies in large-

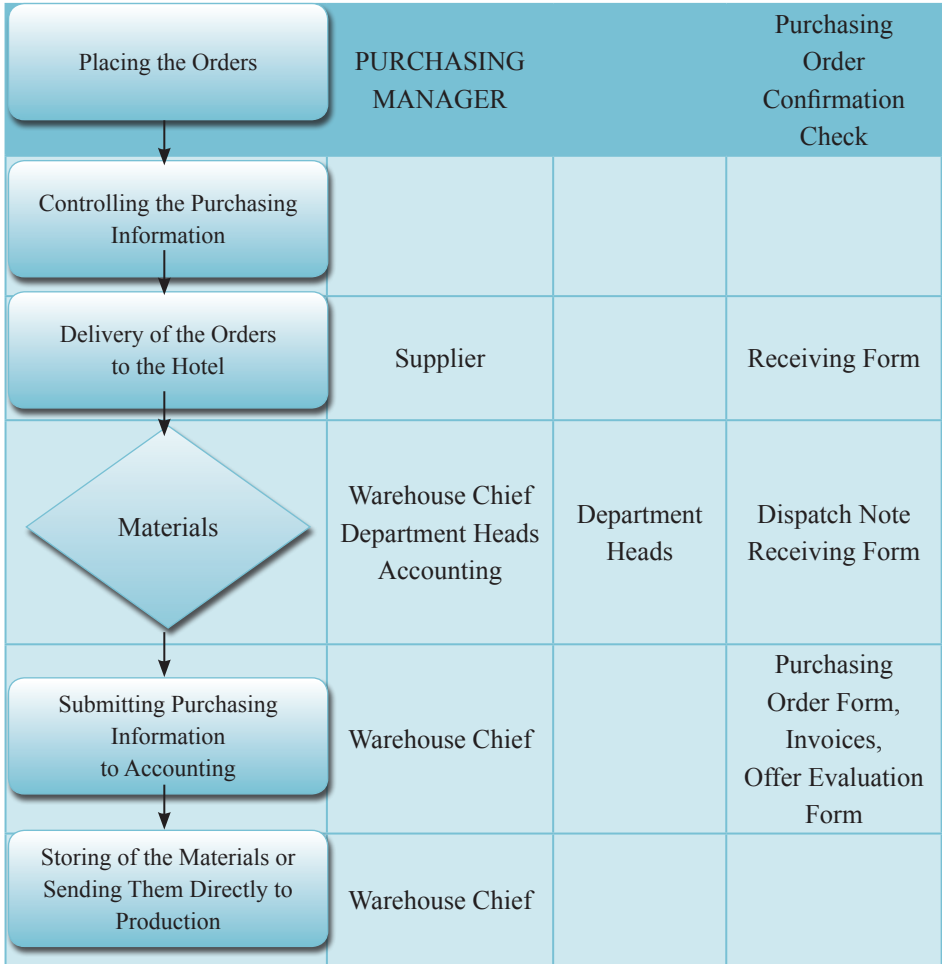
scale hotel businesses will be addressed more due to their size and complex structure, volume for establishing technological infrastructure and financial strength.

Three main elements shape the purchasing processes in accommodation businesses. These are globalization, supply chain synchronization and technology. Since hotel businesses serve both domestic and foreign tourists, they may prefer to procure some of their food and beverage from abroad. Businesses lean towards foreign purchases in anticipation of increasing quality and reducing costs. Especially chain and/or multinational hotel businesses benefit from all kinds of advantages of globalization and purchasing more than local businesses. This situation leads to a decrease in unit costs, and therefore, a more competitive stance in the market. The flow of information, materials, products and services between the stakeholders and the harmony of this flow will return the parties as optimum performance and minimum cost. Moreover, with the synchronous operation of the supply chain, supplier companies will ensure maximum customer satisfaction. The internet, which is described as a technological revolution, is a communication tool with serious effects on purchasing. For instance, buyers and sellers can reach each other quickly thanks to applications such as e-sourcing and e-procurement.

In this way, costs decrease and productivity increases (Tokmak,2012, <http://kariyer.turizm gazetesi.com/articles/article.aspx?id=28662>)

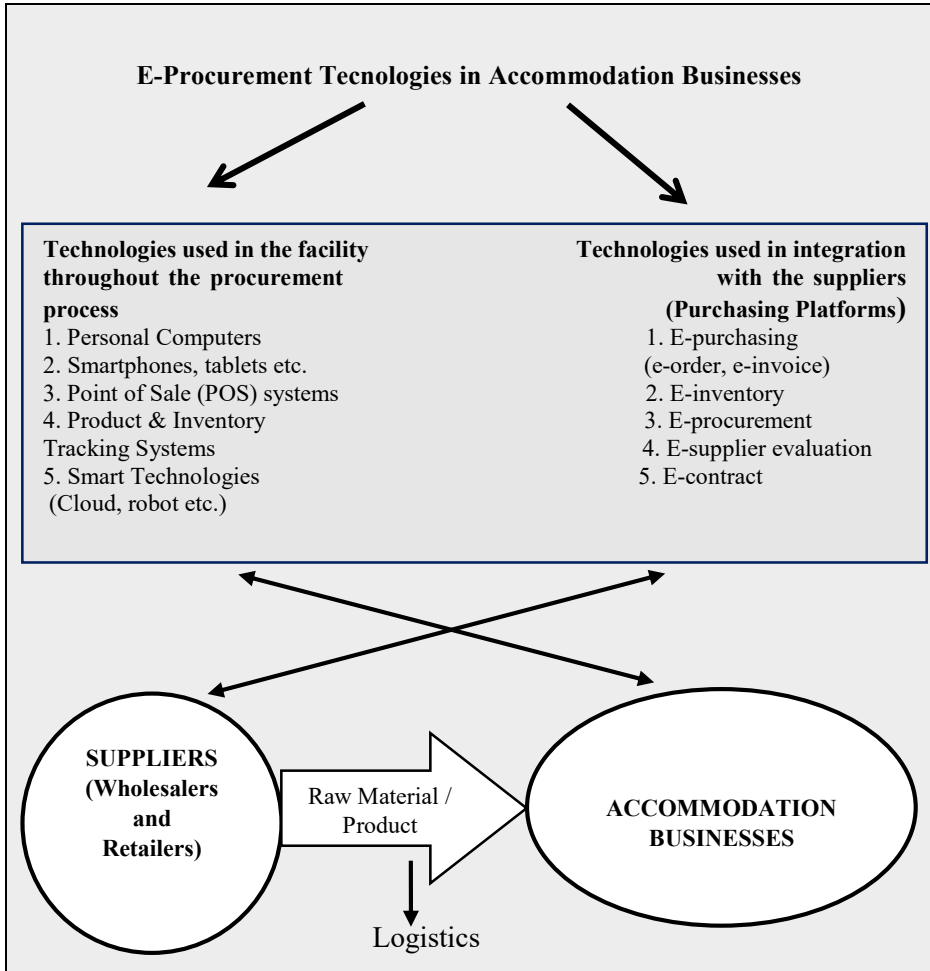
Table 1: Modelling of Purchasing Process for Five-Star Hotel Businesses

WORKFLOW	INDIVIDUAL(S) RESPONSIBLE	WHO GRANTED APPROVAL	RELEVANT DOCUMENT
Material Requests From the Departments	Department Heads	Department Heads	Warehouse Request Slip
NO ↓ Is It a Stored Material? ↓ YES	Department Heads	Department Heads	Warehouse Request Slip & Purchasing Order Form
Stock Level Controls	Warehouse Chief		
NO ↓ Is the Material in the Warehouse Sufficient? ↓ YES			
Delivery from the Warehouse	Warehouse Chief	Recipient Personnel	
Reporting the Missing Materials to the Purchasing	Warehouse Chief & Department Heads	Purchasing Request Slip	
Receiving Offers from Certified Suppliers	PURCHASING MANAGER		Purchasing Offer Request Form & Supplier Evaluation Rubrics
↓ Has the Order Been Confirmed? YES	PURCHASING MANAGER	GENERAL MANAGER	Offer Evaluation Form



Source: It is compiled from the purchasing processes of five-star hotel businesses.

Table 2: E-Procurement Technologies in Accommodation Businesses



Before providing a general outline of purchasing technologies in accommodation businesses, it is useful to explain how the purchasing process takes place. The figure below will help explain this process. For a hotel business, this process begins with receiving material demands from departments. Then, stock levels are checked, and if they are adequate, the product is sent from the warehouses to the relevant units.

In this process, the par stock levels identified by the relevant raw material/product in the facility are important. If the par stock level has fallen below the specified amount, the relevant raw material/product is reported to the purchasing unit to be purchased. After the purchasing unit determines suppliers and receives tenders from the approved ones, approval is received by the the general manager

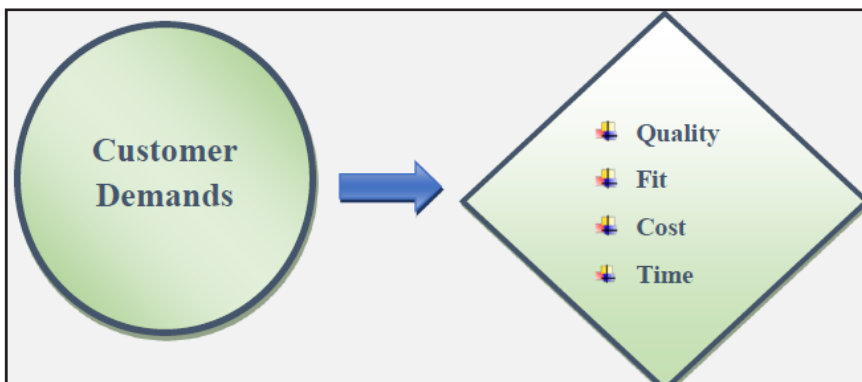
and/or the relevant unit supervisors in accordance with the quantity and quality of the raw material/product, and the purchasing transaction is performed. All these aforementioned processes can be managed faster and with minimum error by means of purchasing technologies. For this reason, it is beneficial for accommodation businesses, whether large or small, to make maximum use of purchasing technologies.

Technologies used by accommodation businesses in the purchasing process can be examined in two dimensions as technologies used in the business and technologies used in the product procurement process.

The rapid development in information and communication technologies has changed the way businesses do business and application methods in commerce, as in every other field, and has caused them to adopt new internet-based application forms such as e-business and e-commerce. While e-business involves commercial transactions and information exchange between businesses (Croom & Brandon-Jones, 2005), e-commerce includes electronic information exchange (EDI), websites, e-mail, intranet, extranet etc. (Handfield, Straight & Stirling, 2002).

Today, it is observed that businesses adopt e-based applications in their procurement practices, as well. Businesses want to automate the procurement process to reduce their costs, increase their product and service quality, and gain competitive power by introducing new products to the market. The figure below clearly indicates why businesses should use technology in the procurement process.

Figure 2: The Goals of Procurement



E-procurement is a concept that refers to a business' transition from corporate purchasing strategy to online purchasing practices. Jap (2003) defines e-procurement as business-to-business purchasing practices that use

e-commerce to identify potential suppliers, purchase and transfer products and services, make payments, and communicate with suppliers. E-procurement is a purchasing transaction made online or over digital networks/platforms, and many transactions can be performed over these networks/platforms. E-procurement systems are integrated technologies.

E-procurement applications today are also widely used by accommodation businesses, and it is considered as a way of relating the procurement process to all parties (Njoroge, 2018: 2).

2.1. Technologies Used in the Facility Throughout the Procurement Process

One area that contributes to the success of a business is back-office operations. Nawi et al. (2016) as well as Rosli and Rahman (2017) state that purchasing plays an important role in the success of a business. Osmonbekov & Johnston (2018) express those new technologies have a high potential to improve the purchasing process.

It is possible to encounter inventory tracking systems that can be integrated with points of sales, especially smartphones, tablets, and computers to facilitate the purchasing process in accommodation businesses. Today, it is observed that these systems are used effectively through internet-based information services such as cloud.

2.1.1. Personal Computers, Tablets and Smartphones

It would not be wrong to say that the operations in each department of accommodation facilities, whether small or large, are carried out via computers. In fact, when PCs started to be used in accommodation businesses in 1979, it was a great revolution especially in inventory management (Feinstein et al., 2017:18). Computers enable the purchasing programs to be run and the relevant users within the business to use the programs within their authorization. Besides, tablets and smartphones help supply managers coordinate processes at any time, thanks to their wireless structure and mobility. Since browsers such as Internet Explorer, Google Chrome, and Apple Safari can be used on these devices, the data can be accessed at any time (Feinstein et al., 2017:18).

3.1.2. Point of Sale Systems (POS)

Point of sale systems (POS) are touchscreen computers that are used together with electronic cash registers (ECR) constituting the backbone of food and beverage management systems (Kaşlı, 2006:51), and that allow to edit menu

items and monitor employee activity and productivity (Feinstein et al., 2017:19). POS systems are used in restaurants, hotels, and retail stores. POS system enables businesses to complete purchases, record sales data and view business performance reports. Some POS systems may have additional features such as customer, employee, and inventory management (<https://www.bilgiustam.com/pos-point-of-sale-sistemi-nedir/>).

POS systems consist of two elements as POS software and POS hardware. POS software is technology platforms where purchases can be performed, and they can either be cloud- or local server-based. It can be stated that they are mostly preferred by small-scale businesses due to their ease of use and security. POS systems can be classified as follows (<https://www.bilgiustam.com/pos-point-of-sale-sistemi-nedir/>):

- POS systems used in restaurants,
- POS systems used in retail,
- POS systems used in bar management,
- POS systems used in salon, SPA, and
- Mobile POS systems.

POS hardware are physical components required for sale, including tablet, tablet stand, monitor, smartphone, card reader, credit card terminal, kitchen display systems, digital menu, barcode scanner etc.

Figure 3: Pos Hardware



Source: <https://www.altexsoft.com/blog/pos-hotels/>.

With the help of POS systems in accommodation businesses; payment transactions, inventory management, customer management, employee management and reporting can be conducted. In addition, POS systems can be integrated with PMS, CRM, inventory management systems and accounting

systems (<https://www.altexsoft.com/blog/pos-hotels/>). Some examples of POS systems include Agilysys (POS system for hotel businesses), eZee Absolute (POS System for large-scale hotel businesses), Hotelogix (POS system for resorts),

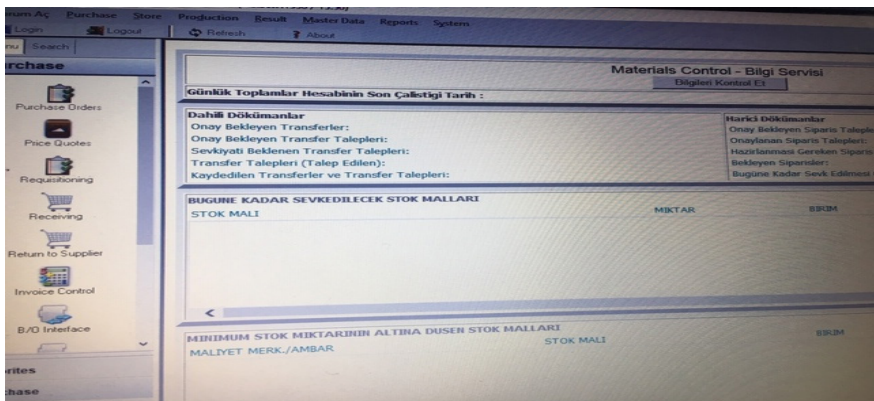
RMS Software and HotelKey PMS Software (POS System for small hotels) and Protel (<https://posquote.com/hotel-pos/>).

3.1.3. Inventory Tracking Systems

Nowadays, it is possible to come across some software to meet the needs of different units, especially PMS (poverty management system) in accommodation businesses. These kinds of software are designed to be used considering the size of the facility, the number of outlets and the management approach. It is observed that this software can also work in integration by means of a common portal.

Inventory management programs used in accommodation businesses enable many operations such as receiving demands for needs, determining product specifications, conducting purchasing processes, tracking stocks, reporting, and making cost calculations. Inventory management programs can also be run as integrated with accounting and POS devices. For example, the MC (Materials Control) stock control and cost management program developed by Protel facilitates each purchasing process by ensuring real-time inventory control and cost management. (www.protel.com.tr).

Figure 4: Materials Control Program Homepage



Source: Materials Control Program Homepage.

The program has a great number of functions including observing cash flow, preventing work with excess stock by determining the lowest and highest

stock amounts, enabling more than one decision-making in product purchase, providing many different analysis reports from sales analyses to inventory lists, having a business to business (B2B) interface with suppliers, and not repeating transactions like invoice entry etc. In addition, its functions include facilitating month-end transactions and accounting processes, responding to purchase requests-demands and processes by all departments, tracking prices specified by periodic agreements with suppliers, determining minimum/optimum stock levels and offering purchase orders accordingly, delivering purchase requests to suppliers over the system via e-mail and fax, as well as tracking the maximum and minimum stocks so that there is no maximum stock amount, and alerting the parties of concern by e-mail about these two cases, and transferring the sales made from the MicroSPOS device in each outlet to the inventory management. It is, thus, observed that the program has features that increase business efficiency. For instance, it enables that raw materials in each food or beverage item sold are removed from the inventory, barcodes specific to the business are created, waybills and invoices are tracked individually, and all inventory information is received on the basis of each warehouse, business and portfolio (www.protel.com.tr).

Examples of inventory management software developed for accommodation businesses include Zoho Inventory, Oracle NetSuite ERP, Vyapar - Accounting & Invoicing, TallyPrime, CaptainBiz, TYASuite Inventory Management, Horizon ERP, MARG ERP 9+ Inventory Management Software, Oracle NetSuite CRM, GOFRUGAL POS, Oracle NetSuite OpenAir, StayFlexi, Marg ERP9+ Mandi Software and Ecogreen (<https://www.softwaresuggest.com/inventory-management-software/hospitality-industry>), (<https://www.fourth.com/adaco/>).

2.2. Smart Technologies

Over the last two decades, the world has witnessed a series of technological transformations in every field. A significant part of this transformation keeps occurring regarding such issues as lower data processing costs, data storage and data mining, supplier performance analysis, etc. (Rejeb et al., 2018: 77). Digitalization in supply chain management has provided the opportunity to do business on a platform where all partners can access, share, and process information. This appears as a business model that improves communication abilities between partners in a real-time manner (Nicoletti, 2017).

Purchasing plays an important role in accommodation businesses. It carries out the function of providing the ultimate customer with products and services at the desired price and in the desired quality as well as procuring products

for the facility at the desired time and price, and in the desired quantity and quality. Automatization of purchase order processes will help place and track orders expeditiously. Approval of purchase orders, demands, and invoices via a cloud-based procurement system will provide great convenience to the business through pre-determined robot process automation rules (RPA rules). An automatic procurement system to be established in accommodation businesses will also provide the opportunity to access the combined view data of past and real-time expenditures by saving documents in the cloud-based pool.

(<https://www.stb.gov.sg/content/dam/stb/documents/industries/hotel/Smart%20Hotel%20Technology%20Guide%202019.pdf>).

2.3. Technologies Used in Integration with Suppliers (Purchasing Platforms)

Today businesses want to develop synchronized business connections with their suppliers to increase their process efficiency and produce goods and services on time. The most effective way to achieve this is to make the most of technological developments. General Motors' use of information technologies with its suppliers is one of the best examples for business-supplier integration. General Motors (GM) has set up an online manufacturing database for its suppliers to access at its Saturn facility. Suppliers can track orders from the production schedule in the company's database and can make their own production and delivery schedules. In this way, they can send the required components to the assembly facilities when necessary. This process is not documented, but an electronic message is sent to the seller after the components are shipped. When the products arrive, the barcodes on them are scanned; the factory where the parts should be delivered is learned on the computer, and in the meantime, the process of payment to the seller is initiated. This kind of technology use has enabled Saturn and its suppliers to work as a single business, to reduce their general expenses and not to see their suppliers as competitors (Hammer and Champy, 1997:82-83).

E-procurement can be briefly defined as purchasing goods and services over the internet. The purpose of e-procurement is to make the entire procurement process online (Hearn & Gibbons, 2001). The growth of e-procurement is in progress today. Businesses are trying to perform digital transformation quickly to manage their purchasing processes effectively and reduce their costs. However, there are two important challenges for businesses to use e-purchasing systems. The first is the return on investment of the e-purchasing system, and the second is that these systems are expensive. In addition to the initial cost of software, businesses also need to consider the training costs, maintenance costs, and network and IT upgrade costs (Carter and Peterson, 2005). Since

these systems require high costs for medium and small-sized accommodation businesses, their integration into the business may not be welcomed by the management. On the other hand, combining the e-procurement system to be established in the facility with the traditional decision-making processes will ensure the sustainability of the businesses. Nonetheless, relying solely on technology (high tech) or human skills (high touch) is not a right approach, and will not guarantee success (Nawi et al., 2016).

Accommodation businesses that lack the right software may try to coordinate their purchasing activities on paper or spreadsheet programs such as excel etc. However, digital tools to be used for purchasing to be performed in a fast, systematic, and accurate way will facilitate many functions of the facilities such as purchasing, supplier management, contract management, and expenditure analysis. Moreover, e-procurement will improve procurement operations regarding centralization, comprehensive control, flexible supplier catalogs, budget management support, supplier control and auditing.

(<https://www.pairsoft.com/blog/eprocurement-for-the-hospitality-industry/>).

Procurement software used in accommodation businesses and their functions can be exemplified as follows:

- 1) Inn-flow,
- 2) Coupa,
- 3) Eyvo,
- 4) Precoro
- 5) Procurify

1) Inn-flow: Inn-flow is an integrated hotel management platform that enables a facility to manage its needs such as accounting, labor management, procurement, sales, and facility management in a single centre. With Inn-flow supply management, purchasing costs can be controlled, and in the meantime, inventory levels can be maintained based on budget. It seems that this management platform has functions such as budgeting based on PAR levels, separating workflows of approval, purchase, and inventory (<https://www.inn-flow.com/product-overview/>).

2) Coupa: It is a comprehensive platform that offers business management solutions suitable for different industries. With Coupa procurement software, employees can manage purchasing processes more easily and effectively;

savings will be encouraged by comparing products among all suppliers; real-time budget and inventory management will be enabled; approval process will be accelerated with e-mail and mobile approvals, and third-party risk can be managed in a more efficient and effective way by utilizing proactive contract and artificial intelligence - machine learning techniques (<https://www.coupa.com/products/procurement>).

- 3) **Eyvo:** Established in 2009, Eyvo is a company that provides businesses with cloud-based integrated purchasing tools including e-procurement, purchase order for goods and services, expense tracking, online demands, purchase order approval, procurement of goods, invoice, and asset management (<https://www.e-procurement.com/the-modules/>).
- 4) **Precoro:** It is a company that provides services to many different industries, including the hospitality industry, in 67 different countries, and has a mission of assisting its customers to reduce their costs and increase their productivity.
- 5) **Negosmart:** Negosmart strategic purchasing platform is a global company currently operating in 40 countries. The company enables procurement/purchasing departments of medium and large-sized businesses to make use of the platform without incurring any installation costs. The cloud-based services offered by Negosmart include e-RFx (e-Request for Information and Quotation)/e-Auction, Contract Management, Supplier Management, Project Management, e-Sales Management, and e-Purchasing.

Conclusion

Purchasing in accommodation businesses is a key function in carrying out the production of intended goods and services. It is an essential part of the procurement process and has a strategic importance for businesses today to ensure price competition by minimizing their costs. Briefly, organizational purchasing can be described as procurement of products, which are required for foreseeable production of goods and services, from the right supplier in the right quantity, and at the right time and desired price. It is inevitable for purchasing units, which have been established to perform these transactions, to act systematically in order not to cause any disruptions. It is observed, in this context, that they have integrated purchasing technologies into the business. These technologies in accommodation businesses can be addressed in two categories as technologies used in the facility during procurement and

technologies used in integration with suppliers. Technologies used in the facility can be listed as personal computers, smartphones, tablets, product and inventory tracking systems, and smart technologies. These technologies and devices can be connected to each other by means of a portal so that procedures can be carried out more expeditiously.

Even though it cannot be stated that e-procurement applications are widely used in the accommodation industry, it is observed that large-scale e-procurement companies produce business solutions for the tourism industry, such as e-procurement, e-contract, e-inventory, e-supplier evaluation. Some examples for these companies include Coupa, Negosmart, Precoro, Inn-flow and Eyvo.

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CHAPTER 8

AN INTEGRATED MCDM APPROACH TO EVALUATE FINANCIAL PERFORMANCE OF TEXTILE AND LEATHER FIRMS LISTED IN BIST

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1. Introduction

Textile and leather sector is a key to the economic and social development of many developing countries due to its share in the gross national product (GNP), the employment it produces, and its capacity utilization. This sector, which has a strategic importance, plays a locomotive role for the economy. In order to create a strategic roadmap in such an important sector, the effective use of resources must be determined and the situation and progress must be analyzed.

Financial performance analysis is the process of determining the operational and financial structure characteristics of a business based on its accounting records and financial statements. The purpose of such an analysis is to reveal the effectiveness and performance of business management through the company's financial records and reports (Bhunias et al., 2011: 269). Determining the competitiveness of companies in their sectors and evaluating their financial performance are very important for the development of the sectors (Bulgurcu, 2012: 1034).

In general, companies take care to know their place among their rivals in the same industry in order to implement appropriate strategies. Therefore, the ranking of companies in the business world is important (Abdel-Basset

et al., 2020: 193). In the financial performance evaluation, many criteria and sub-criteria are encountered under the heading of liquidity, activity, financial structure and profitability ratios. This situation can be regarded as a multiple criteria decision-making (MCDM) problem (Shaverdi et al., 2014: 995). The MCDM methods ensure the decision maker with an appropriate framework to reach a solution in the presence of many conflicting criteria and alternatives. MCDM is an important decision analysis process used to select the best alternative considering multiple conflicting criteria (Wen et al., 2020).

There are several MCDM techniques that achieved great results in different sectors. One of the most popular MCDM methods are Entropy and vlsekriterijumska optimizacija I kompromisno resenje (VIKOR). Because of the uncertainty of signals in information sources, Shannon considered entropy as information theory (Lam et al., 2021: 3). The Entropy method is an effective tool used to measure uncertain information (Lu et al., 2019: 2). The VIKOR model is put forward to determine the compromise solution that is the farthest from the negative ideal solution (NIS) and the closest to the positive ideal solution (PIS) and to rank its alternatives (Lam et al., 2021: 3).

This study aimed to evaluate the financial performance of listed companies in the Borsa Istanbul (BIST) Textile and Leather Index (XTEKS) with integrated Improved Entropy- VIKOR methods. Fifteen textile and leather firms were chosen as case study for the period 2017 -2018. In this study, the data required for analysis was collected through financial statements of the companies. Improved Entropy method was utilized to determine the weights of the criteria and VIKOR method was utilized for determining the ranking of the companies. In order to test the robustness of the proposed model, sensitivity analysis was applied and criterion weights were determined by mean weight approach.

The motivation and main advantages of the proposed model in this paper are outlined as follows:

- i. In classical Entropy method, serious problems may arise during the logarithmic calculation in the presence of the negative or zero values in the decision matrix. Accordingly, the classical Entropy method is extended to continue the process steps and Improved Entropy method is put forward. Decision makers have been guided for the future studies.
- ii. The current study is the first to measure financial performance in the textile and leather industry using the integrated Improved Entropy-VIKOR model.
- iii. VIKOR considers the maximum “group utility” and minimum of “individual regret”, while, the other methods just ensure an optimal choice. Improved

Entropy-VIKOR method provides the weights of each criterion and the performance sets are ranked. The weights of criteria from Improved Entropy method are combined with the other steps of VIKOR.

- iv. Conducting this study in Turkey's leading sector is considered important in terms of revealing the financial status of the companies and contributing to the development of the sector.
- v. The obtained results with two different weighting methods (Improved Entropy and Mean weight method) are considered essential in terms of allowing comparison and showing the effect on the results.

The rest of this paper is organized as follows: Section 2 discusses the relevant previous literature studies. In Section 3, mathematical models used in the application are described. The application is given in Section 4. Finally, the discussion, concluding remarks and future research directions are involved in Section 5.

2. Background

MCDM methods are widely used and they provide a suitable framework for the decision maker to reach a solution in case of multiple criteria and alternatives. Dobrosavljević and Urošević (2019) analyzed the structuring of business process management (BPM) within the groups of micro, small and medium sized enterprise. A total of 8 criteria which define BPM were determined, and the weights of the criteria were determined through the questionnaire presented to 238 managers. Alternatives were ranked using simple additive weighting (SAW) and technique for order preference by similarity to ideal solution (TOPSIS) methods. It was concluded that the rankings obtained by SAW and TOPSIS methods were the same. Xu et al. (2020) proposed the Entropy based probabilistic linguistic term set (PLTS) to select the car sharing platform in China. In the study in which 4 alternatives (Gofun, Topo, Evcard, Greengo) and 4 criteria (safety, convenience, service, car brand) were used, criterion weights were determined by total Entropy and cross Entropy, and alternatives were listed using the probabilistic linguistic (PL)-preference ranking organization method for enrichment evaluations (PROMETHEE) approach. It has been determined that the proposed method can be successfully used in car sharing selection problem. Wan et al. (2019) developed the hesitant fuzzy PROMETHEE approach to select the green suppliers for large-scale food companies in China. A nonlinear programming model was used to determine the criteria weights, fuzzy PROMETHEE was used to rank the alternatives. It was concluded that

the proposed novel perspective can be successfully used in the green supplier selection problem. Wan et al. (2018) used the multi-attribute group decision making (MAGDM) and pythagorean fuzzy numbers (PFNs) integrated model for selection of haze equipment. Four companies were evaluated on the basis of five attributes (quality of products, product life, the utility of the product, product price, delivery time). The criteria were weighted in two different ways as objective (Entropy) and subjective (judgments by four decision makers). It was concluded that different vectors of attribute weights can produce different ranking results. Wan et al. (2013) used extended VIKOR method with triangular intuitionistic fuzzy numbers (TIFNs) for personnel selection problem. Five candidate were evaluated under six attributes (moral character, work attitude, leadership cultural level, oral communication skill, past experience) and the criterion weights were determined objectively by Shannon Entropy method. It was determined that the proposed model can be applied successfully in intuitionistic fuzzy environment. Wan and Zheng (2015) proposed a hesitant fuzzy (HF)-analytic network process integrated (ANP)-VIKOR approach for supplier selection of foreign trade sourcing company. A novel HF-ANP approach was presented to determine the weight of each criterion. HF-VIKOR method was put forward to rank the alternatives. It was concluded that proposed method is practicable and valid to solve the MCDM problem with hesitant fuzzy environment. Dong et al. (2017) developed a new linguistic hesitant fuzzy (LHF)-VIKOR method for MCDM problems with linguistic hesitant fuzzy set (LHFS). In the study, where two different case studies were tackled, the criteria were weighted in two different ways using the maximizing deviation method and the Simplex method. LHF-VIKOR method was proposed to rank the alternatives. It was concluded that the proposed model can be used in fuzzy environments.

As can be seen from the examples discussed above, many studies under different headings have been conducted using the MCDM methods. In addition, in financial performance evaluation, many methods have been used, such as discriminant analysis (Keskin et al. 2020), meta analysis (Hang et al. 2019), balanced scorecard (Mamabolo and Myres,2020), andI-distance method (Marković et al. 2020).

Other frequently used methods in financial performance evaluation are the MCDM methods. The most important feature that differentiates MCDM methods from others is that they provide the decision-maker with an appropriate framework in the presence of many alternatives and conflicting criteria. There have been many studies in the literature about the application of MCDM methods for the financial performance evaluation.

Aldalou and Perçin (2020) proposed the fuzzy Shannon's Entropy and the fuzzy elimination et choix traduisant la réalité-elimination and choice expressing the reality (ELECTRE) I approach to evaluate the financial performance of companies listed in BIST Technology Index of Turkey. Shannon's Entropy method was used to assign weights for the evaluation criteria, the fuzzy ELECTRE I method was applied to evaluate and rank the alternatives. Abdel-Basset et al. (2020) proposed the integrated analytic hierarchy process (AHP)-VIKOR-TOPSIS model to evaluate the financial performance of 10 steel companies in Egypt. The weight of the criteria was determined using the AHP method. The company ranking was determined using the VIKOR and the TOPSIS methods, comparatively. It was concluded that the rankings obtained by these methods were almost the same. Anthony et al. (2019) evaluated the financial performance of the seven Indian large chemical companies for the period 2010-2018 using 9 financial ratios (criteria) with the TOPSIS, the complex proportional assessment method (COPRAS) and data envelopment analysis (DEA). Criterion weights were determined by the Friedman test and Entropy method and no difference was found between the weights obtained by the two methods. Durmaz et al. (2020) evaluated the financial performance and service quality of low-cost carriers (LCCs) operating in Europe. In the study where 6 alternatives and 17 criteria were discussed, the criterion weights were determined by the criteria importance through inter-criteria correlation (CRITIC) method, and the alternatives were listed by TOPSIS and evaluation based on distance from average solution (EDAS) method. It was found that the increase in service quality had an adverse effect on financial performance. Tsolas (2020) used the integrated DEA-grey relation analysis (GRA)-tobit regresion-range adjusted measure (RAM) of efficiency model for evaluating the financial performance of Greek construction firms. At the end of the study, it was determined that only 4% of the sampled firms were efficient. Alimohammadlou and Bonyani (2017) evaluated the financial performance of 14 large companies operating in Iran using the Best-Worst method and PROMETHEE II. Bilbao-Terol et al. (2019) proposed the DoEPT-TOPSIS approach to rank the firms based on their corporate sustainability and financial performance. Dong et al. (2018) evaluated the financial performance of three companies from air transport industry using QUALitative FLEXible multiple criteria method (QUALIFLEX) approach for MCDM with hesitant fuzzy linguistic term sets (HFLTSS). Pineda et al. (2018) combined data mining and the MCDM to evaluate the financial performance of 12 airlines in the United States. While the ANP was used to determine the criteria weights, the VIKOR method was

applied to select the suitable alternative. It is concluded that the proposed model is suitable for financial performance evaluation. Beheshtinia and Omidi (2017) evaluated the financial performance of four banks in Iran. The AHP and the modified digital logic (MDL) methods were used to determine the weights of criteria. The banks were ranked by the fuzzy TOPSIS and the fuzzy VIKOR. It was concluded that the return on investment, debt ratio and lower energy consumption were the most important criteria. Dahooie et al. (2019) proposed the CCSD weighting method and hybrid FCM-ARAS approach for clustering and evaluating the financial performance of the banks. Celen (2014) used the integrated fuzzy AHP-TOPSIS method to measure the financial performance of 44 banks operating in Turkish banking sector for the period 2002-2010. It was concluded that the 2001 financial crisis in the Turkish banking sector was huge, capital ratios, asset quality and profitability ratios were almost equally important criteria, while balance sheet ratios were the least important criteria. Aytekin and Karamaşa (2017) used the integrated fuzzy Shannon's Entropy and fuzzy TOPSIS model to evaluate the financial performance of 6 insurances companies listed in BIST. In the study which is based on 2011-2015 period, 6 financial ratios were used. It was concluded that net profit margin was found as the most important criterion. Erdoğan et al. (2016) evaluated the financial performance of 21 food firms listed in BIST. In the study, which is based on the period of 2011-2014, financial performance evaluation was made using the TOPSIS, VIKOR, ELECTRE methods with the help of 8 financial ratios. At the end of the study, it was concluded that the rankings obtained with different methods were diversified.

3. Material and Method

3.1. Material

Textile and leather sector, which has become very important in the global world, is the engine of the economy. This sector, which has a flexible and dynamic structure, contributes significantly to the solution of employment problems in our country due to its employment opportunities. Therefore, the present study of the textile and leather sector is selected for its strategic importance. The textile and leather companies within the scope of the study are presented in Table 1 with the order, code and title information in the BIST.

Table 1: Textile and Leather Companies Included in the Study

Rank	Code	Company name
1	“ATEKS”	“AKIN TEKSTİL A.Ş.”
2	“ARSAN”	“ARSAN TEKSTİL TİCARET VE SANAYİ AŞ”
3	“BLCYT”	“BİLİCİ YATIRIM SANAYİ VE TİCARET A.Ş.”
4	“BOSSA”	“BOSSA TİCARET VE SANAYİ İŞLETMELERİ T.A.Ş.”
5	“DAGI”	“DAGI GİYİM SANAYİ VE TİCARET A.Ş.”
6	“DERİM”	“DERİMOD KONFEKSİYON AYAKKABI DERİ SANAYİ VE TİCARET A.Ş.”
7	“DERAS”	“DERLÜKS DERİ SANAYİ VE TİCARET AŞ”
8	“DESA”	“DESA DERİ SANAYİ VE TİCARET AŞ”
9	“HATEK”	“HATEKS HATAY TEKSTİL İŞLETMELERİ AŞ”
10	“KRTEK”	“KARSU TEKSTİL SANAYİ VE TİCARET AŞ”
11	“KORDS”	“KORDSA TEKNİK TEKSTİL AŞ”
12	“MNDRS”	“MENDERES TEKSTİL SANAYİ VE TİCARET AŞ”
13	“SKTAS”	“SÖKTAŞ TEKSTİL SANAYİ VE TİCARET AŞ”
14	“YATAS”	“YATAŞ YATAK VE YORGAN SANAYİ VE TİCARET AŞ”
15	“YUNSA”	“YÜNŞA YÜNLÜ SANAYİ VE TİCARET AŞ”

Selecting the appropriate evaluation criteria will help to evaluate the alternatives properly. In this study, the criteria were selected among the ratios that give information about the solvency of an enterprise, effective use of assets and resources, financial structure and profitability. This paper undertakes a systematic review of the literature in order to select the criteria. The criteria used in this study are presented in Table 2.

Table 2: Criteria Included in the Study

Ratio group	Financial ratio	Code
Liquidity Ratios (LR)	Current Ratio	LR1
	Acid-Test Ratio	LR2
	Cash Ratio	LR3
Operating Ratios (OR)	Asset Turnover Ratio	OR1
	Inventory Turnover Ratio	OR2
Financial Structure Ratios (FSR)	Leverage ratio	FSR1
	Short Term Liabilities/Total Liabilities	FSR2
Profitability Ratios (PR)	Gross Profit Margin	PR1
	Net Profit Margin	PR2

3.2. Method

Improved Entropy Method: Entropy was first described as a measure of irregularity and uncertainty in a system by Rudolph Clausius (1865) (Zhang et al., 2011: 444). Natural logarithm function is used in Entropy method. If there are negative or zero values in the decision matrix, serious problems may arise during the logarithmic calculation. In order to avoid of any possible problems, corrections were made using Improved Entropy method developed by (Zhang et al., 2014). Accordingly, the steps of the Improved Entropy method are as follows (Zhang et al., 2014: 3):

Step 1: Decision matrix elements are converted by Z-score standardization using equation (1).

$$z_{ij} = \frac{x_{ij} - \bar{X}_j}{\sigma_j} \quad (1)$$

z_{ij} shows the standardized data of the i .index in the j . region,

x_{ij} shows the original data,

\bar{X}_j and σ_j shows the arithmetic mean and standard deviation values, respectively.

Step 2: The decision matrix elements are converted into positives with the help of equation (2).

$$z'_{ij} = z_{ij} + A, \quad A > |\min z_{ij}| \quad (2)$$

z'_{ij} indicates the standard value after conversion. z'_{ij} must be > 0 .

Step 3: The regulated decision matrix elements are normalized using equation (3).

$$P_{ij} = \frac{z'_{ij}}{\sum_j z'_{ij}} \quad (3)$$

Step 4: The Entropy value for each units in the decision matrix is calculated using equation (4).

$$e_j = -k \sum P_{ij} \ln(P_{ij}) \quad (4)$$

where

$$k = (\ln(n))^{-1}$$

n indicates the number of alternatives.

Step 5: The degree of differentiation of the criteria is found with the help of equation (5).

$$div_j = 1 - e_j \tag{5}$$

div_j shows the degree of differentiation. The more the div_j is, the more important the criterion j th is.

Step 6: The normalized weight values for each criterion are found with the help of equation (6).

$$w_j = \frac{div_j}{\sum_j div_j} \tag{6}$$

w_j shows the weight of criterion.

VIKOR Method: The VIKOR method was first introduced by Opricovic (1998) and began to be used in the solution of MCDM problems with the study conducted by Opricovic and Tzeng in 2004. The method basically produces a conciliatory solution within the framework of alternatives and evaluation criteria. Accordingly, the VIKOR method determines a near-ideal solution that provides maximum group benefit and minimum individual regret for the majority (Cristóbal, 2012: 752). The steps of the method can be summarized as follows (Opricovic and Tzeng, 2004: 447-448):

Step 1: After creating decision matrix, determine the best f_i^* and the worst f_i^- values of all criterion functions, $i = 1, 2, \dots, n$.

$$f_i^* = \max_j f_{ij}, f_i^- = \min_j f_{ij}, \quad \text{If the } i\text{-th function represents a benefit} \tag{7}$$

$$f_i^* = \min_j f_{ij}, f_i^- = \max_j f_{ij}, \quad \text{If the } i\text{-th function represents a cost} \tag{8}$$

f_{ij} refers to decision matrix elements, f_i^* represents the highest value in the relevant column, f_i^- represents the lowest value in the relevant column.

Step 2: Compute the values S_j and R_j , $j = 1, 2, \dots, J$, by the relations

$$S_j = \sum_{i=1}^n w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-), \tag{9}$$

$$R_j = \max_i [w_i (f_i^* - f_{ij}) / (f_i^* - f_i^-)], \tag{10}$$

where w_j are the weights of criteria, expressing the irrelative importance.

Step 3: Compute the values $Q_j = 1, 2, \dots, J$ by the relation

$$Q_j = v(S_j - S^*) / (S^- - S^*) + (1-v)(R_j - R^*) / (R^- - R^*) \quad (11)$$

$$S^* = \min_j S_j, S^- = \max_j S_j$$

$$R^* = \min_j R_j, R^- = \max_j R_j$$

and v is introduced as weight of the strategy of “the majority of criteria”, here $v = 0,5$.

It is expressed that when value v is selected bigger ($>0,5$), majority tends to show positive attitude to the index Q_j and when value v is selected smaller ($<0,5$), it suggests that majority shows negative attitude to the index Q_j . Choosing the value of v as 0.5 indicates that the evaluation expert groups have a conciliatory attitude (Wei and Lin, 2008: 2).

Step 4: Alternatives are sorted into three ranking lists according to their S , R , and Q values.

Step 5: If the following two conditions are met, the alternative (a^1) best ranked by the measure Q (minimum) is recommended as a compromise solution.

Condition 1. Acceptable Advantage:

$$Q(a^2) - Q(a^1) \geq DQ \quad (12)$$

where a^2 is the alternative with second position in the ranking list by Q ; $DQ = 1 / (J - 1)$;

J is the number of alternatives.

Condition 2. Acceptable Stability in Decision Making:

The alternative must also be in the best order by S and/or R . If one of the conditions is not met, the following compromise is recommended:

- Alternatives a^1 and a^2 if only condition C2 is not satisfied, or
- Alternatives $a^1, a^2, \dots, a^{(M)}$ if condition C1 is not satisfied; and $a^{(M)}$ is determined by the relation $Q(a^{(M)}) - Q(a^1) < DQ$ for maximum M . The best alternative, ranked by Q , is the one with the minimum value of Q .

The alternatives in VIKOR method are ranked in descending order by their Q scores. When the two conditions (Condition 1 and 2) are satisfied the procedural process necessary to determine the degree range ends. If the condition 1 is

not satisfied the procedural process necessary to determine the degree range continues. If the two conditions are not satisfied the procedural process necessary to determine the degree range continues.

The alternative a is ranked first in Grade n only when the acceptable advantage condition and acceptable stability in decision making are met. Otherwise, a and $a+1$ are considered compromise solutions only if the acceptable stability condition is not met. However, if the acceptable advantage condition is not met, the compromise solutions are represented as $a, a+1, \dots, a_M$ for the maximum M satisfying: $Q_{aM} - Q_{ai} < DQ$, where $DQ = 1/(a - 1)$ (Alidrisi, 2021: 13).

4. The Research Findings

Financial performance evaluation is considered as a MCDM problem due to the many criteria and sub criteria in its structure. The first step in the solution of MCDM problems is the definition of the problem. As can be seen from Figure 1, determining alternatives and criteria, collecting data, determining criteria weights and ranking alternatives are the steps of the evaluation procedure.

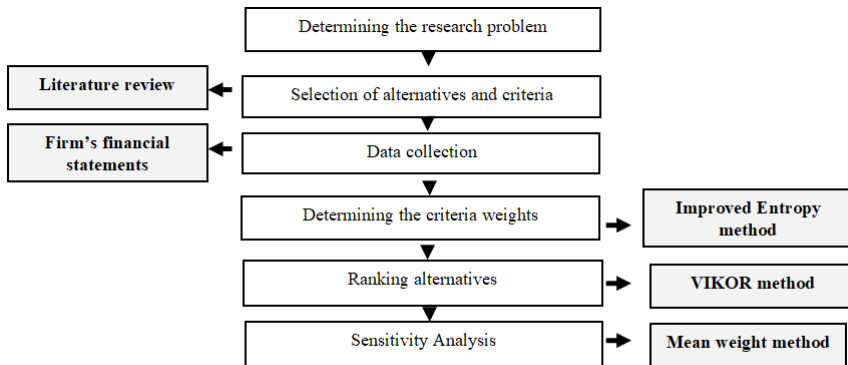


Figure 1: The Evaluation Procedure of the Study

At the first stage of the evaluation procedure, the research problem was determined in order to evaluate the financial performance using MCDM techniques. The 9 financial ratios in Table 2 were determined as the criteria and the 15 firms listed in Table 1 were identified as alternatives to the study. Alternatives and criteria were determined by a comprehensive literature review. The data required for analysis was obtained from the financial statements of the companies on 15/11/2019. Improved Entropy method was applied to calculate

weights of criteria, and VIKOR method was used for performance ranking. In order to test the robustness of the proposed model, sensitivity analysis was applied by giving equal weight to the criteria. All statistical analyses were performed using Microsoft Excel 2013.

The benefits of using integrated Improved Entropy-VIKOR method are as follows:

- With the aid of Improved Entropy, an objective evaluation is made, away from subjective judgments of decision makers. Through this method, the researchers are provided with a solution and guided to continue the process steps in the presence of negative and zero-value data in the decision matrix.
- The VIKOR method provides a compromise solution by calculating the positive and negative ideal solution as a ratio.
- The existence of v parameter in the calculation process, provides a compromised solution by providing maximum group benefit.
- Improved Entropy and VIKOR methods complement each other. The weight of criterion from Entropy method are amalgamated with the other steps of VIKOR. Integrated use of these two complementary methods will yield healthy results in performance evaluation.

4.1. Determination of the Criteria Weights

In order to determine the criteria weights, the steps of the Improved Entropy method were followed. In the first step, the decision matrix containing the alternative and criteria was created and presented in Table 3.

Table 3: Decision Matrix

Firms	Years	Criteria								
		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
ATEKS	2017	1.33	0.49	0.03	0.42	3.16	0.24	0.58	0.19	3.21
	2018	1.34	0.53	0.07	0.61	3.39	0.31	0.63	0.22	4.05
ARSAN	2017	1.11	0.65	0.00	0.54	3.07	0.36	0.87	0.15	18.37
	2018	1.02	0.65	0.29	0.49	3.43	0.40	0.73	0.15	-0.47
BLCYT	2017	1.95	1.59	0.02	0.61	4.81	0.41	0.52	0.29	10.48
	2018	2.09	1.52	0.04	0.7	4.42	0.37	0.58	0.35	13.62
BOSSA	2017	1	0.62	0.06	0.59	3.66	0.89	0.45	0.27	2.06
	2018	1.17	0.78	0.03	0.84	3.7	0.82	0.45	0.36	10.44
DAGI	2017	3.59	2.46	1.01	0.58	1.95	0.34	0.43	0.45	-0.22
	2018	1.9	1.01	0.26	0.77	2.07	0.40	0.72	0.43	-6.42
DERIM	2017	1.39	1.34	0.00	0.87	22.27	0.86	0.80	0.09	0.3
	2018	1.49	1.43	0.00	0.77	19.07	0.86	0.78	0.08	-0.31
DERAS	2017	1.36	0.72	0.09	1.44	-3.92	0.75	0.67	0.11	0.037
	2018	1.28	0.80	0.19	2.20	-7.03	0.70	0.81	0.26	0.048
DESA	2017	1.14	0.18	0.06	0.93	0.77	0.72	0.86	0.48	-0.09
	2018	1.21	0.21	0.00	1.31	1.18	0.73	0.82	0.46	0.001
HATEK	2017	1.04	0.59	0.02	0.58	4.18	0.35	0.80	0.08	-5.36
	2018	1.17	0.65	0.09	0.65	3.8	0.36	0.84	0.17	5.97
KRTEK	2017	1.1	0.71	0.08	0.84	3.88	0.80	0.59	0.19	-0.42
	2018	1.17	0.79	0.18	0.92	3.75	0.82	0.63	0.23	3.97
KORDS	2017	1.29	0.66	0.02	0.92	3.63	0.43	0.76	0.18	6.64
	2018	1.28	0.65	0.08	1.03	3.86	0.52	0.68	0.20	7.41
MNDRS	2017	1.18	0.53	0.08	0.83	2.74	0.71	0.57	0.20	6.64
	2018	0.95	0.43	0.05	0.94	3.09	0.81	0.60	0.14	-6.27
SKTAS	2017	0.82	0.45	0.05	0.56	3.87	0.84	0.37	0.28	-13.52
	2018	0.61	0.34	0.04	0.54	3.64	0.83	0.50	0.34	-20.37
YATAS	2017	1.26	0.69	0.16	1.79	3.95	0.56	0.71	0.42	8.72
	2018	1.48	0.89	0.25	1.51	3.92	0.57	0.63	0.42	8.02
YUNSA	2017	1.01	0.59	0.07	1.19	2.96	0.73	0.93	0.24	4.99
	2018	1.13	0.71	0.08	1.3	3.38	0.72	0.93	0.26	7.64

The criteria values in the decision matrix in Table 3 are standardized with the help of equation (1). The example of calculation made by taking into account ATEKS's LR1 criteria in 2017 is as follows. All the results are presented in Table 4.

$$\frac{1.33-1.37}{0.665} = -0.06$$

Table 4: Standardized Data

Firms	Years	Criteria								
		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
ATEKS	2017	-0.06	-0.58	-0.36	-1.13	-0.17	-1.64	-0.44	-0.39	0.06
	2018	0.14	-0.64	-0.41	-0.8	-0.07	-1.5	-0.47	-0.42	0.27
ARSAN	2017	-0.39	-0.30	-0.48	-0.82	-0.18	-1.09	1.17	-0.69	2.13
	2018	-0.75	-0.31	1.84	-1.07	-0.06	-1.05	0.31	-1	-0.27
BLCYT	2017	0.87	1.35	-0.4	-0.63	0.14	-0.86	-0.78	0.39	1.05
	2018	2.22	2.11	-0.71	-0.6	0.14	-1.2	-0.85	0.67	1.41
BOSSA	2017	-0.55	-0.35	-0.24	-0.68	-0.08	1.32	-1.17	0.23	-0.1
	2018	-0.33	0.056	-0.82	-0.29	-0.002	1.05	-1.85	0.75	1.03
DAGI	2017	3.31	2.877	3.56	-0.71	-0.39	-1.18	-1.28	1.62	-0.41
	2018	1.69	0.69	1.53	-0.44	-0.32	-1.05	0.23	1.33	-0.98
DERIM	2017	0.03	0.91	-0.48	0.05	3.34	1.18	0.78	-1.15	-0.34
	2018	0.56	1.86	-1.12	-0.44	3.02	1.25	0.69	-1.58	-0.25
DERAS	2017	-0.02	-0.18	-0.12	1.55	-1.47	0.68	0.06	-1	-0.38
	2018	-0.02	0.11	0.82	2.73	-2.11	0.45	0.92	-0.08	-0.21
DESA	2017	-0.34	-1.12	-0.24	0.21	-0.61	0.55	1.11	1.85	-0.40
	2018	-0.22	-1.53	-1.12	0.76	-0.50	0.6	1	1.58	-0.22
HATEK	2017	-0.49	-0.40	-0.4	-0.71	0.02	-1.14	0.78	-1.23	-1.12
	2018	-0.33	-0.31	-0.20	-0.71	0.02	-1.25	1.15	-0.83	0.50
KRTEK	2017	-0.40	-0.19	-0.16	-0.03	-0.04	0.91	-0.39	-0.39	-0.44
	2018	-0.33	0.08	0.71	-0.11	0.01	1.05	-0.46	-0.33	0.26
KORDS	2017	-0.12	-0.28	-0.4	0.18	-0.08	-0.77	0.56	-0.46	0.53
	2018	-0.03	-0.31	-0.31	0.13	0.03	-0.45	-0.08	-0.58	0.67
MNDRS	2017	-0.28	-0.51	-0.16	-0.05	-0.24	0.5	-0.5	-0.31	0.53
	2018	-0.94	-0.92	-0.61	-0.07	-0.12	1	-0.69	-1.08	-0.96
SKTAS	2017	-0.82	-0.65	-0.28	-0.76	-0.04	1.09	-1.61	0.31	-2.23
	2018	-1.89	-1.17	-0.71	-0.96	-0.01	1.1	-1.46	0.58	-2.65
YATAS	2017	-0.16	-0.23	0.16	2.47	-0.02	-0.18	0.28	1.39	0.81
	2018	0.52	0.36	1.42	1.2	0.04	-0.2	-0.46	1.25	0.74
YUNSA	2017	-0.54	-0.40	-0.2	0.90	-0.20	0.59	1.5	0	0.30
	2018	-0.44	-0.14	-0.31	0.73	-0.07	0.55	1.85	-0.08	0.69

*The A value in equation (2) has been taken as 2.3 for the year 2017 and as 2.70 for the year 2018.

In the third step, the decision matrix data was transformed into positive with the help of equation (2). The example of calculation made by taking into account ATEKS's LR1 criteria in 2017 is as follows. The results for all criteria obtained are presented in Table 5.

$$z'_{ij} = -0.06 + 2.3 = 2.240$$

Table 5: Coordinate Translation

Firms	Years	Criteria								
		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
ATEKS	2017	2.240	1.721	1.94	1.168	2.133	0.664	1.856	1.916	2.358
	2018	2.839	2.061	2.292	1.9	2.637	1.2	2.238	2.283	2.966
ARSAN	2017	1.912	2.002	1.82	1.484	2.117	1.209	3.467	1.608	4.434
	2018	1.95	2.394	4.537	1.633	2.645	1.65	3.008	1.7	2.427
BLCYT	2017	3.166	3.651	1.9	1.668	2.436	1.436	1.522	2.685	3.353
	2018	4.922	4.811	1.986	2.1	2.840	1.5	1.854	3.367	4.106
BOSSA	2017	1.748	1.949	2.06	1.616	2.225	3.618	1.133	2.531	2.2
	2018	2.367	2.756	1.884	2.411	2.698	3.75	0.854	3.45	3.727
DAGI	2017	5.613	5.177	5.86	1.589	1.911	1.118	1.022	3.915	1.888
	2018	4.394	3.394	4.231	2.256	2.377	1.65	2.931	4.033	1.718
DERIM	2017	2.330	3.212	1.82	2.353	5.639	3.482	3.078	1.146	1.959
	2018	3.256	4.561	1.578	2.256	5.724	3.95	3.392	1.117	2.446
DERAS	2017	2.285	2.125	2.18	3.853	0.834	2.982	2.356	1.3	1.923
	2018	2.672	2.811	3.516	5.433	0.586	3.15	3.623	2.617	2.489
DESA	2017	1.957	1.177	2.06	2.511	1.694	2.845	3.411	4.146	1.905
	2018	2.478	1.172	1.578	3.456	2.202	3.3	3.7	4.283	2.483
HATEK	2017	1.807	1.896	1.9	1.589	2.320	1.164	3.078	1.069	1.184
	2018	2.367	2.394	2.496	1.989	2.718	1.45	3.854	1.867	3.195
KRTEK	2017	1.897	2.107	2.14	2.274	2.265	3.209	1.911	1.915	1.860
	2018	2.367	2.783	3.414	2.589	2.708	3.75	2.238	2.367	2.956
KORDS	2017	2.181	2.019	1.9	2.484	2.219	1.527	2.856	1.838	2.827
	2018	2.672	2.394	2.394	2.833	2.730	2.25	2.623	2.117	3.366
MNDRS	2017	2.016	1.791	2.14	2.247	2.056	2.8	1.8	1.992	2.827
	2018	1.756	1.783	2.088	2.633	2.578	3.7	2.008	1.617	1.736
SKTAS	2017	1.479	1.651	2.02	1.537	2.263	3.391	0.689	2.608	0.066
	2018	0.811	1.533	1.986	1.744	2.686	3.8	1.238	3.283	0.055
YATAS	2017	2.136	2.072	2.46	4.774	2.278	2.118	2.578	3.685	3.112
	2018	3.228	3.061	4.129	3.9	2.741	2.5	2.238	3.95	3.439
YUNSA	2017	1.763	1.896	2.1	3.195	2.096	2.891	3.8	2.3	2.601
	2018	2.256	2.561	2.394	3.433	2.635	3.25	4.546	2.617	3.394

The normalization process was carried out with the help of equation (3) using the decision matrix elements in Table 5. The example of calculation made by taking into account ATEKS’s LR1 criteria in 2017 is as follows. All the results are presented in Table 6.

$$P_{ij} = \frac{2.240}{34.53} = 0.065$$

Table 6: Normalized Decision Matrix

Firms	Years	Criteria								
		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
ATEKS	2017	0.065	0.050	0.057	0.034	0.062	0.019	0.054	0.055	0.068
	2018	0.0703	0.051	0.057	0.047	0.065	0.029	0.055	0.056	0.073
ARSAN	2017	0.055	0.058	0.053	0.043	0.061	0.035	0.100	0.046	0.129
	2018	0.048	0.059	0.112	0.040	0.065	0.041	0.075	0.042	0.060
BLCYT	2017	0.092	0.106	0.055	0.049	0.071	0.042	0.044	0.077	0.097
	2018	0.122	0.119	0.049	0.052	0.070	0.037	0.046	0.083	0.101
BOSSA	2017	0.051	0.057	0.060	0.047	0.065	0.105	0.033	0.073	0.064
	2018	0.059	0.068	0.047	0.059	0.067	0.092	0.021	0.085	0.092
DAGI	2017	0.163	0.150	0.171	0.046	0.055	0.032	0.030	0.113	0.055
	2018	0.109	0.084	0.104	0.056	0.059	0.040	0.073	0.099	0.042
DERIM	2017	0.067	0.093	0.053	0.069	0.164	0.101	0.089	0.033	0.057
	2018	0.081	0.113	0.039	0.056	0.141	0.097	0.084	0.027	0.060
DERAS	2017	0.066	0.062	0.064	0.112	0.024	0.087	0.068	0.038	0.056
	2018	0.066	0.069	0.087	0.134	0.014	0.077	0.090	0.064	0.061
DESA	2017	0.057	0.034	0.060	0.073	0.049	0.083	0.099	0.120	0.055
	2018	0.061	0.029	0.039	0.085	0.054	0.081	0.092	0.105	0.061
HATEK	2017	0.052	0.055	0.055	0.046	0.067	0.034	0.089	0.031	0.034
	2018	0.059	0.059	0.062	0.049	0.067	0.035	0.096	0.046	0.079
KRTEK	2017	0.055	0.061	0.062	0.066	0.066	0.093	0.055	0.055	0.054
	2018	0.059	0.069	0.084	0.064	0.067	0.092	0.055	0.058	0.073
KORDS	2017	0.063	0.059	0.055	0.072	0.064	0.044	0.083	0.053	0.082
	2018	0.066	0.059	0.059	0.070	0.067	0.055	0.065	0.052	0.083
MNDRS	2017	0.058	0.052	0.062	0.065	0.060	0.081	0.052	0.057	0.082
	2018	0.044	0.044	0.052	0.065	0.064	0.091	0.050	0.040	0.043
SKTAS	2017	0.043	0.048	0.059	0.045	0.066	0.098	0.020	0.075	0.002
	2018	0.020	0.038	0.049	0.043	0.066	0.093	0.031	0.081	0.001
YATAS	2017	0.062	0.060	0.072	0.139	0.066	0.062	0.075	0.106	0.090
	2018	0.080	0.076	0.102	0.096	0.068	0.061	0.055	0.097	0.085
YUNSA	2017	0.051	0.055	0.061	0.093	0.061	0.084	0.110	0.066	0.075
	2018	0.056	0.063	0.059	0.085	0.065	0.080	0.113	0.064	0.084

Using the normalized decision matrix elements, Entropy measurements for each criterion were calculated with the help of equation (4). Differentiation measures of criteria values were determined using equation (5). The example of e_j calculation is presented in Table 7.

Table 7: Calculation of E_j Value for ATEKS'LR1 Criterion in 2017

	LR1	ln	LR1 *ln
ATEKS	0.065	-2.73337	-0.17767
ARSAN	0.055	-2.90042	-0.15952
BLCYT	0.092	-2.38597	-0.21951
BOSSA	0.051	-2.97593	-0.15177
DAGI	0.163	-1.81401	-0.29568
DERIM	0.067	-2.70306	-0.18111
DERAS	0.066	-2.7181	-0.17939
DESA	0.057	-2.8647	-0.16329
HATEK	0.052	-2.95651	-0.15374
KRTEK	0.055	-2.90042	-0.15952
KORDS	0.063	-2.76462	-0.17417
MNDRS	0.058	-2.84731	-0.16514
SKTAS	0.043	-3.14656	-0.1353
YATAS	0.062	-2.78062	-0.1724
YUNSA	0.051	-2.97593	-0.15177
		Σ	-2.63999
		Σ / k	0.975

The d_j value for the ATEKS' LR1 criterion in 2017 was found to be $(1-0.975 = 0.025)$. All the results are presented in Table 8.

Table 8: e_j and d_j Values

		Criteria								
		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
e_j	2017	0.975	0.973	0.976	0.971	0.973	0.963	0.967	0.971	0.960
e_j	2018	0.976	0.977	0.978	0.979	0.977	0.974	0.974	0.977	0.966
d_j	2017	0.025	0.028	0.024	0.029	0.027	0.037	0.033	0.029	0.040
d_j	2018	0.024	0.023	0.022	0.021	0.023	0.026	0.026	0.023	0.034

In the last step, the weights of each criterion were determined using equation (6) and presented in Table 9.

Table 9: Criteria Weights

		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
w_j	2017	0.092	0.101	0.088	0.108	0.098	0.135	0.122	0.108	0.148
w_j	2018	0.108	0.102	0.101	0.096	0.106	0.116	0.118	0.102	0.151

4.2. Ranking of the Alternatives

In the first step, the Positive Ideal Solution (PIS) (fi*) and the Negative Ideal Solution (NIS) (fi-) values for each criterion in Table 3 were determined using equations (7) and (8). The results are presented in Table 10.

Table 10: PIS and NIS

		LR1	LR2	LR3	OR1	OR2	FSR1	FSR2	PR1	PR2
2017	fi*	3.59	2.46	1.01	1.79	22.27	0.24	0.37	0.48	18.37
	fi-	0.82	0.18	0.00	0.42	-3.92	0.89	0.93	0.08	-13.52
2018	fi*	2.09	1.52	0.29	2.20	19.07	0.31	0.45	0.46	13.62
	fi-	0.61	0.21	0.00	0.49	-7.03	0.86	0.93	0.08	-20.37

In the second step, Sj and Rj values for 15 textile and leather firms were calculated using the equation (9) and (10). The Rj value was calculated considering the highest value of Sj. The results list with Sj, Rj values is given in Table 11.

The Sj value for the ATEKS' LR1 criterion in 2017 = $\frac{3.59-1.33}{3.59-0.82} * 0.092 + \frac{2.46-0.49}{2.46-0.18} * 0.101 + \dots + \frac{18.37-3.21}{18.37-(-13.52)} * 0.148 = 0.622$

Table 11: Sj and Rj Values (Improved Entropy Based)

	Firms	Sj	Rj		Firms	Sj	Rj
	2017	ATEKS	0.622		0.108	2018	ATEKS
ARSAN		0.644	0.109	ARSAN	0.539		0.096
BLCYT		0.494	0.093	BLCYT	0.305		0.087
BOSSA		0.699	0.135	BOSSA	0.503		0.108
DAGI		0.300	0.095	DAGI	0.396		0.089
DERIM		0.695	0.129	DERIM	0.593		0.116
DERAS		0.713	0.106	DERAS	0.541		0.106
DESA		0.706	0.107	DESA	0.630		0.102
HATEK		0.752	0.110	HATEK	0.572		0.096
KRTEK		0.715	0.116	KRTEK	0.553		0.108
KORDS		0.641	0.086	KORDS	0.526		0.073
MNDRS		0.667	0.098	MNDRS	0.704		0.105
SKTAS		0.757	0.148	SKTAS	0.748		0.151
YATAS		0.500	0.078	YATAS	0.342		0.062
YUNSA		0.721	0.122	YUNSA	0.605		0.118

Then, Qj values were determined using equation (11). In this study, the value of v, which shows the weight of the strategy providing the maximum group benefit,

was considered as 0.50. S, R and Q values were ordered from small to large and three ranking lists were generated. The R_j value for the ATEKS' LR1 criterion in

$$2017 = \frac{0.622-0.757}{0.300-0.757} * 0.5 + \frac{0.108-0.148}{0.078-0.148} * (1-0.5) + \dots + \frac{0.721-0.757}{0.300-0.757} * 0.5 + \frac{0.122-0.148}{0.078-0.148} * (1-0.5) = 0.565$$

The final ranking results are presented in Table 12.

Table 12: VIKOR Ranking Results (Improved Entropy Based)

	2017						2018				
	Firms	Q_j	rank	C_1	C_2		Firms	Q_j	rank	C_1	C_2
	ATEKS	0.565	6				ATEKS	0.389	5	✓	
	ARSAN	0.596	7				ARSAN	0.457	6		
	BLCYT	0.317	3	✓			BLCYT	0.143	2	✓	✓
	BOSSA	0.843	14	✓			BOSSA	0.480	7		
	DAGI	0.122	1	✓	✓		DAGI	0.256	3		
	DERIM	0.794	13				DERIM	0.630	12		
	DERAS	0.650	9	✓			DERAS	0.515	9		
	DESA	0.647	8				DESA	0.593	11		
	HATEK	0.722	10				HATEK	0.493	8		
	KRTEK	0.726	11				KRTEK	0.537	10		
	KORDS	0.429	4	✓			KORDS	0.314	4	✓	
	MNDRS	0.539	5	✓			MNDRS	0.696	14		
	SKTAS	1	15				SKTAS	1	15		
2017	YATAS	0.219	2	✓	✓	2018	YATAS	0.042	1	✓	✓
	YUNSA	0.773	12				YUNSA	0.654	13		

According to the results in Table 12; DAGI, which has the lowest Q value in all rankings, had an acceptable advantage over other alternatives for 2017. DAGI is followed by companies such as YATAŞ, BLCYT, KORDS, respectively. According to results in 2018, YATAS was the alternative with the lowest Q value. This company is followed by BLCYT, DAGI and KORDS. Two conditions must be fulfilled in order to accept DAGI and YATAŞ as the company with the highest financial performance in 2017 and 2018 respectively.

According to the results in Table 12; BLCYT, BOSSA, DAGI, DERAS, KORDS, MNDRS, YATAS companies for 2017 and ATEKS, BLCYT, KORDS, YATAS companies for 2018 had acceptable advantage as they provided C1 condition ($Q(A^2)-Q(A^1) \geq 0,071429 (1/(15-1))$). According to the results in Table 12; Dagi has the lowest S_j value, while Yataş has the lowest R_j value in 2017. Yataş has the lowest R_j value in 2018. This indicates that Condition 2 is fulfilled. As a result, the company with the highest financial performance was DAGI for

in 2017 and YATAŞ in 2018. On the other hand, it was determined that SKTAS has the lowest financial performance in both years.

4.3. Sensitivity Analysis

The robustness of the model was tested by applying a sensitivity analysis in order to see the differences in the ranking of the alternatives when the importance weights of the criteria changed. At this stage, the sensitivity of the rankings obtained by the Improved Entropy based VIKOR method was tested by changing the weights of the criteria. Accordingly, equal weight was assigned to each criterion using equation (13) (Deng et al., 2000: 967).

$$w_j = \frac{1}{m} \quad (13)$$

m indicates the number of criteria.

Using the equation (13), the weight of each criterion was found to be (1/9 = 0.111111). The new ranking results of textile and leather firms are presented in Table 13.

Table 13: VIKOR Ranking Results (Mean Weight Based)

	2017					2018				
	Firms	Q _j	rank	C ₁	C ₂	Firms	Q _j	rank	C ₁	C ₂
	ATEKS	0.884	7			ATEKS	0.668	6		
	ARSAN	0.916	9			ARSAN	0.768	10		
	BLCYT	0.683	4			BLCYT	0.354	2		✓
	BOSSA	0.940	10			BOSSA	0.653	5		
	DAGI	0.131	1	✓	✓	DAGI	0.377	3		
	DERIM	0.914	8			DERIM	0.828	11		
	DERAS	0.952	12			DERAS	0.750	9		
	DESA	0.942	11			DESA	0.872	14	✓	
	HATEK	1	15			HATEK	0.710	8		
	KRTEK	0.702	5	✓		KRTEK	0.698	7		
	KORDS	0.833	6			KORDS	0.435	4	✓	
	MNDRS	0.665	3			MNDRS	0.856	13		
	SKTAS	0.986	14			SKTAS	1	15		
	YATAS	0.242	2	✓	✓	YATAS	0.022	1	✓	✓
	YUNSA	0.961	13			YUNSA	0.849	12		

Although there were deviations between the ranking results obtained by Mean Weight based VIKOR method and Improved Entropy based VIKOR method, the positions of the first two firms remained the same. DAGI and YATAS companies shared the first places for 2017 and 2018, respectively. It can be stated that the ranking results are stable because these two firms have fulfilled the Conditions 1 and 2.

5. Conclusion and Recommendations

In the process of reaching the final results in financial performance analysis, many alternative and contradictory criteria are encountered. In such a case, MCDM techniques provide the decision maker with an appropriate framework for reaching a solution in order to create an effective and comprehensive model. Improved Entropy method is used to measure the amount of useful information. It is an objective method that leads to the final result using only decision matrix elements. As logarithmic functions take place in the process steps, it is an advantageous method which transforms negative and zero values in the decision matrix to positive by standardizing them. The VIKOR method is based on the creation of a compromise solution that provides maximum group benefit and minimum individual regret within the scope of alternatives and evaluation criteria.

In today's competitive world, the survival and growth of an business depends on its ability and strength to keep up with the competition. The financial performance of the enterprise should be measured and analyzed in order to determine the competitiveness of the company steadily. Making such an important analysis in the textile and leather sector, which is the locomotive of the country's economy, is of great importance for the country as well as for managers and investors.

In this study, it is aimed to measure the financial performance of 15 companies operating in BIST textile and leather sector with MCDM techniques. Based on the period 2017-2018, 9 financial ratios were included in the analysis. The financial performances of 15 textile and leather firms were evaluated on the basis of (current assets/short term liabilities),(current assets-inventories/short term liabilities), (cash and cash equivalents+stocks and bonds/short term liabilities), (net sales/total assets), (cost of sales/average inventory), (total liabilities/total assets), (short term liabilities/ total assets (liabilities)), (gross profit margin/net sales) and (net profit/net sales) ratios. The weights of the criteria were calculated using the Improved Entropy method which is an

objective method, and the performance evaluation on the basis of alternatives was performed using VIKOR method.

According to the results obtained with the Improved Entropy based VIKOR method, DAGI and YATAS company ranked first in terms of financial performance in 2017 and in 2018, respectively. It was found that DAGI and YATAS have an acceptable advantage by fulfilling the C1 and C2 conditions in VIKOR method.

In order to test the robustness of the model, sensitivity analysis was performed and the analysis steps were repeated by giving equal weight to each criterion. According to the results obtained with sensitivity analysis; the highest performing companies were DAGI in 2017 and YATAŞ in 2018. The company with the lowest performance was HATEK for 2017 while it was SKTAS for 2018. Although there were deviations between the ranking results obtained with Improved Entropy based VIKOR method and Mean Weight based VIKOR method, it was found that the places of the first two firms remained same. The results obtained with the two different weighting methods are considered important in terms of showing the effect and power on the results.

The Improved Entropy – VIKOR model used in this study is considered important as it efficiently handles conflicting situations. In the Improved Entropy–VIKOR method, the weight of the criterion obtained from the Improved Entropy method is integrated with the VIKOR steps. Considering in general, this study provides a suitable framework for continuing the analysis in the presence of negative values in the decision matrix and is a reference for researchers to conduct similar studies.

In this study, objective methods were used for weighting the criteria. In future studies, subjective methods such as AHP and simple multi-attribute rating technique (SMART) could be used by including decision makers' perceptions. In addition, the results can be compared by making additions to the financial ratios used in the study.

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CHAPTER 9

EFFICIENCY OF PUBLIC HOSPITALS WITHIN THE SCOPE OF SPATIAL DEPENDENCE IN HTP PERIOD

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1. Introduction

Hospital efficiency and its determinants have an extensive literature in the health economics literature. Even though there are empirical studies on this issue for Turkey as a developing country. While investigating hospital efficiency in Turkey in these studies, it is seen that the spatial dimension between regions is not taken into account within the scope of the Health Transformation Program, (HTP). Since 2003, the Turkish health system has undergone many changes with the Health Transformation Program. The main aim of the program is to ensure more efficient use of resources in the health sector by implementing reforms related to health service delivery, financing and human resources. The Health Transformation Program, funded by the World Bank, consists of two phases (WHO, 2012). Phase I, called the Health Transformation Program Support Project, covered the period 2003-2009. The second phase, called the Health Transformation and Social Security Reform Project, covered the years 2009-2013 (Akıncı et. al., 2012). Up to the end of the second phase of the HTP in Turkey: Public hospitals were classified and co-payments amounting were identified by different classes by the roles of the hospitals. The scope of the universal health insurance was expanded and all members of the society were taken under social security system. General hospitals and educational-research hospitals were transferred to the Public Hospitals Union, enabling hospitals to become administratively and financially autonomous. Apart from these changes,

a number of regulations and amendments have been made in the health sector of Turkey during the period of 2010-2014.

After the Health Transformation Program (HTP) started, the demand for health services in Turkey increased significantly. According to OECD 2013 data, hospital visits per capita has increased fourfold in the last ten years, from 2% to 8.2%, which is above the average OECD average, %6.7. Some attempts to increase efficiency of public hospitals such as introducing performance-based supplementary payment and giving managerial and financial autonomous to the public hospital has been put into practice by the health transformation program. In the literature, some studies investigating the efficiency of hospitals under the effects of the health transformation program are listed as follows: Yeşilyurt (2007), Temür (2010), Şahin et. al. (2011), Sülkü (2012), Atılğan (2012), Yigit (2016), and Keskin (2018). However, none of these studies considered spatial interaction between hospitals.

The aim of this study is to investigate the efficiency of public hospital in Turkey for the period 2010-2014, taking into account the spatial dimension within the scope of HTP. The subject of hospital efficiency and its determinants has been widely discussed and researched in the health economics literature. But recently, the importance of spatial dependency has been emphasized in health economics literatures in the context of hospital efficiency by Ferrier and Valdmanis (2006), Mobley et. al. (2009), Strumann and Herwartz (2010), Felder and Tauchmann (2013), Baltagi and Yen (2014) and Longo et. al. (2017). Ignoring the spatial dimension of the problem may lead to misleading empirical evidence regarding the efficiency of hospitals. Traditional OLS estimator will not be efficient if spatial error correlation is present (Anselin, 1988). In this case, conventionally computed standard errors will not be correct and t stats will be misleading (Anselin, 1988). Furthermore, ignoring the endogenous variable that follows a spatial autoregressive process will result in the omitted variable bias problem, resulting in inconsistent and biased estimates of the OLS (LeSage and Pace, 2009). Therefore, when investigating the hospital efficiency, spatial interdependence should be taken into account if there is significant spatial relationship. In the literature, an insufficient number of studies investigating the efficiency of hospitals in Turkey, taking into account their spatial dependence, were found. Apart from hospital efficiency, only Çağlar and Gülel (2015) study, which investigated the efficiency of health services on a provincial basis by considering spatial interaction, was found in the literature. In this study, at the first stage, the health service efficiency scores of the provinces were calculated with the help of traditional DEA models. In the second part of the study, spatial

regression models were set up in which satisfaction rates were used as the dependent variable, and the efficiency scores obtained in the first stage and some variables affecting satisfaction were used as the explanatory variable.

Even though there are some empirical studies investigating the efficiency of the Turkish public hospital before and after HTP, (Ersoy et. al., 1997; Sülkü, 2012; Şahin and Özgen, 2011; Atılğan, 2016), neither of them consider the spatial dimension and the interaction between hospitals. Indeed, besides the P4P and the DRG payment applications, the initiation of the public hospital unions is expected to rise the competition for patients and that might increase the interdependence between hospitals. Thus examining the spatial dependence among the Turkish hospital becomes crucial and necessary to evaluate the impacts of the HTP reforms.

In this study a two-step procedure is applied to examine relationship between technical efficiency and its determinants. In the first step, data envelopment analysis introduced by Andersen and Petersen (1993) is used to find super efficiency scores of general hospitals for each year of the study period, which covers the second period of the HTP. Than estimated efficiency score calculated by using Simar and Wilson (2007) procedure. The possible determinants of hospital performance are investigated using different spatial econometric specifications in the second stage. Spatial Durbin model was decided to be the most suitable model by comparing different econometric features with likelihood ratio tests.

The rest of the study is organized as follows: The method and dataset are given in the next section. The findings are discussed in the results section. In the last part, the conclusion and comment part of the study is given.

2. Method

In this study, a two-step procedure is used to examine the relationship between hospitals' technical efficiency and its determinants. In the first stage, the technical efficiency scores of the hospitals are calculated. However, efficiency scores from traditional DEA models range from 0 to 1, where 0 indicates the score of the least efficient hospital and 1 indicates the score of the most efficient hospital. In order to avoid the censorship problem in the regression models, the super-efficiency scores of Andersen and Petersen (1993) is calculated for each year in the study, which enable us ranking hospital on the efficient frontier.

The input-oriented and variable returns to scale Super efficiency model used in the study is given below.

$$\begin{aligned}
& \min \theta_0 \\
& s. t. \\
& \sum_{\substack{j=1 \\ j \neq j_0}}^n \gamma_j x_{ij} \leq \theta_0 x_{i0}, \quad i = 1, \dots, k \\
& \sum_{\substack{j=1 \\ j \neq j_0}}^n \gamma_j y_{rj} \geq y_{r0}, \quad r = 1, \dots, s \\
& \sum_{\substack{j=1 \\ j \neq j_0}}^n \gamma_j = 1 \\
& \gamma_j \geq 0, \quad j = 1, 2, \dots, n
\end{aligned} \tag{1}$$

Here, X : k -dimensional input vector, y : s -dimensional output vector, Γ : shows the weights of n decision units (i.e. hospitals).

Simar and Wilson (2007) introduced in their study that efficiency scores calculated by DEA are predicted with a systematic downward bias in small samples and are uncorrelated in an unknown way. Simar and Wilson's method can indicate technical efficiency as a parametric relationship, assuming that the data generation process of technical efficiency depends on unobservable environmental factor.

Assuming the unknown real relationship is as follows,

$$TE_j = \alpha + \delta Z_j + \varepsilon_j \tag{2}$$

In this method, assuming the distribution of the error term comes from a truncated normal distribution with unknown variance and zero mean, and using the estimated TE obtained from DEA instead of the unknown TE in the equation, the equation above can be written as follows.

$$\widehat{TE}_j \approx \alpha + \delta Z_j + \varepsilon_j \tag{3}$$

$$\varepsilon_j \sim N(0, \sigma_\varepsilon^2)$$

$$\varepsilon_j \geq 1 - \alpha - \delta Z_j$$

The method introduced by Simar and Wilson (2007) estimates the bias-corrected production possibilities frontier based on the Bootstrap method. Corrected efficiency scores are calculated according to the distances from this frontier.

2.1. Spatial Models

In the model below, which was created by considering the spatial relationship, the determinants of the efficiency of the hospitals were investigated by employed the bias-corrected efficiency scores as the dependent variable.

$$\widehat{TE} \approx \rho W \widehat{TE} + \beta X + e \quad (4)$$

Here, the model is estimated by MLE, assuming that the error term e comes from a multivariate normal distribution.

$$e \sim N(0, \Sigma)$$

$$\Sigma = E[ee'] = \sigma_e^2 (B'B)^{-1}$$

$$B = (I_N - \lambda W)$$

W denotes the weight matrix.

Before estimating the model in the study, first of all, the existence of spatial relationship should be investigated. Whether there is a spatial relationship is tested with the help of Moran' I test.

If there is a spatial relationship, the type of spatial relationship is tried to be determined with the help of LM tests for spatial error and spatial lag models. Depending on the type of spatial relationship detected, the most suitable econometric model is determined in the next step with the general-to-specific approach (Elhorst, 2010).

Generally, a general-special approach is adopted to achieve the most suitable econometric model (Elhorst, 2010). It is started with the spatial autoregressive combined model (SAC) as a general model:

$$Y = \alpha + X\beta + \rho WY + u \quad (5)$$

$$u = \lambda Wu + \varepsilon$$

Also, spatial Durbin model:

$$Y = \alpha + X\beta + \rho WY + \theta WX + u \quad (6)$$

SEM and SAR models can be obtained by placing appropriate constraints on the parameters of both equations. When the SDM is restricted by $\theta = -\rho\beta$, the spatial error model (SEM) arise. The SAR model is obtained if the constraint $\theta = 0$ is valid in the SDM. On the other hand, If the constraint $\lambda=0$ applied to the SAC, SAR model is obtained. The SEM shows up when the constraint $\rho=0$ is valid.

3. Data Set

In this study, 169 general public hospitals belonging to the Ministry of Health (MoH) are examined for the period of 2010-2014. Since the DEA assumes the homogeneity of data management units university hospitals, private hospitals, branch hospitals and hospitals cooperated by both university and the MOH are not included in the sample. Besides, the united and closed hospitals are not included because of either inconsistency or absence of their data. In 2010 public hospitals are classified by the MoH and each hospitals in the same classes are given right to provide health services for the same purposes and serving the equivalent treatments on the similar scale. Thus each hospitals belonging to the same class are considered as homogenous. In this study, all data and assumptions regarding the applied methods are determined in the light of the literature, taking into account the new health system regulations and the performance criteria of TKHK's (2012) Ministry of Health hospitals (TKHK, 2012) and the availability of data. Table 1 presents the input and output variables used in DEA models. Since the surgical operations are categorized by the MoH according to TKHK (2012) from A to E level as each level informs the complication: from A advanced level to E basic cases. Therefore, in this study, the surgical operations are weighted according to complication level ($Ax5+Bx3+Cx2+D+E$) and then the total surgical operations are calculated.

In addition, the inefficiency effects variables are presented in Table 1. These variables are used as explanatory variables in the OLS and the spatial Durbin models. Following to literature the variables which are the most probable identifiers of the hospitals efficiency are chosen. Similar to Kjekshus and Hagen (2007) to approximate the budget size of hospitals, the total expenses (in 2005 prices) per bed which is represented by "budget" are used. In order to measure the degree of market competition Herfindahl- Hirschman Index (HHI) is used following to Rosko and Mutter (2008); Sari (2003); Rosko ve Mutter (2010). HHI is calculated according to the geographical bordering approach and the province's borders are used as geographical border. Furthermore socio-economic development levels of the provinces are considered by introducing "develop" dummy variable which takes one if the province is developed according to the Ministry of Development's classification.

Furthermore, the hospitals are classified by the MOH according to their size and the quality of the services provided: A2 type hospitals serve for the most complicated cases and provide 3. level emergency and intensive care services, B type hospitals provides 2. level emergency and intensive care services, C type

hospitals provides only 1. level emergency and intensive care services. Thus the hospital role dummies are defined below in Table 1 and in our analysis to prevent the dummy variable trap A2-type is considered as the base and B and C type dummies are introduced in the regression models.

Table 1: Data and Variables, Turkey, 2010 - 2014

Variables	Definition
Inputs	
Nbed	Number of Full-staffed Bed
Ndoctor	Number of Physician
Nhcp	Number of Allied Health Care Professional
Ntms	Number of Technical and Managerial Staff
Outputs	
Outpatient	The number of Outpatients Visits
Inpatient	Inpatient Days-Admissions
Surgical Op.	The number of Weighted Surgical Operations ($Ax5+Bx3+Cx2+D+E$)
Inefficiency Effects Variables	
Specialist	Specialist Physicians Ratio (specialist physicians / total physicians)
Occupancy	Occupancy Rate ((Number of Inpatient Days / Number of Beds) x 365)
Mortality	Mortality Rate (Number of patients died / number of patients discharged)
HHI	Index for Concentration of Hospital Cases per Province
Develop	Socio-Economic Development (1: developed, 0: under developed)
A2_type hospitals	Hospital type dummy (1: type A2, 0: otherwise)
B_type hospitals	Hospital type dummy (1: type B, 0: otherwise)
C_type hospitals	Hospital type dummy (1: type B, 0: otherwise)
Minus14	Fraction of people aged below 14
Plus65	Fraction of people aged over 65
Budget	Hospitals' Budget Size per bed (total expenses / number of bed)
Popratio	Population ratio (district population / population of province)
W	Spatial weight matrix

In our study as spatial weight matrix the contiguity based matrix is identified. In order to create this matrix, 29 health regions which have been introduced by the MoH since 2010 are used. These regions were defined according to population

density, transportation access, socio-economic and cultural environment, and illness incidence of regions, existing health workers size and quality, physical conditions of health facilities, health provision capacity and owned other health resources. In this study Hospitals located in the same health zone are defined as neighboring hospitals in this study and the Spatial weight matrix W was determined accordingly.

4. Results

In the first step, for each year from 2010 to 2014, the technical efficiency estimates of the public hospitals are obtained using the DEA approach of Andersen and Petersen (1993). Andersen and Petersen's approach enables us to find super efficiency scores which mean that the technical efficiency scores may exceed unity; they are not restricted to be at most 1. It states that it would not be appropriate to use these scores directly in a Tobit regression where the determinants of efficacy are investigated. Instead, it has been suggested that efficiency scores should be estimated using the truncated regression-based bootstrap method using some observable factors (Simar and Wilson, 2007). With the algorithm proposed by Simar and Wilson (2007), the biased corrected production possibilities limit is estimated based on the Bootstrap method. Then, bias-corrected technical efficiency scores are calculated according to this limit. In this study, these calculated bias-corrected scores are used in the spatial regression models in the next step. The results of the super-efficiency and the bias-corrected efficiency are given in the table below.

Table 2: Technical Efficiency Scores, Super Efficiency and Simar & Wilson (2007) Bias-Corrected Efficiency Scores

		Super Efficiency Score					Bias-Corrected Efficiency Score				
		N	Mean	Std. Dev.	Min.	Max	N	Mean	Std. Dev.	Min.	Max
2010	General	169	0.82	0.21	0.38	2.102	169	0.94	0.38	0.44	2.76
	Efficient	43	1.12	0.35	1.01	2.102	46	1.37	0.49	1.01	2.76
	Inefficient	126	0.63	0.10	0.38	0.998	123	0.78	0.11	0.44	0.99
2011	General	169	0.94	0.41	0.28	5.046	169	1.06	0.59	0.32	5.50
	Efficient	67	1.32	0.66	1.01	5.046	70	1.48	0.71	1.01	5.50
	Inefficient	102	0.67	0.14	0.28	0.995	99	0.77	0.15	0.32	0.99
2012	General	169	1.01	1.02	0.44	9.728	169	1.15	1.08	0.46	10.80
	Efficient	60	1.65	1.32	1.01	9.728	64	1.78	1.56	1.01	10.80
	Inefficient	109	0.69	0.14	0.44	0.993	105	0.77	0.15	0.45	0.99
2013	General	169	1.04	1.01	0.36	9.956	169	1.12	1.08	0.40	11.99
	Efficient	61	1.55	1.47	1.01	9.956	65	1.68	1.58	1.01	11.59
	Inefficient	108	0.71	0.14	0.36	0.998	104	0.76	0.15	0.40	0.99
2014	General	169	1.08	1.30	0.37	14.298	169	1.15	1.44	0.39	17.79
	Efficient	61	1.61	2.08	1.01	14.298	65	1.79	2.18	1.01	17.79
	Inefficient	108	0.71	0.14	0.37	0.998	104	0.75	0.15	0.39	0.999

From the summary table of the calculated efficiency scores, it is found that the bias-corrected efficiency score averages are higher than the super-activity scores as expected. The biased-corrected technical efficiency scores obtained from here are used as dependent variable in the spatial models in the next step.

First of all, it is necessary to research the existence of spatial dependence in the error term of the OLS regression. Three tests, Moran's I and two versions of Lagrange Multiplier tests, are used to investigate the presence of spatial dependence in the error terms of the model, investigating the efficiency of public hospitals (Anselin, 1988; Florax et. al., 2003). Moran's I statistic gives a general indication of spatial relationship; however, between the two alternative forms of spatial dependence, the spatial error and the spatial lag, it cannot provide information about which of them is present in the model. For this, LM-lag and LM-error tests and their robust versions are used in this study.

The results of Moran's I and LM tests are given in the Table below. Before 2012, Moran's I statistical results indicate the existence of a positive spatial

autocorrelation. On the other hand, negative Moran's I statistics values indicate the presence of significant negative spatial autocorrelation for both hospital efficiency and other explanatory variable after 2012. These results suggest that spatial relationship should be considered while investigating the hospital efficiency. Also residual spatial autocorrelation is tested for the models. The results are given in the Table 3. The results indicate that there is autocorrelation in the Spatial Error Model. Also if only spatial lag component is included into models, LM (lag) test results show spatial autocorrelation in the SAR model. As a result, the existence of spatial dependence in both error and lag components of OLS is determined.

Table 3: Model Specification Tests 1: Moran's I Test and LM Tests

	Moran's I statistic (z-value)		LM Error		LM Lag		LM Lag Robust		LM Error Robust	
	value	P-value	value	P-value	value	P-value	value	P-value	value	P-value
2010	1.091	0.029	3.77	0.051	3.819	0.043	6.972	0.009	4.277	0.022
2011	1.084	0.037	3.311	0.039	4.963	0.021	4.305	0.028	2.985	0.039
2012	2.659	0.007	4.907	0.026	3.971	0.049	3.714	0.038	2.702	0.008
2013	-2.087	0.029	4.077	0.032	4.265	0.032	-5.338	0.006	-2.087	0.035
2014	-2.191	0.002	5.298	0.008	3.551	0.059	-3.789	0.061	-1.986	0.038

After verifying the presence of residual spatial autocorrelation, general-to-specific approach proposed by Elhorst (2010) is used to find the most suitable econometric model in our case. It has been started separately with the estimation of SDM and SAC, which are determined as the most general models. Also, alternative models obtained by restricting related parameter in the general models. Later in the study, LR tests are used to investigate whether both SDM and SAC models can be reduced to SAR or SEM models. LR test results are given in Table 4.

Table 4: Model Specification Tests 2: LR Tests

Hypothesis	2010	2011	2012	2013	2014
<i>H₀</i>: $\rho = 0$	13.93*	4.76*	38.59*	37.63*	29.26*
<i>H₀</i>: $\lambda = 0$	8.86*	3.59*	35.82*	26.18*	27.84*
<i>H₀</i>: $\theta = -\rho\beta$	1.211	11.087*	1.589	1.748	1.382
<i>H₀</i>: $\theta = 0$	1.647	11.514*	1.334	1.294	1.198

Note: * denotes significance levels of 0.5%.

The first and second hypothesis test SAC against SEM and SAR respectively. The obtained results indicate that both spatial lag and spatial error are significant for both model specifications. After these results, the Spatial Durbin model is tested against SEM and SAR models respectively in this study. The LR test results indicate that the next two null hypotheses are rejected for all years. According to the test result, it is decided that the Spatial Durbin Model is more suitable model than the SEM and SAR models.

4.1. Regression Results

After defining the most suitable model in our case, the OLS and the spatial Durbin models for each year from 2010 until 2014 results are given in Table 5. There are distinct differences between the estimated coefficients of the two models for each year. Especially when considering the spatial effects, the signs of some of the parameters have changed in favors of our expectations.

The results presented in Table 5 show a positive and significant parameter estimate of the rho coefficients in all years before 2012, showing that the increased efficiency level in a region increases with an increase in the efficiency level of its neighbors. This result is consistent with the finding of Hadley et al. (1996), in which the effect of introducing DRGs in the USA was investigated. On the other hand, after 2011, the signs of the estimated coefficients of the rho variables turned out to be negative. This result indicates that efficiency in one region negatively affect its neighbors' efficiency. This result is very important in terms of putting out the effects of the health policies under SDP on the efficiency of the hospitals. Especially, besides all other amendments and regulations made after 2012, administrative and financial autonomous status has been given to public hospitals by bringing some MoH hospitals under hospital unions. Each hospital association is subject to annual performance reviews based on four criteria: (1) quality of care, (2) organization and service infrastructure, (3) patient satisfaction, and (4) efficiency (Şahin et al. 2011). According to our results, it seems that the introduction of this performance evaluation system has triggered competition between hospitals rather than co-opertition. Especially after giving administratively autonomy to hospitals, it increased the negative competition between hospitals in the same region.

Table 5: OLS & Spatial Durbin Models Results

	2010				2011				2012			
	OLS	P-value	SDM	P-value	OLS	P-value	SDM	P-value	OLS	P-value	SDM	P-value
Constant	-0.402	(0.075)*	-0.762	(0.072)*	-0.585	(0.083)*	5.296	(0.027)**	-1.268	(0.064)*	-0.834	(0.084)*
Occupancy	0.279	(0.000)***	0.317	(0.000)***	0.238	(0.007)**	0.208	(0.009)**	0.216	(0.012)**	0.147	(0.026)**
Mortality	-0.002	(0.089)*	-0.001	(0.094)*	-0.013	(0.055)*	-0.02	(0.034)**	0.005	(0.083)*	-0.006	(0.079)*
Specialist	-0.328	(0.018)**	0.216	(0.038)**	-0.112	(0.080)*	0.261	(0.055)*	0.544	(0.022)**	0.465	(0.026)**
Population	-0.031	(0.043)**	-0.037	(0.039)**	-1.032	(0.044)**	-1.727	(0.036)**	-1.273	(0.038)**	-0.627	(0.074)*
Budget	0.073	(0.04)**	0.031	(0.721)	0.101	(0.086)*	0.147	(0.089)*	-0.614	(0.042)**	-1.071	(0.030)**
HHIndex	0.174	(0.042)**	0.031	(0.089)*	0.214	(0.039)**	0.368	(0.017)**	-3.377	(0.010)**	2.418	(0.034)**
Minus14	-0.115	(0.090)*	-1.716	(0.034)**	3.888	(0.044)**	5.058	(0.051)*	3.886	(0.047)**	0.595	(0.094)*
Plus65	-0.993	(0.063)*	0.754	(0.082)*	-0.034	(0.099)*	-5.921	(0.066)*	6.731	(0.048)**	7.184	(0.059)*
Developed	-0.076	(0.034)**	0.078	(0.040)**	-0.021	(0.084)*	0.026	(0.083)*	0.001	(0.099)*	0.039	(0.078)*
B_type hospitals	-0.048	(0.049)**	-0.116	(0.009)**	-0.23	(0.001)**	-0.264	(0.000)***	-0.266	(0.000)***	-0.318	(0.000)***
C_type hospitals	0.061	(0.058)*	0.020	(0.085)*	-0.239	(0.008)**	-0.25	(0.006)**	-0.241	(0.009)**	-0.192	(0.015)**
W*Occupancy			0.329	(0.010)**			0.019	(0.092)*			0.059	(0.082)*
W*Mortality			0.015	(0.045)**			-0.081	(0.006)**			-0.103	(0.003)**
W*Specialist			0.405	(0.039)**			-1.599	(0.008)**			-1.678	(0.008)**
W*Population			-0.109	(0.019)**			1.005	(0.063)*			-1.402	(0.053)*
W*Budget			-0.240	(0.025)**			-1.079	(0.039)**			-1.079	(0.041)**
W*HHIndex			-0.201	(0.061)*			0.123	(0.078)*			0.027	(0.099)*
W*Minus14			2.867	(0.015)**			-5.516	(0.053)*			5.452	(0.056)*
W*Plus65			0.643	(0.087)*			14.357	(0.036)**			16.543	(0.031)**
W*Developed			-0.064	(0.063)*			-0.134	(0.048)**			-0.034	(0.086)*
W*B_type hospitals			-0.307	(0.013)**			-0.345	(0.022)**			-0.822	(0.000)***
W*C_type hospitals			-0.156	(0.051)*			-0.159	(0.060)*			-0.282	(0.038)**
rho			0.07	(0.052)*			0.204	(0.012)**			-0.352	(0.000)***
Number of Hospitals	169		169		169		169		169		169	

Note: P values are in parentheses. *** 1%, ** 5%, * 10% significance levels.

Table 5: OLS & Spatial Durbin models Results (Continued)

	2013			2014		
	OLS	P-value	SDM	OLS	P-value	SDM
Constant	-2.022	(0.050)*	1.376	2.955	(0.027)**	11.146
Occupancy	0.358	(0.002)**	0.328	0.555	(0.000)***	0.590
Mortality	0.035	(0.034)**	-0.027	0.019	(0.070)*	-0.001
Specialist	0.318	(0.056)*	0.446	-0.414	(0.036)**	0.462
Population	-0.824	(0.057)*	-1.59	-0.202	(0.087)*	-1.492
Budget	-0.024	(0.097)*	-0.434	-0.114	(0.084)*	-0.519
HHIndex	0.374	(0.018)**	0.710	0.524	(0.006)**	0.906
Minus14	3.250	(0.054)*	5.081	1.642	(0.071)*	5.573
Plus65	0.566	(0.094)*	13.761	2.529	(0.076)*	13.353
Developed	0.070	(0.055)*	0.074	0.151	(0.022)**	0.207
B_type hospitals	-0.216	(0.003)**	-0.242	-0.278	(0.000)***	-0.288
C_type hospitals	-0.173	(0.025)**	-0.169	-0.311	(0.005)**	-0.359
W*Occupancy			0.162		(0.057)*	-0.119
W*Mortality			-0.101		(0.022)**	-0.074
W*Specialist			-1.759		(0.013)**	-1.911
W*Population			0.768		(0.074)*	1.725
W*Budget			-1.619		(0.016)**	-1.597
W*HHIndex			-0.018		(0.097)*	0.065
W*Minus14			-4.275		(0.063)*	-8.934
W*Plus65			26.991		(0.007)**	26.045
W*Developed			0.029		(0.088)*	-0.129
W*B_type hospitals			-0.528		(0.009)**	-0.285
W*C_type hospitals			-0.364		(0.030)**	-0.591
rho			-0.188		(0.015)**	-0.174
Number of Hospitals	169		169			169

Note: P values are in parentheses *** 1%, ** 5%, * 10% significance levels.

When the estimated coefficients of the explanatory variables are taken into account, the sign of coefficient of occupancy rate is positive and statistically significant. The estimated coefficients vary between 0.147 in 2012 and 0.59 in 2014. If occupation rate increases by 1%, this will cause a 0.59% increase in efficiency of hospitals. Here, the positive bed occupation rate is interpreted as efficient use of capital and consistent with our expectation.

The estimated coefficients of the mortality rate have been found to be negative and significant, when spatial interaction is taken into account. The high quality is demonstrated by low mortality rate. So increased mortality rate is associated with increased inefficiency.

In the study, the coefficients related to the rate of specialist physicians have been found to be positive and significant. The increase in the proportion of specialist physicians can be related to the quality of the physician and the ability of the physician. It is an expected result that quality and expertise in service production will increase technical efficiency. Also, Population ratio variables were included in the models to capture the urbanization degree of the region. The coefficients of the population variables are negative and statistically significant. This results show that hospitals in the rural location in Turkey are more technical efficient than urban location. The results are inconsistent with the findings of Strumann and Herwartz (2010) for Germany. This may be because health workers in Turkey do not want to work in rural areas more. Also it can be shown that medical personnel are treating more patients by sacrificing quality in order to be able to meet the demand in rural areas.

Rising budget size per bed is associated with less efficient production of medical inpatient care. A negative and significant relationship is found between the budget and hospital efficiency, except for 2011. The minus14 and plus65 age variables are found to have both positive sign and negative sign throughout the entire period. These results show mixed relationship between age structure of the region population and hospital efficiency, similar to the findings of Strumann and Herwartz (2010).

When spatial interaction taking into account, the coefficients of Herfindahl-Hirschman Index in the all years are positive and significant, which suggests that increased competition is related to more efficiency, which is similar to the findings of Rosko and Mutter (2008), Sari (2003), Rosko and Mutter (2010).

Estimated coefficients for Developed dummy variables for all year are positive and significant in SDM, unlike the OLS results. The positive coefficient for socioeconomic development suggests that hospitals serving in the social-economically advantaged regions of Turkey are more efficient than the hospitals

servicing in the underdeveloped regions of Turkey. The estimated coefficients of the variables of B_type and C_type, which represents the scale of the hospitals, are negative and significant in the all model, which means that if the hospital's role group is smaller, hospital efficiency score is significantly lower.

5. Conclusion

Hospital efficiency and its determinants have been discussed for a long time in the health economics literature, especially in emerging markets. Even though there are empirical studies on this subject for Turkey as a developing country. This study considers the spatial interdependence of hospital efficiency in Turkey for 2010-2014. In the study, a two-stage procedure is applied, and in the first stage, super efficiency scores are calculated for each year of the whole term, which includes the second period of the HTP, with the method suggested by Andersen and Petersen (1993). The bias-corrected score values are corrected by Simar and Wilson (2007). These scores are used as dependent variable in spatial econometric models in the second stage.

The spatial dimensions of hospital efficiency and its determinants have often been overlooked in the efficiency literature in the healthcare industry. However, the results indicate the existence of a significant spatial relationship between productivity and its determinants. Therefore, while investigating the relationship between hospital efficiency and its determinants, the spatial dimensions of the subject should also be included in the analysis. Then, various LR tests are performed to determine the most suitable spatial econometric model in the study and the most suitable model is determined to be SDM.

After 2012, it is determined that the productivity of a region was negatively affected by the productivity of its neighbors. This finding suggests that giving administrative autonomy for hospitals, besides of the other regulations and amendments; it has increased the negative competition between hospitals in the same region. Various arrangements in the health sector under the health reform program were carried out in Turkey since 2003. One of the most important of these reforms is the granting of administrative autonomy to public hospitals and the transition to a performance evaluation system for hospital managers. With this regulation, managers who are found inadequate as a result of the evaluation made by the Public Hospitals Institution of Turkey are dismissed from their duties. It is likely that this regulation has put pressure on the managers and that their decisions have encouraged them to guarantee themselves, rather than cooperating with other hospitals in the same region.

The results show that when spatial effects are taken into account, the signs of some parameters become suitable for economic expectations. Estimated coefficients for Developed dummy variables for all year are positive and significant in SDM, unlike the OLS results. These results show that hospitals serving in the social-economically advantaged regions of Turkey are more efficient than the hospitals serving in the underdeveloped regions of Turkey. Furthermore, when spatial interaction taking into account, the coefficients of Herfindahl-Hirschman Index in the all years are positive and significant have been found. Another result, consistent with the findings of the other studies in the literature, is that the increase in the mortality rate is associated with the increase in inefficiency. Also, it has been found that the increase in the proportion of specialist physicians has increased technical efficiency of hospitals. The estimated coefficients of the variables of B_type and C_type, which represents the scale of the hospitals, are negative and significant in the all model. The results indicate that there is a negative correlation between hospital size and technical efficiency of hospitals. When the effects of the age structure of the population of the region on the hospital efficiency are examined, no clear result can be found. In addition, it has been found that hospitals in the rural location in Turkey are more technical efficient than urban location in Turkey. This finding shows that resources are not allocated effectively in the health sector. The introduction of incentives to encourage health professionals to work in rural areas is recommended.

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CHAPTER 10

CRYPTOCURRENCIES IN FINANCIAL MARKETS: THEIR RISKS, OPPORTUNITIES AND THREATS

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1. Introduction

Technological developments in almost all field around the world have revealed the need for change in financial fields. As a result of these developments, which especially affected the financial markets of countries, investment instruments and payment systems began to change. Even money, which has been a physical asset in the form of banknotes or coins for centuries, has started to become virtual with the developing financial technologies.

In parallel with today's technological developments, cryptocurrencies, one of the most important innovations in human life of the 21st century, are a digital currency that allows to virtual money supply and can be used digitally. The most distinctive feature of cryptocurrencies, which can be used as investment and savings instruments like traditional currencies, is that there is no central authority and legal regulation behind them.

Although decentralized, control of the cryptocurrency market is provided by the blockchain database. Cryptocurrencies, in which secure, confidential and cryptographic transactions are made thanks to blockchain technology, are rapidly spreading and used in digital environments.

Although the number and value of cryptocurrencies, which are thought to form the digital finance infrastructure of the future, increase every year, it is accepted that these currencies carry various risks in terms of financial markets.

In this section, it is aimed to examine the possible risks, threat opportunities of cryptocurrencies and their situation in financial markets. For this purpose, first of all, information about cryptocurrencies and their historical development was given, the risks of cryptocurrencies were discussed, and the situation in the financial markets was evaluated and the conclusion part was presented.

2. Cryptocurrencies and Its Development

With the 2007-2008 global financial crisis and the debt crisis that followed, central currencies came under pressure and people began to lose their faith in central financial institutions. For this reason, a call was made for alternative currencies. Answering this call, cryptocurrencies (Morisse, 2015: 1) are defined as a virtual and digital currency, which is an alternative instrument of exchange, enabling cryptographic transactions.

Unlike other currencies such as dollars, euros, and Turkish lira, cryptocurrencies that are not in physical form are registered in computer systems. Therefore, it has no value arising from the value of the metal like precious metals or from the reputation of the state like bank notes. The real value of cryptocurrencies is that those who use the money accept it as an instrument of exchange or see it as a commodity. However, the value of cryptocurrencies is determined by the changing supply and demand conditions in the markets, just like other currencies and commodities (Eğilmez, 2017).

2.1. Features of Cryptocurrencies

Various features of cryptocurrencies consisting of many coins and tokens can be listed as follows:

- Cryptocurrencies have a decentralized structure, unlike centralized electronic money and banking systems. Therefore, the control of this structure, which is not dependent on any authority, is carried out by blockchain transaction databases (Çarkacıoğlu, 2016: 8).

Blockchain is a database that allows cryptographic transaction tracking, ensures that each information is processed in blocks and with advanced encryption algorithms and connected to each other without being connected to an authority (Ceylan, 2019: 6). Although it does not have a central system, the data is stored by the users who are integrated into the system. With blockchain technology, cryptocurrencies mathematically eliminate the intermediaries needed by both parties. This also indicates that it functions as a trust mechanism (Collomb ve Sok, 2016: 95-96). Blockchain technology, which enables cryptocurrencies

and infrastructure to work, enables users to speed up the process, reduce costs, improve security and simplify operational work (Dilek, 2018: 11). In Figure 1, how the blockchain technology works is presented visually.

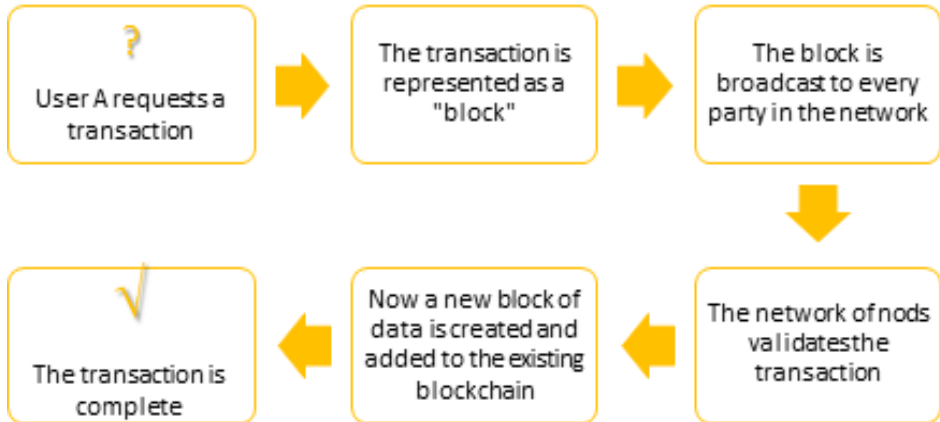


Figure 1: How Blockchain Technology Works

Reference: Hassan, N., Jain N., Chandna, V.K. (2018). Blockchain, Cryptocurrency And Bitcoin. International Conference on Information Technology & Digital Applications, Jaipur, 4.

- Cryptocurrencies are produced in decentralized crypto systems, using publicly available and publicly known methods, at the rates determined during the establishment of the system. In traditional monetary systems, governments can issue additional money through national central banks when deemed necessary, but they cannot issue cryptocurrencies. They also cannot confiscate cryptocurrencies owned by others without their consent. The amount of cryptocurrency in circulation and the method and timing of the money supply are determined during the establishment of the crypto system. However, there is a trusted third institution/organization in traditional electronic money storage and transfer transactions. There is no third party in crypto systems. Here, security, integrity, and accuracy of the global ledger are achieved through mutually distrusting miners (Çarkacıoğlu, 2016: 9).

Miners provide transaction confirmation, grouping of approved transactions, generating new blocks from grouped transactions and adding the produced blocks to the chain when certain circumstances allow. Each new block approved and produced by miners is linked to the previous block. The first purpose of

this system is to completely prevent the changing of the encrypted information on the block after it is added to the blockchain. Because this information is encoded with cryptic evidence that is costly to produce and nearly impossible to re-analyze (Arıkan, 2020: 27-28).

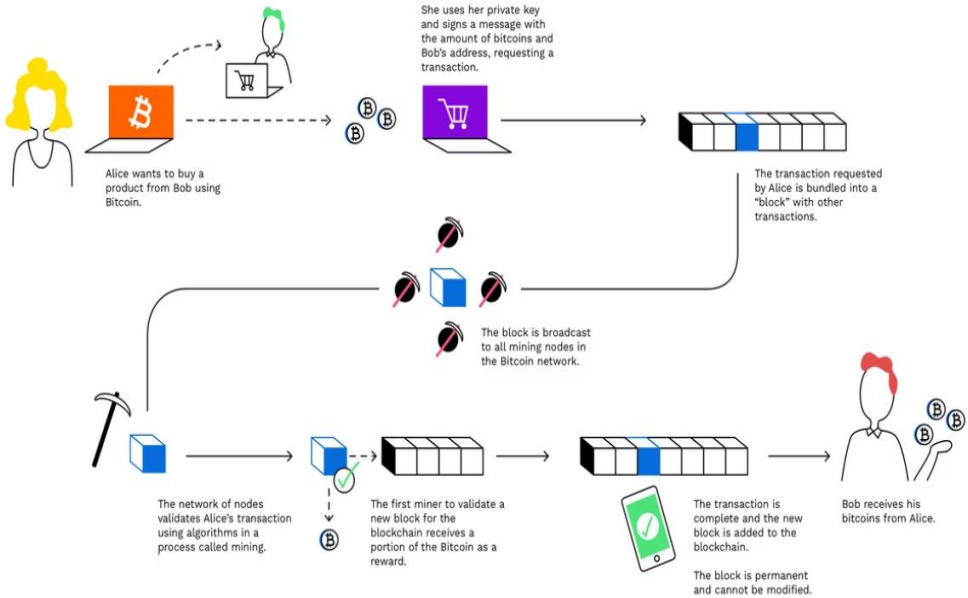


Figure 2: How Blockchain Mining Works?

Reference: <https://www.bitpanda.com>.

Figure 2 shows how Bitcoin, well-known cryptocurrency, mining is done. Accordingly, while the two parties want to buy cryptocurrency from each other, a transaction is requested first. This transaction is linked together as a block with the others. After the verification with mining, the first miner receives the reward and the transaction is completed and the cryptocurrency is transferred.

- In most cryptocurrency systems, the production of cryptocurrencies decreases over time so that the total cryptocurrency in circulation can be fixed.
- The banknotes in circulation issued by the countries are fiat money and they are under the guarantee of an authority that issues, supervises and regulates them. Conversely, trust in virtual cryptocurrencies is based on the belief that the majority of system users will do nothing wrong and virtual currency issuance and circulation system (Çarkacıoğlu, 2016: 9).

2.2. Opportunities and Threats of Cryptocurrencies

There are many supportive and opposing views regarding the use of cryptocurrencies. While some finance users advocate the positive features of cryptocurrencies in terms of payments and transactions in the financial

system; while others oppose the use of cryptocurrencies due to their excessive volatility.

The various opportunities of cryptocurrencies can be listed as follows (Ivanschenko, 2016: 272; Bunjaku vd., 2016: 38; Hendrickson vd. 2016: 928):

- Cryptocurrency mining uses advanced algorithms used in internet banking. However, as in internet banking, no information is shared about the parties,
- Since the number of various cryptocurrencies such as Bitcoin is limited, there is no inflation due to the abundance of money in the markets,
- There is an end-to-end encrypted cryptocurrency network. For this reason, neither banks nor governments can control the flow of money,
- Due to unlimited transaction opportunities, cryptocurrency can be transferred to any part of the world, at any time and in any amount,
- Cryptocurrencies are non-imitable, non-copyable and cannot be spent twice,
- The number of companies that allow transactions with cryptocurrencies, especially Bitcoin, is increasing day by day,
- Transaction costs are relatively lower,
- Although there is no central authority, since every mining computer is a member of this system, transactions are carried out safely and without interruption,
- All transaction histories are stored thanks to blockchain technology and this results in a transparent operation,
- Transaction speed is very high,
- There is no such thing as theft of credit card information in online shopping with cryptocurrencies. Because there is a public and a private key in the cryptocurrency system, the private key is only known by the transaction owner.

While the various opportunities that cryptocurrencies offer to their users compared to traditional currencies are listed as above, some threats can be listed as follows:

- Legally, it gives rise to a belief that it will not provide security due to the low awareness of blockchain technology. For this reason, its usage area has not been as widespread as expected (Kaplanhan, 2018: 112),
- Although there is no inflationary development in the cryptocurrency system, similar to the Bitcoin system, it is thought to have a deflationary effect since the supply level is predetermined (Çakraccioğlu, 2016: 64),

- Some states want to take measures to prevent the use of cryptocurrencies. Because cryptocurrencies prevent a government from fulfilling the tasks assigned to it, such as creating monetary policy or increasing revenue (Hendrickson vd., 2016: 930),
- Traditional financial accounts can be suspended if the parties to a transaction engage in illegal activities. However, in cryptocurrency systems, accounts cannot be frozen, transactions cannot be reversed, and account holders are not easy to identify. For this reason, cryptocurrencies can be used to carry out illegal transactions (Hendrickson vd., 2016: 927-928),
- Earnings in cryptocurrency systems are not taxable and the taxpayer's anonymity does not allow them to obtain information about taxpayers. Although this situation seems advantageous for users, it is considered a disadvantage by the states (Kenger ve Tokmak, 2018: 4701),
- Due to the lack of legal measures in some countries, transactions made with electronic money cannot be reversed, transactions cannot be corrected. For example, if the customer pays the wrong person, the person receiving the payment can spend the money immediately before it is even possible to track them. Therefore, the person making the payment will suffer (Bozkurt Yüksel, 2016: 195).

3. Cryptocurrencies in Financial Markets

Although the first cryptocurrency officially issued using blockchain technology took place in 2009, the number of cryptocurrencies with a history of almost 30 years has exceeded 6500 as of October 2021. With this number, the total value of cryptocurrencies in the market has reached the level of 3 trillion dollars (www.coinmarketcap.com). Cryptocurrencies, which are created entirely in digital environments and whose number is increasing day by day, are spreading to a wider audience. However, in addition to those who advocate cryptocurrencies, which are predicted to be even more common, there are also many people and countries that take a stance against cryptocurrencies.

In the research conducted by the World Economic Forum in February 2021 on the 74 largest economies of the world, Europe, America, Asia and African countries, it is noteworthy that cryptocurrencies have started to be used intensively especially in Africa and Asia. Accordingly, as can be seen in Figure 3, Nigeria ranks first among the countries that use cryptocurrencies the most compared to the population, while the countries that use cryptocurrencies the least are Japan and Denmark with four percent. Turkey, on the other hand,

ranks fourth in the world and first in Europe with 16 percent. The European countries that show the most interest in cryptocurrencies after Turkey are seen as Switzerland and Greece with 11 percent (<https://www.weforum.org>).

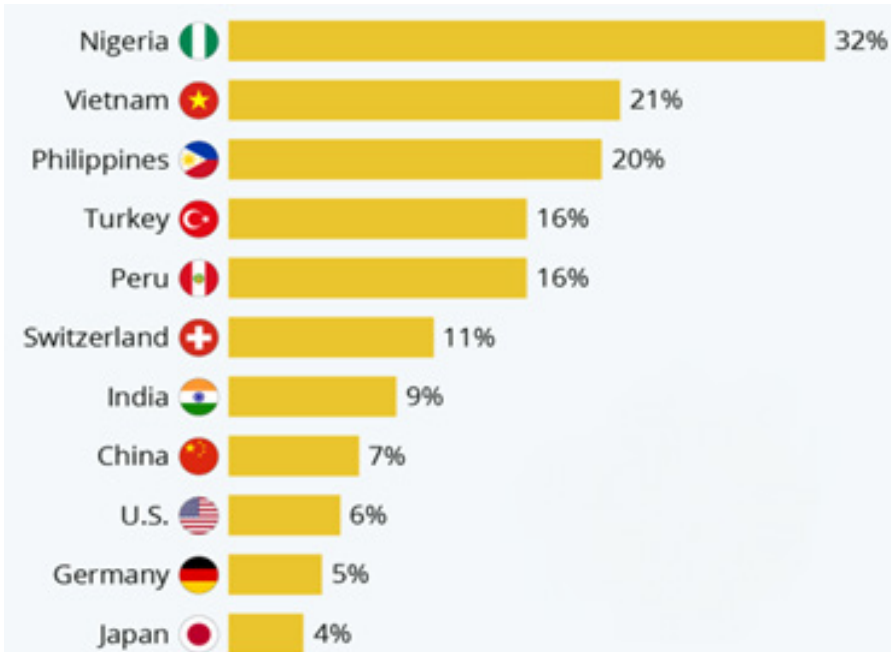


Figure 3: These are the countries where cryptocurrency use is most common
Reference: <https://www.statista.com/chart/18345/crypto-currency-adoption/>

When we look at the approach of countries towards cryptocurrencies in detail, it is striking that various regulations have been made on the taxation of cryptocurrencies in the USA, the leading country of the world economy. In addition, studies have been carried out on the taxation of income from Bitcoin mining. The United States has subject the holding and selling of cryptocurrencies for more than one year to capital gains tax. On the other hand, in Canada, corporate and value-added tax is applied in transactions made with cryptocurrency by commercial enterprises. For individual investors, 50% of the earnings are exempt from tax, and the remaining base is taxed at the normal tax rate. It can be said that Canada has created its own cryptocurrency with the name “Mazacoin”, as an indicator of its very positive approach towards the cryptocurrency system (Topaloğlu, 2021: 250). Also, in Canada, the status that applies to goods and services applies to cryptocurrency. Under Canadian law, Bitcoin is a commodity asset like gold, silver or natural gas. Accordingly, cryptocurrencies are taxed

as either commercial gains or capital gains. Considering cryptocurrency as a commodity, Japan accepts these coins as a means of payment. Cryptocurrencies, defined as digitally transferable asset-like assets, are also subject to income and capital gains tax in the country (Günay ve Kargı, 2018: 70).

The UK government, which has embraced blockchain technology, has exempted transactions made with cryptocurrencies from value added tax. However, a corporate tax obligation of 20% has been imposed on those who carry out these transactions. If the profit from trading cryptocurrencies in Germany exceeds 800 Euros, this profit is considered “speculative gain” and is taxed at a rate of 25%. Cryptocurrency transactions are exempt from value added tax. Cryptocurrency traders in the Netherlands pay corporate tax, while individual investors pay income tax on their profits. Switzerland, on the other hand, exempts individual transactions in cryptocurrencies from taxation (Altay Topcu ve Sümerli Sarıgül, 2020: 36).

Scandinavian countries, including Denmark and Sweden, are developing strategies for using cryptocurrencies more in daily life, as they want to completely remove the use of cash. Finland, another Scandinavian country, defined cryptocurrencies, especially Bitcoin, as a financial service and exempted Bitcoin transactions from value added tax (Çarkacıoğlu, 2016: 57).

Countries such as Iceland, Ecuador, Thailand, China, and Germany are relatively deliberate in using cryptocurrencies compared to other countries. Some countries have imposed various restrictions on cryptocurrencies in terms of competition, some on the grounds that it is illegal, and some on the grounds that they can put their users at financial risks. For example, transactions with cryptocurrencies in China are prohibited in order to control virtual currency movements (Çarkacıoğlu, 2016: 57; Günay and Kargı, 2018: 70).

In Turkey, there has been no regulation for three years since 2009, when cryptocurrencies were first introduced. However, with the law enacted in 2013, the necessary conditions for producing virtual money have been determined. In addition, it has been stated that Bitcoin is a virtual currency that is not issued by any official or private institution and is not guaranteed for its return. In addition, according to the regulation published by the CBRT in April 2021, the direct or indirect use of cryptocurrencies in payments is prohibited. In addition, considering that it contains elements that may create a lack of trust in the current conditions, it has been stated that cryptocurrencies are likely to cause irreparable unjust sufferings. However, contrary to the countries that strictly prohibit the use of cryptocurrencies, it is stated that the conditions of use of cryptocurrencies can be regulated according to the market conditions,

as a result of the statements made by the Banking Regulation and Supervision Agency in Turkey.

As can be seen; Countries' approaches to cryptocurrencies, taxation considerations and their desire to popularize use may differ. However, since cryptocurrencies have the potential to be an important source of income for states, it is estimated that the idea of taxing and using cryptocurrencies may change over time. Because when we look at the economic volume of cryptocurrency in the world, it is seen that it has reached a considerable size. When states take this situation into consideration, they will be able to change the policies they maintain with various regulations regarding cryptocurrencies over time.

4. Risks of Cryptocurrencies

There have been some discussions about the legal applications of cryptocurrencies in Turkey. Some investors even have serious concerns about the reliability of cryptocurrencies. In the CBRT's report, the risks of cryptocurrencies are listed as follows (<https://www.bloomberght.com>):

- The fact that crypto assets are not subject to any regulation and supervision mechanism and the absence of a central authority brings together the inadequacy of control and supervision..
- Excessive volatility in market values as a result of uncontrolled crypto asset transfers creates a serious price risk for investors with a high appetite for crypto assets.
- Due to its anonymous structure, it facilitates its use in illegal activities and makes it difficult to trace transactions on an individual basis, such as tax evasion, money laundering and terrorist financing. In some cases, it is not possible to track transactions according to the types of crypto assets used.
- There is a risk that crypto assets may be stolen, lost or used improperly without the knowledge of their owners. This is mostly the case for wallets held on trading platforms. However, there is such a risk in certain cases for the wallets of individuals, which are described as their own cold wallets, apart from these platforms.
- Crypto assets are vulnerable to cyber attacks and hacker attacks. In this context, it is seen that especially the platforms where trading transactions are carried out may be more vulnerable to such attacks.
- The irreversible nature of the transactions may cause irreparable unjust sufferings for the parties of the transactions due to operational errors and abuses.

- Lack of legal protection under security of cryptocurrency, refund or warranty as it is not regulated.
- Crypto assets have a sustainability problem as they are not universally accepted means of payment.

CONCLUSION

Parallel to the increasing technological developments after the 2000s, money as a means of payment and exchange accelerated the adventure of change by keeping up with this development. Cryptocurrency, as a digital payment and savings method, was put into circulation in 2008, especially in today's world where all sectors are rapidly digitized.

Cryptocurrencies, which do not have a fully legal basis around the world and cannot even fully meet the fiat money today, are controlled by blockchain databases. The blockchain database, which is known to have a very secure script, is a pioneer in change and transformation in other sectors as well as cryptocurrencies.

Cryptocurrencies, which have various advantages such as unlimited transaction possibilities, imitability and copying, low transaction costs and high transaction speed, are also important in terms of providing financial freedom and privacy when used consciously. Although it is considered risky because it has a history of more than 10 years, is not audited by a central authority and the possibility of being used in illegal transactions, the use of cryptocurrencies is becoming increasingly common

When evaluated in terms of countries, it is seen that there are different strategies for the use, taxation and acceptance of cryptocurrencies. Some countries or organizations accept various cryptocurrencies as a means of payment, while others do not. However, in some countries cryptocurrency earnings are exempt from tax, while in others they are taxed.

In Turkey, after the first law on cryptocurrencies enacted in 2013, the use of cryptocurrencies in payments was prevented due to security weaknesses in the regulation in 2021. However, it is stated that the terms of use of cryptocurrencies can be changed, taking into account the changing economic and technological conditions.

In fact, due to the fact that crypto currency trading platforms are not subject to control in today's conditions, many people and institutions in Turkey and around the world have suffered. Platforms that mediate the buying and selling of cryptocurrencies and provide custody and clearing services should be considered as financial institutions. In addition, it is thought that more people will want to use cryptocurrencies safely with the inspection of these institutions.

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CHAPTER 11

EFFECT OF MONETARY GROWTH IN USA ON SELECTED ASSETS: S&P500, GOLD & BITCOIN ESTIMATES WITH FACEBOOK PROPHET

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1. Introduction

Developments in monetary policy can be evaluated differently depending on the sensitivity of the economy. Changes between the money supply and interest rates, which are one of the monetary policy instruments, can cause expansionary or restrictive effects on the economy. It is known that expansionary policies are the main recipe for Keynesians and this acts as a balancing function by creating stimulating effects on the demand side especially against economic depression. Expansionary practices to stimulate demand can also trigger increases in stock prices, as well as gold, which is used for hedging from traditional investment instruments, can gain value due to the expectations that monetary expansion will cause possible inflationary reflections.

The basis of monetary expansion finds a place in the Quantity Theory of Money and accordingly, when there is an increase in the money supply, the surplus in the amount of money is used to buy more stocks and stock prices can move up. Although the argument that money has revitalizing effects in the whole economy and especially in the stock markets is accepted, it has been experienced that the monetary expansion applied against the stagnation in Japan in the 1990s caused overflows from domestic to global economy and

this phenomenon was defined as “carry trade”. In the context of stimulating the internal economy, it is mentioned that the economy should be closed in terms of both goods and services and factor flows in order for expansionary policies to be effective. In open economies, monetary expansion has reflections in the form of overflows from inside to outside. The phenomenon of carry trade, which is briefly used to describe this situation, is known as the factor that triggers the motive to invest outside the country, especially in emerging markets. It can be said that with the 2008 global crisis, the expansionary policies implemented against the crisis in many developed economies, especially in the USA, triggered mechanisms similar to the carry trade phenomenon that Japan had previously experienced.

Increasing money supplies in developed economies can turn interest rates to zero or even negative, while shifting funds to emerging economies, as well as deepening the tendency to seek safe havens in this process. Both the search for safe havens and the motives for higher earnings trigger the behaviour of gaining high profits from emerging economies, as well as increasing commodity prices, especially gold. Cryptocurrencies that have emerged at this point can be described as both a safe haven and a reflection of the search for high returns. (Akdağ, 2019).

The first reflection of the monetary expansion carried out by the central banks is the decrease in interest rates and in this context, the existence of substitution effects, that is, the existence of negative relations between the interest rate and the stock market, is observed, while the existence of positive relations between the money supply and the stock market is detected. This phenomenon, which emerges as a requirement of the quantity theory of money, is among the main implications of the liquidity hypothesis. According to the policy expectation hypothesis, it is stated that there may be increases in interest rates as a move against the capital surplus in circulation, which will cause tightening in credit conditions and this will trigger the fall in stock prices. The expected inflation hypothesis also suggests that an inverse relationship will emerge between the two variables. (Bissoon et al., 2016).

In this study, the effects of the monetary growth data of the United States on the American Stock Exchange S&P500, gold and -the most important element of the cryptocurrency market- Bitcoin prices are tried to be revealed. The main motivation of the study aims to analyze the spillover effects of expansionary policy practices in the US economy, which corresponds to approximately 25% of the world output. Parallel to the fact that monetary expansion in a large economy has a lowering effect on interest rates, it is highly probable that the

domestic substitution process will have a boosting effect on the national stock market. In addition to the revival effects of monetary expansion inside, it is expected to have a spillover effect on foreign economic related countries. On the other hand, it is known that monetary expansion triggers both the search for safe havens and alternative investments. Accordingly, there may be effects of global confidence seeking as an alternative to the US stock market and a trend towards gold as an investment instrument. Moreover, the effects on Bitcoin, which are discussed in the literature with both protection and speculative investment, can be considered worthy of research, and it is possible to say that there are monetization effects in the emergence of Bitcoin and this appears to be a means of avoiding inflation in the first place due to monetization and then considered as an investment tool. Therefore, it is observed that Bitcoin resembles gold and stock markets which appears to be a kind of safe-haven and investment, respectively. In this framework, it was aimed to investigate the “stock market-gold-Bitcoin” relations in the context of monetary changes in the USA and their spillover effects with the help of the Facebook Prophet Algorithm, which was developed in terms of future predictions. The second part of the study explains the theoretical and empirical literature, the third part explains the data set and methodology, and the fourth part includes empirical findings. In the fifth chapter, the results, evaluations and the article are summarized.

2. Literature Review

When monetization is in a way that can be experienced within its own structure in developed countries, the emergence of inflationary effects along with the developments in the approach to full employment as well as the effects that lead from underemployment to full employment in the short term are among the main implications of orthodox economics. In the long run, starting from the perspective of neutrality of money, it does not cause income and employment increases; It is claimed that it has rather inflationary consequences. It is claimed that, despite the short and long-term differences in the effect of monetization on macroeconomic variables, it ultimately triggers protection motives, especially from inflationary effects. At this point, in contrast to Rozeff's (1974) argument that monetization increases stock market returns; Black (1987) argued that it did not affect interest rate, stock exchange, investment or employment; Boudoukh et al. (1994) discussed the phenomenon in the context that its effects will be conditional, that is, the relationship between inflation and stock market returns as a result of monetary expansion (Thorbecke, 1997). In an environment where

the internal effects of monetary expansion are discussed, it is stated that the external reflections of monetary expansion will affect other countries through inflationary effects with the balance of payments in open economies compared to closed economies (Triffin & Grubel, 1962). It is accepted that the effects of monetary expansions on asset prices in the short term create overflow effects and have reflections on other economies.

This phenomenon, which is called spillover effects in the literature, is also called external reflection, contamination and domino effects. Accordingly, spillover effects are expressed on a sectoral basis within the country, and this has reflections in the form of inflation, exchange rate and imports (Caporale et al., 2018). It is the fact that the deterioration occurring in an economy, which has a relatively high impact among countries, manifests itself in the form of deterioration caused by the economy with which it has an intense relationship. It is claimed that the depth of this depends on the strength of economic relations between these countries (Andritzky et al., 2016). Dornbusch et al. (2000) described spillover effects as the transfer of market shocks or imbalances from one economy to another. It is stated that the spillover becomes more pronounced in deterioration rather than improvement in general. However, it is observed that the positive effects create an optimistic atmosphere with more psychological effects and this affects other structures with spreading effects.

While it has been claimed that the effects of spillover create effects from the developed country with a high level of income towards its partner countries, it is stated that the functioning of the mechanism mostly arises from the dimension of commercial and financial relations among themselves, that is, the economic structure similarity. While it is mentioned that the spread among developed countries is towards to a relatively developed but small economy (Wang et al., 2017), after that it has effects on developing countries in the ongoing process (Samarakoon, 2011; Gerni et al., 2020). Similarly, the argument that the spillover effects among developing countries arise mostly from the phenomenon of geographic proximity can be put forward on the basis of Asian and Russian crises. For example, a decline in the returns of the long-term assets of the USA leads investors to seek alternatives, and at this point, the trend changes to relatively more risky and higher earning assets in developing countries (Chen et al., 2012).

In this context, the openness of the countries that go to monetary expansion and spreading the seigniorage gains to the world cannot create the targeted results. Because the secular stagnation currently put forward for these

countries is defined as the inability to increase the total factor productivity against all measures taken, including monetary and fiscal expansion. In other words, secular stagnation is described as the absence of expansionary effects on income and employment. Although there are opinions that attribute this to various factors, especially the aging of the population (Summers, 2020), it can be said that the triggering factors for foreign investment in countries with strong money are also the cause. Moreover, when we look at the size between GNP and GDP in these countries, it can be seen that GNP is higher than GDP, which can be followed from the factor income item in the balance of payments. GNP and GDP values of the United States regarding the aforementioned difference can be seen in Figure 1.



Figure 1: GDP and GNP Values of USA

Source: St. Louis FED

On the other hand, while the share of M2 in GDP increases in countries with high monetization, this currency triggers the trend to gold with the search for a safe haven, and also has an upward effect on the stock market and similar assets which is Bitcoin and other cryptocurrencies are also an element of both the search for safe havens and the search for speculative gain. Figure 2 shows the increase in the GDP share of M2, which is the money stock of America, from approximately 4.5 trillion USD to 20 trillion USD in the last 20 years.

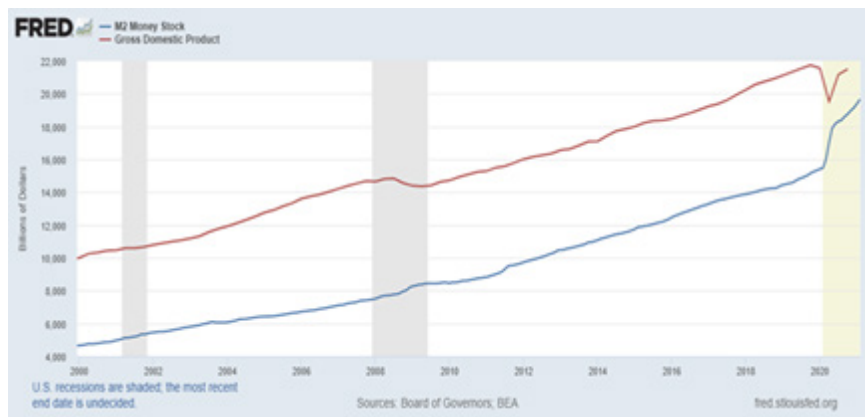


Figure 2: GDP and M2 Money Stock of USA

Source: St. Louis FED

When Figure 1 and Figure 2 are evaluated, while the income increase in the US economy has been 2.3 times in the last 20 years, the increase in monetary expansion has been 4.4 times. The deepening monetization effects, especially in the USA and in the world in general, cause spillover effects between sectors within countries and between markets among countries.

Despite the fact that the spread is caused by the proximity and depth of economic relations, it is observed from the crisis experiences that the reflections seen as “money supply- interest rate- stock market value” with internal substitution effects spread to similar economies. Thus, it can be mentioned that there is a literature stating that the contagion or spillover effects are generally from developed countries to developing countries, and in a very small way, from emerging markets to developed countries. It is noteworthy that this second type of spillover is justified by the significant investments made by the developed countries in emerging markets (Sugimoto & Matsuki, 2019). The examples in which the crises are relatively undeveloped and thus remain local can be given the Asian or Russian crises. On the other hand, the spillover of the crisis on a global scale can be cited as examples of the US mortgage or the EU monetary crisis. Woo and Zhang (2011) stated that the beginning of the crisis in the USA started on June 22, 2007 within the American Investment Bank and started to spread to other financial institutions, and that it spread to the US economy towards the end of the year and that it was exported to other countries in mid-2008. In the ongoing process, it has been illustrated that the spillover effects in the USA have been transferred to the UK and to China with a little delay (Sugimoto & Matsuki, 2019). Moreover, the spillover effects of the increases in

the monetization dimension in developed countries are defined as the spillover effect of the tendency towards developing markets. Therefore, it can be said that while expansionary practices in developed countries flow to emerging markets with high interest and profit motives, they also play a trigger role in alternative instruments such as gold and cryptocurrencies.

It is stated in the literature that stock market values and stock returns increase as a result of monetary growth (Rozeff, 1974). Studies from different countries have also revealed various results by examining the effects of monetary growth. For example, it has been suggested that monetary expansion creates effects on import, prices and production dimensions in EEC member countries through the foreign trade mechanism (Triffin & Grubel, 1962). Similarly, when the period between 1962 and 1991, one of the periods in which monetary policy was expanding in the United States, was considered, it was seen that the returns of the stock markets increased (Jensen & Johnson, 1995). At the same time, with monthly data, it was determined that the expansion in the period of 1967-1990 had positive effects of monetary expansion on the company returns traded in the US stock exchange. On the other hand, it has been demonstrated that restrictive monetary policies reduce stock prices, while expansionary monetary policies increase stock prices (Thorbecke, 1997). In a study examining 13 OECD countries, it was observed that monetary policy affects stock returns (Ioannidis & Kontonikas, 2008), while restrictive monetary policies lowered stock prices in another study on G-7 countries (Neri, 2004). Yoshino et al. (2014) found that the spillover mechanism of monetary expansion on the stock market is influenced by the money stock, the exchange rate and the inflation rate. In another study examining the relationship between the stocks in the Dhaka Stock Exchange and the monetary policy, it was revealed that there is a negative relationship between the stock price and the monetary policy overnight interest rate (Saidjada et al., 2014).

The indirect relationship between the monetary policy interest rate and asset returns used in Namibia has been expressed in different studies (Eita, 2012; Gan et al., 2006). On the other hand, Stoica & Diaconasu (2012) stated that there is a short and long term mutual relationship between the interest rate and stock returns in European Union countries. Yang and Hamori (2014) showed that the spillover effects of US monetary expansion on the stock markets of selected ASEAN countries occurred during periods defined as more calm. Bissoon et al. (2016) analyzed the relations between monetary policy changes and the stock market on Mauritius, London, Australia, Japan and Trinidad with panel forecasters. Although the effects of global and EU crises shadow variables and money supplies are not captured in the findings, it has been determined

that money supply has positive and negative and significant effects of interest rates in the error correction model, and this has also been effective in the short and long term. While Sugimoto and Matsuki (2019) investigated the relative importance of 9 Asian stock markets, especially China, effects of the spillover on Japan, the USA, France and Germany, with panel estimates, they revealed that the spread from the USA to Asia was stronger. It has been determined that the monetization in the USA is also effective on Asian stock markets.

In the literature reviews, while some studies put the effects of monetary expansion in the country on the national stock market, some of them deal with the spillover effects and deal with the effects of monetary expansion from large economies to small ones. In this context, studies that reveal the effects of monetary expansion in the USA, which is the relatively largest economy of the world economy, both domestically and on its own stock market reveal the existence of spillover effects. In addition, studies reveal that they have effects on other large economies reveal the existence of international spillover effects. The trend of these effects on gold and Bitcoin as a means of hedge or alternative investment also points to the existence of global spillover effects.

3. Methodology and Data

It is known that the sensitivity of trends, cycles and fluctuations in time series prediction models is high and it is clear that smooth data are required to eliminate these features. For example, the ARMA model is a combination of autoregressive and moving average models and is an important tool in predicting stationary time series. Trends can be included in the model with the ARIMA model, which is one of the ARMA derivatives, and seasonality can be added to the model with another derivative model called the SARIMA model. However, the accuracy of these models requires the adjustment of some parameters to determine to what extent historical data will affect the model. The accuracy of the model can be increased by some adjustments on the model, such as adjusting moving averages, subtracting standard deviations or scaling. Thanks to a new algorithm in which the aforementioned adjustments are made with machine learning on research models, most operations do not need to be done manually and the accuracy rate increases in parallel.

In this study, the open-source Facebook Prophet Algorithm (FPA), which was created by Facebook data analysts, was used. FPA used in the analysis of time series can be used to find data breakpoints of past time series, to determine global trends, annual, monthly, weekly or daily seasonality, and to determine the effects of holidays (Taylor & Letham, 2018; Fang et al., 2019).

One of the most important features of the Facebook Prophet Algorithm is that data sets do not need to be stabilized. While stationarity is an important prerequisite in time series algorithms such as ARMA or ARIMA, trends or seasonality tests are more important in FPA. At the same time, predictions can be made with missing data points while making predictions with FPA. The numerical condition behind the Prophet model is characterized in Equation 1.

$$y_t = g_t + s_t + h_t + \varepsilon_t \quad (1)$$

Prophet forecasts trends using a piecewise linear model and g_t represents the trend. Periodic shifts due to weekly, monthly or yearly seasonality are represented by s_t , holiday effects are represented by h_t , and the error term is represented by ε_t . Prophet model fitting is normally very quick (even for thousands of observations) and requires no data pre-processing. It also takes into account missing data and outliers.

Facebook Prophet Algorithm is based on two trend models. These are saturating growth model, and piecewise linear model. Firstly, saturating growth model is modelled with logistic growth model and showed in Equation 2.

$$g_t = \frac{C}{1 + \exp(-k(t - m))} \quad (2)$$

In Equation 2; C expressed as carrying capacity, k the growth rate, and m an offset parameter. Secondly, piecewise logistic growth model showed in Equation 3.

$$g_t = \frac{C_t}{1 + \exp(-(k + a_t^T \delta)(t - (m + a_t^T \gamma)))} \quad (3)$$

The logistic growth model analyzed in Equation 3 is a form of generalized logistic growth curves, which is only a single type of sigmoid curve. In addition, periodic effects investigated with an adaptable model on Fourier series. In standard Fourier series, arbitrary smooth seasonal effects approximate in Equation 4. Other features of Facebook Prophet Algorithm such as automatic changepoint selection, trend forecast uncertainty and model fitting can be found in Taylor & Letham (2018).

$$s_t = \sum_{n=1}^N \left(a_n \cos\left(\frac{2\pi nt}{P}\right) + b_n \sin\left(\frac{2\pi nt}{P}\right) \right) \quad (4)$$

In this study, the R program was used to reveal the Facebook Prophet Algorithm. The codes of the program can be found at Github prophet.R. In addition, 2620 pieces of weekly data collected between January 1, 2008 and March 12, 2021 were used. These are M2 data, which is the United States monetary stock indicator, and the American Stock Exchange S&P500, gold and Bitcoin data. M2 data collected from St. Louis FED database, others are taken from Yahoo! Finance.

4. Empirical Findings

Keynesian economics, which emerged after the Great Depression of 1929, broke new ground with its revolutionary aspect of economics, which was proposed the use of expansionary monetary and fiscal policies for deflationary structures caused by the lack of demand in economies. However, although there has been a disgrace, especially since the 1970s, when the inflation and stagnation environment were experienced simultaneously, it was possible to recourse to these macroeconomic prescriptions as an important human knowledge. In this context, against the global crisis that started in the USA towards the end of 2007 and spread to the developed countries in 2008 and to the developing countries in 2009, Keynesian economics has been recourse. While Figure 1 and Figure 2 show that monetization is beyond the suggestions of the orthodox economy, it is expected to have possible reflections inside and outside the economy. Therefore, while Keynes's prescription for monetary expansion is put into effect once again, its effects on the S&P500 Stock Exchange, Gold and Bitcoin prices, which are the motivation of the study, are illustrated in the graphs below.

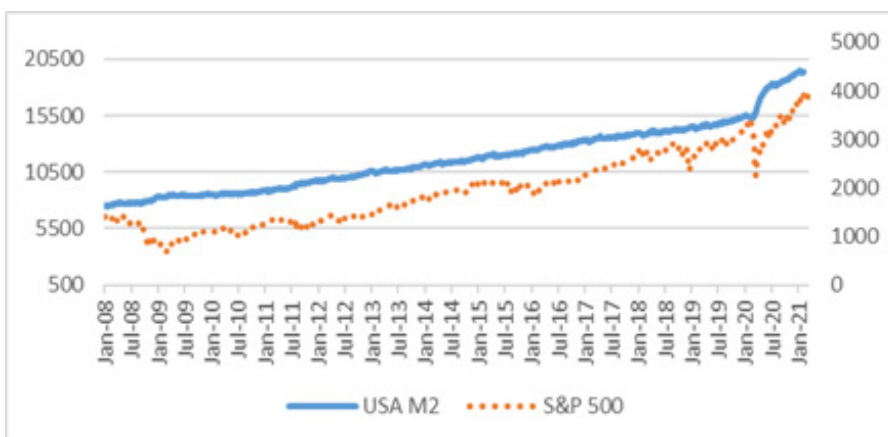


Figure 3. USA M2 Money Stock and S&P500

Source: St Louis FED, Yahoo Finance

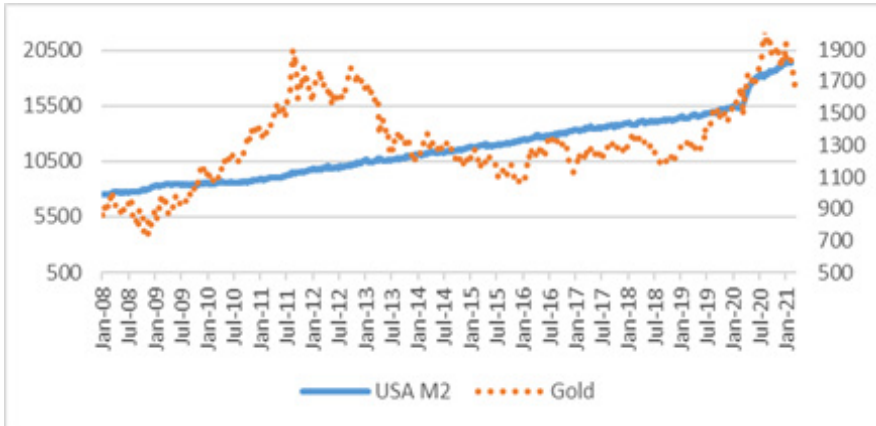


Figure 4. USA M2 Money Stock and Gold

Source: St Louis FED, Yahoo Finance

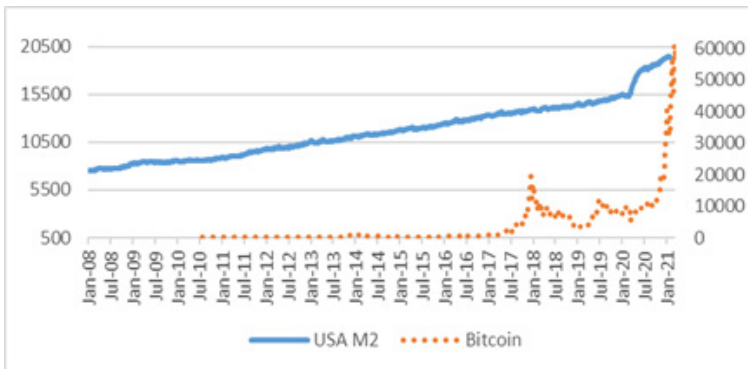


Figure 5. USA M2 Money Stock and Bitcoin

Source: St Louis FED, Yahoo Finance

Mean Absolute Error (MAE) and Root Mean Square Error (RMSE) were used for the accuracy measurements of the model. While the MAE alone defines the average error, the RMSE sets the accuracy measurements by placing a higher weight on large errors. Low MAE and RMSE values indicate that the model is good (Akdağ & Bozma, 2021). Equation 2 and 3 shows calculation of MAE and RMSE, respectively.

$$MAE = \frac{1}{n} \sum_{t=1}^n |e_t| \quad (5)$$

$$RMSE = \sqrt{\frac{1}{n} \sum_{t=1}^n e_t^2} \quad (6)$$



Figure 6. S&P500 Stock Exchange Prediction with USA M2

Figure 6 shows the price chart of the S&P500 Stock Exchange, which was created by adding the US money supply to the model. When the model is estimated with S& P500 data, the RMSE and MAE values are 123.87 and 84.21, respectively. After the model was created, the US money supply was added to the model. Thereupon, the RMSE and MAE values were realized as 120.76 and 82.63, respectively. Accordingly, when the money supply is added to the model estimated by Facebook Prophet Algorithm, there is a 2.51% improvement in the RMSE value and a 1.88% improvement in the MAE value in the model.



Figure 7. Gold Prediction with USA M2 Money Stock

Figure 7 shows the price chart of Gold created by adding the US money supply to the model. When estimated model with Gold data, the RMSE and MAE values are 71.76 and 57.43, respectively. After the model was created, the US money supply was added to the model. Thereupon, the RMSE and MAE values were 67.26 and 53.51, respectively. Accordingly, when the money supply is added to

the model estimated by Facebook Prophet Algorithm, an improvement is seen in the RMSE value of the model by 6.27% and the MAE value by 6.82%.

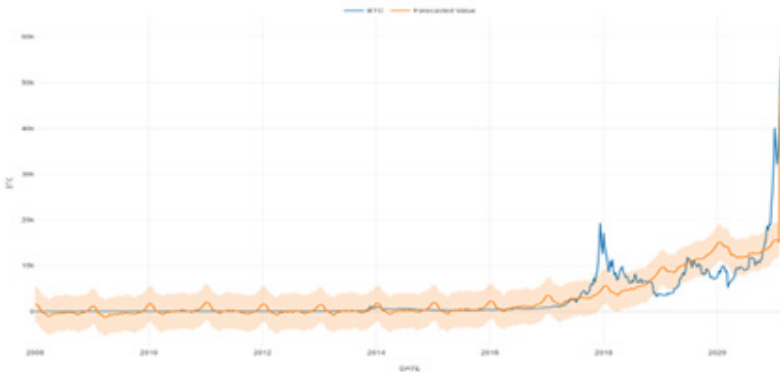


Figure 8. Bitcoin Prediction with USA M2 Money Stock

Figure 8 shows the price graph of Bitcoin created by adding the US money supply to the model. When the model is estimated with Bitcoin data, the RMSE and MAE values are 3938,36 and 1840,20, respectively. After the model was created, the US money supply was added to the model. Thereupon, the RMSE and MAE values were 3043.68 and 1492.27, respectively. Accordingly, when the money supply is added to the model estimated by Facebook Prophet Algorithm, an improvement of 22.72% in the RMSE value and 18.91% in the MAE value is observed in the model.

5. Conclusion

The crisis that started in the USA in 2007 has made itself felt throughout the world, especially in the partner countries of the USA and then to the partners of these partner countries. Although the expansionary monetary policy practices implemented by the United States in 2008 within the framework of its own efforts to exit the crisis created revival effects in the financial markets in the country as well as in countries with a high degree of relationship, the investment tool and / or safe harbor element, which is described as transnational, led to dynamism in gold and similar commodity prices. It is a phenomenon that is strongly expected to cause. Based on the situation expressed as the spreading and contagion effects of crises, the steps taken to overcome the crises can also create a similar positive climate. However, another reflection of excessive monetization is that it can be thought to be triggered by the derivation of new money and/or financial instruments in terms of protection from inflation and a new investment instrument. In this context, it can be thought that the emergence of cryptocurrencies is a

reflection of the search for trust against excessive monetization and inflation that will arise due to this, as well as the presence of uncertainty in these innovative coins triggering them to be seen as a speculative investment tool.

In this study, it has been determined that with the monetization in the USA, its internal reflections will have spillover effects on the S&P500 index, and it has a global spillover effect by triggering the gold orientation against the possible inflationary environment created by monetization on a global scale. However, it is noteworthy that the structure seen in cryptocurrencies was effected from monetization bigger than expected. Therefore, while the presence of reflections on internal and external contamination caused by expansionary applications due to globalization was caught, it was observed that the effects of this were ranked as S&P500, gold and Bitcoin, from the weakest to the strongest. It is observed that the safe-haven property of gold is less affected by monetization compared to its past trend and it has been determined that the monetization is a great importance of Bitcoin value.

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CHAPTER 12

WHAT DO WE KNOW ABOUT BRAND SYMBOLISM?

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1. Introduction

The echo of symbolism has stimulated researchers and marketers to study the causes and effects of brand symbolism (e.g., Anisimova, 2016; Dalal & Aljarah, 2021; Jian, Zhou, & Zhou, 2019). The concepts of animism, materialism, and symbolism have paved the way for markets and brands in the globalization era (e.g., Fournier, 1998; Levy, 1959; Richins, 2004). Millions of dollars are spent each year by organizations in building and marketing the symbolism and image of their brands to maintain and develop their market share through current and potential customers (Bhat and Reddy 1998). Brand symbolism posits that the consumer believes that the purchasing and consumption of products and services are considered to be symbolically extended self on the individual level and collective level (Belk 1988). The symbolic brand act as such cues, enhancing the accessibility of the consumer's objective to fit with the community and represents the extent to which a brand represents the identity of customer (Bernritter, Loermans, et al. 2016). Philosophers and psychologists have been trying to form a theory of symbolism, but researchers and philosophers of marketing and management haven't yet established a theoretical and empirical argument that studies the interrelationship between brand symbolism and some important aspect of consumer behaviors. Therefore, this chapter supports the notion that brand symbolism is an important component of the consumer-brand

relationship. It also argues what have been said in the literature on the significant effect on brand symbolism on consumer favorable responses such as purchase intention, customer citizenship behavior, brand loyalty. More precisely, our aim in this chapter is to bring light to brand symbolism and summarize what empirically-minded scholars know about it. Needless to say, not all of us know the same thing, and some of us know more than others. There is, however, a fairly solid core of knowledge about brand symbolism which we think is shared by most empirically-minded scholars. We propose to proceed in three sections. In section 2, we discuss the concept of brand symbolism. This is followed in Section 3 by discussing the consequences of brand symbolism on consumer behavior. Section 4 is devoted to providing some suggestions for future studies. Section 5 is the conclusion.

2. The literature review about brand symbolism

A grown number of studies have been conducted in the era of brand symbolism giving the importance of this concept (Anisimova 2016; Bernritter, Loermans, et al. 2016). Brand symbolism has been defined by several studies. For instance, the study of Tsai (2005) defined brand symbolism as a concept the “*is related to how the consumer evaluates the product’s brand name in terms of the valence assigned to the brand’s reputation and its capability for self-expression*”. While the study of Morhart, Malär, Guèvremont, Girardin, and Grohmann (2013) defined brand symbolism as the ability of a brand to serve as a resource for identity construction by providing self-referential cues representing values, roles, and relationships. While the study of Schmitt (2012) referred to the symbolic brands as the brands that signify the individual self, group, society and culture. The study of Park, Jaworski, and MacInnis (1986) define symbolic needs as desires or wishes for brands that accomplish internal consumer needs for self-image or self-concept, membership or desired group and position role. Table 1. Summaries some definitions that has been suggested by scholars for brand symbolism. In the realm of symbolism era, many important theories have illuminated the horizon of consumers-products relationship, through melting the psychological and sociological dimensions such as self-image/product-image congruity theory (Sirgy 1982), symbolic interactionism theory (Kleine, Kleine, and Kernan 1993), social identity theory (Tajfel 1979) and consumer culture theory (Arnould & Thompson, 2005). These previous theories focused on the experiential dimensions of consumers’ consumption, including issues such as brand symbolism, brand meanings, consumers’ identity, and the symbolic perspective of possessions. Hence, symbolism represents the potentiality of a brand, as it considers important resources of construction to culture, values, quality, interrelationships, and self-identity. Brand symbolism has been divided

into two dimensions; namely: self-symbolism and social-symbolism (Elliott and Wattanasuwan 1998). Self-symbolism refers to when a product provides meaning to the association of an individual's buying behavior with his/her self-concept, whereas social symbolism refers to when a product is to serve as a symbolic communicative purpose, where it achieve social recognition, and the meaning associated with the product be clearly established and understood by related segments of society (Grathwohl 1967).

Table 1. Definitions of brand symbolism

Source	Definition
(Tsai 2005)	<i>Brand symbolism is related to how the consumer evaluates the product's brand name in terms of the valence assigned to the brand's reputation and its capability for self-expression.</i>
(Leigh and Gabel 1992)	<i>Brand symbolism is based on the premise that individuals interact with society at large and with reference groups to determine how behavior should be structured.</i>
(Schmitt 2012)	<i>Brand symbolism is used to signify individual selves, represent a group, a society, or culture.</i>
(Elliott and Wattanasuwan 1998)	<i>Brand symbolism represents the potentiality of a brand, as it considers important resources of construction to culture, values, quality, interrelationships, and self-identity, therefore brand symbolism has two dimensions: social symbolism and self-symbolism</i>
(Park et al., 1986)	<i>Symbolic needs are defined as desires for products that fulfill internally generated needs for self-enhancement, role position, group membership, or ego-identification.</i>
(Solomon 1983)	<i>Consumers employ brand symbolism to define social reality and to ensure that behaviors appropriate to that reality will ensue.</i>
(Belk 1988)	<i>Brand symbolism suggests that the consumer believes that the purchasing and consumption of products and services considered to be symbolically extended self on the individual level and collective level</i>
(Keller 1993)	<i>Symbolic benefits are the more extrinsic advantages of product or service consumption. They usually correspond to non-product-related attributes and relate to underlying needs for social approval or personal expression and outer-directed self-esteem.</i>
(Escalas and Bettman 2005)	<i>Consumers appropriate the meaning of brands as they construct their self-identities, particularly brand meaning that arises from reference group use and nonuse of brands.</i>
(Morhart et al. 2013)	<i>Brand symbolism is defined as a brand's potential to serve as a resource for identity construction by providing self-referential cues representing values, roles, and relationships. In other words, symbolism reflects the symbolic quality of the brand that consumers can use to define who they are or who they are not.</i>

3. The consequences of brand symbolism on consumer behavior

3.1. The impact of brand symbolism on purchase intention

Consumer purchase intention is viewed as a subjective inclination toward a product or brand and can be an important symbol to predict consumer behavior (Fishbein and Ajzen 1975). The brand represents symbols of consumption; it carries a culture's values and beliefs, and it has physical and utilitarian aspects (Aaker, Benet-Martínez, & Garolera, 2001). Consumers build their ideology of consumption according to judgment their social relationships and the objects (goods) they own, which give meaning to their life (Schouten and McAlexander 1995). Escalas & Bettman (2005) posit that the consumers purchase brands to form their self-brand connections, and considering that the reference groups represent a source of brand meaning. Symbolic benefits represent the more extrinsic consumption advantages of the product or service and relate to underlying needs for self-esteem and social approval (Keller, 1993). Moreover, Salinas, Gutierrez, & Pina (2004) claimed that brand symbolism represents a very valuable asset for companies.

Literature on the sociology of consumption (e.g., Dittmar, 1993), and symbolic of consumer behavior (e.g., Schouten & McAlexander, 1995) explains the significant interrelationship between consumers' symbolic needs and their consumptions of products and services. Scholars and researchers consider that the brands' ads are designed on the attitude models; the interest is on the functional brand attributes instead of symbolic attributes, whereas posteriorly they have realized that brands' symbolism is considered important indicator of purchase motivation (Sirgy 2015). Importantly, Morhart et al. (2015) claimed that brand symbolism represents a key component of perceived brand authenticity, where it gives meaning to consumers' lives, reflects consumers' values, and attaches consumers with their brands. Meanwhile, Csikszentmihalyi & Halton (1981) considered the emotion and sensation that things trigger represents an interpretation of a human's attitude, where objects are chosen to reflect the power and the position of the bearer. Moreover, Levy (1959) revealed, from consumer behavior literature and symbolic purchasing, that the symbolic meaning of the product motivates purchase decisions.

3.2. The impact of brand symbolism on customer citizenship behavior

Customer citizenship behavior refers to helpful and discretionary behaviors of customers that support the ability of the organization to deliver service quality (Bettencourt 1997). Consumers who have attached to a brand will

be more likely to move from an egocentric to reciprocal state within a brand relationship (Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010). In the hospitality and service context literature, the brand image concept has been widely used as an umbrella to the sub-concept “brand symbolism”, where many studies have supported the thought that brand symbolism is an important component of the hospitality brand image concept (B Dalal and Aljarah 2021). Scholars have tied brand, in its larger domains, to consumer behavior and customer citizenship behavior (Belén del Río, Rodolfo Vázquez, 2001; Gilde, Pace, Pervan, & Strong, 2011; Xie, Poon, & Zhang, 2017). Two schools of thought affect the decision of consumer behavior: the first school is the “Rational School”, where consumers’ needs are driven by utilitarian motivations, meanwhile, the second school is the “Emotional School”, where consumers’ needs are driven by symbolic motivations (Bhat and Reddy 1998). Solomon (1983) indicated that consumers appeal to brand symbolism to manifest their social acceptance. If the producer or marketer realizes that he is marketing symbols as well as products, then his/her view will be holistic and complete (Levy 1959). Some researchers focus on the causality interrelation between customer-brand, such as *The Ties That Bind* (Thompson, MacInnis, and Park 2005); brand personality (Aaker, 1997); *Why Does This Brand Speak to Me?* (Guèvremont, Durif, and Grappe 2020). Other researchers examine the interpose role of brand symbolism, such as its mediating role (Solomon 1983). Moreover, there is a study that investigates the causes of brand symbolism, including the effect of brand attachment on Customer Citizenship Behaviors (Cheng et al. 2016).

In the hospitality and service context, building a strong brand for a hospitality firm is crucial given the intangibility of hospitality services and the perception of the quality of hotel services (Martínez and Bosque 2013). Jeong, Jang, Day, & Ha (2014) indicated that brand image and symbolism represents the main factor that affecting the restaurant sector. Thus, brand symbolism plays an important role in the consumer’s evaluation where it motives and enhances the consumers into two directions: to express their self-identity and to satisfy their social role (Guèvremont et al. 2020). Meanwhile, C. Whan Park, Milberg, & Lawson (1991) claimed that a positive evaluation of consumers toward the brand comes basically from their positive evaluation of brand symbolic associative. Therefore, the findings of Dalal & Aljarah (2021) revealed that brand symbolism has a significant positive impact on customer citizenship behavior and consider as a stronger predictor of policing other customers than helping other customers in the hospitality context.

3.3. The impact of brand symbolism on customer loyalty

Loyalty can be defined as the attachment or feelings of a customer toward a brand and/or company (Jain et al. 2018; Kotler and Gertner 2002). Loyalty has been addressed in literature either as attitudinal loyalty (Su, Pan, and Chen 2017) or encompassed behavioral loyalty and attitudinal loyalty (Aljarah and Ibrahim 2020; Ibrahim and Aljarah 2018). Many scholars have suggested that brand symbolism is essential for building longer-lasting, stronger, and more stable customer–brand relationships (e.g., Bassam Dalal & Aljarah, 2021; Ho Han, Ekinci, Steve Chen, & Kyeong Park, 2019; Maia Bairrada, Coelho, & Coelho, 2017). In service literature, Anisimova (2016) insisted that corporate brand symbolism plays a significant role in enhancing customer-brand relationships, such as consumer satisfaction and loyalty. Carroll and Ahuvia (2006) study found that satisfied customers’ affection is greater for brands in product categories perceived as posing symbolic benefits. Furthermore, in the tourism context, Ekinci, Sirakaya, and Preciado (2013) claimed that three dimensions of symbolic tourism destination brand—self-congruence, brand identification, and lifestyle-congruence affect destination brand loyalty. Moreover, Papadimitriou, Apostolopoulou, and Kaplanidou (2013) found that brand image was strongly affected by the affective dispositions and symbolic meanings (i.e., destination personality) in the Domestic Urban Tourism context. Hospitality marketers have also recognized the importance of building their symbolic brand values as an effective strategy to enables a strong relationship between customers and companies and generates a positive attitude on the part of the customer (Bassam Dalal and Aljarah 2021; Ekinci et al. 2013). Thus, hospitality businesses need to develop a strong symbolic image that evokes positive feelings and add value to brands by helping to develop brand loyalty (Ho Han et al. 2019).

4. Suggestions for future studies

4.1. Brand symbolism and brand evangelism

Brand evangelism is voluntary behavior that involves not only purchasing a product from a specific brand but also is a religious-like fervor to promote a brand and convince others to purchase from the brand (Hsu 2018). The study of Matzler, Pichler, and Hemetsberger, (2007, p. 27) defined brand evangelism as “a more active and committed way of spreading positive opinions and trying fervently to convince or persuade others to get engaged with the same brand”. It has been considered as an overall behavior that includes brand purchase intention, positive brand referral, and oppositional brand referral (Becerra and

Badrinarayanan 2013), brand defense, and brand advocacy (Harrigan, Roy, and Chen 2020). Several studies have argued that brand evangelism results from a high level of identification between customer and brand (Becerra and Badrinarayanan 2013), which, in turn, is considered as one of the consequences of brand symbolism (Elliott and Wattanasuwan 1998). Those relations hint at the possibility of a positive relationship between brand symbolism and brand evangelism through the mediation effect of customer-company identification. Until now, no efforts have been devoted to the literature to investigate this relation. Those future studies may investigate brand evangelism as one of the consequences of brand symbolism.

4.2. Brand symbolism and online brand endorsement

The online brand endorsement has been considered a new phenomenon that has been quite understudied (Bernritter, Verlegh, and Smit 2016). Recent studies have shown that brand symbolism plays a critical role in enhancing customers' online brand endorsement (Bernritter, Loermans, et al. 2016). Yet, the underlying mechanism of how and under what conditions brand symbolism affect online brand endorsement is still untapped. Future studies should further new insights into this matter.

5. Conclusion

In conclusion, it is hoped that his chapter provides insightful knowledge about brand symbolism, enabling a better understanding of the nature of brand symbolism and how it affects consumer behavior.

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CHAPTER 13

THE NECESSITY OF SUSTAINABLE MARKETING AND SOCIOECONOMICS OF GLOBAL FOOD CRISIS

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*“We live in an age when
unnecessary things are our only necessities.”*

Oscar Wilde

1. Introduction

The scarcity of resources challenge humans from the earliest times and it is still a question whether mankind will ever overcome dearth, if for no other reason than endless human needs and wants (Backer and Saren, 2010). Maslow (1943) defines human needs in his famous hierarchy in five stages. He formulates his theory of motivation starting with (1) The physiological needs as hunger, sexual activity, thirst, sleepiness etc. Afterwards, he describes (2) the safety needs, (3) the love needs, (4) the esteem needs and (5) the need for self-actualization which occur one after the previous need is relatively well gratified. In our paper as we focus on food scarcity, the first stage of the motivation hierarchy gives us an insight to understand the hungry man. As Maslow (1943) describes:

“The urge to write poetry, the desire to acquire an automobile, the interest in American history [intellectual], the desire for a new pair of shoes is, in the extreme case, forgotten or become of secondary importance. For the man who is extremely and dangerously hungry,

no other interests exist but food. He dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food, and he wants only food (p.5)."

Far beyond Maslow's hierarchy of human needs there is human wants which are defined as endless in economic theory. After the Industrial Revolution there were mass production in a variety of goods and there was a fiercer competition environment between producers. There were consumers who demanded more, along with producers trying to please consumers. Consumerism was the engine for economic growth. As a bad result, climate problems occurred which leads the aridness and shortage of food.

Despite of massive production of all kinds of goods, food crises is a major problem for underdeveloped countries like Yemen, Sudan, Madagascar, Chad, and Central Africa. According to World Food Programme 690 million people around the world -over 80 countries- go to bed on an empty stomach every day¹. While Hunger is still one the biggest - and most solvable - problems in the world the solution can be achieved with obtaining and maintaining sustainable behavior in a consumeristic society which requires sustainable marketing idea and understanding socioeconomics of nutrition.

In this paper, firstly we focus on overpopulation, climate change and consumerism problems suggesting the solution as new governmental policies, individual responsibility to make pro-environmental behaviors into habits and use the technologies to increase fertility mother earth to achieve food security which means having reliable access to a necessary quantity of affordable, healthy food. The main focus of the paper is the socioeconomics of food crises and necessity of adopting sustainable production and consumption.

2. Key Components Effects Agriculture and Production

2.1. Overpopulation and Climate Change

World population was about 5.3 billion in 1990 and has increased by 2.4 billion people in the last 30 years, to 7.7 billion in 2020. The population growth rates have slowed from 1,74 to 1,05 over this time but, the human population is increasing by a further 81-82 million people per year².

¹ World Food Programme (2021). https://www.wfp.org/support-us/stories/donate?utm_source=google&utm_medium=cpc&utm_campaign=12712293304&utm_content=120989103735&gclid=CjwKCAjwuvvmHBhAxEiwAWAYj-AKBy60IzD62gtMRWbTTgqvO3vKxVkJbLqZt13RR__5YHpCnTevv3hoC5lMQAvD_BwE&gclsrc=aw.ds

² World Population by Year <https://www.worldometers.info/world-population/world-population-by-year/>

On World Population cartogram made by Roser (2018), each square represents five thousand people of population of a country. 13 countries in the world are populated by more than 100 million people which represent the 62% of world population.



Image 1: World Population in 2018

Source: Max Roser, 2018, The map we need if we want to think about how global living conditions are changing, <https://ourworldindata.org/world-population-growth#how-is-the-global-population-distributed-across-the-world>

In his famous work, *An Essay on the Principle of Population*, Thomas Malthus (1798) formulates the famine and war as a balance tool of overpopulation. He states:

“Assuming then my postulata as granted, I say, that the power of population is indefinitely greater than the power in the earth to produce subsistence for man. Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. ... By that law of our nature which makes food necessary to the life of man, the effects of these two unequal powers must be kept equal. This implies a strong and constantly operating check on population from the difficulty of subsistence. This difficulty must fall somewhere and must necessarily be severely felt by a large portion of mankind (p.4-5).”

Malthusian point of view implies that overpopulation causes famine which is a solution by mother nature to balance the population. Additionally, He claims that wars are the other balance tool for overpopulation. A tool *“leveling the population with the food of the World which lowering the birth rates and increasing the death rates”*.

“The absolute population at any one period, in proportion to the extent of territory, could never be great, on account of the unproductive nature of some of the regions occupied; but there appears to have been a most rapid succession of human beings, and as fast as some were mowed down by the scythe of war or of famine, others rose in increased numbers to supply their place. Among these bold and improvident Barbarians, population was probably but little checked, as in modern states, from a fear of future difficulties. A prevailing hope of bettering their condition by change of place, a constant expectation of plunder, a power even, if distressed, of selling their children as slaves, added to the natural carelessness of the barbaric character, all conspired to raise a population which remained to be repressed afterwards by famine or war (p.15).”

With all due respect to Malthusian theory, in our point of view, famine is a global, political, and economic problem linked to climate change and consumerism beside overpopulation. Apart from the balancing tool of mother nature, it is necessary to deal with the issue politically and economically, to reduce consumption and produce sustainable solutions by taking the correct responsibility of societies and individuals on climate change and food security.

Over population and climate change a substantial danger to supply and security of food worldwide, also, affects water use. Sustainability of production and distribution of food are directly related to management of population and water usage which have a vital importance on agriculture, human health, industrial production, and energy. Improvement of food production and reduction of consumption are crucial for the next 15 years to encounter the needs of an additional 1,1 billion individuals. According to Food and Agriculture Organization (FAO) of the United Nations, at the global level, agrarian production will continue to increase satisfactorily to meet the additional demand expected till 2050³. Table.1 shows World population by continent and predictions for 2035 and 2050.

³ Population Division of the Department of Economic and Social Affairs (2015, p.33-34).

Table 1. World Population 2021 and Predictions for 2035 and 2050

	Population (millions)		
	mid-2021	mid-2035	mid-2050
WORLD	7,837	8,848	9,688
AFRICA	1,373	1,890	2,259
Northern Africa	248	301	348
Sub-Saharan Africa	1,125	1,589	2,181
AMERICAS	1,027	1,120	1,174
Northern America	371	396	412
Latin American and Caribbean	656	725	762
ASIA	4,651	5,043	5,192
Western Asia	284	345	391
Central Asia	76	90	102
South Asia	1,969	2,244	2,488
Southeast Asia	671	743	786
East Asia	1,650	1,622	1,485
EUROPE	744	742	731
OCENIA	43	53	62

Source: Evaluated from 2021 World Population Data Sheet, <https://interactives.prb.org/2021-wpds/wp-content/uploads/2021/08/print-at-home-2021-world-population-data-sheet.pdf>

Food security will, yet stay as a challenge at the local, household, and individual levels, particularly in countries categorized by determined scarcity. For instance, the most agriculture dependent countries in the world are in Africa. Those countries' populations and economies depend on farming. Men share the 54 percent of the employment in farming in Sub-Saharan while women share 55 percent in 2018. The total employment has been declining over the last decade. In 2000, men were sharing 60 percent and women 64 percent. Employment dividends are lower in North Africa and have been decreasing. Lots of the countries in Africa have restricted resources to prevent or adapt to climate change. Also, Africa has the fastest population growth worldwide. It hardens to recover from climate change's consequences like food shortage and access to basic needs (Ringler and Rosegrant, 2020).

2.2. *Consumption and Waste*

Consumption is a process of consuming products to satisfy human needs and wants (Salonen et al., 2014, p.59) starts with the recognition of needs and wants which follows with appraisal of alternatives, purchasing and use that may cause environmental and social sustainability (Milfont and Markowitz, 2016).

Kotler and Armstrong (2012) underline the effects on consumer purchases as cultural, social, personal, and psychological features. Also, Veblen (1899, p.22) argues that increase of the population and complexity of social relations are parallel. With the complexity details of life multiplies and go through a process of refinement and selection. In this elaboration process, the use of trophies evolves into a system of ranks, titles, degrees, and insignia, typical examples of which are heraldic instruments, medals, and honorary insignias. In the most general sense, consumption means satisfying needs which gives pleasure when fulfilled if the opposite it gives pain (Dolu, 1993, p. 21; Firat et al., 2013, p. 183). According to Veblenian point of view consumption becomes an expression of the relation of status, which are symbols differ between social classes (Veblen, 1899, p. 22-171). Marx (1971) defines the consumption as equals to production which serves the aims of capitalism that creates an increasing spiral of needs. As a result, consumption is a direct expression of social scale and revenue (Ricci and et al, 2016, p. 396).

Baudrillard (2015, p. 15-16) associates the consumption with abundance. He speaks of a transcendence of consumption that alienates people from themselves with the proliferation of objects, services, and material goods around them. Moreover, He (2006, p. 94) states that in the consumption society, individuals move away from questioning the main purpose of their consumption, and they use consumption as a tool by getting rid of their existential concerns.

As a matter of fact, when Bauman (2018) says “waste is the shameful secret of production”, he means that waste generation is inevitable for the continuation of (unnecessary) production and wastes that occur after (unnecessary) consumption (Bauman, 2018, p. 41). The daily products people use are a come out of a process involves finding resources, production, consumption, and waste management. According to Cambridge Dictionary waste is “a substance of no value or use that is made during a process in which something useful is produced”. Hoornweg and Bhada-Tata (2012, p.3) defines waste as “mainly a by-product of consumer-based lifestyles that drive much of the world’s economies”. By-product is defined as “something that is produced as a result of making something else, or something unexpected that happens as a result of something” (Cambridge Dictionary). In this sense, waste is a consequence of production and “the best

way to reduce it is to reduce economic activity” (Hoornweg and Bhada-Tata, 2012, p.3) which produce goods and services of consumption leads to waste.

Zukin and Maguire (2004, p.176) argues that in the 1970s and early 1980s the more developed economies shifted from manufacturing to postindustrial production and the consumption which leads to landscape destruction became more visible. As consequences of urban lifestyle based on resource intensive production and consumerism solid-waste is the most observable and destructive by-product along with greenhouse gas emissions, water pollution and endocrine disruptors (Hoornweg and Bhada-Tata, 2012, p.3). Also, dioxins are one of the most harmful by-products of industrial process. It is a broad group of chemicals. The four main industrial activities are the formation of dioxin; (1) In combustion units, (2) Due to the use of active chlorine in pulp bleaching in the paper industry (3) PVC is the chemical manufacture of commercial products containing chlorine, such as chlorinated solutions, painted stickers, and pesticides, (4) industrial structures such as metal separations, refineries, cement kilns (Hismisogullari et al., 2012, p. 23). Dioxins are environmental pollutants causes many problems for human body. They absorb by fat tissue and affects organs and systems. In food chain, dioxins tend to pile up more as an animal processed more (WHO, 2016).

3. Necessity of Sustainable Consumption

The term of sustainability refers sustainable development, social sustainability, environmental sustainability, sustainable living, sustainable future etc. (Kopnina and Shoreman-Ouimet, 2015, p. 3). It is the ability of a system to constantly renew itself in order to continue its life (Onaran, 2014, p. 1). In our case, planet earth’s natural renewal system is damaged by the human activities. Production and consumption generate by-products and pollution that are harmful the ecological system. To defeat the effects of production and consumption not only the consumers but governments, corporations and organizations need to take responsibility. Consumption is one of the dynamics of keeping the community for which the government is responsible (Fındıklı & Saygın, 2020, p.124). In the linear source-dependent production system it is inevitable to encounter environmentally problems. Sustainable consumption must be started with sustainable production to lead sustainable development.

Sustainable consumption is discussed as a new area giving the attention to environmental concerns linked to economic and social development for international organizations like United Nations (UN), World Health Organization (WHO) and The Food and Agriculture Organization (FAO). In the

1960s, consumer protection movement starts in Europe and North America and issue becomes an international concern in 1970s. In 1974, UN established a commission to create a code of conduct for international businesses. Also, WHO and FAO prepared a guideline to formulate the standards and codes of practice on food commodities in the field of food safety. The guideline was aiming to encourage consumer to participate in all kinds of decision making related to food safety as the quality, labelling, advertising etc. More attention is given to sustainable consumptions since 1985 (UN, 1998).

Governmental policies are based on regulations and taxes to intercept unsustainable industrial production practices. To restrict the negative consequences of unsustainable production on environment and social factors is important as creating markets for sustainable goods and products. Government tools as standards, regulations, taxes, subsidies, communication campaign, education etc. are important to encourage sustainable production. Also, governmental tools can aim policies to consumer groups based on better understanding of social and economic behavior and underline the need for more connected programs as well as institutionalization of sustainable consumption in sustainable development policies (OECD, 2008, p. 7).

In Oslo Symposium (1994), sustainable consumption and production is defines as aiming to protect natural resources for future generations by minimizing the use of them and diminish toxic materials, gas emissions, waste, and pollutants throughout the life cycle while consuming/producing goods and services that meet the basic needs and increase the quality of life (Caeiro et al., 2012, p. 72; UN, 2021). Sustainable products are produced for the consumption of households and governments with environmentally and socially have the sustainable characteristics which considering lessen the pollution, waste, resource use, and redound health, and welfare they represent (UN, 2021).

Williams and Dair (2007, p. 161-162) argue that sustainable neighborhood developments depend on two main aspects: (1) technical sustainability, (2) behavioral sustainability. When technically sustainable built environment intersects with sustainable behavior not reliant on the built environment, behavioral sustainability is supported or enabled by the built environment. For instance, “providing cycle paths and pedestrian routes can encourage people to walk and cycle rather than drive their cars and providing neighborhood recycling facilities can encourage people to recycle their household waste”.

The governmental efforts for sustainability can be identify with technical sustainability and behavioral sustainability is emerges and supported by these initiatives. When consumers, as citizens, make purchase choices regarding

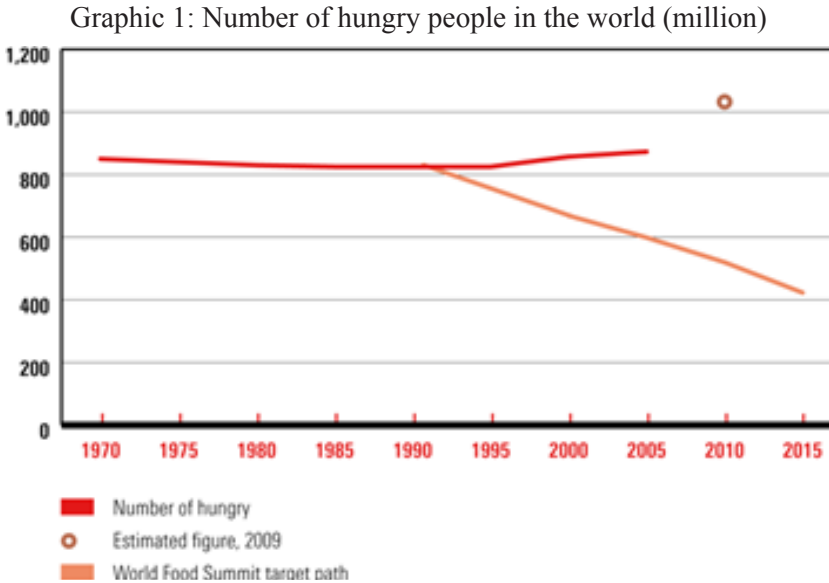
sustainable development (Ricci et al., 2015, p. 397) and there are three main types of consumer-citizens putting the focus on environmental concerns: (1) ecological citizenship, (2) political consumerism, and (3) life (style) politics (Spaargaren and Oosterveer, 2010, p. 1888).

- (1) Ecological citizenship refers consumer-citizens who behave sustainably in both public and private contour of the market along with public debate and the publicly defines roles for citizens in sustainable development. Green consumption and behavioral and habitual changes are considered as the items of ecological citizenship (: p. 1891).
- (2) Political consumerism refers the role of consumers as agents of change in the context of using their buying power to enforce providers of products and services with their ethical and political preferences (: p. 1892-1894).
- (3) Life (style) politics represents a micro-level of consumption being held in everyday lives as eating food, wearing clothes, and driving a car. It is about civil society actors and dynamics of change beyond the state and markets. It is linked to morals and choices of consumer-citizens in a daily basis (: p. 1894-1895).

In due respect the sustainability is a global issue, all three types of consumer-citizens represent the choses of every man effects a bigger system affects everyone on the globe with sustainable behavior. Global (environmental) change is expected (: p. 1890).

4. Socioeconomics of Global Food Crises

McMichael (2009, p. 32) argues that hunger and food crises are the subsequences of a long-term crisis of reproduction stemming from colonialism and neoliberalist capitalist development as the colonies were converted into supply zones of food and raw materials. In 2007, rising prices jumped to a further 75 million people under the malnutrition doorstep. According to FAO (2008) and von Braun (2008), the number of malnourished people increased from approx. 848 million to 923 million, mainly because of the food-price catastrophe worldwide between 2003 and 2008. The global wheat and maize prices tripled, rice prices raised fivefold between 2005 and summer of 2008. Poor people characteristically devote 50–70% of their income on nutrition. Their incomes did not adjust to balance for their lessening buying power (FAO, 2008; von Braun, 2008, p. 701).



Source: FAO, 2009; C. Golay, 2010.

Golay (2010) explains the growing numbers of hungry people between 2007 and 2009 by two major causes: (1) “the abandonment of policies in favor of smallholder farmers over the past 30 years” and (2) “the extreme poverty in the cities of developing countries”. He argues that countries concerned are dependent on the food imports could have replaced it with local produced ones. On the other hand, the poorest households were devoting 60-80% of their income to food before the crisis. This proportion of their incomes which they allotted for food rose in 2007 and 2008, hence, they reduced other expenditures, specifically on health and education. Approximately in 40 countries in the spring of 2008, hunger riots took place including countries as Burkina Faso, Cameroon, Côte d’Ivoire, Egypt, Ethiopia, Haiti, Indonesia, Madagascar, and Senegal.

By 2050, the world economy is projected to fourfold and the global population to grow over 9.2 billion that place on the earth’s material and energy resources and the environment. More food, more industrial products, more energy, and more water are required by a higher population with higher income levels. This possesses challenging situation for sustainable economic and environmental development. For example, from 1980 to 2008, the need of agricultural biomass and increased by half due to changes in income level of a bigger population preferring meat consumption. As the income levels increase people changes their dietary habits and more biomass needed to cope the production for a meat-based nutrition than a vegetarian diet (OECD, 2015).

Food is a human right and the fundamental need for human survival. With the responsibility of feeding their people, governments must end the hunger and encourage the farmers to use sustainable agriculture techniques, to develop urban gardens, reform a whole support system for farmers that enhance the environment (Magdoff, 2008). Also, encouraging consumers to consume more sustainably. Thøgersen (2010, p. 172) suggests the most effective ways for consumers to increase sustainable food consumption: (1) reducing the amount of meat in their diet, (2) buying organic food which locally produced, (3) avoiding food products transported overseas.

The importance of green products hence been underlined. Green products are the ones domestically cultivated rather than imported from other countries. They are organic, seasonal, fresh, and not wrapped. Also, green products are produced sweat-free, and they support fair trade (Tanner and Wölfling Kast, 2003, p. 883).

5. Conclusion

The main solution seems to lie in the promoting and expansion of sustainable consumption. Along with the criticism of the consumption society, environmental problems make it a functional necessity to change the aforementioned social life which brings up the concept of sustainable consumption. Production and consumption come to a sense that are necessary for human life. Especially food is the basic need to human existence. While industrialization causes climate change and pollution, waste management is limited by collection which leads to harm the agricultural land. Also, conversion of undeveloped countries to food production places by developed countries is another vital problem for worldwide food shortage. When people are hungry, they are less able to enjoy life and more suitable for diseases caused by weak immune system and environmental stresses.

Environmental problems as global warming, water, soil, and air pollution, extinction of animal species, melting icebergs, and farmland erosion caused by unsustainable production and consumption. Along with environmental problems listed, overpopulation and climate change have significant impacts on food security. Therefore, sustainable consumption, ecological footprint and food security are main concerns of the recent times. Nevertheless, sustainable development appears to be the only solution under human control. To encourage green goods' consumption, zero waste applications, closed loop production, renewable energies and supporting local leaving economies are crucial.

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CHAPTER 14

SECTOR-BASED EFFECTS OF COVID-19 PANDEMIC IN TURKEY: AN EVENT STUDY ANALYSIS OF THE STOCK MARKET SECTOR INDICES

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1. Introduction

Coronavirus pandemic (covid-19) has infected over 240 million people globally with over 4.8 million fatalities (John Hopkins Coronavirus Resource Center [JHCRC], 2021) by the end of October 2021. The spread of covid-19 started in Wuhan city in China and has gradually reached other countries across the world. The covid-19 epicenters shifted throughout the year starting with China and followed by Europe, the USA, Brazil, and India. At the time of writing, the USA has the most infections globally with 19% of the confirmed cases (Worldometer, 2021). The disruption caused by covid-19 is not limited to individual health due to its ability to spread fast and kill in huge numbers. Lockdowns, social distancing, and other measures implemented by countries at various degrees have dramatically changed how people live, work, and interact with each other.

Vaccines are crucial for bringing the pandemic under control. By October 2021, 6.4 million doses of vaccines have been administered (JHCRC, 2021). With the development of various covid-19 vaccines, financial market indices greatly recovered from losses in March and April 2020. International oil prices reached pre-pandemic levels in late February 2021, the pressure on the US dollar eased

and labor markets seem to be stabilizing in most of the countries (Federation of American Scientist, FAS, 2021). Despite these positive developments, the emergence of the new mutations of coronavirus increased the concerns that the normalizations will not be possible in the short term.

In this study, we aim to analyze the sector-based impact of the pandemic on Borsa Istanbul by employing the event study analysis to examine the impacts of four events on 27 sector indices of Borsa Istanbul. We selected four events to compare the impact of each event during the pandemic. First event date is 11 March 2020, declaration of the pandemic and the first observed case in Turkey. Second event date is 1 June 2020, when the travel restrictions were removed and the start of the loosening of the other measures which were announced on the 28th of May. Third event date is 17 November 2020, when the new measures were announced and a second partial lock-down started. Fourth event date is 13 January 2021, on which the first vaccine was administered in Turkey. Although the impacts of the outbreak of the pandemic on 11 March 2020 on stock market have been analyzed by a few studies, the other events are not analyzed. We are contributing to the existing literature by analyzing the impacts of the important stages of the pandemic on stock market sector indices.

This paper is organized as follows. Section 2 presents an overview of the economic impacts of the covid-19 pandemic in Turkey and Section 3 describes the methodology used in this study. Section 4 presents the results of the event studies. The findings are discussed in Section 5.

2. Literature Review

The literature on the economic consequences of covid-19 pandemic has emerged rapidly since the second quarter of 2020 and it is already vast and diversified. Padhan and Prabheesh (2021) gives a summary of the existing literature and suggests a coordination among monetary, macroprudential and fiscal policies. Brodeur et al. (2021) also surveys the literature and summarizes the findings.

Goodell (2020) states that the impacts of Covid-19 on financial markets have a wider range compared to other pandemics. Also, stock markets all over the world were adversely affected by the covid-19 pandemic at a scale without precedence. Baker et. al. (2020) pointed that no other pandemic, including the Spanish flu (1957-58), the Bird Flu (H5N1), SARS (severe acute respiratory syndrome), the Swine Flu (H1N1), MERS (Middle Eastern

Respiratory Syndrome)/Ebola, affected stock markets this hard. Researchers evaluate the impact of coronavirus on stock markets in different aspects. Davis, Liu, and Sheng (2020) investigated the stock prices and workplace mobility. They found that the pandemic had greater effects on stock market levels and volatilities in the U.S. than in China. Phan and Narayan (2020) investigated how stock price reacted at the different stages of the pandemic and argued that as with any unexpected news, markets over-reacted at the beginning. As uncertainty decreases and more information becomes available, and people understand the ramifications more broadly, the markets correct themselves. Adekoya and Nti (2020) evaluated the effect of covid-19 on major stock indices in different countries using Machine Learning methods. They concluded that covid-19 can influence the World economy in both the short and the long term. Gormsen and Koijen (2020) found that the coronavirus would have a major impact on the stock markets and annual growth. Sansa (2020) also investigated the impact of the covid-19 on the stock markets in China and the USA. Simsek and Ozkan (2020) examined the time-varying impact of the covid-19 on stock market returns by employing the bootstrap rolling window causality test for France, Germany, Italy, Spain, the United Kingdom, and the United States.

Liu et. al. (2020) used the event study method and evaluated the short-term impact of the coronavirus outbreak on 21 leading stock markets including Japan, Korea, Singapore, the USA, Germany, Italy, and the UK, etc. To explain the panic in financial markets, they represent stock prices as the potential of future earnings, and investors see the pandemic as a dampening economic activity, and because of expecting deterioration in stock markets investors' response to the pandemic would be selling the stocks. He, Sun, and Li (2020), by using the event study method, investigated covid-19's impact on stock prices across different sectors in the Chinese stock market. They found that transportation, mining, environment, electricity, and heating industries have been adversely affected by the pandemic. But, manufacturing, information technology, education, and healthcare industries have been resilient to the pandemic.

Several studies analyzed the impact of the pandemic on the Borsa Istanbul Stock Market (BIST). According to Ilhan and Akdeniz (2020), interest rate and oil prices had significant effects on BIST 100 for the period from 13th of September 2019 to 11th of September 2020. Kilic (2020), using the event study method, reported that the highest negative returns are in the tourism and

textile sectors and the positive returns are on the trade sector. Goker, Eren, and Karaca (2020) aimed to analyze the impact of the covid-19 outbreak on the Borsa Istanbul sector indices. According to their study, the highest losses were in the Sports, Tourism, and Transportation sectors. Kartal, Depren, and Depren (2020) examined the causes of the main stock exchange index changes in Turkey during the covid-19 period with machine learning algorithms. Olmez and Ekinçi (2020) analyzed the effects of covid-19 pandemic on BIST-100 and four main sector indices by using event study and time series methodologies. They observed negative impacts and volatility on the indices. Karaomer and Acaravci (2021) and Ege and Metin (2021) used event study methodology to assess the impacts of the pandemic outbreak on a few selected sector indices. Karaomer and Acaravci (2021) found negative impact on banking and transportation sectors, but a positive impact on telecommunication and food-beverage sectors. According to the results of Ege and Metin (2021) outbreak of covid-19 in Turkey resulted in positive returns for food index, but negative return for tourism sector. Altemur (2021) estimated the abnormal returns of 10 sector indices for 7 different events during the pandemic. He observed fluctuations for the banking and financial indices, and a decreasing negative abnormal return for the other indices.

3. Economic Impacts of the Covid-19 Pandemic in Turkey: An Overview

Covid-19 pandemic has severe global economic consequences. It is estimated that the world economic output has contracted by 3.5% in 2020 (IMF, 2021), worse than the recession during the 2008-09 financial crisis. Even though Turkey's 1.8% growth performance in 2020 was higher than the world average, in the second quarter of 2020, the growth rate was -10.3% with respect to the same quarter of 2019.

If one looks at the sector-based growth performances in Turkey in 2020, both the direction and the magnitude of the growth rates differ (Table 1). The financial and insurance sectors seem to have benefited from the pandemic with a 21.4% annual increase in the value-added. In the third quarter of 2020, the growth of value-added in financial and insurance activities reached 45.5%. One of the most important factors of the high growth performances in these sectors is the expansion of the credit volume. The information and communication sector also performed well with a 13.7% increase in the value-added. The annual growth rate of the agriculture sector is 4.8%. Value-added increased 2.8% in public administration, education, human health, and social work activities.

The growth rate of the real estate sector stayed positive at 2.6%. Although the annual growth rate also stayed positive for other service activities (2.5%) and the industry sector (2.0%), the value-added in these two sectors dropped sharply in the second quarter of 2020.

The rest of the sectors ended 2020 with negative growth rates. Value-added in professional, administrative, and support service activities decreased 5.2%. The services sector experienced the most severe decrease in the value-added in the second quarter and ended 2020 with a 4.3% decrease. Even though the construction sector grew in the third quarter of 2020, the annual growth rate is -3.5% for this sector.

Table 1: Percentage Change in GDP Volume in 2020 Compared to the Same Period in 2019 (%)

Economic activity (NACE Rev.2)	Quarter				Annual
	I	II	III	IV	
A- Agriculture, forestry and fishing	1.8	3.7	6.0	4.0	4.8
BCDE- Industry	6.3	-16.5	7.3	10.3	2.0
C- Manufacturing	7.1	-18.3	8.6	10.5	
F- Construction	-2.8	-3.9	4.7	-12.5	-3.5
GHI- Services	2.8	-25.7	0.1	4.6	-4.3
J- Information and communication	10.9	12.2	15.7	15.1	13.7
K- Financial and insurance activities	2.8	28.7	45.5	9.2	21.4
L- Real estate activities	2.7	1.8	2.9	2.9	2.6
MN- Professional, administrative and support service activities	3.3	-17.6	-6.7	0.0	-5.2
OPQ- Public administration, education, human health and social work activities	4.7	-2.3	2.4	6.2	2.8
RST- Other service activities	12.9	-18.1	4.8	7.9	2.5
Sectoral total	3.9	-11.3	5.3	5.0	
Taxes less subsidies on products	9.8	-1.6	14.9	13.4	
Gross domestic product (purchaser's price)	4.5	-10.3	6.3	5.9	1.8

Source: TURKSTAT

Analyzing the changes in employment is also essential for assessing the economic impacts of the pandemic. Table 2 gives the monthly changes in employment in 2020 compared to the same month in 2019. In all the months of 2020, except January, total employment is much lower than that of the same month of 2019. By April 2020, more than 2.5 million people lost their jobs. By November 2020, employment loss compared to the same month of the previous year was still more than 1.1 million. The general economic recovery in the third and fourth quarter of 2020 has limited positive impacts on employment.

When the sector-based employment changes are analyzed, employees of the accommodation and food service sector have been the most heavily affected by the pandemic. In April, May, and June more than half a million of the employees in this sector were excluded from the employment compared to the same months of the previous year. Employment losses in the wholesale and retail trade, agriculture, forestry and fishing, and manufacturing sectors are also high. By November 2020, the employment level was below November 2019's level for almost all the sectors.

Table 2: Change in Employment in 2020 Compared to the Same Month in 2019 (Thousand Person)

Economic activity (NACE Rev.2)	Months										
	1	2	3	4	5	6	7	8	9	10	11
Total	109	-602	-1662	-2585	-2411	-1981	-1254	-975	-733	-896	-1103
A-Agriculture, forestry and fishing	-242	-530	-538	-491	-308	-274	-361	-314	-350	-242	-361
B-Mining and quarrying	23	28	24	16	9	1	-1	4	-9	0	-6
C-Manufacturing	242	194	13	-236	-294	-332	-257	-136	-38	-100	-89
DE-Electricity, gas, steam, water supply, sewerage etc.	-7	-16	-11	11	10	10	12	42	19	18	3
F-Construction	-68	-93	-248	-361	-206	-91	114	147	166	110	101
G-Wholesale and retail trade	-83	-135	-306	-396	-432	-338	-194	-148	-30	-51	-72
H-Transportation and storage	35	16	-60	-93	-88	-30	-43	-43	-39	-45	-72
I-Accommodation and food service activities	91	-14	-228	-512	-580	-520	-374	-313	-294	-286	-385
J-Information and communication	8	8	-15	-11	-24	-14	3	4	29	18	40
K-Financial and insurance activities	49	55	38	32	29	26	30	18	11	-15	-24
L-Real estate activities	13	27	-9	-23	-19	-11	-17	-29	-23	-10	-5
M-Professional, scientific and technical activities	2	-3	-8	-9	-4	6	24	30	20	-18	-59
N-Administrative and support service activities	-45	-71	-119	-170	-150	-124	-86	-52	-93	-49	-79
O-Public administration and defense	55	17	3	-18	-47	-20	9	-9	59	62	126
P-Education	48	57	40	0	-29	-23	21	31	-23	-94	-74
Q-Human health and social work activities	71	17	22	2	0	-4	-11	-50	-71	-91	-63
R-Arts, entertainment and recreation	-25	-32	-53	-67	-65	-61	-52	-61	-41	-39	-35
STU-Other social, community and personal service activities	-58	-123	-207	-258	-213	-184	-71	-95	-26	-64	-47

Source: TURKSTAT, Author's calculations

4. Methodology

In this study, we implemented an event study analysis to examine the impacts of four events on 27 sector indices of Borsa Istanbul. Table 3 shows the indices and the number of stocks included in each index.

Table 3: Sector Indices and # of Stocks

Index	Sector	# of Stocks
Xbank	Banking	11
Xblsm	ICT	18
Xelekt	Electricity	6
Xfink	Financial Leasing Factoring	4
Xgida	Food and Beverage	21
Xgmyo	Real Estate	26
Xhold	Holding	34
Xiltm	Communication	2
Xinsa	Construction	9
Xkagt	Forest Paper Printing	12
Xkmya	Chemical Petroleum Plastic	21
Xkobi	SME	41
Xkury	Corporate Governance	52
Xmadn	Mining	16
Xmana	Base Metal	20
Xmeys	Metalware Machinery	27
Xsgrt	Insurance	5
Xspor	Sports	4
Xtcrt	Trade	15
Xteks	Textile Leather	14
Xtrzm	Tourism	5
Xuhiz	Services	60
Xulas	Transport	7
Xumal	Financial	81
Xusin	Industrial	134
Xutek	Technology	19
Xyort	Securities Investment	9

In the second step, we have estimated the expected return for each index by using equation 1 for each day in the event window. In our study, the largest event window includes 41 days between -20th and +20th days. And then, for each trading day, we have estimated the abnormal returns by using equation 2. Afterward, we have calculated cumulative abnormal returns for 11 event windows by using equation 3. The events windows of our analysis are (-20,+20), (-10,+10), (-5,+5), (-2,+2), (-1,+1), (0,0), (0,+1), (0,+2), (0,+5), (0,+10), and (0,+20).

At the final step, we tested the statistical significance of the cumulative abnormal returns by using a t-test as suggested by Kothari and Warner (2007) where the test statistic is;

$$\frac{CAR(t_1, t_2)}{[\sigma^2(t_1, t_2)]^{1/2}} \quad \left| \begin{array}{l} \sigma^2(t_1, t_2) = L\sigma^2(AR_t) \\ L = t_2 - t_1 + 1 \\ \sigma^2(AR_t) : \text{variance of one period abnormal return} \end{array} \right.$$

4. Results

In this part, we summarize the results of our analysis. For each event, index-based cumulative abnormal returns and their statistical significance are summarized for 11 event windows. Wider event windows are more likely to include the impacts of other factors during those days that the results of the narrower event windows are more robust. We visualized the cumulative abnormal returns of (-2, +2) event windows with a graph to show a more reader-friendly picture of the impact of each event.

The first event in our study represents the start of the pandemic in Turkey. The event day, 11 March 2020, is the first day of new life under pandemic conditions. Cumulative abnormal returns of event 1 are given in Table 4. Almost all indices have statistically significant abnormal losses. During the (-10, +10) event window period the abnormal losses of the sports and tourism indices exceed 69%, and 52% respectively. On the other hand, a few indices' reactions to the start of the pandemic were positive. Banking, communication, and trade indices have 15.18%, 5.81%, and 7.83% abnormal returns during the (-5, +5) event window period. Return of the communication index reaches 15.15% in the (-20, +20) event window.

Table 4: Cumulative Abnormal Returns of Event 1

Index	Sector	Event Windows												
		(-20,+20)	(-10,+10)	(-5,+5)	(-2,+2)	(-1,+1)	(0,0)	(0,+1)	(0,+2)	(0,+5)	(0,+10)	(0,+20)		
Xbank	Banking	-3.54%	6.03%	15.18%***	8.63%***	6.32%***	0.68%	3.40%***	3.96%***	10.35%***	-0.14%	-4.83%		
Xblsm	ICT	-9.99%*	-15.20%***	-36.02%***	-26.71%***	-20.55%***	-5.62%***	-15.07%***	-17.73%***	-24.79%***	-4.02%	-0.540%		
Xelek	Electricity	-16.55%***	-12.45%***	-14.61%***	-12.14%***	-14.49%***	-5.63%***	-9.92%***	-6.78%***	-6.41%**	-7.14%**	-9.20%*		
Xfink	Financial Leasing	-11.57%**	-5.50%	-10.93%***	-21.17%***	-19.98%***	-4.53%	-16.39%***	-9.60%**	4.42%	13.73%	15.85%		
Xgida	Food and Beverage	-2.92%	-0.14%	-8.46%***	-4.58%**	-3.74%**	0.13%	-2.38%*	-1.29%	-7.46%***	1.81%	-0.01%		
Xgmyo	Real Estate	-16.23%***	-19.64%***	-20.01%***	-14.37%***	-13.89%***	-3.70%***	-10.09%***	-7.15%***	-9.93%***	-7.61%**	-2.060%		
Xhold	Holding	-6.79%*	-6.17%	-7.28%**	-1.34%	-3.72%**	-2.94%***	-3.15%**	-0.93%	-4.45%***	-2.56%	-0.33%		
Xiltm	Communication	15.15%***	10.32%**	5.81%**	-2.25%	2.56%**	2.34%**	3.08%**	-0.54%	5.39%	9.19%**	6.98%		
Xinsa	Construction	-7.08%	-11.60%***	-10.63%***	-12.59%***	-14.33%***	-3.27%**	-6.05%***	0.10%	-1.21%*	-0.20%	3.63%		
Xkagt	Forest Paper Printing	-10.12%*	-18.54%***	-26.08%***	-16.23%**	-14.83%***	-3.55%***	-11.80%***	-9.11%***	-13.95%***	-6.14%	10.56%*		
Xkmya	Chemical Petroleum	2.39%	-10.53%***	-16.40%***	-3.05%	-3.96%***	-1.87%**	-3.05%**	-1.87%	-10.58%***	-2.06%	8.43%*		
Xkobi	SME	-12.62%**	-17.07%***	-27.81%***	-17.93%***	-13.25%***	-1.95%	-7.87%***	-7.26%***	-14.48%***	-2.12%	8.79%		
Xkury	Corporate Governance	-2.56%	-3.72%	-2.52%	-0.53%	-0.28%**	-0.71%**	-0.98%**	-0.73%	-1.56%**	-2.56%**	-1.56%		
Xmadn	Mining	-3.87%	-18.91%***	-26.93%***	-13.96%***	-11.32%***	-1.16%	-5.61%***	-2.26%	-13.51%***	1.63%	6.39%		
Xmana	Base Metal	-1.98%	3.55%	3.23%	-1.96%	-0.11%	-3.03%**	-1.89%	-3.44%	-1.40%	-1.96%	-5.35%		
Xmeys	Metalware Machinery	-16.11%***	-28.16%***	-25.82%***	-11.94%***	-7.70%***	-2.28%***	-5.51%***	-7.64%***	-18.22%***	-21.15%***	-10.80%***		
Xsgrt	Insurance	-21.25%***	-17.35%***	-19.71%***	-8.03%***	-2.79%**	-0.76%	-2.35%**	-5.78%***	-16.56%***	-14.06%***	-17.65%***		
Xspor	Sports	-5.43%	-69.29%***	-55.84%***	-43.49%***	-37.85%***	-9.26%***	-24.45%***	-21.76%***	-33.75%***	-37.71%***	6.04%		
Xtort	Trade	11.46%**	16.20%***	7.83%***	0.27%	4.13%***	9.20%***	4.31%***	0.32%	0.71%	6.90%*	3.40%		
Xteks	Textile Leather	-29.78%***	-38.28%***	-36.63%***	-21.75%***	-17.77%***	-5.58%***	-14.28%***	-11.89%***	-20.78%***	-19.69%***	-9.35%*		
Xtrzm	Tourism	-26.33%***	-52.41%***	-42.97%***	-27.75%***	-23.11%***	-7.53%***	-17.90%***	-15.52%***	-27.09%***	-30.28%***	-1.09%		
Xuhiz	Services	4.80%	2.45%	-1.54%	-4.46%**	-2.16%**	2.31%***	-0.31%	-1.72%*	-0.85%	3.65%*	3.80%		
Xulas	Transport	-11.37%**	-21.73%***	-19.26%***	-6.04%***	-10.39%***	-4.07%***	-8.14%***	-2.88%	-7.64%**	-3.00%	7.51%		
Xumal	Financial	-5.91%	-0.64%	4.01%	2.88%	1.02%	-0.92%**	-0.06%**	1.14%	3.29%***	-1.66%	-3.11%		
Xusin	Industrial	-4.81%	-10.75%***	-13.83%***	-6.57%***	-4.97%***	-2.02%***	-3.88%***	-3.81%***	-9.65%***	-5.43%***	-0.25%		
Xutek	Technology	21.50%***	3.13%	-10.78%***	-6.66%***	-6.27%***	-0.82%	-1.91%	-1.19%	-4.60%	3.45%	5.72%		
Xyort	Securities Investment	-2.36%	-12.93%***	-10.88%***	-28.20%***	-29.18%***	-8.15%***	-22.23%***	-16.76%***	-7.75%**	-16.70%***	-13.81%*		

*** p<0.01, ** p<0.05, * p<0.1

Figure 2: Cumulative Abnormal Returns of Event 1
for the Event Window (-2,+2)

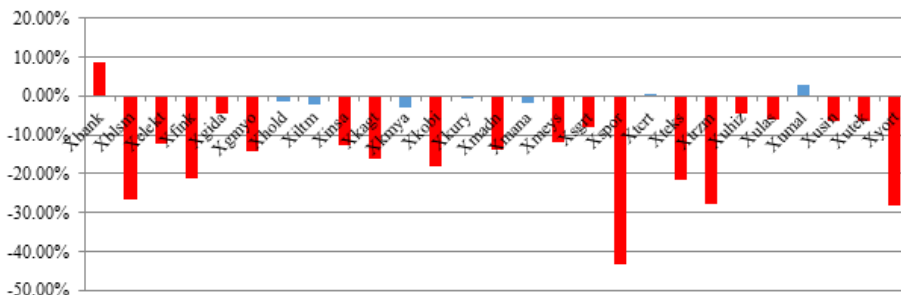


Figure 2 shows the cumulative abnormal returns for the five trading days between 9 March and 13 March. The red lines show the statistically significant abnormal returns. All indices have negative abnormal returns except financial (Xumal) and banking (Xbank) sector indices. During that 5-day period, the abnormal loss in Sports (Xsport) index was more than 40%, in ICT (Xblsm), tourism (Xtrzm), and securities investment (Xyort) indices the losses were close to 30%, and for the textile (Xteks) and food and beverage (Xgida) indices, the loss was more than 20%.

The second event in our study represents the end of the first lock-down on the 1st of June 2020. On the 28th of May, after the cabinet meeting, some of the pandemic measures were loosened. For example, it was announced that cafes, restaurants, sports halls, private courses, and parks were going to be opened on the 1st of June. On the 1st of June, travel restrictions were also removed. In this part, we analyzed the impact of the loosening of the measures on sector indices.

Table 5 summarizes the cumulative abnormal returns of event 2. Real estate, holding, chemical petroleum plastic, insurance, and trade indices have statistically significant positive returns. Banking, ICT, food and beverage, SME, corporate governance, services, transport, and securities investment indices have statistically significant negative returns.

Table 5: Cumulative Abnormal Returns of Event 2

Index	Sector	Event Windows										
		(-20,+20)	(-10,+10)	(-5,+5)	(-2,+2)	(-1,+1)	(0,0)	(0,+1)	(0,+2)	(0,+5)	(0,+10)	(0,+20)
Xbank	Banking	-9.31%	-8.43%*	-2.03%	1.12%	0.27%	0.08%	-0.53%	-0.41%	-0.56%	-2.37%	-2.15%
Xblsm	ICT	-28.26%**	-17.62%**	-15.24%**	-9.03%**	-5.62%*	-1.97%	-3.70%	-2.95%	-7.14%	-9.68%	-16.60%*
Xelekt	Electricity	9.81%	-1.67%	-4.03%	0.95%	0.28%	-0.78%	-1.06%	1.15%	-1.23%	-1.00%	3.11%
	Financial Leasing											
Xfink	Factoring	15.62%	3.43%	-6.77%	-4.97%	-0.05%	-1.10%	-0.27%	-2.29%	-2.41%	2.50%	1.83%
Xgrda	Food and Beverage	-9.17%	-2.76%	-3.93%	-5.37%*	-3.41%	-0.27%	-1.81%	-0.69%	-2.07%	-1.84%	-3.44%
Xgmyo	Real Estate	8.62%	9.17%*	4.63%	4.18%*	5.03%**	2.32%**	4.24%**	3.27%**	4.02%	8.34%**	4.72%
Xhold	Holding	2.58%	1.14%	1.29%	1.23%	0.36%	0.47%	2.26%**	2.60%**	2.34%	2.96%	1.41%
Xiltm	Communication	3.06%	-4.00%	-3.15%	-2.59%	-1.76%	-1.82%	-2.75%	-2.95%	-1.21%	-1.88%	5.28%
Xinsa	Construction	2.84%	-1.31%	-2.60%	-5.36%	-3.82%	-0.46%	-0.85%	-2.05%	-0.71%	3.47%	7.69%
Xkagt	Forest Paper Printing	-10.90%	-7.91%	-6.19%	-5.57%	-1.19%	0.30%	-0.93%	-2.15%	-1.53%	-0.53%	-3.09%
	Chemical Petroleum											
Xkmya	Plastic	5.14%	-1.29%	-0.11%	-0.22%	1.17%	1.72%*	1.71%	-0.11%	0.86%	2.24%	2.41%
Xkobi	SME	7.96%	-20.70%**	-25.66%**	-14.31%**	-7.14%**	-0.49%	-4.08%*	-6.36%**	-5.00%	5.54%	3.44%
Xkury	Corporate Governance	-2.50%	-2.65%*	-0.29%	-0.36%	0.16%	0.42%	0.47%	0.28%	0.35%	-0.63%	-0.86%
Xmadn	Mining	-14.21%	-9.63%	-10.52%	-4.66%	-3.97%	-2.33%	-0.86%	-3.69%	-7.20%	-4.05%	-7.98%
Xmana	Base Metal	1.45%	-1.63%	2.00%	0.01%	-0.13%	0.03%	0.38%	1.30%	3.29%	1.35%	1.66%
Xmays	Metalware Machinery	7.01%	4.22%	1.11%	-0.15%	-1.16%	0.60%	1.03%	1.62%	2.32%	3.19%	6.79%
Xsgrt	Insurance	6.40%	9.81%**	1.70%	-1.39%	1.01%	-0.14%	0.53%	0.81%	1.81%	6.17%*	4.92%
Xspot	Sports	0.66%	3.83%	7.92%	6.48%	6.02%	-2.94%	-1.88%	-3.46%	-3.82%	-5.19%	-8.04%
Xtirt	Trade	6.26%	11.18%*	0.56%	0.44%	0.30%	-1.86%	-3.35%*	-1.27%	-2.90%	-1.64%	-1.60%
Xtrem	Textile Leather	7.61%	8.97%	-1.93%	0.87%	0.99%	0.69%	0.44%	0.44%	2.19%	7.51%*	2.72%
Xtrzm	Tourism	1.73%	-2.37%	-4.86%	-6.53%	-1.88%	-1.68%	-2.09%	-2.59%	2.67%	4.68%	0.32%
Xuhiz	Services	3.85%	4.27%	-0.25%	-1.21%	-1.00%	-1.62%**	-2.82%**	-2.19%*	-2.50%	-1.68%	-0.84%
Xulas	Transport	-5.33%	3.30%	4.41%	-3.73%	-3.47%	-1.06%	-3.15%	-4.70%*	-4.72%	-5.76%	-14.34%*
Xumal	Financial	-2.89%	-2.79%	-0.28%	1.19%	0.70%	0.38%	0.89%	0.95%	0.89%	0.84%	-0.14%
Xustin	Industrial	1.86%	-0.68%	-1.10%	-1.18%	-0.51%	0.44%	0.60%	0.26%	0.69%	1.37%	1.75%
Xutek	Technology	-11.37%	-3.93%	-6.55%	-2.67%	1.54%	1.74%	2.06%	-0.39%	-2.34%	-2.64%	-9.74%
Xyort	Securities Investment	-11.55%	-5.93%	-14.10%*	-6.24%	-3.24%	-0.71%	-2.56%	-2.55%	-4.57%	-2.10%	-5.65%

*** p<0.01, ** p<0.05, * p<0.1

Figure 3: Cumulative Abnormal Returns of Event 2 for the Event Window (-2,+2)

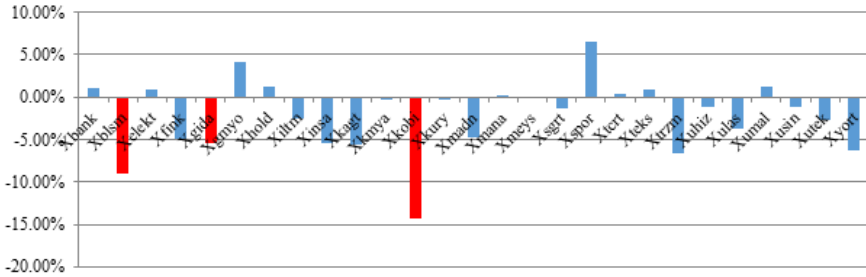


Figure 3 shows the cumulative abnormal returns for the five trading days between the 28th of May and the 3rd of June. ICT (Xblsm), food and beverages (Xgida), and SME (Xkobi) indices have statistically significant negative returns. Although the rest of the calculated returns are not significant, they provide some evidence about the direction and the amount of the reaction. The second event has a positive impact on Sports (Xsport), real estate (Xgmyo) indices with 7.92% and 4.63% cumulative abnormal returns respectively. Banking (Xbank), financial (Xumal), textile (Xteks), trade (Xtrt), holding (Xhold), and electricity (Xelekt) also has positive cumulative abnormal returns. The rest of the indices have negative cumulative returns.

The covid-19 cases started to increase rapidly in fall 2020, and a second wave of the pandemic started. On the 17th of November, measures were tightened by announcing a lock-down during the weekends and closing the schools, restaurants, etc. The third event in our study is the announcement of this second partial lock-down.

Table 6 summarizes the cumulative abnormal returns of event 3. Most of the indices' reactions to event 3 were negative. On the other hand, banking, base metal, and transport indices have statistically significant positive reactions to event 3.

Table 6: Cumulative Abnormal Returns of Event 3

Index	Sector	Event Windows										
		(-20,+20)	(-10,+10)	(-5,+5)	(-2,+2)	(-1,+1)	(0,0)	(0,+1)	(0,+2)	(0,+5)	(0,+10)	(0,+20)
Xbank	Banking	10.38%*	9.91%**	7.76%**	2.30%	-0.48%	-2.20%**	-0.38%	2.05%	-1.36%	0.06%	-3.49%
Xblsm	ICT	-31.77%***	-20.55%**	-16.48%**	-4.16%	-1.49%	0.59%	-1.14%	-2.95%	-5.20%	-4.10%	-9.73%
Xelekt	Electricity	-21.81%**	-12.77%*	-9.13%*	-5.86%*	-3.81%	0.56%	-2.28%	-3.55%	-1.44%	-2.40%	-7.55%
Xfink	Financial Leasing Factoring	-31.33%***	-17.92%	-10.10%	-3.77%	-2.14%	-0.87%	-3.39%	-3.41%	-4.23%	-7.02%	-13.45%
Xgıda	Food and Beverage	-25.73%***	-6.17%	-3.86%	0.14%	0.03%	2.92%***	0.10%	-1.75%	-0.73%	-1.89%	-7.80%
Xgmyo	Real Estate	-19.07%**	-9.96%*	-4.61%	-1.74%	-0.15%	1.27%	-0.30%	-2.25%	1.07%	0.59%	-4.73%
Xhold	Holding	-0.02%	-1.34%	-0.10%	-0.44%	-1.53%	-0.84%	-1.37%	-0.84%	-0.72%	-1.20%	0.63%
Xiltm	Communication	-20.57%**	-9.99%	-7.96%*	-1.89%	-3.09%	-0.88%	-1.69%	-1.34%	-3.57%	-6.73%	-9.50%
Xinsa	Construction	-17.05%	-14.21%*	-11.81%**	-2.92%	-0.89%	-0.48%	-1.34%	-2.13%	-3.64%	-5.20%	-8.41%
Xkagt	Forest Paper Printing	5.91%	-8.65%	1.52%	1.81%	1.68%	1.47%	-0.54%	-1.99%	4.62%	0.52%	-1.68%
Xkmya	Chemical Petroleum Plastic	4.86%	3.69%	2.69%	0.06%	-0.69%	0.06%	-0.67%	0.90%	2.59%	4.62%	8.33%*
Xkobi	SME	-44.67%***	-19.23%*	-5.12%	-2.70%	-1.89%	1.90%	-1.70%	-2.92%	1.26%	-4.57%	-18.85%*
Xkury	Corporate Governance	3.17%	-0.17%	0.17%	-0.32%	0.34%	-0.33%	0.53%	0.30%	0.59%	0.43%	2.68%*
Xmadn	Mining	-18.25%	-13.14%	-5.43%	-2.36%	-1.42%	1.70%	-1.18%	-2.35%	2.14%	-1.78%	-2.77%
Xmana	Base Metal	9.65%	-3.83%	-2.54%	-0.10%	4.78%***	0.75%	5.71%***	2.12%	2.38%	0.46%	11.00%***
Xmeys	Metalware Machinery	0.50%	-5.63%	-1.69%	1.52%	-0.24%	-0.01%	-2.55%*	-2.91%*	2.67%	-1.11%	-0.56%
Xsgrt	Insurance	-16.86%**	-9.86%*	-2.99%	-1.11%	-0.86%	0.25%	-0.22%	-0.81%	0.55%	-2.73%	-3.27%
Xspor	Sports	-36.19%	-20.10%	-16.06%	-5.43%	-4.98%	0.21%	-3.18%	-2.40%	-5.98%	-6.40%	-13.31%
Xtort	Trade	-12.06%	-4.49%	-5.73%	0.35%	1.62%	2.72%*	1.31%	-0.37%	-2.44%	0.05%	-3.94%
Xteks	Textile Leather	-14.38%*	-6.54%	-2.78%	0.23%	-1.06%	0.05%	-2.92%	-1.78%	0.73%	-0.57%	-4.35%
Xtrzm	Tourism	-23.13%*	-19.72%**	-11.14%	-8.09%*	-4.43%	-2.36%	-7.09%**	-10.46%**	-8.73%*	-9.15%	-17.17%*
Xuhiz	Services	-13.72%***	-5.59%*	-5.86%**	-1.63%	-0.36%	1.00%	-0.50%	-1.51%	-2.53%	-1.43%	-5.55%*
Xulas	Transport	5.33%	12.81%*	5.00%	-3.92%	1.45%	-0.11%	-1.09%	-2.76%	0.50%	6.94%	1.54%
Xumal	Financial	1.96%	2.24%	2.71%	0.65%	-0.89%	-1.16%**	-0.78%	0.34%	-0.79%	-0.45%	-1.75%
Xusin	Industrial	-1.43%	-3.03%	-1.02%	0.25%	0.88%	0.73%	0.39%	-0.53%	2.18%*	0.88%	3.18%
Xutek	Technology	-28.54%***	-19.95%***	-10.93%**	-4.35%	-1.75%	0.22%	-0.78%	-2.18%	-3.67%	-5.18%	-12.79%*
Xyort	Securities Investment	-30.69%**	-26.76%**	-17.27%**	-6.61%	-6.28%	-1.82%	-4.10%	-6.16%	-7.72%	-6.99%	-18.49%*

*** p<0.01, ** p<0.05, * p<0.1

Figure 4: Cumulative Abnormal Returns of Event 3 for the Event Window (-2,+2)

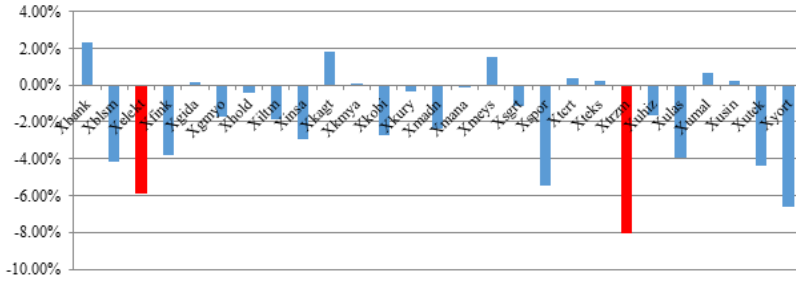


Figure 4 shows the cumulative abnormal returns for the five trading days between the 13th of November and the 19th of November. Electricity (Xelekt) and tourism (Xtrzm) indices have statistically significant abnormal returns. Although the rest of the returns are not significant, there is evidence that the tightening of the measures resulted in negative cumulative abnormal returns for most of the indices. The highest loss was in the tourism (Xtrzm) index. A few sector indices such as banking (Xbank), financial (Xumal), forest paper printing (Xkagt), metalware machinery (Xmeys), etc. had positive cumulative abnormal returns.

The last event in this study is the start of the covid-19 vaccination in Turkey on the 13th of January 2021. Table 7 summarizes the cumulative abnormal returns of event 4. Tourism, textile, metalware machinery, and financial leasing and factoring indices have statistically significant positive returns. Banking, construction, forest paper printing, and mining indices have statistically significant negative returns.

Table 7: Cumulative Abnormal Returns of Event 4

Index	Sector	Event Windows										
		(-20,+20)	(-10,+10)	(-5,+5)	(-2,+2)	(-1,+1)	(0,0)	(0,+1)	(0,+2)	(0,+5)	(0,+10)	(0,+20)
Xbank	Banking	-5.25%	-5.14%	-4.70%	-4.57%*	-2.12%	-0.53%	-0.83%	-1.59%	-4.23%	-4.11%	-2.85%
Xblsm	ICT	8.98%	3.98%	7.29%	3.04%	1.38%	0.65%	1.45%	4.41%	7.68%	7.46%	9.93%
Xelek	Electricity	1.06%	2.08%	-6.31%	-0.49%	-1.89%	-2.05%	-2.13%	-0.59%	-2.30%	3.65%	6.74%
Xfink	Financial Leasing Factoring	8.93%	6.58%	-4.77%	-2.63%	-3.04%	-1.73%	-1.49%	-1.62%	0.40%	14.23%*	17.54%
Xgrda	Food and Beverage	-2.73%	1.10%	3.74%	1.46%	0.40%	-0.67%	0.97%	0.41%	1.57%	-0.07%	-0.57%
Xgmyo	Real Estate	3.51%	1.68%	-1.54%	-0.12%	-0.79%	-0.71%	0.45%	1.39%	0.85%	4.10%	7.31%
Xhold	Holding	2.62%	2.94%	2.37%	2.22%	1.56%	1.02%	0.93%	1.29%	2.34%	2.94%	4.54%
Xiltm	Communication	-1.26%	0.33%	-3.04%	-0.95%	-0.20%	1.95%	0.96%	0.51%	-0.58%	2.59%	0.72%
Xinsa	Construction	1.86%	4.31%	4.50%	1.04%	0.49%	-1.99%	-5.90%**	-5.24%	-4.23%	-7.27%	-8.85%
Xkagt	Forest Paper Printing	-29.98%**	-16.00%*	-9.85%	-2.21%	-1.31%	-0.59%	-1.47%	-1.75%	-5.19%	-1.88%	-7.90%
Xkmva	Chemical Petroleum Plastic	6.10%	-0.03%	2.09%	-0.52%	-0.53%	-1.33%	-0.12%	0.01%	2.21%	0.51%	3.18%
Xkobi	SME	-19.94%	-5.81%	1.21%	2.89%	0.31%	-0.66%	0.31%	2.89%	3.62%	2.11%	-1.70%
Xkury	Corporate Governance	-3.10%	-0.88%	0.86%	0.22%	0.76%	0.34%	0.30%	0.30%	0.72%	-0.11%	-0.60%
Xmadn	Mining	26.97%**	5.76%	-1.25%	-0.63%	-7.59%**	-4.49%**	-6.14%**	-1.78%	-6.53%	-2.03%	7.58%
Xmana	Base Metal	-6.28%	-0.86%	3.81%	2.36%	1.12%	0.56%	-0.17%	1.65%	3.22%	0.23%	-0.44%
Xmeys	Metalware Machinery	6.34%	6.96%	6.99%*	5.28%**	2.12%	0.42%	-0.08%	-0.06%	1.66%	1.24%	1.96%
Xsgrt	Insurance	4.29%	5.03%	1.50%	0.39%	-0.72%	-0.68%	0.22%	1.37%	3.62%	5.04%	2.60%
Xspor	Sports	-16.72%	-1.05%	3.85%	3.94%	-2.30%	-5.88%	-3.47%	-0.91%	-7.75%	-6.93%	-14.96%
Xtctt	Trade	-6.84%	-1.44%	-2.20%	-2.02%	-0.59%	0.34%	-0.01%	-1.54%	-0.12%	-0.06%	-5.40%
Xteks	Textile Leather	7.57%	9.16%	6.85%	6.52%**	1.79%	1.77%	2.45%	5.14%**	6.17%*	13.40%***	15.32%**
Xtrzm	Tourism	8.71%	22.38%**	5.24%	10.35%**	4.30%	-0.04%	3.34%	9.04%**	5.43%	19.56%***	11.54%
Xuhiz	Services	-2.43%	0.33%	-1.06%	0.06%	0.21%	0.27%	0.10%	0.01%	-0.19%	1.06%	-1.34%
Xulas	Transport	-3.91%	-3.46%	0.29%	4.72%	4.11%	1.32%	3.64%	4.94%	2.41%	1.63%	0.20%
Xumal	Financial	0.22%	-0.19%	-1.02%	-1.01%	-0.41%	0.06%	0.09%	0.13%	-0.41%	0.71%	2.33%
Xusun	Industrial	2.25%	1.76%	3.14%	1.91%	0.14%	-0.43%	-0.31%	0.48%	1.55%	0.99%	2.15%
Xutek	Technology	-6.35%	-2.61%	-1.73%	-0.89%	-1.27%	-0.74%	-0.45%	0.44%	-0.21%	1.76%	-0.11%
Xyort	Securities Investment	-7.05%	4.83%	-4.18%	-0.22%	-0.72%	1.33%	-0.33%	1.76%	-1.31%	7.58%	4.69%

*** p<0.01, ** p<0.05, * p<0.1

Figure 5: Cumulative Abnormal Returns of Event 4 for the Event Window (-2,+2)

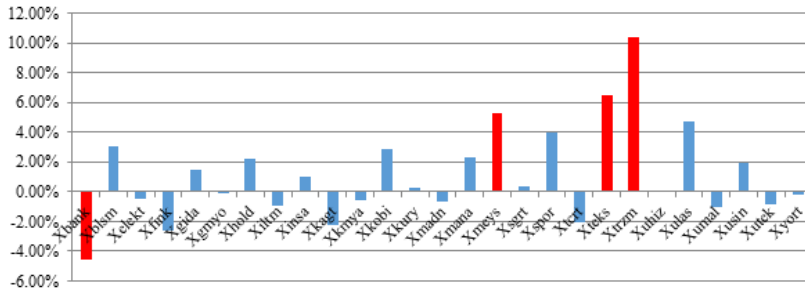


Figure 5 shows the cumulative abnormal returns for the five trading days between the 11th of January 2021 and the 15th of January 2021. Red lines show the statistically significant returns. It is not surprising that most of the indices reacted positively to the vaccination. For instance, the abnormal return in tourism (Xtrzm) index is more than 10%, which is also significant. On the other hand, banking (Xbank), financial leasing and factoring (Xfink), financial (Xumal) indices reacted negatively.

6. Concluding Remarks

The COVID-19 pandemic changed lives and working conditions worldwide. Changing conditions with the measures to save the lives of the people led to severe economic impacts. Worldwide economic growth contracted rapidly and most of the economies experienced negative growth rates in 2020. Although the vaccination enabled better working conditions, recovery from the economic damage requires efficient policies, efforts, and time.

Understanding the consequences of the pandemic is necessary to be able to achieve an economic recovery. When we look at the sector-based impacts, the levels of the damages are diverse. Moreover, a few sectors seem to have benefited from the pandemic conditions. For example, in Turkey, the financial and insurance sector and information and communication sector performed high growth rates in 2020. On the other hand, the value-added of the services sector decreased sharply. A decrease in economic activity also caused massive employment losses.

This study aims to contribute to understanding the sector-based impacts of the pandemic. We analyzed the impacts of four events on the 27 sector indices of Borsa Istanbul by implementing an event study methodology. According to the

results, the start of the pandemic in Turkey on the 11th of March, the loosening of the measures by the 1st of June, and the tightening of the measures on the 17th of November caused negative returns in most of the indices. Only financial and banking indices reacted positively to these three events. On the other hand, most of the indices reacted positively to the start of vaccination in Turkey, where financial and banking indices reactions were negative.

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CHAPTER 15

COMPARATIVE ADVANTAGE OF POLAND IN THE FURNITURE SECTOR AND ITS IMPACT ON EU28'S COMPETITIVENESS

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1. Introduction

Countries are closely interested in foreign trade to have a voice in international markets and to achieve high growth targets. Foreign trade grows faster than the country's economies and contributes a lot to the economy. Export, which is one of the foreign trade items, is a variable that plays an important role in the economic growth of countries. The furniture sector, one of the export items, shows great developments on a global scale. World furniture trade volume in 2018 is \$506.2 billion (International Trade Center). Due to the changes in total supply and demand, furniture trade in Poland has developed significantly. In 2018, Poland's furniture trade volume was \$18.7 billion (International Trade Center). Poland has a large share in the furniture trade especially in the EU and the world. In 2018, it ranks second among EU countries and third worldwide .

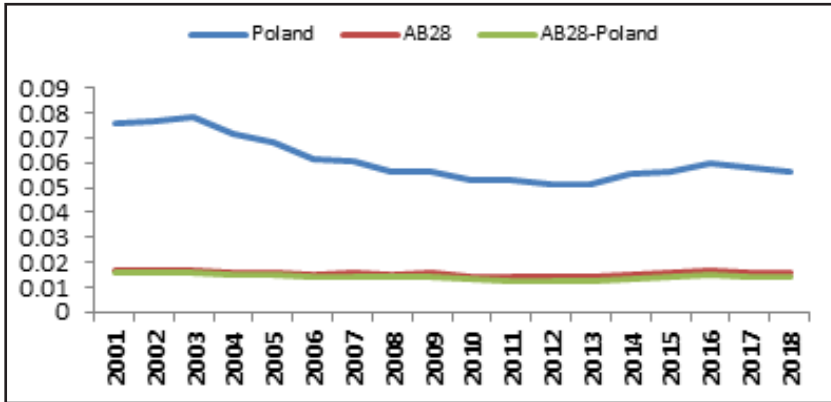


Figure 1: Poland, EU28, EU28-Poland share of the furniture industry in all export products

Source: International Trade Center

In Figure 1, the share of furniture exports for Poland, EU28 and EU28-Poland is given in all export products. When Figure 1 is examined for Poland, an increase in exports was observed for 2001-2002 and a decrease was observed in exports from 2003 to 2013. Although it started to increase since 2014, it started to decrease again in 2016. When the chart is examined for the EU, EU-Poland, there are no significant changes in the general course of furniture export, but with the inclusion of Poland in the union, the export figures increased.

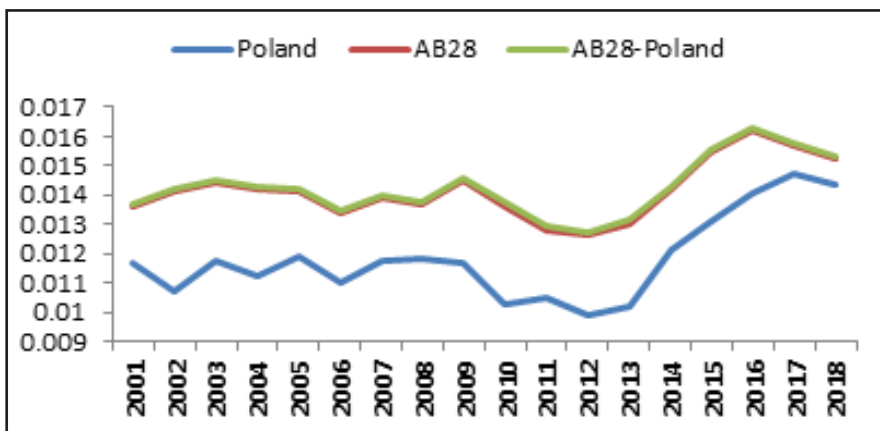


Figure 2: Poland, EU28, EU28-Poland share of the furniture industry in all import products

Source: International Trade Center

In Figure 2, the share of furniture imports for all import products is given for Poland, EU28 and EU28-Poland. When Figure 2 is analyzed for Poland, there was a fluctuating course in imports between 2001-2013 and an increase has been observed since 2013. When the chart for EU, EU-Poland is analyzed, the course of furniture import fluctuated between 2001 and 2012, it increased from 2012 to 2016 and then fell again. Although the inclusion of Poland in the union did not change the course of import figures, the import amount of the union decreased slightly.

The aim of the study is to determine the comparative superiority of Poland and EU in the furniture sector and six sub-sectors (9401, 9402, 9403, 9404, 9405, 9406)¹ between 2001 and 2018 and to prove the accuracy of the given statistics. The feature that distinguishes the study from other studies is that Poland's furniture industry has been examined in terms of revealed comparative advantages, and It is the evaluation of the contribution of Poland by including the EU to the study. Other studies are mainly in the form of two countries comparison and different sectors. With this aspect of the study, it is thought that it will bring a different perspective and contribute to the literature. In addition to the ultimate goal, the revealed comparative advantage of the EU in the furniture sector was evaluated too. For this purpose, in this article are used RCA, RXA, RMA, RTA, and RC indexes. According to the results of the analysis, Poland and EU28 has a comparative advantages in the furniture sector and in its six subgroup sectors.

The study conducted in this direction consists of three chapters. In the first part, studies related to competitiveness are explained under the title of literature. In the second section, the data set and method used are explained. In the third section, the findings obtained from the analysis and study were discussed and then the study was concluded with the conclusion section.

2. Literature review

Balassa (1979) analyzed the comparative advantage of manufactured goods in the process of physical and human capital accumulation in economic development. As a result of the research, it has been determined that the differences in the export structure of the countries are largely due to the differences in the physical and human capital equipment.

Rana (1988) measured the competitiveness of 13 Asia-Pacific countries in the field of exports between 1965-1984. As a result of the analysis, it was found

¹ Sector contents are given in annex 1.

that the countries in question had a comparative advantage mainly in labor-intensive goods and partially in capital-intensive goods.

Bender and Li (2002) examined the performance of production exports in Asian and Latin American economies in 1981-1997 period and their comparative advantages Between economies in East Asia, Southeast Asia and Latin America. Despite the strong export performance of East Asian economies, they concluded that they lost their comparative advantages with lower-level economies in Southeast Asia and Latin America.

Fertő and Hubbard (2002) investigated the competitiveness of Hungary's agri-food products compared to the EU, based on four comparative advantage indices for the period 1992-1998. They found that Hungary is advantageous for eleven of 22 aggregated product groups. They also concluded that Hungary is relatively advantageous for animal and meat products.

Mykhnenko (2005) analyzed the competitiveness of Poland and Ukraine's technology products for 2001-2002 using the revealed comparative advantage index. As a result of the analysis, it was concluded that Poland and Ukraine are superior in low and medium technology products but disadvantageous in the export of high technology products.

Hossain (2006) used the Simpson Index, RCA, RSCA, regression techniques to determine the strengths and weaknesses of Bangladesh's fisheries exports in his study. As a result of the analysis, it was found that Bangladesh has a comparative advantage in the fisheries sector but its monetary value is not sufficient in the world market.

Suntharalingam et al. (2011) measured the competitiveness of Malaysian fresh fruits in global agriculture and selected export markets for the period 2000-2008 with the method of revealed comparative advantages and comparative export performance. As a result of the analysis; Malaysia has a comparative advantage in watermelon and papaya fruit against Thailand, Indonesia, Philippines, Singapore, China and India.

Riaz and Jansen (2012), In their study, researched Pakistan's agricultural export products to various regional markets and country markets with a comparative advantage index. Although Pakistan does not have an advantage in agricultural products in the world, as a result of the analysis, they concluded that Pakistan has superiority in many products.

Yu and Qi (2015) analyzed the competitiveness and complementarity of Chinese and 5 Central and Eastern European countries in agricultural products using the RCA, TCI and GL indices. They found several results in the study. First, it is more advantageous in the Chinese labor intensive industry and less competitive in the remaining agricultural products. Second, they found that

the comparative superiority of agricultural products in Poland and Lithuania is stronger than China and has a great potential for complementarity in the trade of agricultural products. In addition, although China and five Central and Eastern European countries are complementary in many product categories, they concluded that the five CEE countries are generally more dependent on China.

Granabetter (2016) measured the competitiveness of Austria's exports of Burgenland between 2010 and 2014 using the Revealed Comparative Advantages Index (RCA). As a result of the analysis, it came to the conclusion that Burgenland has important agricultural exports and is an important agricultural center for both Austria and the European Union.

He and Lin (2016), In their study analyzed the competitiveness of the iron and steel industry for four Asian countries using the multi-layer gray correlation analysis method. As a result of the analysis, it was determined that the country with the highest competitiveness in the iron and steel industry among the Asian countries was Japan and that China, South Korea and India countries followed Japan respectively.

Balogh and Jambor (2017) examined the international competitiveness of the 16 major wine producers in the European Union between 2000 and 2013 using the Ballassa Index. In addition to the analysis, stability and duration analysis was applied to the comparative advantages calculated. As a result of the analysis, they found that Bulgaria, Cyprus, France, Greece, Italy, Portugal and Spain are the highest European wine producers in the world market and have the highest comparative advantages. Looking at the results of time and stability tests, it shows that the trade advantages in most of these countries have weakened.

Fojtíková (2017) analyzed the competitiveness of the Chinese iron and steel industry using the revealed comparative advantage index for the 2001-2016 period. According to the analysis result, it was concluded that China had a comparative advantage only in 2007, 2008, 2014, 2015 and 2016.

Szczepaniak (2018), in his study analyzed the competitiveness of Polish food products in the European Union for the period 2003-2015, using Balassa's comparative advantage (RCA) index. As a result of the analysis, it reached the conclusion that Poland has a comparative advantage among 2 HS and 8 non-food products in terms of product exports to the EU in 2015. Szczepaniak also stated that the high superiority in the food sector is important for the national economy.

3. Data and methodology

In international trade, it is important for countries to have competitive power in the production and export of various groups of goods and services. In the economic literature, many indices have been developed to measure the

competitiveness of countries. The first and most widely used is the Revealed Comparative Advantage (RCA) index, introduced by Liesner (1958) and formulated by Balassa (1965). This index compares the local specialization of a country in any sector with the world or another country (Bojneck, 2001).

The RCA index developed by Balassa was criticized by Vollrath (1991) on several points. The most important point of criticism is that only exports are taken into account in the index. The most important point of criticism is that only exports are taken into account in the index. According to Vollrath, in order to measure the competitive advantage of countries more accurately, it is necessary to take into account the effect of imports and therefore net exports along with exports. In this context, three different indices have emerged and these are; The relative export advantage index (RXA) is the relative import advantage index (RMA) and the relative trade advantage index (RTA).

The mathematical representations of all indices are as follows.

$$RCA = \frac{(X_{ij}/X_j)}{(X_{iw}/X_w)} \quad (1)$$

$$RXA = \frac{(X_{ij}/X_{kj})}{(X_{ir}/X_{kr})} \quad (2)$$

$$RMA = \frac{(M_{ij}/M_{kj})}{(M_{ir}/M_{kr})} \quad (3)$$

$$RTA = RXA - RMA \quad (4)$$

$$RC = \ln RXA - \ln RMA \quad (5)$$

The explanations of the mathematical notations in the equations are as follows.

- X_{ij} : Country J exports of goods i
- X_j : Total exports of country j
- X_{iw} : World exports of goods i
- X_w : World total exports
- X_{kj} : Total exports of country J excluding goods i
- X_{ir} : World exports of goods i (except country J)
- X_{kr} : Total exports of the world (excluding country J) excluding goods i
- M_{ij} : Country J imports of goods i
- M_{kj} : Total imports of country J excluding goods i
- M_{ir} : World (except country J) import of goods i
- M_{kr} : Total imports of the world (excluding country J) excluding goods i

The fact that the RCA and RXA index values are equal to 1 indicates that the export share of the relevant sector is the same as the world average. On the other hand, if the index values are greater than 1, it indicates that the relevant sector has a competitive advantage, and if it is lower than 1, it indicates that the relevant sector has a competitive disadvantage. In the RMA, an index value greater than 1 indicates competitive disadvantage, and a value less than 1 indicates competitive advantage. Finally, a positive RTA value indicates that the country has a competitive advantage, otherwise it has a competitive disadvantage.

The most important feature of RXA, RMA and RTA indices is to distinguish the analyzed product from other products. Thus, no double counting is made in the index calculation. On the other hand, Vollrath states that the RC index produces more accurate results because it includes the supply-demand balance and explains the RC index as a better reflection of the comparative advantage of a country or a good (Vollrath, 1991: 276). However, it is not possible to apply the index without bilateral trade (both imports and exports).

3. Results

Table 1 shows the RCA index values for Poland, EU28 and EU28-Poland between 2001-2018. It has a considerably comparative advantage in the Polish furniture industry and its subgroups. Comparative advantage coefficients in the furniture sector, 9401, 9403, 9405 and 9406 sub-sectors have decreased over time, but the advantage has not been lost. The advantage of comparative advantage in the 9402 and 9404 sub-sectors continued to increase over time.

Table 1: Poland, EU28 and EU28-Poland RCA Index, 2001-2018

Years / Product Group	POLAND					EU28					EU28 - POLAND										
	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406
2001	6	8.92	1.71	5.95	4.99	1.79	2.53	1.33	1.31	1.29	1.39	1.14	1.14	1.7	1.26	1.2	1.28	1.32	1.08	1.13	1.68
2002	5.91	9.04	2.55	5.7	5.15	1.6	2.24	1.29	1.31	1.3	1.34	1.09	1.09	1.68	1.22	1.19	1.28	1.28	1.02	1.08	1.68
2003	6.09	9.5	2.51	5.62	5.41	1.47	2.48	1.3	1.33	1.35	1.34	1.11	1.11	1.64	1.22	1.19	1.33	1.27	1.03	1.11	1.63
2004	5.75	9.07	2.75	5.2	5.07	1.51	2.4	1.31	1.3	1.43	1.36	1.04	1.15	1.66	1.22	1.15	1.41	1.28	0.96	1.14	1.64
2005	5.7	8.94	2.78	4.91	5.73	1.46	2.13	1.32	1.29	1.45	1.38	1.05	1.17	1.69	1.22	1.11	1.42	1.3	0.94	1.17	1.68
2006	5.37	8.66	2.71	4.55	5.4	1.46	2.14	1.31	1.26	1.46	1.39	1.01	1.19	1.62	1.21	1.08	1.43	1.31	0.9	1.19	1.61
2007	5.16	7.97	2.88	4.58	5.65	1.44	1.87	1.33	1.26	1.47	1.42	1	1.22	1.61	1.22	1.07	1.43	1.33	0.88	1.22	1.6
2008	5.07	7.38	4.72	4.71	6.69	1.52	1.7	1.38	1.28	1.47	1.48	1.08	1.27	1.6	1.27	1.1	1.37	1.38	0.91	1.26	1.6
2009	4.81	7.66	4.34	4.1	6.08	1.29	1.13	1.33	1.27	1.43	1.4	1.02	1.25	1.45	1.22	1.07	1.33	1.32	0.86	1.25	1.46
2010	4.81	7.44	4.4	4.29	6.6	1.16	1.5	1.29	1.24	1.47	1.37	0.99	1.21	1.49	1.18	1.04	1.38	1.28	0.81	1.21	1.48
2011	5.01	7.9	3.79	4.55	6.54	1.29	1.42	1.33	1.31	1.47	1.42	1.02	1.2	1.55	1.21	1.1	1.39	1.31	0.84	1.2	1.56
2012	4.51	7.25	3.47	4.11	6.51	1.07	1.43	1.22	1.2	1.44	1.31	1.01	0.99	1.47	1.11	1.01	1.38	1.22	0.83	0.99	1.47
2013	4.29	6.75	3.58	4.12	6.54	1.02	1.48	1.17	1.2	1.43	1.28	1	0.9	1.36	1.06	1	1.36	1.18	0.81	0.89	1.36
2014	4.36	6.7	4.04	4.4	6.7	1.05	1.67	1.17	1.23	1.42	1.3	1.02	0.82	1.53	1.05	1.02	1.32	1.19	0.81	0.81	1.52
2015	3.91	6.21	3.61	3.76	6.11	1.08	2	1.09	1.18	1.32	1.22	0.96	0.71	1.64	0.98	0.99	1.23	1.12	0.77	0.7	1.63
2016	4.16	6.26	3.46	4.1	5.69	1.38	2.4	1.14	1.21	1.33	1.26	0.96	0.79	1.74	1.02	1.01	1.24	1.14	0.78	0.76	1.71
2017	4.3	6.26	4.24	4.16	5.47	1.66	2.36	1.18	1.24	1.36	1.28	0.96	0.86	1.8	1.05	1.04	1.24	1.17	0.78	0.82	1.78
2018	4.23	5.85	4.45	4.38	5.38	1.55	2.32	1.17	1.22	1.38	1.29	0.95	0.84	1.77	1.04	1.02	1.24	1.16	0.75	0.81	1.75

EU28 countries have a comparative advantage in the furniture industry. In the sub-sectors numbered 9401 and 9403, the coefficients decreased over time, but the advantage has not been lost. The 9404 sector has lost its comparative advantage since 2015 and the 9405 sector has lost its comparative advantage since 2012. The advantage of comparative advantage in the sub-sectors 9402 and 9406 continued to increase over time.

Comparative advantage continues to decrease in time in the furniture sector of the EU28-Poland countries, sub-sectors 9401, 9402 and 9403. Furniture sector and 9401 sector lost their competitive advantage only in 2015. The sector of 9404 has lost its comparative advantage since 2004 and the sector of 9405 has become disadvantageous since 2012. Only the 9406 sector has increased its comparative advantage over time.

When Table 1 is examined in general, with the addition of Poland to the union, the degree of comparative advantage of the union increased.

Table 2 shows the RXA index values for Poland, EU28 and EU28-Poland between 2001-2018. Comparative advantage coefficients in the furniture sector, 9401, 9403, 9405 and 9406 sub-sectors have decreased over time, but the advantage has not been lost. The advantage of comparative advantage in the 9402 and 9404 sub-sectors continued to increase over time.

The comparative advantage of exports in the furniture sector, 9401 and 9403 sub-sectors of the EU28 countries has continued to decrease over time, but the advantage has not been lost. Competition advantages in exports continue in the 9402 and 9406 sub-sectors. The 9404 sector has lost its comparative advantage in exports since 2015 and the 9405 sector has lost its comparative advantage in exports since 2012.

Table 2: Poland, EU28 and EU28-Poland RXA Index, 2001-2018

Years / Product Group	POLAND										EU28										EU28 - POLAND									
	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406		
	2001	6.41	9.21	1.71	6.12	5	1.79	2.54	1.33	1.31	1.29	1.4	1.14	1.14	1.7	1.26	1.2	1.28	1.33	1.08	1.14	1.69	1.28	1.19	1.28	1.28	1.02	1.08	1.14	1.69
2002	6.32	9.35	2.55	5.85	5.16	1.6	2.25	1.3	1.31	1.3	1.35	1.09	1.09	1.68	1.22	1.19	1.28	1.28	1.02	1.08	1.68	1.22	1.19	1.28	1.28	1.02	1.08	1.14	1.69	
2003	6.52	9.86	2.51	5.76	5.42	1.47	2.48	1.31	1.33	1.35	1.35	1.11	1.11	1.64	1.22	1.19	1.33	1.27	1.03	1.11	1.63	1.22	1.19	1.33	1.27	1.03	1.11	1.63		
2004	6.12	9.38	2.75	5.31	5.09	1.51	2.4	1.32	1.31	1.43	1.36	1.04	1.15	1.66	1.22	1.15	1.41	1.28	0.96	1.14	1.64	1.22	1.15	1.41	1.28	0.96	1.14	1.64		
2005	6.04	9.22	2.78	5.01	5.75	1.46	2.13	1.33	1.29	1.45	1.38	1.05	1.17	1.69	1.22	1.11	1.42	1.3	0.94	1.17	1.68	1.22	1.11	1.42	1.3	0.94	1.17	1.68		
2006	5.66	8.91	2.71	4.62	5.42	1.46	2.14	1.32	1.26	1.46	1.39	1.01	1.2	1.62	1.22	1.08	1.43	1.31	0.9	1.19	1.61	1.22	1.08	1.43	1.31	0.9	1.19	1.61		
2007	5.43	8.18	2.89	4.66	5.67	1.44	1.87	1.33	1.26	1.47	1.42	1	1.22	1.61	1.23	1.07	1.43	1.33	0.88	1.22	1.6	1.23	1.07	1.43	1.33	0.88	1.22	1.6		
2008	5.32	7.54	4.72	4.79	6.72	1.52	1.7	1.39	1.28	1.47	1.48	1.08	1.27	1.6	1.27	1.1	1.37	1.39	0.91	1.26	1.6	1.27	1.1	1.37	1.39	0.91	1.26	1.6		
2009	5.03	7.85	4.35	4.16	6.11	1.3	1.13	1.33	1.27	1.43	1.4	1.02	1.25	1.45	1.22	1.07	1.33	1.32	0.86	1.25	1.46	1.22	1.07	1.33	1.32	0.86	1.25	1.46		
2010	5.02	7.61	4.4	4.35	6.63	1.16	1.5	1.3	1.24	1.47	1.37	0.99	1.21	1.49	1.18	1.04	1.38	1.28	0.81	1.21	1.49	1.18	1.04	1.38	1.28	0.81	1.21	1.49		
2011	5.23	8.08	3.79	4.61	6.57	1.29	1.42	1.34	1.32	1.47	1.42	1.02	1.2	1.55	1.22	1.1	1.39	1.32	0.84	1.2	1.56	1.22	1.1	1.39	1.32	0.84	1.2	1.56		
2012	4.7	7.41	3.47	4.16	6.53	1.07	1.43	1.22	1.21	1.44	1.32	1.01	0.99	1.47	1.11	1.01	1.38	1.22	0.83	0.99	1.47	1.11	1.01	1.38	1.22	0.83	0.99	1.47		
2013	4.47	6.89	3.58	4.17	6.57	1.02	1.48	1.18	1.2	1.43	1.28	1	0.9	1.36	1.07	1	1.36	1.18	0.81	0.89	1.36	1	1	1.36	1.18	0.81	0.89	1.36		
2014	4.56	6.85	4.04	4.47	6.73	1.05	1.68	1.17	1.23	1.42	1.31	1.02	0.82	1.53	1.05	1.02	1.32	1.19	0.81	1.53	1.36	1.05	1.02	1.32	1.19	0.81	0.81	1.53		
2015	4.08	6.36	3.61	3.82	6.14	1.08	2	1.1	1.19	1.32	1.22	0.96	0.71	1.64	0.98	0.99	1.23	1.12	0.76	1.63	1.36	0.99	0.99	1.23	1.12	0.76	0.7	1.63		
2016	4.36	6.41	3.46	4.16	5.72	1.38	2.4	1.15	1.21	1.33	1.26	0.96	0.79	1.74	1.03	1.01	1.24	1.15	0.78	1.71	1.36	1.01	1.01	1.24	1.15	0.78	0.76	1.71		
2017	4.5	6.4	4.24	4.23	5.49	1.66	2.36	1.18	1.24	1.36	1.28	0.96	0.86	1.8	1.05	1.04	1.24	1.17	0.78	1.78	1.36	1.04	1.04	1.24	1.17	0.78	0.82	1.78		
2018	4.43	5.98	4.46	4.45	5.4	1.56	2.32	1.18	1.22	1.38	1.3	0.95	0.84	1.77	1.04	1.02	1.25	1.16	0.75	1.75	1.38	1.02	1.02	1.25	1.16	0.75	0.81	1.75		

The comparative advantage of exports in the furniture sector, 9401, 9402 and 9403 sub-sectors of the EU28-Poland countries continued to decrease over time. Furniture sector and 9401 sector lost their competitive advantage only in 2015. The 9404 sector has lost its comparative advantage in exports since 2004 and the 9405 sector has lost its comparative advantage in exports since 2012. The 9406 sector has increased its superiority in exports over time.

When Table 2 is examined in general, with the addition of Poland to the union, the degree of comparative advantage of the union in exports increased.

Table 3 shows the RMA index values for Poland, EU28 and EU28-Poland between 2001-2018.

It lost its competitive advantage in imports in the Polish furniture industry between 2008, 2011 and 2014-18, and maintained its superiority in other years. The 9401 sector is advantageous in imports in 2001, 2002, 2010 and 2012 and is disadvantageous in other years. The sector of 9402 has become disadvantageous in imports since 2009. The 9403 sector is advantageous in imports during the period under consideration. While the 9404 sector was advantageous until 2013, it lost its superiority after 2013. The sector of 9405 is advantageous only in imports between 2002-05. The sector of 9406 has become an advantageous position in imports since 2009.

EU28 countries are disadvantageous in imports in the furniture sector, 9401, 9403, 9404 sub-sectors. In the 9402 sector, it became an advantageous position in imports between 2011 and 2017. The year when 9405 sector was advantageous in imports is 2002. The sector 9406 became an advantageous position in imports between 2004 and 2008-14 and in other years it is disadvantageous.

Table 3: Poland, EU28 and EU28-Poland RMA Index, 2001-2018

Years / Product Group	POLAND										EU28										EU28 - POLAND									
	94		9401		9402		9403		9404		9405		9406		94		9401		9402		9403		9404		9405		9406			
2001	0.92	0.89	0.95	0.81	0.52	1.13	2.06	1.08	1.11	1.06	1.06	1.08	1.02	1.15	1.08	1.12	1.06	1.07	1.09	1.12	1.07	1.09	1.02	1.09	1.02	1.13				
2002	0.79	0.89	0.91	0.64	0.46	0.98	1.17	1.04	1.09	1.08	1.01	1.09	0.99	1.14	1.05	1.09	1.08	1.02	1.11	1.09	1.02	1.11	0.99	1.14						
2003	0.86	1.18	0.82	0.64	0.5	0.9	0.98	1.06	1.1	1.06	1.04	1.09	1.04	1.07	1.07	1.1	1.06	1.05	1.1	1.06	1.05	1.1	1.05	1.07						
2004	0.86	1.1	0.76	0.62	0.51	0.96	1.55	1.09	1.12	1.03	1.07	1.09	1.06	0.97	1.09	1.12	1.04	1.09	1.1	1.07	1.09	1.1	1.07	0.96						
2005	0.93	1.18	0.72	0.63	0.51	0.99	1.54	1.11	1.14	1	1.08	1.1	1.09	1.04	1.11	1.14	1	1.09	1.12	1.09	1.12	1.09	1.02							
2006	0.9	1.06	0.78	0.67	0.47	1.08	1.7	1.1	1.15	1.02	1.07	1.09	1.09	1.06	1.11	1.15	1.03	1.08	1.11	1.09	1.11	1.09	1.04							
2007	0.96	1.05	0.93	0.72	0.66	1.18	1.61	1.14	1.16	1	1.12	1.13	1.16	1.06	1.15	1.17	1.01	1.13	1.14	1.16	1.14	1.16	1.04							
2008	1.04	1.12	0.73	0.84	0.71	1.27	1.74	1.21	1.25	1	1.19	1.19	1.21	0.99	1.22	1.26	1.01	1.2	1.21	1.2	1.21	1.2	1.2	0.96						
2009	0.99	1.11	1.37	0.84	0.8	1.12	0.79	1.23	1.28	1.03	1.21	1.22	1.22	0.94	1.24	1.28	1.02	1.23	1.23	1.23	1.23	1.22	1.22	0.94						
2010	0.92	0.96	1.66	0.73	0.71	1.27	0.96	1.22	1.25	1.01	1.21	1.2	1.22	0.86	1.23	1.26	0.99	1.23	1.22	1.22	1.22	1.22	1.22	0.86						
2011	1.02	1.01	1.6	0.77	0.83	1.62	0.91	1.24	1.27	0.95	1.23	1.22	1.27	0.87	1.25	1.28	0.93	1.24	1.24	1.24	1.24	1.26	1.26	0.87						
2012	0.94	0.94	1.32	0.75	0.92	1.44	0.54	1.2	1.23	0.88	1.19	1.2	1.24	0.73	1.21	1.24	0.86	1.21	1.21	1.21	1.21	1.23	1.23	0.73						
2013	0.93	1.04	1.45	0.73	1.04	1.15	0.59	1.2	1.23	0.91	1.19	1.19	1.24	0.75	1.21	1.24	0.89	1.2	1.2	1.2	1.23	1.25	1.25	0.76						
2014	1.04	1.18	1.17	0.76	1.1	1.36	0.87	1.22	1.25	0.94	1.18	1.22	1.25	0.92	1.23	1.26	0.93	1.2	1.23	1.2	1.23	1.25	0.92							
2015	1.01	1.21	1.03	0.68	1.1	1.27	0.88	1.19	1.22	0.94	1.14	1.15	1.22	1.04	1.2	1.22	0.94	1.16	1.16	1.16	1.16	1.22	1.04							
2016	1.03	1.26	1.02	0.69	1.08	1.31	0.8	1.19	1.23	0.95	1.13	1.16	1.19	1.08	1.2	1.22	0.95	1.14	1.16	1.14	1.16	1.19	1.09							
2017	1.13	1.42	0.88	0.77	1.08	1.4	0.67	1.2	1.26	0.95	1.14	1.14	1.19	1.04	1.21	1.26	0.95	1.16	1.15	1.16	1.15	1.18	1.05							
2018	1.14	1.43	1.22	0.78	0.99	1.41	0.72	1.21	1.27	1.02	1.15	1.14	1.19	1.11	1.21	1.26	1.01	1.17	1.15	1.17	1.15	1.18	1.12							

EU28-Poland countries are disadvantageous in imports in the furniture sector, 9401, 9403 and 9404 sub-sectors. It became an advantageous position in 9402 sector between 2010 and 17 in imports. In the sector of 9405, it provided a competitive advantage in imports only in 2002. The sector of 9406 became an advantageous position in imports between 2004 and 2008-14.

When Table 3 is examined in general, with the addition of Poland to the union, the degree of comparative advantage in the union increased in 2002, 2003 and 2006-17, but it is also disadvantageous in these years.

Table 4 shows the RTA index values for Poland, EU28 and EU28-Poland between 2001-2018.

The Polish furniture industry is advantageous in competition in the sub-sectors 9401, 9402, 9403 and 9404. Poland is disadvantaged in competition in the 9405 sector only between 2010 and 15. In the sector of 9406, it is disadvantageous only in 2008.

Furniture industry of EU28 countries is disadvantageous in competition between 2013-18. The 9401 sector is at a disadvantage between 2012-18. 9402, 9403, 9406 sectors are advantageous in competition throughout the period. The 9404 sector is advantageous only in 2001 and 2003. 9405 sector is advantageous between 2001-09.

EU28-Poland countries have an advantage in the furniture industry between 2001-08. 9401 sector is advantageous in competition between 2001-04. Sectors 9402 and 9406 are advantageous in competition throughout the period. The 9403 sector is disadvantageous in competition in 2013 and 2018. The 9404 sector is advantageous only in 2001 in competition. 9405 sector is advantageous in competition between 2001-09.

Table 4: Poland, EU28 and EU28-Poland RTA Index, 2001-2018

Years/ Product Group	POLAND						EU28						EU28 - POLAND							
	94	9401	9402	9403	9404	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406
2001	5.49	8.32	0.77	5.31	4.49	0.67	0.48	0.26	0.2	0.23	0.33	0.06	0.12	0.55	0.18	0.09	0.23	0	0.12	0.55
2002	5.53	8.46	1.64	5.21	4.7	0.62	1.07	0.25	0.22	0.22	0.33	-0.01	0.09	0.54	0.17	0.1	0.2	0.26	-0.09	0.09
2003	5.65	8.68	1.68	5.12	4.92	0.57	1.5	0.24	0.23	0.3	0.31	0.02	0.07	0.57	0.16	0.09	0.27	0.23	-0.07	0.06
2004	5.26	8.28	1.99	4.7	4.58	0.55	0.86	0.23	0.18	0.4	0.29	-0.04	0.09	0.69	0.13	0.02	0.37	0.2	-0.14	0.08
2005	5.11	8.04	2.07	4.38	5.23	0.47	0.59	0.22	0.15	0.45	0.3	-0.06	0.08	0.66	0.11	-0.03	0.41	0.2	-0.18	0.07
2006	4.76	7.85	1.93	3.96	4.95	0.39	0.44	0.21	0.12	0.44	0.32	-0.08	0.1	0.56	0.11	-0.07	0.4	0.23	-0.21	0.1
2007	4.46	7.13	1.96	3.93	5.01	0.26	0.26	0.19	0.09	0.47	0.3	-0.12	0.06	0.55	0.08	-0.09	0.43	0.2	-0.26	0.06
2008	4.27	6.42	3.99	3.95	6.01	0.25	-0.04	0.17	0.03	0.47	0.3	-0.12	0.06	0.61	0.05	-0.16	0.37	0.19	-0.31	0.06
2009	4.04	6.73	2.98	3.32	5.32	0.17	0.34	0.1	0	0.39	0.19	-0.19	0.03	0.51	-0.02	-0.21	0.31	0.09	-0.37	0.02
2010	4.11	6.65	2.74	3.62	5.92	-0.1	0.55	0.08	0	0.46	0.16	-0.21	-0.01	0.62	-0.05	-0.21	0.38	0.05	-0.41	-0.01
2011	4.22	7.07	2.2	3.84	5.74	-0.33	0.51	0.1	0.04	0.52	0.19	-0.2	-0.07	0.68	-0.03	-0.18	0.46	0.07	-0.4	-0.06
2012	3.76	6.47	2.15	3.41	5.61	-0.37	0.9	0.02	-0.03	0.57	0.12	-0.2	-0.25	0.75	-0.1	-0.24	0.52	0.01	-0.39	-0.24
2013	3.53	5.85	2.13	3.44	5.53	-0.14	0.89	-0.03	-0.03	0.52	0.1	-0.19	-0.35	0.61	-0.15	-0.23	0.47	-0.02	-0.39	-0.35
2014	3.51	5.67	2.87	3.71	5.62	-0.31	0.8	-0.05	-0.03	0.48	0.13	-0.2	-0.43	0.61	-0.17	-0.23	0.39	0	-0.42	-0.44
2015	3.08	5.15	2.58	3.14	5.04	-0.2	1.13	-0.1	-0.03	0.37	0.08	-0.19	-0.51	0.61	-0.21	-0.23	0.29	-0.04	-0.39	-0.52
2016	3.33	5.15	2.44	3.47	4.64	0.07	1.6	-0.05	-0.02	0.38	0.13	-0.19	-0.4	0.66	-0.17	-0.22	0.3	0	-0.38	-0.42
2017	3.37	4.98	3.36	3.46	4.4	0.26	1.69	-0.02	-0.03	0.41	0.14	-0.18	-0.34	0.77	-0.15	-0.22	0.29	0.01	-0.36	-0.36
2018	3.29	4.55	3.24	3.67	4.41	0.14	1.6	-0.03	-0.05	0.36	0.14	-0.2	-0.35	0.66	-0.17	-0.24	0.24	-0.01	-0.4	-0.37

When Table 4 is examined in general, with the addition of Poland to the union, the union got rid of the disadvantage between 2009-12. This disadvantage gradually decreased in 2013 and beyond.

Table 5 shows the RC index values for Poland, EU28 and EU28-Poland between 2001-2018. The Polish furniture industry is advantageous in competition in the sub-sectors 9401, 9402, 9403 and 9404. 9405 sector is disadvantageous in competition between 2010-15. In 9406 sector, it is disadvantageous only in 2008.

The EU28 countries are disadvantageous in the furniture industry between 2013 and 2018. 9401 sector is advantageous between 2001-11. 9402, 9403, 9406 sectors are advantageous in competition. The 9404 sector is advantageous only in 2001 and 2003. 9405 sector is disadvantageous between 2010-2018.

EU28-Poland countries have an advantage in the furniture industry between 2001-2008. The sector 9401 is advantageous in competition between 2001-2004. The 9402 and 9406 sectors are advantageous in competition. The 9403 sector is disadvantageous in competition in 2013, 2015 and 2018. The 9404 sector is advantageous only in 2001 in competition. 9405 sector is advantageous in competition between 2001-2009.

When Table 5 is examined in general, with the addition of Poland to the union, the union got rid of the competition disadvantage between 2009-2012. In 2013 and later years, this disadvantage has gradually decreased.

Table 5: Poland, EU28 and EU28-Poland RC Index, 2001-2018

Years / Product Group	POLAND										EU28										EU28 - POLAND																																																																																																																																																																																																																																																																																																																																																																															
	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406	94	9401	9402	9403	9404	9405	9406																																																																																																																																																																																																																																																																																																																																																																								
	2001	1.94	2.34	0.59	2.02	2.27	0.46	0.21	0.17	0.2	0.27	0.06	0.11	0.39	0.16	0.07	0.19	0.22	0	0.11	0.4	2002	2.08	2.35	1.03	2.21	2.41	0.49	0.65	0.22	0.19	0.28	-0.01	0.09	0.39	0.15	0.08	0.17	0.22	-0.08	0.08	0.38	2003	2.02	2.12	1.11	2.2	2.38	0.49	0.93	0.21	0.19	0.25	0.26	0.07	0.43	0.14	0.08	0.23	0.19	-0.06	0.06	0.42	2004	1.97	2.14	1.29	2.15	2.3	0.46	0.44	0.19	0.15	0.33	0.24	0.08	0.53	0.11	0.02	0.3	0.17	-0.14	0.07	0.54	2005	1.87	2.06	1.36	2.07	2.42	0.39	0.33	0.18	0.12	0.37	0.24	0.07	0.49	0.1	-0.03	0.35	0.17	-0.17	0.06	0.5	2006	1.83	2.13	1.24	1.94	2.45	0.31	0.23	0.18	0.1	0.36	0.26	0.09	0.43	0.09	-0.06	0.33	0.19	-0.21	0.08	0.43	2007	1.73	2.05	1.13	1.87	2.16	0.2	0.15	0.15	0.08	0.38	0.23	0.05	0.42	0.07	-0.08	0.35	0.16	-0.26	0.05	0.43	2008	1.63	1.9	1.87	1.74	2.24	0.18	-0.02	0.13	0.02	0.39	0.22	-0.1	0.05	0.48	0.04	-0.14	0.31	0.14	-0.29	0.04	0.51	2009	1.62	1.95	1.16	1.6	2.04	0.14	0.35	0.08	0	0.32	0.15	-0.17	0.02	0.44	-0.02	-0.18	0.27	0.07	-0.35	0.02	0.44	2010	1.7	2.07	0.98	1.78	2.23	-0.09	0.45	0.06	0	0.37	0.12	-0.2	-0.01	0.54	-0.04	-0.19	0.33	0.04	-0.41	-0.01	0.55	2011	1.64	2.08	0.87	1.79	2.07	-0.23	0.44	0.08	0.03	0.43	0.14	-0.18	-0.05	0.58	-0.03	-0.15	0.4	0.06	-0.39	-0.05	0.58	2012	1.61	2.07	0.97	1.72	1.96	-0.3	0.98	0.01	-0.02	0.5	0.1	-0.18	-0.22	0.71	-0.09	-0.21	0.47	0.01	-0.38	-0.22	0.7	2013	1.57	1.89	0.9	1.74	1.84	-0.13	0.92	-0.02	-0.03	0.45	0.08	-0.17	-0.33	0.59	-0.13	-0.21	0.42	-0.02	-0.39	-0.33	0.58	2014	1.47	1.76	1.24	1.78	1.81	-0.26	0.65	-0.04	-0.02	0.41	0.1	-0.18	-0.42	0.51	-0.15	-0.2	0.35	0	-0.41	-0.43	0.5	2015	1.4	1.66	1.26	1.73	1.72	-0.17	0.83	-0.08	-0.03	0.33	0.07	-0.18	-0.54	0.46	-0.2	-0.21	0.27	-0.03	-0.41	-0.56	0.45	2016	1.44	1.63	1.22	1.8	1.67	0.05	1.09	-0.04	-0.02	0.34	0.11	-0.18	-0.41	0.47	-0.15	-0.19	0.27	0	-0.4	-0.44	0.45	2017	1.38	1.51	1.57	1.7	1.62	0.17	1.26	-0.02	-0.02	0.36	0.12	-0.17	-0.33	0.55	-0.13	-0.19	0.27	0.01	-0.38	-0.36	0.53	2018	1.36	1.43	1.3	1.75	1.69	0.1	1.17	-0.03	-0.04	0.31	0.12	-0.19	-0.35	0.47	-0.15	-0.22	0.21	-0.01	-0.42	-0.38

4. Conclusion

In this study, the international competitiveness of furniture and sub-sectors of Poland between 2001-2018 was measured and analyzed by Balassa's RCA index and additionally RXA, RMA, RTA and RC index. As a result, it can be said that Poland has both a comparative advantage and a competitive advantage in the furniture industry. In addition, in the study, the situation of the EU in the furniture sector was examined and it was seen that Poland contributed positively to the union. By looking at these results, it can be said that Poland is very successful in opening to foreign markets, especially in the furniture sector. To continue this success, it can develop an effective marketing strategy, go to product diversification, the share allocated to R&D can be increased, and incentive policies can be expanded. Thus, there may be a significant increase in the added value obtained.

Poland can increase the number of such studies to replicate similar positive developments in its economy. In this way, it can be advantageous in competition in other sectors. Thus, both solution policies and healthier foreign trade policies can be developed. This study only evaluated the furniture industry and its subgroups. In future studies, different sectors in the Polish economy can be compared or cross-country comparisons can be made.

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Annex 1

Product Code	Product Name
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated nameplates and the like; prefabricated buildings
9401	Seats, whether or not convertible into beds, and parts thereof, n.e.s. (excluding medical, surgical, dental or veterinary of heading 9402)
9402	Medical, surgical, dental or veterinary furniture, e.g. operating tables, examination tables, hospital beds with mechanical fittings and dentists' chairs; barbers' chairs and similar chairs having rotating as well as both reclining and elevating movement; parts thereof
9403	Furniture and parts thereof, n.e.s. (excluding seats and medical, surgical, dental or veterinary furniture)
9404	Mattress supports (excluding spring interiors for seats); articles of bedding and similar furnishing, e.g. mattresses, quilts, eiderdowns, cushions, pouffes and pillows, fitted with springs or stuffed or internally filled with any material or of cellular rubber or plastics, whether or not covered (excluding pneumatic or water mattresses and pillows, blankets and covers)
9405	Lamps and lighting fittings, incl. searchlights and spotlights, and parts thereof, n.e.s.; illuminated signs, illuminated nameplates and the like having a permanently fixed light source, and parts thereof, n.e.s.
9406	Prefabricated buildings, whether or not complete or already assembled

CHAPTER 16

THE ARAB SPRING AND ITS REFLECTION ON SYRIA

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1. Introduction

The Arab Spring is a process expressing the series of events that were initiated in Tunisia in 2010 and that spread to many Middle Eastern and North African countries in a short time. This process involved popular political, regional, and social actions that ranged from protest demonstrations to mass actions to change oppressive and authoritarian governments and from armed conflicts to civil wars. Although the Arab Spring process ended with the implementation of various reform arrangements by the governments in some countries, it brought about power and regime changes in others. Contrary to what was expected, the change of power did not take place in Syria, one of the countries most affected by the Arab Spring, and serious human rights violations emerged in the chaos and civil war. Then, a dead-end was reached after foreign powers were involved in the ongoing struggle between the pro-regime and opponents of the regime in the country. The Syrians, who had no hopes for political stability in the country and wanted to escape from the civil war, sought refuge in different countries, especially neighboring countries. The country that was most affected by this migration wave was Turkey, which has a 911 km border with Syria. Turkey was followed by Lebanon, Jordan, Iran, Egypt, and North Africa.

In the present study, the purpose was to uncover the general situation of the Arab Spring process and to make a brief evaluation of the effects of this process on Syria. The qualitative research method was used in the study that was prepared for this purpose. In this context, the data that were collected with document analysis were interpreted with the descriptive analysis technique. The study is organized as follows; information is provided in the following section

about the Arab Spring. In the third part, the effects of the Arab Spring on Syria are mentioned, and the study is concluded with the conclusion part.

2. About the Arab Spring

The Arab Spring is the short and symbolic name of the chain of events that were initiated in Tunisia in 2010 and then spread to the Middle East and North Africa (Naqvi, 2014, p. 339). The Arab Spring, which is also called with different names e.g. “Arab Awakening”, “Arab Revolution”, or “Arab Revolt” in social media and some studies on the subject, refers to the entire freedom and awakening movements of the Arab peoples. These movements, which affected many Arab countries in a short time, included protests, political and armed regional and social actions aimed at changing the oppressive and authoritarian governments (Doğan & Durgun, 2012, p. 62; Kırık, 2012, p. 89). These movements, which often ended with the change of regime and power stemmed from the discomfort and boredom of the people of many countries about the arbitrary practices of the administrations and corruptions (Gün & Koçak, 2012, p. 9), unemployment problems, inflation, and poor living conditions (Dede, 2011, p. 28-29).

As is already known, the dissatisfaction, suppression, and deprivation felt by the Arab peoples from the oppressive regimes, which started to appear after they became independent and strengthened over the decades, made a great process of change inevitable in the Arabian geographical areas. The unrest felt of the regimes incapable of providing even the most basic services, the unfair and unjust practices that were perceived for many years after the Cold War were gradually coming to light in this process (Köchler, 2014, p. 365-366). Of course, the increased number of the “educated unemployed” young population, who were exposed to social exclusion in parallel with this increase in Arab countries, whose living expenses and education levels were increasing, accelerated the expression of this unrest. In addition to the loss of importance of traditional sources and elements that provided legitimacy to Arabian regimes, the decreased influence of Western states in the region, especially the United States of America (USA), contributed to this process (İnaç, 2012, p. 492).

At this point, it was observed that the demands for change became essential and unavoidable at some point. As is already known, a triggering event or spark is required for almost every large-scale change demand to turn into a revolutionary movement. The events started in the Arab Spring after a young man who was named Muhammed Buazizi, who earned his living by peddling despite being a university graduate, lost his car confiscated by the municipal authorities in the city of Sidi Buzid in Tunisia, and Buazizi, whose efforts to prevent this was

inadequate, tried to commit suicide by burning himself on 17 December 2010 (Yılmaz, 2011, p. 47). The government officials' use of all kinds of power to suppress the protests that started in the city of Sidi Buzid in this process led to the growth of the protests. Video recordings of the harsh interventions of law enforcement officers and the way they suppressed the protests first reached social groups and then the international media through social media. The authorities tried to apply censorship to social media platforms in this process instead of calming the events and this even increased the actions (Yavaşgel & Polat, 2014, p. 72-73). It was seen in this process that local unions and banned political parties also supported these demonstrations. In this way, young people who did not have a fully organized structure but who took leading roles in the popular movements gained a more active and organized structure. When the demonstrators in different parts of the country that acted in an organized manner turned towards the capital, the Ben Ali administration called the army to duty to suppress the protests. However, after the army refused to shoot at the civilian population, armed conflicts started between the army and the police force. Ben Ali, who could not remain indifferent to these developments, made promises and initiatives on some issues, especially regarding employment and democracy. Ben Ali had to leave the country with his family after his statements and attempts failed in relieving the chaos (Koçak, 2012, p. 41; Özipek, 2013, p. 54).

This success of the Tunisians, which led to the change of power, also served as an inspiration for other countries in the region (e.g. Egypt, Libya, Jordan, Yemen, Sudan, Algeria, Bahrain, Kuwait, and Syria) creating a domino effect in a short time and causing the spread of protests in these countries (Polat & Durmus, 2015, p. V). The development that initiated the protests in Egypt, which was the first of these countries, was the death of a young man named Halid Said, who shared the video recordings of the police taking bribes from drug dealers, on the internet, after police violence when he was detained. After Said's death, protesting demonstrations gained momentum in the country (Polat, 2016, p. 139). The demonstrations that were initiated in Egypt on January 25, 2011 turned into a civil uprising with wide participation in a short time with the focal point being the removal of President Hosni Mubarak from power. The accumulated unrest against the regime in Egypt (Bekaroğlu & Kurt, 2015, p. 24) and internal dynamics also made up the necessary ground for uprisings. Also, it was observed that the political and social conditions in the country also allowed this. As is already known, some rebellion movements were initiated by the radical groups in Egypt with broad participation of the Muslim Brotherhood; however, with the support of Western states, which were worried about the shift

of the country to a radical Islamic regime, Mubarak made attempts to end these by applying violence. However, the strategy of “transforming the Middle East” and “removing it from being an enemy” adopted by the Western states after the September 11 attacks especially by the USA, led to a distance and lack of support for the oppressive regimes that remained in power despite the people. This change in strategy not only prepared the ground for the Arab Spring in Egypt and other Arab countries, but also mediated its spread (Kibaroglu, 2011, p. 26-27). Finally, the protests that were initiated on January 25 ended when President Mubarak announced that he had left office (Yavaşgel & Polat, 2014, p. 75). After Mubarak left his post, Mohamed Morsi was elected as the President in the elections. However, Morsi was dismissed with a military coup by General Abdülfettah Said Halil al Sisi one year after he took office on the grounds that he did not meet the demands of the people (Şahin Mencütek et al., 2015, p. 11). As can be seen, although the army in Tunisia was weak, the strong army of Egypt changed the course of the movement in the country and prevented a radical change in the regime (Polat & Durmuş, 2015, p. 118-119). However, the fact that political and social outcomes could be achieved as a result of the protests even in Egypt facilitated the spread of the Arab Spring to other countries.

As a matter of fact, protests and actions were initiated in Libya in February 2011 under the effects of the popular movements in Tunisia and Egypt. This activity increased its violence in Libya after the human rights defender and opposition lawyer Fatih Turbel was arrested in Benghazi, and spread throughout the country. Excessive force was used by the Gaddafi Government to suppress the popular movements in the country (Doğan & Durgun, 2012, p. 80), which led to the tribal forces supporting the opposition which took the control of the cities in the east. Then, it was decided to establish an alternative interim administration in this area by the opponents who took control of eastern Libya, and the National Transitional Council was created on February 27, 2011. Although the National Transitional Council had significant success in the field of foreign relations and focused on military resistance, the lack of a coordination among the opposition groups caused that the expansion of the areas under Gaddafi’s military control expanded. The intense use of military power of Gaddafi in the civil war and the attacks against civilians by using air power support were brought to the agenda of the international public opinion (Ayhan, 2011, p. 9-12). As a matter of fact, it was decided to implement a no-fly zone, to use military force to protect the civilians in the country, and to take all related measures by the UN member states under the influence of the Western states targeting the regime in Libya with the resolution 1973 of the United Nations (UN) Security Council. Then, a military

intervention was made in Libya through the North Atlantic Pact (NATO) in line with the decision taken by the UN (Akbaş & Duzgun, 2012, p. 68-70). After the involvement of the NATO in the events, the forces of Gaddafi gradually regressed towards the capital Tripoli, and the control of the capital passed into the hands of the opposition led by the National Transitional Council on 22 August. Gaddafi, who lived on the run for some time in this period, was caught in Sirte on October 20, and was killed by lynching (Yılmaz, 2012, p. 2-3).

It is interesting that the Arab Spring, which led to regime change in Libya, did not yield the same outcomes in Algeria and Morocco. It was seen that large-scale demonstrations were not experienced in Algeria during the Arab Spring period when compared to other countries, and unlike Tunisia and Egypt, the army did not support the demonstrations. The first of the reasons behind this preference of the regime was the memories of the democratic experiment that wanted to be implemented in the early 1990s but that ended in a bloody civil war were still fresh. In this respect, it can be argued that the Arab Spring was not able to mobilize the “apolitical” Algerian people, who did not recover from the effects of the civil war. Another reason was that the Algerian regime wanted to avoid the chaos that was seen in the countries experiencing the Arab Spring. The opposition in the country that demanded the revision of the system with gradual reforms instead of revolution can also be listed among these reasons. Finally, the fact that international actors were in favor of the continuation of stability in the country because of their economic relations with Algeria and their alliances in the field of security had great effects in the absence of a large-scale uprising and regime change in Algeria. As a matter of fact, the then-current regime continued to exist without major breaks in the Arab Spring process with the political and economic reforms made in this period (Temelat, 2012, p. 64; Koşak, 2019, p. 148-159). Similar to Algeria, Morocco also passed the Arab Spring test successfully. The protest demonstrations, which started after the 20 February protest movement in Morocco with students demanding a transition to a parliamentary monarchy, the adoption of a new constitution, and the improvement of democratic and socio-economic conditions, were responded quickly to by King Mohammed. Immediately, a Constitutional Commission was established in the country, and the preparing the constitution process, which also included political parties and NGOs, was initiated. At the end of this process, a new constitution, which included the principle of separation of powers and provisions to strengthen fundamental rights and freedoms was submitted to a referendum on 1 July 2011, and was accepted. Although some protest demonstrations were held later on the grounds that the reforms that were

introduced by the new constitution were not adequate, they ended before they went into full conflict with the regime. In this, the fact that “regime leaders learned how to react to challenges from the people” was effective as well as the high legitimacy of the royal regime in the eyes of the people (Temelat, 2013, p. 81, 97). In this way, although the protest demonstrations in the country were similar to those that were organized in Tunisia in terms of beginning and development, they did not cause the same results (Kılavuz, 2016).

Various protests and internal conflicts were faced in other countries that were affected by the Arab Spring, in Bahrain, Oman, Jordan, Yemen, and Syria, respectively (UNHCR, 2011). It can be argued that, among other countries, Bahrain was the only example that experienced the Arab Spring, and foreign actors intervened in favor of the regime and made democratization demands become more difficult. In the country, where the left-wing and Shiites rioted against the government since the 1960s for many reasons from the authoritarian regime to sectarian discrimination and from human rights violations to corruption, it was observed that opposition groups started to demonstrate again in February 2011 with the demand for democratic and political reforms. However, the Bahrain administration took very harsh military measures against these demonstrations especially with the pressures of Saudi Arabia, and tried to cover the problem by force without taking any remedial steps (Efegil, 2013, p. 14). Unlike the Bahrain administration, Oman refrained from suppressing the demonstrations that emerged during the Arab Spring by force, and overcame the effects of this process by applying economic and political measures in a short time. Concrete economic measures were taken to improve wages and salaries and to prevent unemployment and poverty enabling the establishment of social peace as well as the political reforms implemented after the dialogue with the demonstrators (Dursun & Koca, 2012, p. 424). Jordan was one of the countries where the effects of the Arab Spring process were moderate. Jordan, where violence was experienced very limited compared to many Arab countries, hosted demonstrations that demanded the correction of the regime instead of overthrowing it (Şen, 2012, p. 155). In the country, where almost every segment of the political spectrum (from the right to the left) demanded economic and democratic reforms and acted together, legal and constitutional arrangements were made for these demands, necessary committees and commissions were formed, this process was avoided (Akbaş, 2012, p. 316). The Arab Spring also affected Yemen, which is one of the most underdeveloped countries of the Arabian Peninsula. The protests, which grew after the demonstrators who were mostly unemployed young people exposed to the pressures of the regime for

years, turned into armed conflicts and resulted in President Ali Salih's handing over his powers (Yavaşgel & Polat, 2014, p. 76). However, unlike the countries examined above, the Arab Spring reinforced the image of a "failed state" in Yemen, and turned the civil war into a chaotic structure. The country entered a period in which individuals had difficulty meeting even their basic needs with the political and economic chaos (Cihangir, 2018, p. 175).

3. Reflection of the Arab Spring on Syria

The onset of the events in Syria was also similar to those in other Arabian countries. When approximately fifteen young people who were aged between fifteen and seventeen wrote "The people want the regime to be overthrown!" on walls, this became the slogan of the Arab Spring process on March 15, 2011, in the city of Dera, which is located in the south of Syria, and the police and the people confronted each other. As a matter of fact, these protests increased even more after the arrest of those who wrote the slogan. With this development, March 15 was declared as the "Day of Anger", and anti-regime demonstrations started in many cities of the country after Friday prayers on March 18 (Taştekin, 2015, p. 12; Polat, 2016, p. 141-142; Gök, 2019, p. 89). The Muslim Brotherhood Organization, members of the former BAAS Party who were offended by the regime, Kurds whose status in the country was not clear, opponents in exile, and leftists also participated in these demonstrations over time (Taştekin, 2015, p. 13). The attitudes of the regime were harsh towards these actions, which were supported by the opponents who demanded the abolition of the state of emergency that had been ongoing in the country since 1963, separation of powers and demilitarization, as well as the provision of income distribution justice, introduction of a broader definition of citizenship, and the revision of laws on political parties by restricting the powers of the BAAS Party (Şöhret, 2016, p. 78). The regime, which tried to radicalize the popular movements in the first place, made provocative and discriminatory statements against those who participated in the protests, arrested civilians, and released radicals who were known to join Al Nusra or DAES when they were released. In this respect, the protests continued, and international pressure increased against the Assad regime. As a response to this, the then-current government resigned, and some decisions were published regarding the abolition of martial law and the promotion of demonstration rights. Then, a new constitution was enacted. However, it cannot be argued that these changes had positive impacts on the opposition side. The resignation of the leaders in Tunisia and Egypt in this process, and the bankruptcy of the regimes became the main expectation of the Syrian opposition

in a short time. However, although the Assad administration initiated reform movements, it also started a strong resistance by using the armed forces to end the demonstrations. In this period, when the attitudes of the regime towards the demonstrators started to become tougher, it was observed that the opposition groups started an armed struggle to defend themselves, and there were divisions in the army. The Free Syrian Army (FSA) was established by non-Nusayri soldiers. It was observed in this period when the conflicts and civil war between the regime forces and the opposition elements continued in the country that the interest in Syria increased in an international sense. Although many western countries, especially the USA, wanted the Assad regime to resign (Matic, 2019, p. 243-244; Kiraz, 2021, p. 94), it was seen that countries such as Russia, Iran, and China, which had long-term political and commercial relations with Syria, supported the regime at all costs (Miş, 2012, p. 263). For this reason, China and Russia, which were among the permanent members of the UN Security Council, vetoed the bill about an intervention in Syria, mentioning the principle of “not interfering in the internal affairs of sovereign states”, in the face of the “humane intervention” justification of the Western states and the Arab League in the Syrian crisis (Topal, 2015, p. 121). In this way, the contribution of China and Russia, which diminished the pressure of the international system on the Assad regime, as well as the contribution of Iran, which provided military support to the regime along with human support since the beginning of the civil war, extended the life of the regime (Muslu, 2018, p. 11).

Also, the fragmented image of the opposition, lacking a common ideology and leader, logistical problems, and not having a clear vision for the future of the country, and the inability of the reactions against the regime in turning into a common popular movement supported by the working class as in Egypt or Tunisia contributed to the Assad regime implicitly. The existence of bureaucrats, who were mostly the members of the Assad family, and who benefited from the system, also strengthened the Assad regime (Şen, 2013, p. 68-69; Deniz, 2013, p. 320). Finally, it is also worth mentioning that the power-army integration in the country caused that the civil war had a different outcome than in other Arab Spring countries (Şöhret, 2016, p. 80). For the reasons listed above, the Arab Spring process evolved into a bloody civil war in Syria, where popular movements did not cause a change of power unlike in other Arab countries, and has been continuing since 2011. The country has entered a spiral of instability with the military interventions against the oppressive rule of the Assad family, who has been ruling the country since 1971. The situation of the country even

deteriorated day by day with the involvement of foreign powers in the fight between the anti-Assad front and the supporters of the regime within the country (Telli, 2020, p. 1281-1282).

Right at this point, the Syrian civil war continues to be among the most important problems of the region and international politics with its ten-year-old history and the heavy destruction it caused. When the process mentioned above is considered, it is concluded that the problem cannot be evaluated as a mere conflict between the regime and its opponents in Syria, but the thing that is actually happening there is much more than that. Although there was classical internal unrest in the early period, this changed in a short time and caused that Syria became a battleground for regional and global power rivalries as well as conflicts of ethnic minorities and sects. No doubt, the devastation that was caused by such a conflict evolved into a great tragedy beyond ordinary domestic unrest. Unfortunately, the biggest share of this tragedy was for civilians (Kiraz, 2021, p. 110). The chaos and armed conflicts in this process became unbearable for the civilian population. As a matter of fact, civilians, who were convinced that political stability could not be achieved in the short term, found the solution by leaving their country, and immigrating to different countries, especially neighboring ones (AFAD, 2014).

According to the data of the UN Refugee Agency, approximately 5.7 million Syrians had to migrate because of the civil war there (Asan, 2020). The country that was most affected by this movement, which was described as “the largest migration waves in recent history”, was Turkey, which has a 911 km border with Syria (Erdoğan, 2015, p. 317-318). According to the data of January 2021, Turkey, which hosted 3 million 645 thousand 557 Syrian refugees alone, reached the position of the country that received the highest number of immigrants (Refugees Association, 2021). In terms of the number of registered Syrian refugees, Turkey is followed by Lebanon with 916 thousand 113 people, Jordan with 654 thousand 192, Iran with 244 thousand 539, Egypt with 129 thousand 159, and North African countries with 35 thousand 713 people (UNHCR, 2019).

4. Conclusion

The protests that caused the change of power in Tunisia, which had been the cradle of the Arab Spring, created a domino effect in a short time, and spread to many Middle Eastern and North African countries that had similar problems. The

strong army figure in Egypt, which was the first of these countries, changed the course of the movement in the country avoiding radical changes in the regime. However, despite everything, the fact that the protests had some political and social outcomes even in Egypt made it easier for the Arab Spring process to spread to other countries. Among these countries, Algeria and Morocco continued on their way with the existing regimes without experiencing major breaks and crises during the Arab Spring process, which led to regime change in Libya. The effects of the process were overcome by applying economic and political measures in Bahrain, which was one of the other countries affected by this process, by trying to cover up the existing problems with force without taking any remedial steps, and by applying democratic and economic measures in Oman. In Jordan, which was one of the countries where the Arab Spring process had moderate effects, this process was avoided by improving the democratic aspect and economic conditions of the regime. In Yemen, however, it was observed that the civil war and the political and economic chaos deepened in parallel. The last point to be mentioned in the perspective presented until now was the events in Syria, which was also the subject of the present study. Although the beginning of the events in Syria was similar to other Arab countries, it was observed that the Arab Spring had different outcomes in Syria. The process became complex because of many internal and external reasons strengthening the Assad regime and carrying the civil war to different dimensions. The existing problems grew even more in this process with the involvement of foreign powers in the fight between the supporters of the regime and opponents. Right at this point, it was observed that the Syrian crisis moved away from internal unrest that was specific to only one country, and transformed the country into a field where regional and global power competition, ethnic and sect conflicts were faced. As a matter of fact, the most affected part of the tragedy at an increasing rate day by day in this field was the civilian population. The Syrians, who lost their hopes for recovering political stability in the country and wanted to escape from the civil war, found the solution by taking shelter in different countries especially neighboring ones.

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CHAPTER 17

LUXURY HOUSING TAX IN TERMS OF TAXATION PRINCIPLES

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1. Introduction

Today, the government's need for revenue is largely met by tax revenues. Although it is seen as a solution for government to increase the burden of existing taxes to meet their increasing income needs, the optimal level of tax rates will remain as the limit of taxation. Ensuring that the tax is diversified and spread to the base is important for the sustainability of the tax revenues for governments. Especially with the development of technology, the emergence of new economic activities and the taxation of these areas require fair method. The limit of the government's authority to tax economic resources in this way is determined in the Constitution. In this context, constitutional taxation principles limit the legislator in the context of taxation authority.

It is stipulated in the article of 73/1 that the primary purpose of the taxes to be collected from everyone is to finance public expenditures. According to article 73/1, tax taken from everyone in accordance with the principle of generality in tax, is required to be taken according to financial solvency. In this context, the indicators of financial solvency in Turkey are income, expenditure and wealth. It is not possible for the financial solvency indicators to reflect all the income and expenditures of individuals. Even if the wealth elements do not create income or cause spending, it gives power to people in terms of economic confidence. For this reason, taxes on wealth are of great importance in terms of catching the economic power (Uluatam, 2014: 398). In other words, taxes on wealth plays

an active role in transforming fixed assets into functioning (Akdoğan, 2007: 259). In addition, if certain incomes and earnings are not sufficiently taxed, the complementary function of wealth taxes comes to the fore (Turhan, 1998: 175).

While the taxes collected on income and expenditures were collected for the realization of financial purposes, taxes on wealth were taxed by considering the social purpose (Ömür and Gerçek, 2017: 198). Taxes taken from wealth and from the change of wealth also have the feature of ensuring justice. In this context, preventing imbalances in income and wealth distribution through taxation constitutes a justification (Erdem et al., 2016: 259). In addition, due to the taxation of wealth, in cases where income is not taxed or under-declared, it is another reason to provide control with such taxes. (Turhan, 1998: 175). In this context, it can be said that there is an auto-control mechanism of wealth taxes on income taxes and therefore have an audit feature (Mutluer et al., 2016: 268)

The Luxury Housing Tax (LHT), which is considered as an indicator of the ability to pay and which deals with the residences exceeding a certain tax value, was introduced as a new wealth tax. LHT, which became into law with the articles added to the Real Estate Tax Law with the Law No. 7194 on Digital Service Tax and Amending Some Laws and Decree Law No. 375, started to be implemented in 2021. In addition, with the Law No. 7221 some provisions of the law have been changed with the Amendment of Geographic Information Systems and Making Laws.

Luxury Housing Tax is a new wealth tax for taxing residential real estates whose value are above a certain amount. Especially in recent years, the existence of practices that emphasize financial solvency for wealth taxes is very important in terms of tax justice. In this context, this process, which started with the addition of the value of the vehicles to the tax base in the Motor Vehicles Tax, continues with the Luxury Housing Tax regulation. In this study, the compliance of Luxury Housing Tax with taxation principles is examined in Turkey. In this framework, Luxury Housing Tax is seen as suitable for taxation within the scope of tax justice and financial solvency since it has a structure that reduces wealth differences between individuals, but it also constitutes a contradiction in terms of many taxation principles.

2. Luxury Housing Tax in Turkish Tax Law

2.1. Subject of Tax

According to the provision of Property Tax Law of article 42, Subject of Luxury Housing Tax are residential properties that are located within the borders of Turkey. In addition, the same law stipulated that the building tax value must be

above 5,000,000 TL in order for a residence to be subject to taxation. The limit set in this provision increases every year at the rate of half of the revaluation rate. In this context, the building tax value limit for 2021 has been determined as 5,227,000 Turkish Lira.

If the residential real estate has more than one independent section, each independent section is subject to tax separately. Accordingly, each independent section of the real estate that are under land register records can be called as residential real estates (Special Notice No. 271358 dated 28.03.2021). In addition, in determining whether the real estate has the characteristics of a dwelling, the actual usage status of the real estate is also taken into consideration. In case the buildings with residential properties in the land registry are used for activities within this scope by obtaining a business and working license from the relevant administration, they will be considered as workplaces due to actual use and will be excluded from the taxation (Special Notice no. 271359 dated 28.03.2021).

2.2. Tax Payer

It is necessary to specify the taxpayer as the owners of the residences whose building tax value exceeds the determined limit. In accordance with the article 45 of Property Tax Law, the taxpayer is the owner of residential real estates within the borders of Turkey, the usufruct owner if any, and those who dispose of a residential real estate if both are not available. Owners of residential real estate in the case of shared ownership are liable in proportion to their shares. In case of joint ownership, the owners are jointly and severally liable for tax.

Property Tax Law expresses in the article 45 that how the liability of LHT starts. According to this:

- The date when the building tax value of the taxable real estate exceeds the legal limit,
- In case of reasons that change the tax value of the building written in article of 33 of Property Tax Law, the date of these changes,
- It starts from the year following the date on which the exemption disappears.

Termination of the liability is enshrined in the article of 45 of Property Tax Law. In accordance with this provision, LHT liability of residential real estates that have been burned, destroyed, rendered completely unusable or that have met the exemption conditions while subject to taxation will cease to be taxable as of the installment following the date of occurrence of these events.

2.3. Tax Base and Rate

The part of the building tax value that exceeds the specified limit as the tax base is ensured in the paragraph 44/1 in Property Tax Law. Pursuant to this provision, the value of the real estate subject to LHT is determined as 3 per thousand for the value of the property between 5,000,000 TL and 7,500,000 TL (including this amount) exceeding 5,000,000 TL. Those up to 10.000.000 TL (including this amount) 7.500 TL for 7.500.000 TL, 6 per thousand for more and more than 10.000.000 TL 22.500 TL for 10.000.000 TL, 10 per thousand for more has been determined. However, according to paragraph 42/4 of Property Tax Law, the lower and upper limits of these values are increased each year by half of the revaluation rate determined in accordance with the provisions of the Tax Procedure Law No. 213 with respect to the previous year.

2.4. Tax Exemption and Exception

The LHT exemption has some provisions for the public sector. Relevant institutions and organizations benefit from exemption provisions. “*Residential real estate owned or owned by the general and special budget administrations, municipalities, universities and the Housing Development Administration.*” evaluated in this context. There are also exemptions for individuals. In addition, “*Domestic real estates belonging to foreign states and used as embassies and consulates, and residential real estates for the residence of ambassadors and their outbuildings (provided that they are reciprocal) and residential real estates belonging to international organizations headquartered in Turkey and representative offices of international organizations in Turkey.*” also included in the exemption regulation.

Real estates properties whose tax value does not exceed TL 5,000,000 for residential buildings within the borders of Turkey are exempt from taxation. In addition, taxpayers who have a single residence and exceed the limit are also included in the scope of tax exemption. Taxpayers who own more than one taxable real estate will be able to include the single real estate with the lowest value in the tax exemption. In addition, newly constructed residential real estates that are registered in the businesses of those whose main field of activity is building construction and that have not yet been subject to first sale, transfer or assignment are within the scope of exemption.

2.5. Declaration and Payment

According to article of 47 of Property Tax Law, LHT is declared to the tax office where the real estate subject to the tax is located. This can be provided with a declaration until the end of the 20th day of February of the year following the year in which the relevant real estate value exceeds the tax value determined as the limit. The tax is assessed and accrued annually by the authorized tax administration on the value provided with the declaration. For the following years, the taxpayer submits an annual declaration in the same way, and the assessment and accrual takes place. The tax levied and accrued by the tax administration is paid in two equal installments in February and August of the relevant year.

3. Evaluation of Luxury Housing Tax in Accordance with Taxation Principles

3.1. Luxury Housing Tax in Terms of the Rule of Law Principle

One of the areas where the state can interfere with the rights and freedoms of individuals is taxation (Bati, 2021: 42). It is in accordance with the principle of the rule of law that this intervention should be done in moderation. In this respect, according to the principle of the rule of law, it is a constitutional requirement that the state protect the fundamental rights and freedoms of individuals and use its taxation authority in this direction. The necessity of the state to make taxation is stated in the article of 73/1 in Constitution as “to cover public expenses”. In addition, it is stated in the same article that taxation is an obligation for individuals. In this context, the most basic reason for taking LHT is for the financing of public expenditures. However, another tax levied on the same tax subject is the property tax. Therefore, taxation of a taxpayer more than once on the same tax subject within the same taxation period creates the problem of double taxation. The receipt of LHT required taxpayers to be taxed twice in one taxation period on the same real estate. For this reason, taxation under the name of LHT for the second time within the scope of wealth tax for residential real estate will mean an aggravation of the tax burden for taxpayers. This taxation undermines the principles, which is stated in the constitution in article 73, financial solvency, justice and equality. As a matter of fact, allowing the deduction of real estate tax from the tax base to be paid by LHT, which is a tax based on declaration, will eliminate the double taxation problem (Kuşoğlu, 2020: 130). In this way, a fairer taxation will be achieved for LHT taxpayers. Similarly, when the problem of double taxation may come to the fore in both

cases, that is when the rental income of the rented house is taken and luxury housing tax is taken. However, the progressive nature of the tax and the fact that it will be collected from the taxpayer in more than one taxation period, not once, will also cause problems. Because, when exposed to DKV due to a residence acquired by inheritance or in another way, although their financial situation is not very good, then it is undeniable that the property rights of the citizens who sell or are executed will be damaged if they have difficulty in paying the related tax debt every year.

3.2. Luxury Housing Tax in Terms of Tax Justice

The article of 73/1 in the constitution states that everyone should be subject to taxation according to their financial solvency. Indicators of people's financial solvency are income, wealth and expenditures. In this context, the principle of equality in taxation necessitates taxation according to financial solvency without giving any privileges to individuals. Therefore, this principle, which ensures that the rights of individuals are secured, reveals the limiting aspect of the taxation authority. In addition, in accordance with the principle of financial solvency, it is a constitutional obligation to make taxation by taking into account the economic and social conditions of individuals. In the luxury housing tax, residential properties are subject to taxation if the exemption and value limit specified in the law are exceeded. The taxation of taxpayers who exceed these legal limits is against the principle of constitutional equality. In this respect, if the real estate of some persons, which are large in number, do not exceed the legal limits in terms of LHT, but the total value of the real estate subject to LHT is considerably higher, an unfair taxation occurs.

Although the principle of generality in tax means that everyone contributes to public expenditures, this principle necessitates the distribution of the tax burden in proportion to the financial strength. Therefore, those whose financial strength is not sufficient to pay taxes can be excluded from the tax (Kaneti et al., 2019: 50). In addition, the article of 73/2 in the constitution state that, the social purpose of the tax was brought to the fore in accordance with the fair and balanced distribution of the tax burden. In this context, due to the tax structure of LHT focusing only on the value of the real estate and the fact that it can subject the real estate to taxation regardless of income, its effect may be low in terms of measuring financial strength. In this way, an evaluation can be made especially regarding the acquisitions of the taxable real estate property, which are in the nature of inheritance or a separate transfer from income. By expanding the exemption provisions, which help to reveal the financial solvency in taxation

for these taxpayers, a fair and balanced distribution of the tax burden is ensured, and the social purpose of the tax can also be preserved. For example, the article of 8¹ in Property Tax Law provides that taxpayers are excluded from taxation by considering their economic situation.

It can be said that the single housing exemption in LHT is a positive regulation for some taxpayers. The legislator's inclusion of single-dwelling real estates within the scope of tax exemption is seen as a fair arrangement, especially for those whose wealth consists of a single dwelling (İşler and Tümer, 2020: 175). However, the fact that valuable wealth elements, which are real estates, are not included in the scope of taxation is against the principle of financial solvency. In this respect, exclusion of workplaces, for example, whose tax value is the same or higher than that of residential real estate, undermines the sense of justice of the LHT payer. The principle of equality in taxation envisages that similar events with the same economic character should be taxed in the same way. In accordance with the principle of horizontal equality, it is a constitutional obligation for people with the same real estate value to bear the same tax burden. In this respect, although the nature of the real estate has changed, the exclusion of similar workplaces from taxation may reduce the voluntary compliance of taxpayers with taxation. In this context, while citizens with two residences worth 4.500.000 TL are not counted within the scope of LHT, it is worth criticizing that the owners of residences whose value exceeds 5.227,000 TL for 2021 are subject to LHT.

In the article of 42/3 in Property Tax Law, the total value of the real estate residence is taken as the basis for the calculation of the tax base in joint ownership and co-ownership. According to this provision, the total value is taken into account for tax liability in joint ownership and co-ownership. Therefore, even if the share of the person who owns the real estate subject to the tax does not exceed the tax value limit, he/she is the taxpayer. This situation is contrary to the principle of justice in taxation (Başak, 2020: 58).

¹ *“The President of the Republic of Turkey is responsible for those who are responsible for taking care of themselves but who document that they have no income, except those who are under the age of eighteen, whose income consists exclusively of the pension they receive from the social security institutions established by law, veterans, the disabled, the widows and orphans of the martyrs, whose gross property value does not exceed 200 m² within the borders of Turkey. In the event that it has only one residence (including the right of usufruct), it is authorized to reduce the tax rates of these residences to zero. This provision shall also apply to the portion of their shares if the above-mentioned persons own a single residence with shares.*

3.3. Luxury Housing Tax in Terms of the Principle of Proportionality

The legislator determines taxes and receivables with the authority taken from the Constitution. While the legislator uses this authority, it is necessary to take decisions proportional to the solvency of the taxpayer. Therefore, with the decisions to be taken regarding taxation, both the public interest should be ensured and the rights of taxpayers should be protected.

The principle of proportionality is a Constitutional principle aimed at limiting the excessive use of the taxation power of the legislator. This constitutional principle states that the amount of tax to be released in tax law and the related receivables should not be overdone (Bati, 2021: 43). Through taxation, the state interferes with the property rights of individuals. The state is obliged to remain within the legitimate limits while exercising this authority, in accordance with the principle of constitutional proportionality (Uçar, 2021: 80). In this context, the principle of proportionality is also a requirement of being a state of law. The principle of proportionality has been evaluated with its sub-elements in a decision of the Constitutional Court.

Accordingly, the sub-elements of the principle of proportionality are; “suitability”, “necessity” and “proportionality”. Among these principles, suitability means the compliance of the legal measure with the stated restriction, the principle of necessity means that the restrictive measure is necessary or necessary for the purpose to be achieved, and the principle of proportionality means that there is a proportional ratio between the measure applied and the aim to be achieved (Bati, 2021: 43). In this direction (Uçar, 2021), it has been stated that it is convenient to use LHT as a tool to provide public finance, but no inference has been made in terms of necessity. In addition, although it can be argued that with the last regulation of LHT on tax base, a certain degree of compliance with the principle of proportionality has been achieved, it can be stated that the exemption provisions do not comply with this principle. That is to say, it is noteworthy that those who own a single residential real estate within the borders of Turkey, and those who own more than one residential real estate, are within the scope of the exemption of the lowest valued single residential real estate subject to the luxury housing tax.

3.4. Luxury Housing Tax in Terms of Benefit Principle

It would be correct to use the taxes to finance municipal services and these taxes should be paid by the local people benefiting from the services (Nacar, 2005: 161). The services provided for luxury residences are carried out by the municipalities. Therefore, the taxable real estate is located within the boundaries

of the local administration and has a structure that benefits from the service provision of these administrations. Municipal services that affect the value of valuable residences and taxation as a reward for these services can be effective in taxpayers' internalization of tax. In addition, obtaining benefits in return for the services provided by the municipalities that will affect the value of the real estate with the taxes collected can contribute to the tax compliance of the taxpayers.

Implementation and collection of property tax belongs to municipalities. In this respect, it is possible for municipalities to provide convenience and economic efficiency in the application of the tax in terms of the fact that the residential real estate is included in the real estate tax subject of LHT and the building tax value is used in its base. In the real estate tax application, the registration and follow-up of the municipalities regarding the properties of the real estates will reduce the tax management costs in the implementation of the LHT by the municipalities. Therefore, all these features of LHT are considered more appropriate for municipalities to apply and collect this tax.

4. Conclusion

Governments, when need to generate financing especially at the time of economic crisis, pandemic, etc. it is appropriate to choose wealth taxes that are more compatible with other taxations according to solvency and other income types in terms of principles of equality, fairness in income distribution. For example, the share of wealth taxes such as motor vehicle taxes, property tax, inheritance and gift tax in Turkey in 2020 is approximately 3% in total tax revenues, and this rate is expected to increase as LHT declaration obligation begins as of 01.01.2021. In this context, according to the data of Hürriyet Emlak website; A total of 6,871 residences in 30 provinces in Turkey are on sale with a value of over 5 billion TL. When the average value of these houses is evaluated as minimum 5.227 TL, the contribution of each of them to the Treasury is 15,681 TL and in total the contribution to the Treasury will be 107,744,151 TL. The contribution of 107 billion worth of luxury housing tax revenue to the budget is remarkable. However, it is a fact that the tax value, which constitutes the basis of the luxury housing tax, is still a controversial issue today. Discussions on the tax value have been gathered especially on the fact that it does not reflect the real value of the real estates and that an objective determination can not be made in the tax values. In this context, the fact that the newly introduced LHT is built on an ongoing problem in terms of tax value, which is the basis for the tax base, reduces tax compliance for taxpayers. However, it is thought that tax collection methods, which are likely

to emerge in practice, and applying measures or mortgages to taxpayers' real estates will cause a deviation from the principle of proportionality. In addition, the fact that the issue of the sustainability of objections to the determination of the tax value of the residential real estate and its valuation is not regulated in the Law no.7194 in which LHT is regulated. However, the existence of a notification institution in the relevant law is an appropriate regulation. Of course, the taxpayer's right to file a lawsuit in the tax courts due to the tax levied and accrued by the tax administration on the basis of the declaration given with reservation in accordance with the law is reserved.

Luxury housing tax does not have a tax structure such as inheritance and gift tax, which is levied once for the taxable event. In addition, the luxury housing tax does not qualify as an extraordinary wealth tax. Therefore, LHT is a tax that will be collected every year on a continuous and regular basis. For this reason, it is important that the tax exemption provisions are in a structure that takes into account the income of individuals along with the wealth element. In this way, taxation will bring the social purpose of the tax to the fore and thus a more equitable taxation will be provided. Although the single house and the lowest valued house exemption are included in the law, the principle of full financial solvency is not reflected in this tax exemption provisions. In this framework, exemption provisions for those with low income or no income will bring the social function of tax to the fore and ensure that financial solvency is observed. Expanding the exemption provisions of LHT, which is discussed especially in terms of double taxation, and bringing the justice system to the forefront will contribute to the change of taxpayers' perspective on taxation.

Making two separate taxation on the same tax issue will negatively affect the taxpayer's voluntary compliance with the tax. In addition to the fact that the tax issue is the same, both taxes are taken over the same value may cause the perception that these taxes are taken unfairly for the taxpayer.

LHT is an important tax in the fair distribution of tax burden according to financial solvency. The taxation of luxury residential real estate is a positive step towards ensuring tax justice in Turkey, where the indirect tax burden is heavy. However, in taxation, the legislator must make regulations in accordance with the constitutional taxation principles. In this context, the regulation of LHT seems to be in violation of some taxation principles.

The taxable real estate residence is in a structure that is located within the boundaries of the local administration and benefits from the service provision of these administrations. From this point of view, instead of being included in the general budget revenues, collecting the tax in the place where the local service is

used, or in other words, giving a share from the LHT collected to the municipalities will increase the voluntary compliance of the taxpayers with the tax.

With the “Law on Amendments to Geographical Information Systems and Certain Laws” published in the Official Gazette No. 31045 in December 2019, the implementation of LHT was postponed for one year to the February of 2020, and its enforcement came to the fore again as of 2021. Therefore, before it was implemented, it was exposed to the reactions of citizens and tax experts. As a result, with the Law No. 7221, 42-49, by making changes in the articles, the practice of determining the tax base value of the houses by the commissions formed by the General Directorate of Land Registry and Cadastre was replaced by the practice of taking the real estate tax value of the house as a basis.

Due to the fact that as the previous regulation of General Directorate of Land Registry and Cadastre determines the value of houses several times higher than the real estate tax value as a base, there was a enormous objection to this by citizens and cases were taken to the court. However, it can be said that it is easy for taxpayers to avoid LHT because they can be exempt from tax when they own 4 houses with a value below 5 million TL or when the relevant limit is not exceeded in the ownership of shared housing. Such situations are contrary to the principles of solvency, equality and justice in taxation of wealth.

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