

# Academic Studies on Social and Economic Issues

Editorial Board

Prof. Dr. Berna BALCI İZGİ

Dr. Gülay ÖRMECİ GÜNEY



Project Coordinator

Kürşat Çapraz



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## CONTENTS

Appreciation .....	9
Informal Economy And Unemployment In Western Balkans: MIMIC Approach.....	11
<i>Abdulgafur SINANI</i>	
The Relationship Between Savings Rate And Macroeconomic Indicators In Turkey: Toda-Yamamoto Causality.....	25
<i>Hilal ALPDOĞAN</i>	
The Impact of COVID-19 Pandemic on Kazakhstan Stock Market.....	41
<i>Aziza SYZDYKOVA</i>	
Towards Effective Teaching in the Post-Pandemic Stage. College and University Education. Chile a case of Study.....	64
<i>Roberto ACEVEDO, Sissi. B. ACEVEDO, Andrés Soto-BUBERT</i>	
A Qualitative Study on the Conceptual Framework and Success Requirements of Benchmarking and Its Future .....	91
<i>Hatice SARIALTIN</i>	
Market Structure in Olive and Olive Oil: Comparison of Italy and Turkey in terms of Cooperatives & Good Agricultural Practices .....	135
<i>Burcu SÖNMEZ, Berna BALCI İZGİ</i>	

Drifts In Green Marketing In Developing Economies:  
Perspective Of Customer And Corporates..... 186

*Rashmi GUJRATI, Hayri UYGUN, Uma GULATI*

Effect of Economic Growth and Income Distribution on  
Human Development: An Empirical Analysis  
of Selected 17 Developing Countries..... 197

*Volkan HAN, Gazi POLAT*

Ideal Point Estimation of Turkish MPs on International  
Agreements' Approval Voting in the 26th Legislative  
Period..... 218

*Aziz KUTLAR, Ali KABASAKAL, Ahmet GÜLMEZ*



## Appreciation

This book aims to provide the publication of our academicians precious studies in various fields of social sciences and economics and to contribute to the field through current issues. To our valuable academicians who contributed with their studies; we would like to thank and express my gratitude to Project Coordinator, for his unwavering support throughout the process, to the scientific committee, to the InTraders Academic Platform, to our publishing house and its employees who took part in the printing, typesetting, design, page layout and similar stages of the work.

*Editorial Board*

*Prof. Dr. Berna BALCI İZGİ*

*Dr. Gülay ÖRMECİ GÜNEY*



# Informal Economy And Unemployment In Western Balkans: MIMIC Approach

*Abdulgafur SINANI<sup>1</sup>*

## **Abstract**

The main objective of this research paper is to investigate the relationship between the informal economy and unemployment in the countries of the Western Balkan region over the last two decades. In this regard, since there are no official instruments that will be able for this research to use as official data, the MIMIC approach has been used as an essential method for the measurement of the informal economy. The dependent variables are; employed business freedom index, economic freedom index, tax burden, unemployment rate and size of government, while as indicative variables are set the following variables: currency (M0 / M1) where based on the MIMIC method is representing the indicator that is set to be fixed in the preliminary value, labour force participation rate and GDP growth rate per capita.

Furthermore, the results of the MIMIC model imply a positive and significant effect of the informal economy on the unemployment rate for the case of Western Balkan countries for the period 2000 – 2019.

Finally, such findings highlight an important contribution to the existing empirical literature regarding the nexus between the informal economy and unemployment rate in developing countries yet do not solve a solution to the long-existing debate

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regarding this relationship in the developed and developing countries.

**Keywords:** informal economy, unemployment, informal sector, MIMIC, indirect approach.

## **Introduction**

The effects of informal economy on unemployment is representing an important and controversial issues among the scholars in the existing empirical literature, however, in the recent years policymakers have increased the interest in the investigation of this relationship in both developing and developed countries.

Schneider (2008) points out that the informal sector covers all the activities that are currently unregistered and which give a contribution to the calculated GDP. On the other hand, Smith et al., (1985) see the informal sector as the legal and illegal market-driven production of goods and services. However, the controversial results regarding the relationship between the informal economy and the unemployment rate have been emphasized by many scholars (Tanzi, 1999; Tedds and Giles, 2002; Boeri and Garibaldi, 2002; Dell'Anno et al., 2007; Dell'Anno and Solomon, 2008; Mauleón and Sardà, 2017).

This research paper can contribute in two aspects: firstly, as far as we know, none of the empirical studies to date have used a dynamic simultaneous equation modeling approach to study the relationship between the shadow economy and unemployment in the case of the Western Balkan region. This paper provides an evidence for the relationship between the informal economy and the labor market in six countries of the Western Balkans: Albania, Bosnia and Herzegovina,

Montenegro, North Macedonia, Kosovo, and Serbia, for the relevant period 2000 – 2019. Thus, in this regard, the main objectives of this study are:

- This region needs to assess the need for the implementation of decisions and measures which will directly affect the strengthening of the capacity of financial institutions and the reduction of the informal economy in this region
- In addition, it is essential to improve the formal legal structure and manage the informal economy, offering opportunities for access to normative regulation that will enable deep independence, professionalism, and functioning other than the influence of political parties.

From this point of view, the main research question of this study is as follows:

- Is there a significant relationship between the indicators of the informal economy and the unemployment rate in Western Balkan countries?

Moreover, to analyze the informal economy's impact on the unemployment rate, the MIMIC method is applied, including the unemployment rate as an indicator variable in the structural equation. Regarding the analysis of the definition of the informal economy and its association with unemployment, two MIMIC models will be applied, mainly due to the absence of instruction, regulation or consensus regarding the variables that should be used as indicator variables in the MIMIC model.

### **Literature Review**

The MIMIC model represents one of the structural equation models (SEM) that uses several observed variables to estimate the value of a latent variable. In this study, the latent variable is an index of the ratio of the informal economy to the calculated

GDP. The variables observed in the MIMIC model are divided into two groups; causes and indicators for the latent variable. Considering the estimation models for measuring the informal economy, scholars Joreskog and Goldberger (1975) made a crucial contribution to the development of the MIMIC model through a maximum likelihood procedure for estimating a model with one latent variable. Following this technique, Frey and Weck-Hannemann (1984) were the first to apply the MIMIC model to estimate the informal economy in OECD countries, suggesting that regulations, tax burden, and tax morale are the main determinants of the informal economy in these countries.

Giles (1999) used the MIMIC model for New Zealand for the period (1968-1994). As dependent variables, he used the average and marginal tax rate, real inflation, income, and the degree of adjustment in the economy. While on the other hand, as indicators, he used the labor force participation rate and the money supply ratio. In his model, he found out that the introduction of the goods and services tax in New Zealand in 1986 caused an immediate downward shift in the size of the informal economy.

Alañón and Gómez-Antonio (2005) apply the MIMIC approach to estimating the size of the shadow economy in Spain for the period 1976-2002. They find that the tax burden, the degree of regulation, and unit labor costs are the leading causes of the shadow economy in Spain during that period. They also find a positive relationship between GDP, money demand, and levels of the shadow economy. Their estimates show that the shadow economy in Spain ranges between 8 and 18.8 percent of GDP during the period 1976-2002.

Furthermore, Dell'Anno (2007), through the MIMIC model, investigated the informal economy in Portugal for 1977 - 2004.

His results imply that the employment of the labor force causes informal economy by the government, tax burden, subsidies, social benefits (transfers) and the unemployment rate as well as gives crucial recommendations for the policymakers and proposes an assessment of the reliability of estimates and an alternative benchmarking strategy for MIMIC approach.

In addition, Buehn and Schneider (2008) also use the MIMIC model with the Error correction model (ECM) as an alternative method for transforming time series into first difference to improve the unit root problem by using quarterly data from the period 1981 to 2006 for France. By using the MIMIC 4-1-2 specification, where dependent variables are tax contributions and social security burden / GDP, the unemployment rate, degree of regulation in the economy and the hours worked by employees in the total economy and as indicators the monetary aggregate M1 and a GDP volume index as indicators for the informal economy. They suggest that the informal economy in France grew from 12.9 percent in the first quarter of 1982 to 15.9 percent in the last quarter of 2006.

Also, Macias and Cazzavillan (2010) applied the MIMIC model to estimate the informal economy in Mexico for (1970-2006) period, by using as causal variables tax burden, wage levels, inflation, unemployment, and overregulation, while real GDP and real currency in circulation were used as indicators of. Their results imply a positive relationship exists between the informal economy and GDP in Mexico.

Further, Bolzano et al (2015) analyze the effects of the informal economy on unemployment in Bucaramanga, where there exists an excess labor force that cannot be fully absorbed into the local economy. Their results imply the existence of informal economies in this region, through the synonym

referred as “self-employed,” that do not pay taxes, not officially registered and creating informal employment and incomes.

Islas et al. (2018) investigated the effects of the unemployment rate on economic growth by using the size of the informal sector in Mexico. Moreover, their results imply the existence of the asymmetric cyclical components of unemployment and output based on the size of the informal sector.

Karpushina et al. (2021) also investigated the relationship between the informal economy and Russia’s unemployment for the period 2006 – 2020 in 83 regions. They show different results among the regions, implying positive and negative results of the informal economy on unemployment.

### **Research Methodology**

In order to determine the impact of the informal economy on the unemployment rate in the countries of the Western Balkans, for the time period 2000 - 2019, it was first necessary to determine the informal economy, which is a latent, respectively unknown and observed indicator, applying the MIMIC method (Multiple Indicators, Multiple Causes) as one of the most applied indirect methods when determining the informal economy of a country. The MIMIC method represents one of the types of SEM – the structural equation model- in which we have a latent variable (in this case, the informal economy), causal variables, and indicators. In this paper, since the countries under analysis are all from the Western Balkans, we can consider that they are homogeneous there, unlike many studies that use GDP per capita as one of the causal variables. Therefore, as an indicator variable, I use the GDP growth rate per capita, the labor force participation rate and the currency variable - the ratio of M0/M1. Moreover, taking into account the MIMIC method, the currency variable (the M0/M1 ratio) was chosen



as an indicator variable in its preliminary value. On the other hand, the following variables are used as causal variables: government size, the value of business freedom, unemployment rate, economic freedom index, and tax burden.

The following table presents the descriptive statistics of the variables included in the empirical analysis, in which we can note the number of observations, the average value and standard deviation, and their maximum and minimum value. In terms of the total number of observations, there are 114 observations, but not all annual time series 2000 - 2019 are available for each indicator for each country.

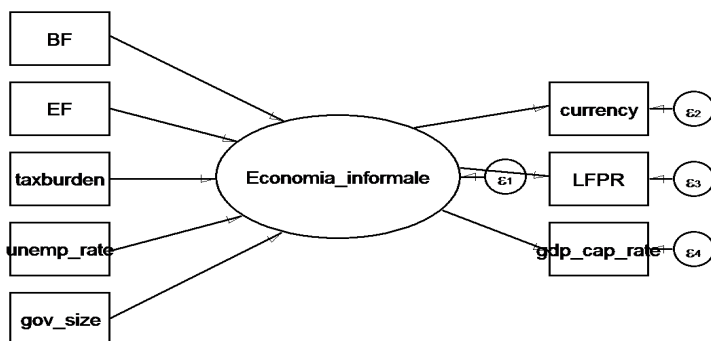
**Table 1.** Descriptive Statistics

Variables	Nr of observations	Mean value	Standard dev	Minimum value	Maximum value
BF	104	59.99481	11.65053	40	82.9
EF	102	67.82691	4.468358	58.7	76.73511
tax burden	104	85.46471	6.505117	66.1	93.65
unemp_rate	110	25.2067	9.684867	12.34	57
gov_size	112	7.236231	.7811208	5.631466	8.63351
GDP_cap	114	4126.831	1768.669	860.1052	8771.688
gdp_cap_rate	114	4.026058	3.929311	-6.039929	29.94779
currency	114	.9575313	.3572115	.0319497	2.978861
LFPR	114	60.77733	4.191518	51.364	67.723

**Source:** Authors calculations.

**The MIMIC model:** includes as causal variables the index of business freedom, the index of economic freedom, the tax burden, the unemployment rate and the size of the government, while as indicator variables, it includes the currency (M0/

M1), the labor force participation rate and the rate of GDP growth per capita.



**Figure1.** MIMIC model

**Source:** Author's sources.

In the MIMIC model, the index of business freedom, the index of economic freedom, the tax burden, the unemployment rate, and the size of the government are included as causal variables. In contrast, as an indicator variable, we have the currency (M0/M1), which is determined according to the limitation of the method of MIMIC as the indicator that is determined to be fixed in the previous value, the labor force participation rate, and the GDP growth rate per capita.

### **Empirical Findings**

In order to determine the impact of the informal economy on the unemployment rate in the case of Western Balkans, for the period 2000 - 2019, it was first necessary to determine the informal economy, which is a latent indicator, respectively unknown and unobserved. In this regard, the MIMIC method (Multiple Indicators, Multiple Causes) has been applied in this

doctoral thesis as one of the most applied indirect methods when determining the informal economy of a country.

From the results we can emphasize that there is a significant negative relationship between the index of business freedom and the informal economy, namely with a 1% increase in the index of business freedom, the informal economy will decrease by 5%. Regarding the relationship between the index of economic freedom and the informal economy, the results suggest that the index of economic freedom has a significant positive impact on the abnormal economy, with a 1% increase in the index of economic freedom, the informal economy will increase by 5%. Yes, a significant positive relationship is observed between the tax burden and the formal economy. The results also prove a significant negative relationship between the size of the government and the informal economy in the Western Balkans countries, with a 1% increase in the size of the government, the informal economy will decrease by 9%.

**Table 2.** Estimated results of the MIMIC model for Western Balkan countries (Kosovo, Albania, North Macedonia, Serbia, Montenegro and Bosnia and Herzegovina).

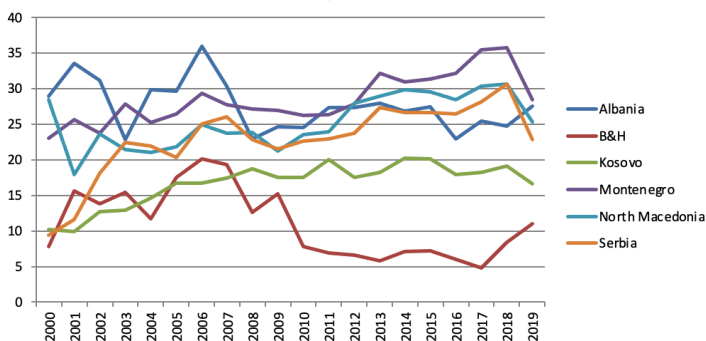
Independent variables	MIMIC model
<b>Causal Variables</b>	
Business Freedom Index	-0.557 (-3.5)***
Economic Freedom Index	0.530 (5.4)***
Tax burden	0.261 (1.9)**
Direct tax	
Unemployment rate	0.064 (0.5)
Government size	-0.975 (-9)***
Inflation	

Indicators	
Currency (M0/M1)	1
LFPR	-0.518 (-7.6)***
GDP per capita	0.4 (4.74)***
Test	
RMS	0.326
(p-value)	(0.05)
Chi-square	149.47
(p-value)	(0.000)
Nr of observations	99
Note: Absolute z statistics in parentheses. ***, **, * indicate significance at 1, 5 and 10% significance levels. According to MIMIC models, the identification rule, an indicator should be fixed at an a priori value. This model selects the currency variable (M0/M1) as a priori value.	

**Source:** Authors' calculations.

Moreover, in the graph below, we can see the estimated value of the informal economy for the countries of the Western Balkan region during the period 2000 - 2019.

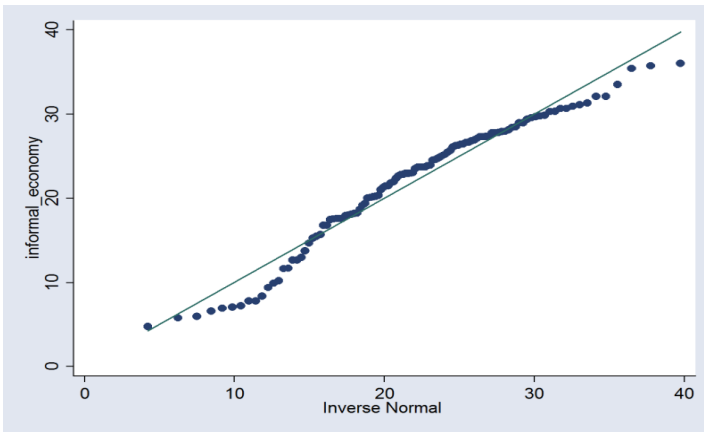
**Figure 2.** Estimated Informal economy on the Western Balkans, 2000 – 2019



**Source:** Authors calculations.

Finally, a test for normality has been employed for the measuring of the informal economy (Q-Q plot), that implies that the measure is normal and that there are no general edges at the top or bottom of the distribution.

**Figure3.** Q-Q structure of the measure of informal economy



**Source:** Authors' calculations.

## Conclusions

The main purpose of this paper was to determine the informal economy's impact on unemployment in the Western Balkans for the period 2000 - 2019, and in this regard, the MIMIC method (multiple indicators, multiple causes) was used. The causal variables are; the business freedom index, the economic freedom index, the tax burden, and the size of the government. The currency (M0/M1) is defined according to the limitation of the MIMIC method as the indicator that is determined to be fixed in the previous value. The other indicators included are the unemployment rate, the labor force participation rate, and the GDP growth rate per capita.

From the results, we emphasize that the informal economy significantly positively impacts the unemployment rate in the Western Balkan countries for the period 2000 - 2019. Moreover, with the increase of 1% in the informal economy, the unemployment rate will increase by 0.3%.

Based on such results, further recommendations are given: reducing corruption at all levels, reducing the tax burden, ensuring an attractive business environment, restructuring the social contribution scheme, reforming regulations to make the economy more competitive, improving the efficiency of law regulation, improving regulatory control.

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# The Relationship Between Savings Rate And Macroeconomic Indicators In Turkey: Toda-Yamamoto Causality

*Hilal ALPDOĞAN<sup>1</sup>*

## **Abstract**

The income per capita comes first among the factors affecting the saving rate. Keynes explains in his general theory that saving is a function of disposable income. In the classical approach, savings are explained in terms of interest rate changes. In the literature, many social, demographic, and legal factors, such as inflation, income type, age, employment status, social security system, and income expectation, are considered factors affecting savings. This study examined the relationship between interest rate, income level, and inflation rate, which are thought to have the most critical influence on savings, with the Toda-Yamamoto causality test in the 1980-2020 period. While no causality was found between per capita income and interest rate and saving level, one-way causality was found between inflation and saving level.

## **Introduction**

The level of domestic savings, which is the most critical source of financing for investments, is critical, especially for developing countries economic growth and development. For this reason, states carry out policies that encourage domestic

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savings. It is also crucial that increasing savings rates are directed to areas where productivity is high and will support economic growth. How much of the households' income will spend and when is one of the critical questions to be answered. While many approaches explaining individuals' consumption and saving tendencies are included in the literature, there are also macroeconomic variables that affect the consumption tendency.

In 1936, the essential determinant of consumption decisions of individuals, which is included in Keynes' General Theory, was expressed as disposable personal income. Many studies that entered the literature later on also support Keynes' theory of liquidity preference and disposable personal income as an important determinants. Besides personal income, the Classics argue that interest rates are an essential determinant of savings. Later, Fisher explained that interest rates affect savings with the intertemporal choice theory. Inflation rates also have a significant impact on savings. It directly affects economic growth by affecting the actual value of the investment and capital accumulation.

The relationship between savings rates and direct personal income, real interest rate, and the inflation rate was examined for the Turkish economy in the 1980-2020 period. Before the empirical study, theories explaining the saving tendencies in economics and studies in the literature included.

### **Theoretical Framework**

The relations between saving and macroeconomic variables in economics are discussed within the framework of the Classical approach, Keynesian approach, and later other income theories. To summarize, determinants of savings; are income

level, interest rate, psychological factors, income type, and institutional and legal frameworks.

### **Income-Saving Relationship**

In Keynesian General theory (1936), consumption, savings, investments, and disposable income are interrelated. As long as savings and investments are in a balanced relationship, the economy will remain in balance. The first factor that provides this balance is the propensity to consume, which also changes depending on disposable personal income. As people's disposable income increases, consumption will increase less than income. So the increase in investments will increase with the increase in personal income; therefore, he concludes that savings move in the same direction as income growth. This is called the fundamental psychological law.

After the Keynesian general theory (1936), Duesenberry (1949) explained the relationship between the relative income hypothesis and expenditures. In the relative income hypothesis, it is argued that people's consumption expenditures are related to each other and to the group they belong to, and the share allocated to consumption does not change unless the income status of the individuals in the group changes. In addition, it is not sufficient to change the current income level to change expenditures. At the same time, spending decisions will change according to the highest income level in the previous period.

In empirical studies, the contradiction between income and consumption in the short and long run is explained with the help of the relative income hypothesis. According to Duesenberry, in the face of a decrease in the current income level, instead of reducing their consumption, people will primarily tend to reduce their savings rates in order to protect their current income. In the recession period of economies, consumption

decreases proportionally less than income; that is, while the average consumption tendency increases, it will cause a decrease in the average propensity to save (Ünsal, 2013:476).

Later, theories based on micro foundations entered the literature. Modigliani et al. (1950) put forward the lifetime income hypothesis, and Milton Friedman (1957) put forward the permanent income hypothesis. Modigliani et al. (1950), according to the lifetime income hypothesis, people have income throughout their lives. However, they have more income during their working periods than their retirement periods. The main reason for this is the desire to save to use them in periods when their income decreases so that their lifetime consumption level does not decrease. According to the lifetime income hypothesis, the reasons for the differences in savings between countries can be listed as follows; is the difference in the population's age structure, life expectancy, and social security systems.

In Friedman's (1957) permanent income hypothesis, consumption is accepted as a function of permanent income (or average income in the long run). Current income changes do not affect people's consumption. It will maintain its average consumption trend in periods when current income is negative. Both Modigliani et al. (1950)'s lifetime income hypothesis and Friedman (1957)'s permanent income hypothesis are forward-looking approaches since consumption is a function of permanent income, so they take into account income expectations (Ünsal, 2013:492).

The permanent income hypothesis allows an understanding of the basis of the Ricardian Equivalence hypothesis put forward by D. Ricardo. According to the Ricardian equivalence theory, while current and future public purchases are fixed, the government's

tax reduction will not affect personal consumption and thus savings.

The consumption in a given period is the function of the consumption in the previous period and the random error term. Another theory explaining the relationship between income and consumption is the random expectations theory by Robert Hall in the 1970s. In the consumption random walks theory, it is assumed that people will not change unless there is any surprise that affects their permanent income.

### **Inflation-Savings Relationship**

Another critical determinant of savings in economies is the inflation rate. In developing countries with high inflation levels, a large part of the income is spent on consumption, thus reducing savings. This situation leads to the inability to meet the investments with domestic savings and negatively affects economic growth. Another situation that will occur if the domestic savings rates are insufficient is the transfer of the necessary savings from outside. This will only be possible by increasing actual interest rates. From this perspective, the relationship between savings and inflation will directly affect economic growth through capital accumulation and investments.

Looking at the literature examining the relationship between inflation and savings; While some studies suggest that the increase in inflation will positively affect savings by reducing consumption, some studies suggest that price increases will negatively affect savings with the expectation that it will decrease the actual value of savings by affecting the purchasing power of money (Okşak and Özen, 2020:355).

### **Real Interest Rate-Savings Relationship**

Classical economists explain the level of savings with the theory of interest. According to the classical interest theory, interest is the alternative cost of giving up consumption. Therefore, rising interest rates will lead people to save.

According to Keynes, the liquidity preference theory explains the factors other than income that affect consumption and saving tendencies. According to the liquidity preference theory, individuals demand liquidity with transactional, precautionary, and speculative motives. While the transaction and precautionary motives depend on the level of national income, the speculation motive depends on the interest rate. A decrease in interest rates will cause a decrease in the demand for money and thus a change in savings expenditures. However, Keynes said that the effect of the interest rate on consumption and saving is insignificant. Classical economists, however, accept that high-interest rates will encourage savings and discourage consumption.

In Irving Fisher's theory of intertemporal choice, individuals consider the intertemporal value of their total resources for their current and future consumption when deciding how much to consume and how much to save. According to Fisher, the interest rate can increase or decrease savings (Mankiw, 2010: 519).

### **Literature Review**

Table 1 shows the studies on the savings levels of various country groups and the determinants of household savings and their results.

**Table 1.** Literature Summary

Owner	Examined Period	Methods and Results
Bulut and Karakaya (2018)	2006-2015 OECD	With the DOLSMG panel co-integration method, the long-term relationship between savings and macroeconomic indicators has been examined. According to the findings, There is an inverse relationship between inflation, per capita income, actual interest rate, and a direct relationship with liquidity.
Güriş and Özkaya (2019)	2000-2015 Developing Countries	With panel data analysis, the relationship between domestic savings and some macroeconomic indicators was examined, and it was concluded that GDP was more effective than other factors on savings. It was concluded that real interest, unemployment, urbanization, and consumption expenditures were affected negatively. At the same time, private sector loans affect savings positively.
Doker et al. (2016)	1993-2013 Transition Economies	In the selected 20 transition economies, the relationship between the dependency ratio (total, young and old), per capita GDP growth, population density, the urban population as a percentage of the total population, female labor force participation, unemployment rate variables, and savings were examined by panel data analysis. According to the results of the study; It has been stated that demographic factors and per capita income have significant effects on savings.
Rehan (2019)	1997-2018 Asian Countries	The study, in which the correlation and fixed effects model was applied, shows that gross domestic product, significant money, and tax income positively affect gross domestic savings. In contrast, the age dependency ratio and inflation adversely affect gross domestic savings.
Khan et al. (2017)	1995-2016 Pakistan, China, Singapore, Japan, Turkey, Russia	It was revealed that foreign direct investment and inflation do not significantly affect gross domestic savings. The increase in money supply (M2), gross domestic product, and per capita income positively affect gross domestic savings. In contrast, foreign direct investment, age dependency ratio, and inflation negatively affect gross domestic savings.
Sajid and Hafeez (2021)	1973-2020 Pakistan	The study where ARDL and error correction model was applied concluded that the interest rate and agricultural production had a positive effect. In contrast, the fiscal deficit and inflation rate negatively affected national savings in the short and long term.
Akçay and Yıldız (2021)	1997-2016 MENA Countries	Foreign savings affect private savings negatively both in the short and long run. While per capita income positively affects private savings and growth rate in the long run, no significant relationship has been found in the short run. Changes in unemployment and interest rates have adverse long-term effects on private savings.

### Econometric Methods and Findings

The relationship between the saving rate and macroeconomic indicators in Turkey was examined by the Toda-Yamamoto (1995) causality test. Annual gross savings, inflation rate, nominal interest rate, and per capita income data for the 1980-2020 period were used in the analysis. Basic statistical information on the data is given in Table 2. Logarithmic forms of the series were used in the analysis. Before applying the causality test, Augmented Dickey-Fuller (ADF) and PP unit root tests were applied to find out the stationarity degree of the series, and the test results are given in Table 3.

**Table 2.** Basic Statistical Information

Variable	Observation	Mean	Standard Deviation	Min	Max
It (Gross Savings)	41	1,00437E+11	82434262661	1763,674	2,45875E+11
Ie (Inflation)	41	39,08%	30,032	6,25	105,21
If (Nominal Interest Rate)	41	36,31%	18,580	8,75	67
Ig (Income per capita)	41	5676,81	3881,715	1246,824	12614,781

According to the ADF and PP unit root test results of the series in Table 3, While the series contain unit root at the level, it is seen that the series become stationary at the first difference.



**Table 3.** ADF and PP Unit Root Test Results

	ADF				P-P			
	Level		First Difference		Level		First Difference	
	C	C&T	C	C&T	C	C&T	C	C&T
le	-1,3309 (0.6016)	-1,5096 (0.80)	-5,8895 (0.00)*	-5,7583 (0.00)*	-1,4037 (0.57)	-1,5096 (0.80)	-5,8936 (0.00)*	-5,7635 (0.00)*
lf	-0,8385 (0.79)	-2,4872 (0.33)	-6,9969 (0.00)*	-7,0448 (0.00)*	-0,7999 (0.80)	-2,4643 (0.34)	-6,9834 (0.00)*	-7,0407 (0.00)*
lg	-0,9849 (0.7495)	-1,4485 (0.83)	-6,1584 (0.00)*	-6,1468 (0.00)*	-0,9909 (0.74)	-1,8202 (0.67)	-6,1650 (0.00)*	-6,1462 (0.00)*
lt	-2,2733 (0.18)	-2,1352 (0.51)	-7,9515 (0.00)*	-8,0735 (0.00)*	-2,1114 (0.24)	-1,9340 (0.61)	-8,1120 (0.00)*	-8,0735 (0.00)*

**Note:** Constant and constant-trend model was used for level values, and the constant and constant-trend model was used for first differences. The values in parentheses are the probability values. The appropriate lag length was determined according to the Schwarz Information Criteria (SIC). \* Does not include unit root at 1 percent significance level.

Before performing the causality analysis, the appropriate model and the lag value of the model must be met with the SC, HQ, LR, FPE, and ACI) information criteria determined accordingly. According to all information criteria, the appropriate lag length was determined as one. Since the maximum integration degree of the series is one, the lag lengths to be used in the VAR system to be estimated will be 2 ( $k=1+d_{max}=1+2$ ). Appropriate lag length results for the VAR model are given in Table 4.

**Table 4.** Determination of Appropriate Lag Length

Lag	LR	FPE	AIC	SC	HQ
0	-60.10641	NA	0.000376	3.465211	3.639365
<b>1</b>	<b>65.42354*</b>	<b>217.1329*</b>	<b>1.02e-06*</b>	<b>-2.455327*</b>	<b>-1.584560*</b>
2	73.14752	11.69034	1.64e-06	-2.007974	-0.440594
3	82.37092	11.96550	2.58e-06	-1.641671	0.622321
4	102.5983	21.86740	2.44e-06	-1.870177	1.090429

The LM Test was used to test the autocorrelation problem in the number of lags found. Considering the autocorrelation LM test results in Table 5, the null hypothesis that there is no autocorrelation problem in the second lag is accepted.

**Table 5.** Autocorrelation LM Test Results

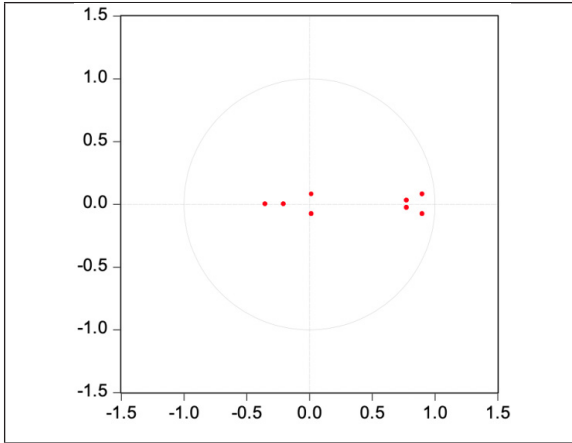
Lags	LM-Stat	Prob.
1	11.39991	0.7842
2	19.88741	0.2253
3	16.71488	0.4043

Table 6 shows the varying variance test results for the two lag lengths. According to the test result, there is no variance problem in the VAR model established with two lag lengths.

**Table 6.** Varying Variance Results

Chi-sq	df	Prob.
154.3996	160	0.6100

It can be seen in Figure 1 that the VAR models estimated by determining the number of lags are stationary and that all the inverse roots of the AR characteristic polynomial are inside the unit circle.

**Figure 1.** Inverse Roots of AR Characteristic Polynomials

Toda-Yamamoto's (1995) causality test will be applied due to the absence of an autocorrelation problem with the appropriate lag length determined. In the Toda-Yamamoto (1995) test, it is unnecessary to make the series stationary. Therefore, the level values of the series will be used in the analysis. For this reason, since the series does not suffer less data loss, it will provide more accurate decisions to contain more information. The highest degree of integration ( $d_{max}$ ) is added to the appropriate lag length ( $p$ ) of the VAR model before proceeding to the Toda-Yamamoto test. In this case, the VAR model is written as follows.

$$Y_t = a_0 + \sum_{i=1}^{p+d_{max}} + \sum_{i=1}^{p+d_{max}} a_{2i} + u_t \quad (1)$$

$$X_t = \beta_0 + \sum_{i=1}^{p+d_{max}} \beta_{1i} + \sum_{i=1}^{p+d_{max}} \beta_{2i} Y_{t-i} + v_t \quad (2)$$

The hypotheses for equation 1 are as follows;

$$H_0 = \text{There is no causality from } Y \text{ to } X$$

$$H_1 = \text{There is a causality relationship from } Y \text{ to } X.$$

There is a unidirectional causality running from gross savings to inflation. In addition, when the bidirectional causality between the variables is examined, one-way causality from inflation to interest rate and from interest rate to per capita income has been determined. Table 6 shows the results of the Toda-Yamamoto causality test.

**Table 6.** Toda-Yamamoto (1995) Causality Test Results

Null Hypothesis	$\chi^2$ Statistic	Probability	Result
lg $\rightarrow$ lt There is no Granger causation.	0,2162	0.89	$H_0$ accept
lf $\rightarrow$ lt There is no Granger causation.	2,4131	0.2992	$H_0$ accept
le $\rightarrow$ lt There is no Granger causation.	1,6970	0.4280	$H_0$ accept
lf $\rightarrow$ le There is no Granger causation.	3,7575	0.1528	$H_0$ accept
lg $\rightarrow$ le There is no Granger causation.	3,2351	0.1984	$H_0$ accept
<b>lt <math>\rightarrow</math> le There is no Granger causation.</b>	<b>7,2878</b>	<b>0.0262</b>	<b><math>H_0</math> reject (%5)</b>
<b>le <math>\rightarrow</math> lf There is no Granger causation.</b>	<b>7,9772</b>	<b>0.0185</b>	<b><math>H_0</math> reject (%5)</b>
lg $\rightarrow$ lf There is no Granger causation.	0,7252	0.6958	$H_0$ accept
lt $\rightarrow$ lf There is no Granger causation.	0,9021	0.6391	$H_0$ accept
le $\rightarrow$ lg There is no Granger causation.	3,2351	0.1984	$H_0$ accept
<b>lf <math>\rightarrow</math> lg There is no Granger causation.</b>	<b>5,7355</b>	<b>0.0568</b>	<b><math>H_0</math> reject (%10)</b>
lt $\rightarrow$ lg There is no Granger causation.	0,7618	0.6832	$H_0$ accept

## Conclusion and Evaluation

The relationship between the determinants of saving and saving in Turkey's 1980-2020 period was examined with the Toda-Yamamoto causality test. A one-way relationship was determined between inflation rate, interest rate, and per capita income only between inflation and the level of savings. According to the science of economics, The inflation rate is an essential determinant of savings levels. The existence of high inflation, especially in developing countries, causes an increase in the share of income allocated to consumption and a decrease in savings rates. This situation will cause the domestic savings rates to be insufficient and the necessary savings to be transferred abroad. Increasing interest rates can only achieve this. This is the most important reason for determining the study's one-way causality between inflation and interest rates. In addition, according to the Toda-Yamamoto causality test results, causality from interest rate to per capita income was determined. Interest rates will increase per capita income by increasing savings rates. This result is consistent with the other studies.

In the simple Keynesian model, the savings rate is a function of disposable income and the interest rate. People will allocate some of their income to consumption and the rest to savings. In the study, it is possible to say that the causality relationship between per capita income and savings could not be determined in Turkey's 1980-2020 period and that people allocate almost all of their income to consumption and even negative savings. Despite the increase in per capita income in developing countries, the snoothing effect is the most crucial reason why the level of savings did not increase. As the income level in developing countries increases, the people of developed countries desire to imitate their lifestyles. Accordingly, the consumption tendency

will increase (Uzay, 1993: 252). Therefore, it can be interpreted that Turkey's marginal propensity to save is close to zero. According to the classical approach, the level of savings is explained by the interest rate. An increase in interest rates will increase savings rates. In the Keynesian approach, the effect of interest on the savings rate is insignificant. This study could not determine the causality between the interest rate and savings levels. So it can be concluded that the Keynesian approach is valid in Turkey.

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# The Impact of COVID-19 Pandemic on Kazakhstan Stock Market

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## **Abstract**

Globally, humanity has gone through various epidemics and pandemics. The SARS-CoV-2 virus has caused the latest of the deadly diseases circulating in the community. This virus has been seen as unique with its multiple symptoms and high rate of transmission. Governments have taken unprecedented measures to protect the health of the population and their business activities. Kazakhstan has also provided substantial funds to support companies in distress, and has also delayed tax payments without interest or fees for delays, temporarily lowered taxes, and taken measures such as unemployment-related leaves for the most affected sectors. The economic effects of the COVID-19 pandemic have emerged in every country under the influence of the internal profile of the spread of the coronavirus and the measures taken to contain it, and have been strengthened by the globalization and interconnectedness of economies. Stock markets in most countries were adversely affected by the spread of the COVID-19 disease, the movement restriction policies implemented, and the uncertainties in the global economy. While the number of COVID-19 cases increased at the beginning of 2020, there were great decreases in the stock market indices of all countries, including the Dow Jones Index,

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FTSE stock market, Nikkei index. The decline experienced in the first quarter of 2020 was the largest after the first quarter of 1987 for the Dow Jones Index and the FTSE stock market. In this period, the effects of the epidemic on stock market indices and stock returns began to be investigated on the basis of general index, sectoral basis and company level and still continues to be investigated. This article aims to analyze the impact of the COVID-19 pandemic on the developing country Kazakhstan stock market. Analysis of stock indices is a tool used to explain the evolution of a particular economy. To measure the impact of the COVID-19 pandemic on the Kazakhstan stock market, the development of the KASE index, which is the reference index for the local stock market, was analyzed. In this context, ARDL method was used with daily data between 13 March 2020-23 December 2021 in the study. As a result of the study, it was determined that there is a negative and statistically significant relationship at the 5% significance level in the short term between COVID-19 confirmed cases and stock market returns. In this case, it can be said that the increase in COVID-19 cases negatively affects the stock market in the short term.

## INTRODUCTION

The Coronavirus (COVID-19) epidemic, which started in Wuhan city of China's Hubei province in December 2019 and spread rapidly and affected the whole world, was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. In addition, recommendations for taking preventive measures have been published in all countries of the world. In the short period of 4 months up to June 16, 2020, about 8 million cases of COVID-19 and about 435,000 deaths were reported worldwide (WHO, 2020). As of March 10, 2022, it has

been determined that 451,809,254 people have been infected with the disease and 6,043,977 people have died due to this disease (Worldometer, 2022). The first case in Kazakhstan was seen on 13 March 2020. After the first case was seen in Kazakhstan, various measures were taken and regulations were started. A state of emergency has been declared across the country, effective from March 16 to April 15, 2020. A number of economic measures have been taken in order to minimize the risks of the COVID-19 epidemic to the country's economy and to reduce the risks. In this context, the National Bank of Kazakhstan acted first and introduced monetary policy measures by reducing the policy interest rate. The National Bank of the Republic of Kazakhstan made an extraordinary decision on the level of the base rate, increasing it by 2.75% - up to 12% per annum. Accordingly, the rate on standing access operations to provide liquidity was 13.5% and on operations to withdraw liquidity - 10.5%.

The Kazakhstan government has granted exemption from tax payment until 31 December 2020 to support businesses experiencing financial difficulties due to the state of emergency. While businesses that are exempted from taxation especially include theatres, exhibitions, fitness and sports facilities, the land tax on agricultural lands of agricultural producers and individual income tax of individual entrepreneurs are also exempted (<https://www.zakon.kz>). In addition, a monthly financial support of 42.5 thousand tenge from the state's social insurance fund was provided to citizens who lost their jobs and lost income during this period. Kazakhstan spent 13 billion dollars, more than 8% of GDP, on the pandemic response in 2020 (<https://www.ktk.kz>).

The pandemic has created not only a global health emergency, but also a significant global economic downturn. Economic

activity has suddenly stopped, as many countries have adopted strict quarantine policies to combat the unseen epidemic. At the beginning of the pandemic, the restriction of transport between countries and the complete cessation of its continuation decelerated global economic activities. It is estimated that the loss of this epidemic in the world economy may be between 2.4 and 9 trillion dollars (McKibbin ve Fernando, 2020). This epidemic, which has a serious impact on both the world economy and human health, has also led to serious changes in investor behavior. While the number of COVID-19 cases increased at the beginning of 2020, there were great decreases in the stock market indices of all countries, including the Dow Jones Index, FTSE stock market, Nikkei index. The decline experienced in the first quarter of 2020 was the largest after the first quarter of 1987 for the Dow Jones Index and the FTSE stock market. In this period, the effects of the epidemic on stock market indices and stock returns began to be investigated on the basis of general index, sectoral basis and company level and still continues to be investigated. Since the stocks have a dynamic structure, the market reactions related to the epidemic can be followed quickly through the stocks. Therefore, the results of studies on this subject are important.

The literature on the effects of the COVID-19 outbreak on stock returns generally examines the relationship between stock performances using the number of cases and the number of deaths (Ashraf, 2020; Liu et al.2020; Lyócsa et al.2020; Baker et al.2020; Mazur et al.2021; Contessi & De Pace, 2021; Choi & Jung, 2021). Although there have been many studies examining the relationship between the COVID-19 epidemic and stock prices since the first month following the epidemic, there has been no study for the Kazakhstan stock market. Therefore, in this study, the effects of the COVID-19 epidemic

on the Kazakhstan stock market index were investigated. In this respect, it is thought that this study will be a pioneering study for Kazakh literature. The study consists of chapters, and in the second chapter following the introduction, a large literature on the subject has been scanned. After explaining the data set and econometric method in the third section, the findings are given in the fourth section. The study ended with the conclusion part.

## LITERATURE REVIEW

The COVID-19 epidemic, which started as a health crisis, turned into a global economic crisis in a short time in parallel with the spread of the virus as a result of the measures taken by the countries to control the epidemic. The contraction in the real sector with the closure of the economies and the uncertainty created by the virus affected the stock markets. For this reason, the literature examining the impact of COVID-19 on stock markets has expanded considerably.

Ashraf (2020) examined the effects of the COVID-19 outbreak on the stock market returns of 64 countries. In the study, using daily data between January 22, 2020 and April 17, 2020, it was determined that stock market returns reacted negatively to the increase in the number of daily cases. As the number of confirmed daily COVID-19 cases increases, stock market returns decrease. Ahmed (2020) argued in his study that only the number of recovered cases affects Pakistan's stock market index performance. It found that positive cases and case-related deaths did not significantly affect Pakistan's stock market index. Waheed et al.(2020) concluded that the impact of COVID-19 on Pakistan's stock market is positive.

Kotishwar (2020) investigated the effect of the COVID-19 outbreak on the stock market indices of the USA, China, India,

France, Italy and Spain. These countries are the countries most affected by the virus. According to the results of the study, the increase in the number of cases has a significant negative and long-term relationship with the stock market indices of the countries in question. Sansa (2020) analyzed the impact of the COVID-19 outbreak on the financial markets in China and the USA using the simple regression model with the data between March 1-25. As a result of the study, it has been determined that there is a positive and significant relationship between the financial markets of the countries related to the COVID-19 epidemic. Liu et al. (2020) They investigated the short-term effects of the COVID-19 outbreak on the stock market indices of the USA, Germany, Japan, England, Italy, Korea and Singapore. The authors found that stock market indices fell sharply in the said countries after the epidemic. In addition, the authors found that Asian countries provided relatively more negative abnormal returns than other countries included in the analysis. He et al. (2020) They used traditional t-tests and non-parametric Mann-Whitney tests in their studies in which they examined the direct effects and spread of COVID-19 on the USA, Germany, China, South Korea, France, Italy, Spain and Japan stock markets. The authors found that COVID-19 had a negative but short-term impact on the stock markets of the affected countries. In addition, they found that the effect of COVID-19 on stock market indices has bidirectional spillover effects between Asian and European countries.

Sun et al. (2021) examined the effect of COVID-19 on the Chinese stock market with the effect of individual investor sentiment on returns with event study analysis. According to the results, both stock returns and individual investor sentiment reacted negatively after the event day. The increase in the standard deviation during the event window was interpreted

as a decrease in the Chinese stock market return and an increase in volatility due to the epidemic. However, in addition to this, a striking result was observed in which this effect was reversed. In the post-event window, both returns and investor sentiment increased, exceeding the average level before the COVID-19 event.

Rahman et al. (2021) examined the effects of two negative (January 30, 2020, when COVID-19 was declared a public health emergency, and March 11, 2020, when COVID-19 was declared a pandemic) and two positive cases (March 22, 2020, when the Australian Prime Minister announced the AUD 66.4 billion stimulus package, and April 8, 2020, when the Australian government announced the AUD 130 billion JobKeeper package) on Australian stock market (ASX) returns by event study analysis. The analysis is done for the entire market and also at the portfolio level. According to the results, the average CAR related to the declaration of COVID-19 as a pandemic is -4.39%, equivalent to an average loss of AUD 352 million per firm. However, with the effect of the positive event of the announcement of the JobKeeper package, the market regained its value by 2.73%. The smallest, least profitable and valuable portfolios were found to be more vulnerable to the pandemic, while size and liquidity were cited as the main drivers of cross-sectional abnormal returns.

Heyden & Heyden (2021), examining the short-term responses of the US and European stock markets to COVID-19, used the event study method. As data, logarithmic stock returns of all companies that are components of S&P 500 and S&P Europe 350 since January 2018 and standard control variables in the literature are used. They revealed that stocks had a significantly negative reaction to the first obituary in the countries they examined. They also found that the announcement of country-

specific fiscal policy measures negatively affected stock returns, while monetary policy measures had the potential to calm the markets. According to another result, these reactions intensify or decrease depending on firm-specific characteristics such as tangible assets, liquidity and corporate assets.

Using the event study method, Pandey & Kumari (2021) examines the effects of the COVID-19 outbreak on 49 stock market indexes consisting of developed and developing countries in the world. The results show that the epidemic affected the global stock markets significantly and Asian stock markets were affected the most by the epidemic, while the effects on the American stock markets were not significant both in the long window and the short window. In addition, it shows that developed markets are affected more severely than emerging markets in the long run, but the effect on developed countries is not significant in the short run. He also highlights that the early restrictions imposed by the nations had positive results in containing the spread of the virus, thus rebuilding investor confidence and a sharp reversal in stock returns.

When the studies analyzing the sectors in which the stocks are located are examined, Ramelli and Wagner (2020) reported that the sectors most affected in the Chinese stock market are the insurance, finance, energy and transportation sectors; Alfaro et al.(2020) stated that the mining, entertainment, construction and transportation sectors in the US stock market were more affected by the epidemic; Mazur et al. (2020), on the other hand, found that oil, real estate and entertainment sectors were more affected by S&P500 companies. In general, it is seen that sectors other than health and telecommunications are adversely affected. According to Harjoto et al. (2021) reported that small-scale companies in developing countries compared to developed countries reacted more harshly to the



COVID-19 epidemic compared to large-scale companies. Huo and Qiu (2020), on the other hand, found that the response to COVID-19 was harsher in companies with low institutional investor ratio in the Chinese stock market. The authors found that company stocks overreacted to the outbreak. They found that the overreaction was higher especially in stocks with low institutional investor ratio.

Hassan et al. (2021) examined firm-level responses to COVID-19, SARS, and H1N1 outbreaks. In the study, in which 326,247 transcripts belonging to 11,943 companies were used between 2001 and 2020, it was tried to understand how the epidemic affected the companies based on the texts in these transcripts. According to the findings of the study, while it was seen that the companies in the finance, insurance and real estate sectors gave limited space to the discussions about COVID-19, it was determined that half of the companies engaged in production, retail and wholesale provided information about COVID-19 in the documents they informed the public. Another important finding is that as the epidemic progresses, more companies start to worry about the safety of their employees and increase measures for this purpose.

Shen et al. (2020) examined the effect of the COVID-19 outbreak on firm performance. In the study, which included companies in China, it was seen that the investment budgets of the companies were significantly reduced during the epidemic and the sales were seriously affected. It has been determined that the effect of the epidemic was much more severe in tourism, restaurant businesses and transportation sectors, production, operations and sales were negatively affected in these sectors, and this situation had a negative impact on company profitability. Compared to the SARS virus in 2003, it was understood that the improvements in the transportation infrastructure increased

the population mobility and this had an accelerating effect on the spread of the epidemic.

Xiong et al. (2020) analyzed which company characteristics were decisive for the reactions of the stocks during the COVID-19 epidemic, using data from companies in China. The authors found that companies with high market capitalization and profitability ratios, with less fixed assets, but with growth potential, were less affected by the epidemic. In addition, they determined that the tourism, real estate, cinema, construction and transportation sectors were adversely affected by the epidemic.

In addition, there are studies in the literature investigating the effects of the COVID-19 outbreak on the volatility of stock markets. Apergis and Apergis (2020) examined the effect of COVID-19 on the return and volatility of the Chinese stock market using the GARCHX model in their study. According to the results of the analysis covering the dates of January 22, 2020 - April 30, 2020, the increase in the daily total number of cases and deaths from COVID-19 decreases the returns of the Chinese stock market, while increasing its volatility. Erdem (2020) has researched the COVID-19 epidemic on the returns and volatility of the stock markets of 75 countries. The study, in which panel data analysis was used, covers the dates of January-April 2020. The number of cases and deaths per million people is used to represent the COVID-19 crisis in the analysis. According to the results of the analysis, the COVID-19 crisis decreases the returns in the stock markets while increasing the volatility. In their study, Bora and Basistha (2020) examined the volatility of India's stock markets during the epidemic with the GARCH model for the dates of September 3, 2019 - July 10, 2020. The analysis using India's Nifty and Sensex stock market index returns was carried out in two sub-periods, the period before the COVID-19 epidemic and the period before

the COVID-19 epidemic. When the two periods are compared, the volatility of India's stock markets is higher during the COVID-19 epidemic than in the pre-epidemic period. Albuлесcu (2021) examined the effect of the change in COVID-19 new cases and death rates on the volatility of the US stock market. The analysis, in which the S&P500 quarterly realized volatility index (the realized volatility index) is used to represent the volatility of the US stock market, covers the dates between 11 March 2020 and 15 May 2020. The estimation results show that the increase in new cases and deaths increases the volatility of the US stock markets.

## DATA SET AND ECONOMETRIC METHOD

### Data Set and Sources

In this study, the effects of the COVID-19 epidemic on the Kazakhstan stock market index were investigated. In the analysis, the return of the KASE stock market index ( $rKASE$ ) to represent the stock market of Kazakhstan and the daily total number of cases (COVID-19) from the date of the first case in Kazakhstan to represent the Covid-19 were used. The model used in the study is given below:

$$rKASE_t = \alpha_0 + a_1 Covid19_t + \varepsilon_t \quad (1)$$

The daily closing prices of the KASE stock market index are used as a return series. Stock market index returns are calculated with the following formula:

$$rKASE_t = \frac{(KASE_t - KASE_{t-1})}{KASE_{t-1}} \quad (2)$$

The COVID-19 variable used as an independent variable in the study is the daily change in the number of active cases. The *Covid19* variable was calculated as follows:

$$Covid19_t = \frac{Covid19_t}{Covid19_{t-1}} \quad (3)$$

Variables were included in the analysis with daily data between 13 March 2020 and 23 December 2021. The reason why 13 March 2020 was chosen as the starting date is the detection of the first Covid-19 case in Kazakhstan. The number of coronavirus cases used in the study was obtained from the WHO official website ([www.who.int](http://www.who.int)), and the daily closing data for the KASE stock market was obtained from the official address of the stock market (<https://kase.kz>) and the stock market return was calculated.

### **Econometric Method**

Economic time series usually have processes with unit roots. As a result of analyzes using non-stationary time series, the problem of spurious regression may arise (Granger and Newbold, 1974). In order to ensure stationarity, the difference is taken in the series. When the differences of the series are taken, there is a loss of information in the series, which can eliminate the existing relationship between the series. Therefore, cointegration analysis is performed to determine the relationships between the series that have unit roots at their levels. In this context, the effect of Covid-19 on the KASE index was estimated by the ARDL method introduced by Pesaran et al. (2001). The Distributed Delayed Autoregressive (ARDL) boundary testing approach has a number of advantages over alternative cointegration tests.

The most important advantage is the applicability of the variables in the model regardless of their stationarity levels. Therefore, there is no need to determine the degree of integration of the variables a priori in the bounds test approach. Compared to the Engle-Granger method, the ARDL bounds test approach has better statistical properties. Because ARDL test gives healthy results even with data containing low number of observations by using Unrestricted Error Correction Model (UECM). In this respect, ARDL bounds test approach gives more reliable results than Engle-Granger and Johansen cointegration tests.

There are basically three stages of ARDL bounds testing approach. In the first stage, the long-term relationship between the variables in the model is investigated. If there is a long-term relationship between the variables, the long-term and short-term coefficients are estimated in the next stages. The UECM created in the first place is included in Equation 4. The model in question is expressed in its adapted form to our study.

$$\Delta rKASE_t = \alpha_0 + \theta_1 rKASE_{t-1} + \theta_2 Covid19_{t-1} \sum_{i=1}^p \bar{\omega}_{1i} \Delta rKASE_{t-i} + \sum_{j=0}^p \beta_{1j} \Delta Covid19_{t-j} + \varepsilon_t \quad (4)$$

The  $p$  value in the model in Equation 4 represents the appropriate lag length. Information criteria are used to decide the  $p$  value. In order to test the existence of the cointegration relationship, the F test is applied to the first period lags of the dependent and independent variables. For this test, the basic hypothesis is established as  $H_0: \theta_1 = \theta_2 = 0$  and the calculated F statistic is compared with the lower and upper critical values of the table in Pesaran et al.(2001). If the F statistic is greater than two critical values, it is concluded that there is cointegration between the variables in the model. If the calculated value is less than the subcritical value, it is concluded that there is no cointegration. Finally, if the F statistic falls in the middle of

two critical values, no definite interpretation is made, and it would be more appropriate to perform other cointegration tests.

In the ARDL bounds test approach, the next step is taken if the null hypothesis is rejected due to the F test. This stage consists of two parts. First, the appropriate lag length is determined for the long-term ARDL model in Equation 5, taking into account the Schwartz criterion. After that, the model in question is estimated by the least squares technique (Narayan and Narayan, 2005:431).

$$rKASE_t = \alpha_0 + \sum_{i=1}^n a_{1i} rKASE_{t-i} + \sum_{i=0}^m a_{2i} Covid19_{t-i} + \varepsilon_t \quad (5)$$

In the third and final stage of the ARDL bounds test approach, the ARDL model in Equation 6 is estimated for the short-term relationship between the variables.

$$\Delta rKASE_t = \alpha_0 + \sum_{i=1}^n a_{1i} \Delta rKASE_{t-i} + \sum_{i=0}^m a_{2i} \Delta Covid19_{t-i} + \varphi ECT_{t-1} + \varepsilon_t \quad (6)$$

The variable  $ECT_{t-1}$ , expressed as the error correction term contained in Equation 6, is the previous value of the residue series obtained from the long-term ARDL model for one period. The coefficient  $\varphi$  belonging to the variable in question shows how much of the imbalance in the short term can be corrected in the long term.

## ANALYSIS FINDINGS

Table 1 contains descriptive statistics for dependent and independent variable series. Considering the Jarque-Bera statistics, the null hypothesis of “data have normal distribution” for the series is rejected at 99% confidence level. In the period

included in the analysis for Kazakhstan, the average stock market return is 0.01% per day, while the maximum return is 2.4% in this period, while the minimum return is 2.3%. The kurtosis coefficient is 4.18, meaning stock market returns are sharp. The skewness coefficient is higher than zero and is skewed to the right.

**Table 1.** Descriptive Statistics

	<i>rKASE</i>	<i>Covid19</i>
Mean	0.001311	1.322510
Median	0.001293	0.994698
Maximum	0.024222	28.00000
Minimum	-0.023153	0.000000
Std. Dev.	0.006953	2.246080
Skewness	0.062200	9.515246
Kurtosis	4.185702	104.1645
Jarque-Bera	25.58458	190294.1
Probability	0.000003	0.000000
Observations	432	432

Table 2 shows the correlation relationship of the variables. Accordingly, there is a negative correlation between the stock market return and the number of COVID-19 cases. The coefficient of negative correlation is 0.13. Therefore, the relationship between the variables is not a strong one.

**Table 2.** Correlation Coefficient

	<i>rKASE</i>	<i>Covid19</i>
<i>rKASE</i>	1	-0.1319
<i>Covid19</i>	-0.1319	1

### Unit Root Test Results

As mentioned above, the ARDL bounds test can be applied regardless of whether the stationarity degrees of the variables

included in the model are  $I(0)$  or  $I(1)$ . However, the unit root test was applied in case the series were  $I(2)$ . The unit root test results performed to examine the stationarity of the  $rKASE$  and COVID-19 variables are presented in Table 3. The basic hypothesis of the applied unit root tests states that the series is stationary.

**Table 3.** Unit Root Test Results of Variables

Variables	Deterministic components	<i>ADF</i>	<i>Philips Perron</i>	Result
<i>rKASE</i>	Intercept	-20.58204 [-2.868353]	-20.57977 [-2.868353]	$I(0)$
	Trend & Intercept	-20.59035 [-3.420794]	-20.58825 [-3.420794]	$I(0)$
	None	-19.82839 [-1.941596]	-19.90839 [-1.941596]	$I(0)$
<i>Covid19</i>	Intercept	-9.180577 [-2.870004]	-21.75623 [-2.868387]	$I(0)$
	Trend & Intercept	-9.746670 [-3.423377]	-22.61591 [-3.420848]	$I(0)$
	None	-4.536745 [-1.941778]	-20.35927 [-1.941600]	$I(0)$

### ARDL Test Results

It is necessary to decide on the maximum lag length for the UECM created in the first step of the ARDL bounds test approach. Considering the number of observations in the study and the fact that the data are daily, the maximum lag length was entered as 10. Akaike (AIC) and Schwarz (SC) information criteria were used to determine the optimum lag length of the model. ARDL (2,1) model corresponding to the AIC value was chosen as the most suitable model. Table 4 shows the results of ARDL model selection. Then, the ARDL (2,1) model was



estimated and the diagnostic test statistics for the model are given in Table 5.

**Table 4.** Determining the Appropriate Lag Length for the ARDL Model

ARDL Model	AIC	SC	Log likelihood	F Wald test	P of Wald test
ARDL(1,1)	8.897164	8.949943	-1645.424	78.88253	0.000000
ARDL(1,2)	8.902377	8.965712	-1645.391	78.39352	0.000000
ARDL(1,3)	8.846015	8.922526	-1558.745	80.46495	0.000000
ARDL(1,4)	8.850182	8.940471	-1492.106	72.35000	0.000000
ARDL(1,5)	8.872310	8.977330	-1428.314	68.34700	0.000000
ARDL(1,6)	8.898757	9.019292	-1369.307	62.77935	0.000000
ARDL(1,7)	8.932108	9.069250	-1310.952	59.22373	0.000000
ARDL(1,8)	8.919904	9.074879	-1245.706	61.92059	0.000000
ARDL(1,9)	8.872784	9.046041	-1184.826	59.43363	0.000000
ARDL(1,10)	8.910268	9.101997	-1144.335	55.35724	0.000000
<b>ARDL(2,1)</b>	<b>8.847554</b>	<b>8.913135</b>	<b>-1560.017</b>	<b>52.61288</b>	<b>0.000000</b>

When the diagnostic test results of the model presented in Table 5 are evaluated, it is seen that there is no autocorrelation in the model, the error term is normally distributed, there is no problem of varying variance, and the model is set up to the correct specifications. For this reason, the results of all tests support that the obtained estimation results are reliable.

**Table 5.** ARDL (2.1) Diagnostic Test Findings

Diagnostic Tests	Statistics
R <sup>2</sup>	0.62
Adjusted R <sup>2</sup>	0.61
F_statistics	38.309 (0.0000)
Breusch-Godfrey LM test	F- statistics = 1.2346 (0.2091)
ARCH Variance test	F- statistics = 1.5873 (0.1485)
Jarque-Bera Test	1.4820 (0.4075)
Ramsey Reset Test	F- statistics = 3.6749 (0.0601)
Note: Values in parentheses represent probability values.	

After determining that the model was appropriate and consistent according to the diagnostic test results, the existence of a long-term relationship between the variables was tested (Table 6).

**Table 6.** ARDL (2.1) Bound Test Results

k	F- statistics	Lower bound (%5)	Upper Bound (%5)	Significance levels
1	5.79**	6.82	7.32	%1
		5.03	5.47	%5
Note: k is the number of independent variables. Critical values are taken from Table CI(iv) in Pesaran et al.(2001). The F statistic is obtained as a result of testing whether the lagged level variables in the fixed-trend model and the coefficients of the trend variable as a whole are different from zero.				

Looking at the results of the F statistic in Table 6, it is greater than the two critical values at the 95% confidence level, confirming the long-term cointegration relationship between the rKASE and COVID-19 variables. The results of the ARDL limit test show that the F-statistical value (5.79) is above the 5% critical level thresholds. Therefore, the  $H_0$  hypothesis is rejected and the  $H_1$  hypothesis is accepted, that is, it has been proven that the variables have a long-term relationship and the parameters reflecting the long-term relationship have been estimated for the ARDL (2,1) model (Table 7).

**Table 7.** Estimated Long-Run Coefficients Based on the ARDL (2, 1) Model

Independent variable	Coefficient	t-statistics	Probability
<i>Covid19</i>	-0.0049	-0.1909	0.1281
c	6.2087	3.1872	0.0000

According to the results in Table 7, it is seen that the coefficient of the COVID-19 variable in the long term is negative but not statistically significant. In the next step, ARDL Error Correction Model was estimated for the estimation of the short-term relationships between the variables and the short-term estimation results are presented in Table 8.

**Table 8.** ARDL (2, 1) Model Short-Term Estimates

Independent variable	Coefficient	t-statistics	Probability
<i>Covid19</i>	-0.1002	-2.9821	0.0485
<i>c</i>	8.6039	4.7049	0.0000
<i>ECT</i>	-0.1920	-4.6794	0.0000

According to the results obtained from the Error Correction Model, it was determined that there was a negative and statistically significant relationship between the COVID-19 and rKASE variables. In other words, a 1% increase in the number of daily cases leads to a 0.10% decrease in the rKASE variable. The error correction coefficient is negative and statistically significant. In other words, it shows that 19% of the deviations in the long-term balance following short-term shocks can be eliminated after a period.

## CONCLUSION

The COVID-19 epidemic has adversely affected the economies of the countries, especially human health and social life. Therefore, financial markets in the economy have brought risks for businesses, policy makers and savers. It is very important to examine the economic picture caused by the epidemic in Kazakhstan in terms of both its global effects and its natural consequences. In the current study, the effect of the COVID-19 epidemic on Kazakhstan's stock market, KASE, was

investigated. In the study, the short and long-term economic effects of the number of COVID-19 cases on the stock market returns in Kazakhstan between March 13, 2020 and December 23, 2021 were analyzed with the ARDL limit test method. The study contributes to the literature in terms of revealing how a developing country's stock market is affected by this process. In the study, KASE stock market returns as the dependent variable and daily confirmed COVID-19 positive cases as the independent variable were included in the analysis. As a result of the study, it was determined that there is a negative and statistically significant relationship at the 5% significance level in the short term between COVID-19 confirmed cases and stock market returns. In this case, it can be said that the increase in COVID-19 cases negatively affects the stock market in the short term. The relationship between variables in the long run is statistically insignificant. In times of uncertainty, decision makers need to evaluate the relationship between indicators that affect investment instruments. Since it is a psychological result that investors tend to save rather than invest in such processes, it is thought that this study will contribute to investors who want to evaluate their savings in the stock market.

In addition, considering the interaction of global markets, the analysis can be expanded based on the dates of the first case in the world, the first case in Russia and the first case in Europe for future studies on the subject. Because the reaction of the financial markets is not only the result of the cases in Kazakhstan, but also the increasing number of cases in the world and the resulting fear, panic and risk perception. In addition, although the effects of the epidemic are not over yet, it is important how exactly the effects of the epidemic will be in the next process.

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# Towards Effective Teaching in the Post-Pandemic Stage. College and University Education. Chile a case of Study

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## Abstract

This research study will thoroughly study the strengths and weaknesses of online lectures from an e-learning and hybrid point of view.

The Pandemic has provided the community with several indicators regarding the experience gained and the academic results achieved. We have examined the complexities observed due to the interface: lecturers-computer platform-students.

The origin and nature of the various careers required a careful and detailed analysis based on curricula, the number of students, high-quality academic staff, and the need to grow together, having a solid and proactive interaction with the productive sector. To better understand this process, we have included technical (DUOC-UC) and university (San Sebastian University) institutions. The results are highly illuminating

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and worth studying in detail, which is this academic Study's primary goal.

**Keywords:** Technical, Higher Education, e-learning, Hybrid lectures.

## **Introduction**

The Institutions of Higher Education have made significant efforts to honour their commitment to society. Still, changes are in due course to get involved in the market professionals with a high level of competitiveness and clear competencies in innovation and technology transfer.

Our country must focus on quality education based on universally recognised international standards. We as a country must be able to educate students using the best practices to compete with students from all over the world.

Developing an effective strategy to train our students and future professionals to follow a convenient path by employing new technologies and highly sophisticated instruments is essential. We have so far been living on the export of renewable and non-renewable resources, agriculture, tourism, and pisciculture, so we must work hard to create new funding resources from the government and private sectors to balance our input (importation) and output (exportation). Additionally, it is necessary to produce goods, and it is essential to increase our export capabilities of highly sophisticated and processed national products. At this point of the discussion, we are thinking of a significant task. We must change our work habits and learning processes to accelerate several techniques that are too inefficient. We must achieve our mission (dream) and vision (strategy) to reach a reasonable level of development, contribute to a better society

for all our citizens, and become a member of a set of realistic and competitive countries on earth.

This article develops the topics outlined in this summary with great depth. A clear and precise target will discuss and propose methods and strategies to make our teaching practical and realistic considering the technological/industrial revolutions 4.0 and 5.0, in full development in the first world countries. We have decided to take the formal view of desirable technical institutions, known as DUOC-UC and the San Sebastian University in our country. The goal is to compare and better diagnose the lectures online (both synchronic and asynchronous modalities), hybrid classes, and the additional work done by our mentors and professors to produce several textbooks and study guides in a relatively short time. We also have one at the San Sebastian University evening academic careers. In summary, we have a broad sample of students of different levels of training. We welcome students who are already professionals (technical groups) willing to work for higher professional titles and, or academic degrees every year.

Chile is a small country characterised by its traditional exports of copper, wine, spirits, fish farming, and timber services, among other resources in the broad spectrum of renewable and renewable energy. The Chilean economy ranks 44<sup>th</sup> in the world, which measures the country's economic competitiveness (six places lower than their place in 2020, however, the above, at the level of Latin America, remains the nation with the best positioning). In general terms, the Chilean economic-political model corresponds to a free-market economy with a strong emphasis on the social (however, by definition, insufficient), which protects the freedom of entrepreneurship and the property right, assigning the State a subsidiary rather than a corporate role. By 2020, the Gross Domestic Product

(GDP), restricted by 6%, given a relaxation of containment measures (COVID-19 and its variants, which has allowed a slight recovery) (EMOL, 2021)

We must declare that the fiscal deficit increased by 7.5% of GDP (2020), representing the most significant fall in recent decades. In this scenario, the country's budgetary situation concerns practical actions, eliminating externalities, and various diagnoses. The growth of the economy (concerning the GDP), which measures the productive activity and is obtained by adding the value in Chilean pesos (our currency) of goods and services of final consumption that take place in a calendar year, not used to produce something additional (Gala et al., 2018)

Structural changes in all areas of the citizens' activities of this country (education and training) must be relevant activities to review (J. D. Rolle et al., 2016). We need young people to be the driving force behind innovation and research, as there are adequate teachers to channel new ideas and create mega-projects. These projects must focus on benefiting the quality of life of human beings with strict adherence to environmental standards to carry out clean processes to their maximum extent and possibility, reducing the carbon footprint, production, and supply chains following international standards. The progress of a country should be its production capacity (Acevedo et al., 2021). In the last 15 years, we have spent without being able to produce to achieve the necessary balances (EMOL, 2021). There is a consensus that in these last 15 years, we have not been able to cross our production level to achieve the necessary balances.

We must focus on training processes for our current and future professionals. Our graduates; must have the skills to tackle an increasingly demanding world of work. (J. A. Rolle

et al., 2019). The critical question is how we can contribute and help our country's progress.

In this sense, the authors think that incorporating technical and university training should be closely related to the productive sector and must be of such a nature that has to lead a competitive country that looks into the future with optimism. The task is to train the nuclei of professionals on a diverse training scale, generate new ideas and produce better processes - results with clear and convincing effectiveness (auditable) (J. Rolle et al., 2020).

No indicator without history makes sense in the Academy, and it is necessary to create a representative number of indicators (KPI) capable of giving an effective response to the interaction of new professionals with the productive sector. We expect that by putting forward a serious, responsible, and proactive policy by 2025, the country will be able to return to the path of growth (Acevedo et al., 2021). It is a relatively long period for persons (from the point of view of microeconomics), which requires significant adjustments at the macroscopic level enabling a sustainable recovery over time and with a substantial growth rate. This excellent task must correspond to a joint effort between the various higher education levels, the market, and the government (the latter with a responsible and transparent expenditure).

Similarly, we face new paradigms, such as robotisation and automation, artificial intelligence, data mining, and 5G technology, which are necessary to develop the four<sup>th</sup> industrial revolution and the new concept of the "Internet of Things" (IoT). These recent advances require state policies that consider the knowledge and accumulated experience of adults and young people without disregarding the age group

to which they belong in the population. What we have said could be the ethical socialisation of our principles and values.

In the post-pandemic phase, we believe that the citizens of this country are not in a position to incur inorganic expenses; on the contrary, it is essential to spend what is strictly necessary and, if possible, to save for prospects. We need to create a battery of properly organised instruments, enabling us to achieve reasonable levels of effectiveness in our work and to lecture with technological examples and project-based on our lives alongside our families and surroundings. We need to contribute to the growth of our individual and economic groups. Students should feel that the effort they and their family group make is significant. It is a golden rule to indicate that humans do well what we love and what they do, so noble and dignified work must be one of our strengths. In this chapter, the authors will thoroughly study the weaknesses and strengths of the global educational system that we are initiating in the post-pandemic stage. The prime objective is to think about what we must do in this period and our strategies to reach the knowledge society's levels. From the technical to the university level, our professionals must necessarily respond to a profile of greater demand and creativity.

To this end, we have decided to incorporate into this vision the activities carried out by the DUOC-UC and the San Sebastian University, considering a series of topics of interest: (a) Comprehensive teacher-training developments in the DUOC-UC, (b) Teaching e-learning and hybrid at the San Sebastian University, (c) Evaluations at the DUOC-UC and the San Sebastian University.

### **Educational strategy and model DUOC-UC**

Within its identity and mission framework, DUOC-UC has developed an educational management model focused on enhancing an offer of Professional Technical Higher Education to contribute to the comprehensive training of people in need of society and to provide opportunities for development and social mobility. In this sense, the study programs taught by the Institutions have always had a significant focus: on the development of relevant capacities for work together with a valuable formation based on the principles of the Catholic Church Social Doctrine to promote successful employability and personal/professional development. In other words, to make this mission of training people, in the technical & professional fields, with a solid ethical foundation must be inspired by Christian values. The main goal is to train students to contribute successfully to the world of work and be committed to the development of society. For these purposes, DUOC-UC deploys relevant and flexible academic pieces of training that contribute to the comprehensive training of its students throughout their lives. The Institution recognises and integrates into its learning processes three learning contexts: formal, non-formal, and informal. The first refers to systematic methods and structured objectives developed in different learning environments, which lead to the achievement of a degree awarded by an institution corresponding to the level and area of training. The non-formal context points to systematised processes with structured objectives taught in different learning environments, leading to academic certification and not obtaining a degree. Finally, the informal context does not have a systematised learning process, does not lead to certification, and results from daily work and personal experience.

The three learning contexts are fundamental parts of the training process of Douc UC. It favours the integral formation of its students both through formal and systematic academic activities, which are typical of a curriculum, study programs that allow updating, deepening, and the development of new capacities, and extension, sports, and pastoral activities. Combining these training activities gives valuable experience for the integral development of the students of DUOC-UC (DUOC-UC, 2020b). Considering this educational model, it is worth mentioning that other academic aspects characterise DUOC-UC by developing a class based on active methodologies. This scheme allows applying the three moments of didactics, the beginning, development, and closing, both at the classroom level until 2019, synchronous in 2020 and the first semester of 2021, to transition to the hybrid system in the second semester of 2021 (face to face and synchronous simultaneously).

Important milestones to 2022 in the development of the classes, understanding the essential social change where there was a fracture in the national collective, and then the Pandemic that burst and altered the health system of the entire world. The Institution had to make various efforts in such a way as to maintain a quality education service, focused on the student as the leading actor of the educational strategy. We know that managers, teachers, and students had to face substantial changes in adapting to the new reality, which undoubtedly demanded different forms of interaction and communication and perception and understanding of the latest and more academic contexts they had to face. The lectures delivered synchronously at the end of 2019, 2020, and the first semester of 2021. It is essential to note that in 2020, the 105,888 students distributed in 18 DUOC-UC locations throughout Chile (12 in Santiago and 6 in regions) continued

their curriculum and activities remotely (online). Under these circumstances, the already defined development plan of action (2021-2025) considered the suggestions for improvements of qualified academics to update the information available. The activities suggested to develop the plan are as follows:

- (a) Strategy to introduce a more robust mechanism for student guidance in a feedback procedure to accompany students during their academic careers.
- (b) Redesign the curricula to make them more efficient and in agreement with the need of the productive sector.
- (c) Need for a better and more qualified academic staff.
- (d) Get together our Institution with the productive sector, increasing more and regular collaborative work.
- (e) Foster and digital culture and promote inclusion
- (f) Others.

Along this way of thinking, digitalisation and innovation in teaching-learning methodologies are highlighted and probably too soon. The use of digital tools by lecturers and students and the use of digital tools in the teaching and learning procedure by academics and students in such a short time was indeed a significant challenge. The above discussion leads to a turning point in the overall process of going from face-to-face lectures to online ones and vice versa. *“DUOC-UC in Context COVID-19 tutoring systems, comprehensive support to students and teachers, and improvements in state-of-the-art technology in workshops and laboratories were just some of the innovations implemented as part of its process of adaptation and flexibility in the face of the Covid pandemic-19. All this led the Institution to rethink dictating the subjects through a new instructional model, which also laid the foundations for future academic developments”.* (DUOC-UC, 2020a), Additionally, the institutional educational model adopts a competency-based approach to learning and



defining competencies (such as the ability to respond in an observable and effective manner to dynamic and complex situations, fully mobilising skills, knowledge, and life-long transferable attitudes in diverse academic, work, social and cultural contexts.

This Methodology is the basis for identifying and developing the speciality and employability capabilities of any study program. This approach focuses on the labour market insertion, performance, and mobility of persons through the articulating axis between training and the requirements of the socio-occupational context. It is necessary to design the graduate profiles of the study programs through the Curriculum Development System. The competency-based curriculum enables the design and implementation of modular, flexible, and student-centred training processes.

This Methodology is a fundamental pillar for each program to be designed in an aligned way in all its stages under an articulating axis: the graduation profile, which arises from the survey of labour, social and cultural needs, as well as the aspects of institutional identity that differentiates the student and professional from DUOC-UC (DUOC-UC, 2020b).

Regarding the profile of DUOC-UC students, the number of students enrolled in 2021 was 102,933, with preferences toward careers in administration, engineering, and information technologies representing a percentage of 58.8% of the total (out of 10 enrolled, 6 chose this type of option for their studies). Of the total enrolled students, 29,850 (29%) are afternoon students, and 2 out of 10 students work and are heads of household.

The remaining 73,083 students are oriented by studying in day mode, being mostly male, with 58,4% of students, and 8 out of 10 young adults under 24 years with three-quarters of the total from secondary vocational-technical schools and

motivated by being the first generation of future graduates of a higher education career. On inclusion and connectivity in students, out of the same total universe of new students mentioned, 13 out of every 100 students belong to native peoples of Chile, and 5% have also declared a permanent disability.

Both for the execution of tasks, assignments, and review of asynchronous content and participation in online classes, more than 70% of the students who joined have an internet connection and an adequate space to study, and over 90% have mobile internet on their computers. Although these numbers are promising, the reality of these students is fragile.

DUOC-UC, within all the available facilities (infrastructure, teaching, the administrative capital makes available several technical support tools

DUOC-UC, within all the possibilities of infrastructure and teaching and administrative capital, makes several technical support tools available to optimise the development of educational procedures, to keep being a leading institution in the training of high-level technicians and professionals in Chile (DUOC-UC, 2021). The students trained at DUOC-UC have a high reputation in the market regarding occupation and income.

However, the employability levels of graduates of the Institution are high; during 2020, they again experienced a slight decrease, explained first by the social explosion of October 2019 and later by the Pandemic. In agreement with the Study of the Employment Situation and income, the employment rate reached 79.8% versus 85.25% in the previous period.

Meanwhile, technicians and working professionals have an average income of \$649,067 (Chilean currency), and 75.46% do so in an area related to their discipline of Study.

On the other hand, the Study shows that it takes four months to find a job. Without prejudice to the reality of the country, through the job exchange (<https://www.duoclaboral.cl>), in the period, 3,178 companies published 11,051 offers with 23,866 vacancies available (4% part-time jobs; 56% full-time; 39% internship; 1% freelance projects). As for the new users of the portal, 9,023 students and 1,730 graduates were enrolled, thus reaching 130,594 people and 16,657 companies. In addition, the Virtual Labour Fair in September was a space that brought together almost 200 companies and made 838 job and internship vacancies available.

For the first time, online jobs and internships reached 25.8% of all available offers; the application preferences corresponded to internships with 52.9%. One of the initiatives that seek to strengthen the relationship with companies committed to the professional development of students and their transition to the world of work is the Preferential Internship Program, which in 2020 managed to incorporate eight new companies: *Falabella Retail*, *Ripley*, *Red de Salud UC Christus*, among others, reaching a total of 28 in this category. In addition, accompanying students and graduates in their employment insertion, along with supporting in the process of selection and recruitment to companies interested in the Institution, is the close relationship that DUOC-UC built with 26 companies belonging to the Preferential Business Program [9].

In terms of the characterisation of students during 2020, 1,151,727 students enrolled in undergraduate courses in the Higher Education System in Chile. Of these, 491,732 belong to Technical Training Centres and Professional Institutes, of which 105,888 are students of DUOC-UC, or 21.5% (DUOC-UC, 2020a). Concerning the face-to-face classes (2020), student approval was about 80.7 % during the year. Also, 8,199 people

graduated from professional careers and 7,265 at a technical level. The teacher training reached 88,8 % of 3,850 lectures since March 2020. Several actions executed since March 2020 led to issues such as (a) 100% face-to-face execution changed to 100% virtual execution, (b) 100% of teachers having a tutor assigned to support the transfer of online classes, (c) 33,000 students have benefited from a tariff flexibility scheme, (d) 9,229 online mental health care sessions held for 3,667 students, (e) 247,093 views made of the 14 mental health capsules designed for students and displayed on the Institutional website.

DUOC-UC went from having 1000 virtual classes per month to almost 9,000 daily courses (98.3% of these virtual classes held during 2020) (DUOC-UC, 2020a). It involved the systematisation of evaluations (synchronous, asynchronous). The partial assessment corresponds to the instance in which information gets collected on the progression of students' performance, according to the expected learning. During the pandemic stage, where there was no personal contact with the student, this role assumed a greater preponderance with a defined focus on timely and quality follow-up and feedback.

The first issue was to analyse the partial evaluations done in a particular face-to-face procedure, evaluated classified into tests or activities at a distance. Therefore, these activities or difficulties that could be synchronously or asynchronously virtual format were maintained.

Activities that required synchronous – face-to-face format as knowledge tests were modified to be evaluated in virtual form or were replaced by the development of reports, commissions, or projects, either individual or group, to measure the achievement indicators defined for each subject. As for the activities that could not be evaluated at a distance because they required laboratory and physical workshops of speciality, they had to

be postponed until when the face-to-face activities resumed; however, activities related to conceptual learning were carried out with a focus on achievement indicators, and some of the procedural learning was transferred to a distance performance evaluation.

This 2022 represents the real possibility of integrating the learnings achieved in synchronous and hybrid class subjects, so some of the initiatives to be implemented contemplate the Blackboard Ultra experience, which implies a shift to a complete learning ecosystem, with Learning Experiences designed directly on Blackboard Ultra, using new technological resources that enable a responsive, accessible, and powerful educational experience.

Application of the C1DO1 Methodology<sup>4</sup> pilot program associated with the development of three practical activities of the subject plan, where students can review capsules explaining the step-by-step associated with each activity, to then replicate the exercise leaving it available in an audio-visual way to receive personalised feedback and can improve, to finally be evaluated, updating the teaching profile that seeks to maintain the purpose of the Institution. Therefore, we have worked to continuously improve the profile and role of teachers, who are guides for students. This update contemplates that the profile goes from being only of characteristics to a complete model of competencies with different attributes that strengthen the formative experience. The Title Portfolio that, in favour of continuous improvement, some adjustments will be made for its implementation, becoming a regular subject in SAP, developed in Blackboard Ultra. It will have semi-annual statements, evaluations, assistance, and various updates.

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<sup>4</sup> C1DO1 is an experiential learning platform that will allow the training of any psychomotor procedure or skill supervised by teaching networks.

Finally, the use of digital resources, through the implementation in classroom classes of digital resources for teaching, teacher book, and digital resources for learning. These will allow access to audio, videos, exercises with feedback, an online dictionary, notes, and other interactive functions. On the opportunities for improvement, it is imperative to advance in the dimensions of communication, for example, understanding that the effectiveness of the message depends to a great extent on the way that message is perceived, which is strongly influenced by non-verbal communication factors (55 % + 38 % = 93%), according to the studies performed by Albert Mehrabian (Ponce, R. (s. f)). Communication is more than just words and slides (Ponce, 2020). These show that what is perceived in a voice message (face-to-face) may correspond to 55% Body language, body movements (especially facial expressions), 38% vocal aspects, voice (volume, tone, intonation, rhythm) and 7% verbal aspect (word content). The content of words in the literal sense of what is said only affects 7%, which is minimal. Considering the lived experience of these last years in synchronous and hybrid classes at DUOC-UC is fundamental to apply the three moments of communication that are perception, welcome, and encounter, so that this is empathic listening, which translates into active listening, being the highest level of listening, which makes it possible to make it assertive towards students.

Another relevant factor is the motivation to remember that it determines, directs, and maintains what students do to learn, so it is essential to understand that their previous knowledge can help or hinder their learning. When students value a learning goal or activity and hope to achieve it successfully and perceive support from the environment, they will be strongly motivated to learn. Motivation refers to an individual's investment to achieve a desired state or product. In the context of learning,

motivation influences the direction, intensity, persistence, and quality of the behaviours towards learning that a student uses; young people are faced with different stimuli that capture their attention, time, and energy, so understanding what increases or decreases students' motivation towards learning is crucial.

If students do not find the course content relevant or interesting, they may see little or no value in mastering or engaging the deep learning. Similarly, if the students perceive that they will not succeed in a course, they may not get involved in the attitudes needed to learn. It is important to recognise that three key axes influence motivation: Perceived value in the task, expectations of effectiveness, and perceived support for achieving a task. If one of the three is neglected, motivation can be deeply affected.

Some of the strategies to promote motivation are connecting the material with the interests of students, providing authentic learning tasks, showing students the academic relevance of the course, demonstrating the relevance of superior thinking skills in students' future professional lives, and identifying and distinguishing what they value (Centro de Desarrollo Docente, 2018; Ponce, 2020).

In conclusion, we would like to highlight that this space is extremely valuable because it allows us both to make it visible and to thank the tremendous effort of the directors and administrators of the Institution to ensure quality education for the academic body. Indeed they did not hesitate to deploy all their skills and knowledge to the benefit of the future technicians and professionals of DUOC-UC. We have all placed our trust in an educational model which has worked on its application to rise to the occasion, despite the existence of difficulties in all processes, procedures, and systems of work, but with the conviction of providing the necessary tools to

prepare future graduates so that they can contribute effectively and comprehensively to Chilean society.

### **Educational strategy and model San Sebastian University**

In Chile, as a product of the social mobilisations from October 2019 and then in March 2020 and given the condition of the Pandemic that is lived in the world, Higher Education Institutions accustomed to face-to-face teaching have had to adapt to this new scenario of online and hybrid classes. For these purposes, several platforms allow communication between teachers and students, in some cases, the use of a chat, visualisation of users by cameras, display of presentations, sending files, and sharing screen, among other functions. It is even possible in some cases to connect an electronic writing tablet that, through an electronic pen, allows to display online the equivalent of a blackboard in real-time per screen, which tries to achieve a better teacher-student contact (attempted through this virtual reality approach more efficiently to recreate the concept of face-to-face class).

The above is not unaware of problems. The first thing that is detected is the internet connectivity that depends on the geographical location of each user, the contracted Plan (internet plan), and finally, the capacity of the network at a certain time on the day that an expeditious class is carried out without interruptions (fall of the system of students and teachers that generates an interrupted class). Other factors or problems that are domestic are added: In each home can coexist, simultaneously several users demand computer equipment at the same time either by telework or because there are more siblings required to attend classes, which limits the real possibilities of having asynchronous class.



Some Study Houses have partially solved the problem through a real-time recording process of classes, a procedure that makes it easier for students to watch classes in asynchronous mode at their available times. These videos usually require downloading, which takes time for the user depending on their internet capability (download speed and megabyte plan available).

The foregoing requires the effective training of academic staff and students. Adaptation is not a simple process; it often produces adverse effects. This process is not trivial because a substantial number of part-time lecturers must dedicate part of their free time (to rest and/or the preparation of materials of superior quality if compared with the classroom modality) to work under this new modality. As expected, adapting these computer systems is quite simple for students. In general, it is observed that it is relatively easy for students to learn the use of this software, while for teachers, this is not always easy and can generate a certain degree of discomfort essentially to the additional time they must devote to their direct and indirect teaching, which is a relevant issue for the academic community to overcome.

This scenario obliges teachers not only to take a class on the platform but also to write notes for this online modality, prepare a class for this modality (make presentations or write lectures notes and/or texts to deliver a reasonable set of classes), which consumes a much longer amount of time than the formal duration of a class. The biggest problem is with those teachers who make teaching with a contract to fees, which in general contemplates the payment of direct hours made but do not usually consider indirect hours. This generates a conflict given that it over requires professionals who perform this type of service.

From the students' point of view, a person who spends several hours of the day connected to an online class, in front of a computer screen, attending a face-to-face class, or viewing pre-recorded classes in deferred schedules to the class (video pods). Both teachers and students are systematically generating fatigue. We can add to these problems the conditions of Chilean households where there are not necessarily study places. Multiple distractors generate obstacles to having a normal class. You can name some of them, children demanding attention from their teachers online and/or some students, people knocking at the door (for example, online home shopping services interrupting class), or the need to go shopping or work that several students must finance their studies, which prevents an effective synchronous class. The latter is possibly an increasing situation since several households face homemakers losing their jobs, forcing the whole group family to seek sustenance. Above, however, the problems with theoretical classes and despite all these difficulties can be overcome, as has already been said, with medium success.

It can be added that, in a significant number of situations, students are asked to turn off their cameras to privilege connectivity, which is usual in numerous courses, to privilege a good audio signal. Lecturers do not watch their students; they do not observe gestures and attitudes, so personal language is lost (DUOC-UC, 2020a). It is a big problem for teachers not to know if there is a connected student in front of them following their class or if there is only one computer on. Some teaching strategies or methodologies are often used to solve these types of problems, such as doing an inverted class, with students actively participating in the class, separating students in group work, and developing different cases. Several methodologies are proposed to increase students' interest, motivation, and

participation in classes, but analysis must be made according to the number of students who attend a subject simultaneously connected to a class. If the number of students is very high and you have massive classes, several of these methodologies begin to lose meaning in an online modality since the teacher cannot attend and follow all their students, losing quality activities, as the per capita time allowance is less.

There can always be more complex situations. The most complicated is related to teaching that is carried out practically. The one that considers the use of the clinical field, pedagogical outputs to the field, experiential practices of practical laboratories, with the use of equipment or machinery that is difficult to replace. Computer labs are usually served with a remote connection, connecting teachers and students with a host computer through a software that allows the use of the programs from these computers. At the level of the laboratories, we have observed the lack of experimental evidence by the students for the main reason that there forced to take data from somebody else experiments. In these laboratories sessions that require the use of machinery, it has been enhanced case study where the student is given the data that would obtain performing the experiment (which in medicine could be clinical data, for example, of a patient, and in engineering could be the results of operating a piece of equipment) and focuses on the analysis of these results. We are trying to simulate the experimental case. However, it should be noted that the depth of learning under this scheme does not deliver depth or quality for the students. It is much more feasible than if the students internalize the experiments to achieve their own results; higher learning rates and improvements could be generated.

In some cases, it is even intended to record the experimental experience and play the video to the students, provide the

data that is obtained from the observation of said video so that the student will observe how it is done, which makes him a spectator of the experience, not the protagonist of it. This offers some solutions to the problem, but it does not replace learning the experience itself and doing it with one hand. Possibly for a nurse, it is not the same as giving an injection as seeing how the injection is placed. Similarly, in the case of a chemist, preparing a solution by weighing a sample, dissolving the solution, and shaking the solution until the sample is completely dissolved, is a video. We must highlight that there is wealth in an experience that is not replaceable. This is not conveyed in a case study.

The experiential class is not completely recoverable in online mode since the wealth of doing it with one own hand is lost, which also generates confidence and skills in the student. In these cases, possibly the best strategy makes sense with activities that recover these experiences that are key to learning when you can return to the face-to-face class modality. In these cases, it is reasonable to generate class recovery sessions (remedial modality) that would consist of “applying the technique” and transmitting that type of knowledge rather than the analysis of the topic under Study, which can be done online. For this purpose, a face-to-face class is proposed where the focus is on the technique of using equipment, tools, utensils, dealing with people, patients, interpersonal relationships, etc. However, another highly complex issue that cannot be overlooked is the evaluation of these learnings obtained in an online modality. Evaluating these courses is not trivial.

For asynchronous, online modes of testing, there are several complexities. The teacher, student, and student connections may fail. Answers can be sent over the phone if the questions are the same. A statement is usually delivered, which students

copy on their computer and send their response to the teacher by a platform that allows the information to be recorded or by mail at the end of the test. The problem with this procedure is that the student can share the answers between the other students or even hire a third party by some students, which resolves the test (given that you are sent the statement) and sends you the answers by vitiating the evaluation. This situation could be mitigated if as many controls were developed as there were students and each test was different. This does not eliminate the possibility of copying, but it would mitigate it. On the other hand, the Professor would be overloaded with this generation of individual tests.

Some teachers think this can be solved with a platform test. The above also does not solve the problem since a simple “print screen” allows again to incur the same action, sending the test to a third party that resolves it and sends the answer by phone to the student. Teachers have tried to perform time-adjusted tests to try to make this adjustment to reduce the possibility of using a third party. The other thing that has been tried is to use banks of questions that are randomly drawn or change their order which makes it difficult to copy between students of the same course but does not prevent third parties from helping in the solution of the answers. Another possible modality is evaluations using variables of the problem in parametric form. For example, in development questions, use the same statement, but that a variable of the problem or several variables defined in it depend parametrically on the list number of each student so that all the problems arising during development are given different answers. This helps to minimise copying between students in the same course but does not prevent a third party from helping to solve problems.

Finally, but not least, some bet on oral questioning. In some professions, this may make sense or in some subjects, but this solution will depend on the learning that you want to measure and the number of students that the subject has given that it could be an “eternal” activity. The latter option minimises the participation of second or third parties. Another possibility of evaluation on an individual basis or in working groups within the course (two to five students depending on the complexity of the problem and the size of the course) and assigning research or development topics to problems or cases where knowledge is applied. This minimises copying among students from different groups and is a good approach to real-world work experience since, in general, people do not work alone and are hired to solve problems by applying learned knowledge. The inconvenience is always the same. An outside person can be hired and solve the case, research problem, or activity requested. This can then be accompanied by oral presentations where each group member must resolve consultations of the work presented, complementing the evaluation of the work or report orally.

The ideal is for group members to receive questions from the teacher “randomly”. This means that the teacher forces a particular member to answer a particular question about the work done orally without the group’s help, avoiding “subsidies” from co-workers or third parties and evaluates whether the student performed or handled the topics discussed at work. One possibility in some subjects is to confront students with a real problem provided by an external company, asking students to apply what they have learned in search of a solution to the problems of the company, what can be done individually or in groups depending on the problem and the size of the group of students in the subject. This compromises the participation of

the company, which is not trivial and requires an additional amount of time on the part of the teacher to allocate teaching hours for evaluation. Sometimes this time is not available, or it forces extraordinary classes to carry out the evaluation, exhausting the teachers and students, who already have an overload in their chores.

Some problems have arisen, and how solutions have been found to these problems. There is still a way to go in this world of online classes. There will be learning and lessons that will give us the experience. Finally, it can be concluded that something fundamental is needed beyond technological tools or resources or working methodologies. There is a need for a community of highly committed teachers to teach and pass on their knowledge, ready to adapt to new challenges. Possibly the essence lies in the latter.

### **Conclusions**

We have explored a non-traditional strategy to teach our students in the current research work heading for the best available practices. We have decided to take a broad view of the learning processes for the academic community. The authors aim to facilitate the reader with updated information about the learning schemes in due courses in the Republic of Chile. We find it extremely interesting to move from a technical institution (DUOC-UC) to a university to better understand overall processes involving many authorities, members of the academic staff, administrators, highly skilled secretaries, and students from different institutional levels of training. Both institutions, DUOC-UC and San Sebastian University have managed the same problems with different kinds of students. Some of them work to gain technical titles, and others to become civil engineering. In some higher educational institutions,

this kind of data is considered in a private way, which makes our life a bit harder. Several ideas are put forward daily to improve the quality of our professionals and the strategies to reach them and to reach them not only with knowledge of their specialities but also with ethical principles.

The task is non-trivial, and many authors argue that the process of lecturing online is not right up to the standards. We, the academic staff members, must prepare lectures, notes, books, and technical reports, read articles (mainly in English), deliver short talks, become mature, and be capable of overcoming the many difficulties that we as a community are facing daily. Through this work, we have shown the strategies employed by DUOC-UC for students working for a technical title and students of San Sebastian University (mainly studying civil engineering majors in Mining, Informatic, Industrial and Energy Sustainability). We must seduce our students to love the contents of each course since this seems to be the most appropriate way to develop strong ethical standards as well as become highly competitive professionals.

Many of our students must make their living, working over the weekend or overnight, though we all have a dream: We must become good citizens and help the weakest and the most vulnerable people. This is indeed a major task, and Higher Education Institutions should become the second house for their enrolled students. We must work as a team, and this fact means duties and commitments. The right balance between duties and commitments is highly likely to have a better society and a nicer world to live in. Finally, but not least, we conclude that there is not a unique strategy, so we must work harder and harder with all the members of society to contribute to a better standard of living for human mankind.



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# A Qualitative Study on the Conceptual Framework and Success Requirements of Benchmarking and Its Future<sup>1</sup>

*Hatice SARIALTIN*<sup>2</sup>

## **Abstract**

In this qualitative study, the success requirements of benchmarking in manufacturing enterprises implementing benchmarking in Turkiye have been reevaluated and benchmarking literature and global application data for the future of benchmarking have been analyzed. Study findings reveal that; senior management support, determining the right benchmarking subject, studying with the right benchmarking partner(s) in the context of improvement and learning, integrating benchmarking into strategic planning, being open to mutual knowledge sharing and external collaborations through global benchmarking databases and the role of the quality department on process management is the most critical success requirements of benchmarking. Findings also reveal that benchmarking, as an effective method for enterprise performance management and a catalyst for change programs, has a future to support performance improvement, continuous learning and dissemination of good practices in the face of megatrends of the VUCA world.

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1 In the preparation of this study, the author's doctoral dissertation, with the title "Benchmarking on Measuring and Improving Organizational Performance and Applications of Benchmarking in the Manufacturing Industry," was utilized.

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## Introduction

It is recognized that benchmarking is a management tool or method order to measure and improve organizational performance (Cook, 1995; Zairi and Leonard, 1996; Longbottom, 2000; Sarıaltın, 2003; Stapenhurst, 2009; Gomes and Yasin, 2011) as a systematic process of searching, learning, comparing and adapting better or the best strategies, processes or practices (APQC, 1992; Watson, 1992; Finnigan, 1996; Mann and Welch, 2001). It is possible for organizations that try to exist in a competitive environment (Cook, 1995) and sustain their performance improvement (Longbottom, 2000) and organizational learning capabilities through benchmarking (Global Benchmarking Network-GBN, 2018). As Bendell et al. (1993) cited from Camp (1989), “*benchmarking is the continuous process of measuring products, services and practices against competitors or industry leaders*” (Bendell et al., 1993: 55). But, according to Cook (1995) it is not a measurement for measurement’s sake, it is more than making just comparisons (Cook, 1995: 25). It provides meaningful data on potential areas for improvement, essential data on how these can be achieved (Boxwell, 1994; Çelebi, 2011).

*‘In the preparation of this study, the author’s doctoral dissertation, with the title “Benchmarking on Measuring and Improving Organizational Performance and Applications of Benchmarking in the Manufacturing Industry,” was utilized.*

Although benchmarking goes hand in hand with performance measurement (Zairi and Leonard, 1996) and we cannot benchmark

and improve without a measurement (Doğan, 2017), the purpose of benchmarking is not only measurement (Koç, 1999:111). The main thing in benchmarking is learning and sharing (Koç, 1999: 110), which makes it one of the most effective methods of business performance management (Goncharuk et al., 2015). In the early 1990s, Watson (1993) noted that; “*benchmarking would become more accessible to all users as a learning device*” (Evans et al., 2012: 766).

Xerox Cooperation first formalized benchmarking and applied it as a performance improvement tool and became a market leader in the early 1980s (Harrington and Harrington, 1996: 31). Over the last 40 years, there are still many reasons that organizations benchmark today to measure and improve performance, set challenging goals, achieve high performance, learn new approaches and methods (Stapenhurst, 2009; Ho Gland, 2021). While Doğan (2017), referring to Deming’s definition as “*benchmarking is a method of searching, finding, learning and adapting how others do better, without departing from the legal and moral path,*” claims that “globalization has increased the searches for benchmarking to the world scale (Doğan, 2017). Therefore, there is a need for studies that explain the current state of the use of benchmarking (Adebanjo et al., 2010).

According to Camp (1989), “As a search for industry best practices to lead to superior performance,” benchmarking has been applied not only by the private sector (Boxwell, 1994, Harrington and Harrington, 1996; Koç, 1999; Sarialtın, 2003; Jones and Kaluarachchi, 2008; Karabulut, 2009; Demirdöğen and Küçük, 2010; Gomes and Yasin, 2011; Kale and Karaman, 2012; Meybodi, 2015; Rashed and Ashraf Un, 2018) but by higher education institutions (Comba et al., 2010; Van Vught, 2008; Sarialtın, 2017a) and also public organizations

as well (Bullivant, 1994; Bendell et al., 1993; Boniface, 2014; Canitez et al., 2016; Boojerdi et al., 2020). Therefore, it has been accepted and applied as an integral part of Total Quality Management (TQM) (Bendell et al., 1993; Town, 1995; Cook, 1995) and a critical element of any comprehensive quality strategy (Finnigan, 1996: 4) from TQM's customer view to see how others satisfy their customers (Town, 1995: 84) and improve process efficiency (Cook, 1995: 14). It is also integrated into business excellence models and became a fundamental requirement of national and international quality awards (Watson, 1992, Harrington and Harrington, 1996; Stapenhurst, 2009; EFQM Benchmarking Guidelines, 2015; Kalder, 2017). In the 1990s, three prestigious benchmarking awards; Award for Excellence in Benchmarking, Benchmarking Research Prize and Benchmarking Study Prize, were given by the American Productivity and Quality Center (APQC) each year (Bendell et al., 1993: 185; Harrington and Harrington, 1996: 150). In Türkiye, both national and European Quality Awards, based on the European Foundation for Quality Management (EFQM) Excellence Model, which require performance comparisons, have been given by the Turkish Society for Quality (KalDer) since the mid-1990s (KalDer Kıyaslama Komitesi, 2000). As the Best Practice Improvement Resource (BPIR) declared, "Global Benchmarking Award has been given since 2012 (BPIR, 2016). According to Adebajo, Abbas and Mann (2010), "as a performance improvement technique, benchmarking is an effective method for all types of organizations" (Alosani et al., 2016: 176).

In this context, the study has two purposes. The first purpose of the study is to evaluate the success requirements of the benchmarking method based on the benchmarking practices of Turkish manufacturing companies. The second

purpose is to determine whether benchmarking has a future as a performance improvement and continuous learning methodology. For the study, the answers to the following research problems are tried to seek out;

- What are the success requirements of benchmarking in Turkish manufacturing companies with best-in-class practices that use the benchmarking method in their performance measurement and improvement processes?
- Does benchmarking have a future to support performance improvement, continuous learning and dissemination of good practices in the face of megatrends of the VUCA circumstances?

The answer to the first research problem of the study has been given by utilizing the author's doctoral dissertation, which is a qualitative case study research that examines how effective benchmarking can be for Turkish manufacturing enterprises to measure and improve organizational performance. In this context, the success requirements of benchmarking in terms of case organizations have been reevaluated. In order to answer the second research problem, the benchmarking approaches of the Baldrige Excellence Framework (BEF) and EFQM Model and benchmarking practices of global organizations and alliances such as APQC, BPIR, GBN, World Benchmarking Alliance (WBA), the Centre for Organizational Excellence Research (COER) and the benchmarking literature have been analyzed. Thus, the study consists of three major sections. First, in the conceptual framework, definitions, types and implementation process of benchmarking have been extensively reviewed. The second section presents the success requirements of benchmarking in terms of Turkish manufacturing firms based on an empirical study of the author's doctoral dissertation. The third section tries to shed light on the future of benchmarking by considering

the current state of benchmarking perspectives and practices under the VUCA conditions.

### **Conceptual Framework: What is Benchmarking and How Implement It?**

APQC explains the benchmarking philosophy as *the “practice of being humble enough to admit that someone else is better at something and wise enough to try and learn how to match and even surpass them at it”* (EFQM Benchmarking Guidelines, 2015: 3; Harper, 2019; APQC, 2020). As Bhutta and Hug said (1999); “the justification lies in the question”, “why re-invent the wheel” (Bhutta and Hug, 1999:254). In this regard, it is a luxury to spend time and effort to find known solutions (<https://www.kalder.org/kiyaslama/>; Stapenhurst, 2009: 4). It is one of the most improved ways of identifying where quality improvements are needed (Cook, 1995). It also promotes an organizational climate for change and learning (Cook, 1995: 15). As London states (2012); “learning is all about change and change drives learning” (London, 2012). Benchmarking allows organizations to learn; what they are achieving now, how they compete with others and what could be achieved (Cook, 1995: 15).

Spendolini (1992) defined benchmarking as *“a continuous, systematic process for evaluating the products, services and work processes of organizations that are recognized as representing best practices for organizational improvement”* (Finnigan, 1996: 4). Benchmarking process helps organizations to measure their performance against the leader organizations’ practices and provide performance improvement and competitive advantage (Boxwell, 1994; Mann and Welch, 2001; Sarialtın, 2003), but also enables organizations to build a learning organization (Cook, 1995). To become a learning organization means (Calvert et



al., 1994: 40); “the intentional action of the organization to continuously transform itself through adaptive and innovative learning” (Finnigan, 1996: 198) that tries to find ways to make learning more intentional and systemic (Finnigan, 1996: 199).

KalDer defined benchmarking within a similar perspective (<https://kalder.org/kiyaslama/>); as a “comprehensive improvement method that includes finding, learning and adapting good practices made by others”. Rohlfer (2004) outlined that “applying good or best practices bring process improvement and competitiveness” (Alosani et al., 2016: 173). Çelebi’s definition emphasized the same process improvement viewpoint as such (2011); “benchmarking is a management approach that aims to research and find better processes for the organization’s priority processes, learn the best practices and increase performance by adapting the obtained knowledge” (Çelebi, 2011). According to Bhutta and Hug (1999), this process based benchmarking is a revolutionary perspective in benchmarking (Bhutta and Hug, 1999: 254).

Harper, from APQC, view benchmarking as the competitive edge that allows organizations to adapt, grow and thrive through change (Harper, 2019). In the 2013 version of the EFQM Model, benchmarking is defined as “*a systematic comparison of approaches with other relevant organizations that will help the organization to take action to improve its performance.*” (EFQM Benchmarking Guidelines, 2015: 3). Benchmarking which was used as a component of quality management principles (Moriarty and Shallman, 2009) and part of total quality management (Bendell et al., 1993; Boxwell, 1994; Town, 1995; Cook, 1995; Stapenhurst, 2009) also part of other change programs (e.g., business process improvement, learning organization (Cook, 1995: 30), has become widespread

with business excellence models which are the basis of quality awards (Bendell et al., 1993; Boxwell, 1994; Kalder, 2017).

International Benchmarking Clearinghouse (ICL) first produced a guide on benchmarking as a part of its quality program in 1989 (Cook, 1995: 28). EFQM published a “benchmarking user guide” for its partner organizations (EFQM Benchmarking Guidelines, 2015). Cook (1996: 30,31) views that “benchmarking is not only part of TQM through its external perspective and “helicopter vision”, “it also acts as a catalyst” for business process improvements through adaptation of best practice as well. Therefore, “benchmarking as a management tool for learning and process improvement are fundamentally linked” (Cook, 1995: 30). It is a learning process that seeks to know strengths and weaknesses in organization to apply the best practices that are learned from other organizations” (Stapenhurst, 2009: 11).

Based on the definitions and explanations above, it can be said that; benchmarking is not stealing” or it is not “industrial espionage (Bhutta and Hug, 1999: 254; Stapenhurst, 2009: 4) because it is executed under certain confidentiality rules (Wasti, 2011). It is also not industrial tourism (Cook, 1995), competitive or industry analysis (Watson, 1992; Boxwell, 1994; Cook, 1995; Finnigan, 1996, Sarialtin, 2003). It is neither something “one does halfheartedly” (Finnigan, 1996: 8) nor a “haphazard method, rather is a systematic, step-by-step process” (Finnigan, 1996:7). It is an effective learning tool from its processes and good practices of others (Finnigan, 1996: 200). At this point, “the critical factors for transferring best practices across organizations” that Longbottom (2000) draws attention to are quite important (Longbottom, 2000).

In the literature, we can find different types and classifications for benchmarking. For instance, Town (1995) classified

benchmarking into four types “internal, competitive, functional, and generic benchmarking, same as Finnigan’s categorization of benchmarking (Finnigan, 1996:16) as “internal, competitive and functional (generic) benchmarking. According to Harrington and Harrington (1996:33), there are five types of benchmarking; “internal, externally competitive, external industry, external generic and combined internal and external benchmarking”. Watson (1992) pointed out that “categorizing benchmarking studies allows the organization to gradually build its benchmarking capability” (Watson, 1992:10). Ramabodran et al. (1997) agreed with Watson (1992) and expressed that “*benchmarking was a developing science*” (Ajelabi and Tang, 2010: 4). Kyro (2003) and Piotrewicz et al. (2007) also agreed with Ramabodran et al. (1997) and Watson’s generational benchmarking (1993) so that; First generation of benchmarking is “Reverse Benchmarking” focused only on the product comparisons. The second generation “Competitive Benchmarking” comparisons of processes with competitors. The third one is “Process Benchmarking,” comparing processes for sharing good process practices from companies outside the industry. The fourth generation is “Strategic Benchmarking”, understanding and adoption of outstanding strategies from external partners. The fifth generation of “Global Benchmarking” is due to benchmarking implementations and comparisons worldwide (Evans et al., 2012: 772). The sixth generation would be “competence benchmarking” or “network benchmarking (Ramabodran et al., 1997; Ajelabi and Tang, 2010; Kyro, 2003; Piotrewicz et al., 2007) or even “bench learning (Fertig and Ziminiene, 2017). Benchlearning is a systematic approach combining performance comparison and mutual learning activities aiming at better delivery to customers (Fertig and Ziminiene, 2017). From the perspective of global benchmarking (Watson, 2007), which “*extended the*

*boundaries of benchmarking geographically in order to take in all best processes found worldwide*" (Evans et al., 2012: 775), Mann (2015) categorized benchmarking as "informal" and "formal benchmarking" (Mann, 2015: 2). Mann claims that "informal benchmarking through learning from colleagues' experience, networking with other people, on-line databases and publications provide quick ways to learn of best practices and benchmarks (Mann, 2015: 3). On the other hand, "performance benchmarking" and "best practice benchmarking", as formal ones, can be used internally, externally and competitively supporting each other (Mann, 2015: 3). Benchmarking is a universal method and its various types mutually supplement each other (Goncharuk et al., 2015).

When we look at the difference between comparison and benchmarking, comparison relates to quantitative performance results and provides valuable data for quality assurance (Çelebi, 2011; EFQM Benchmarking Guidelines, 2015). It is necessary to make a comparison in order to understand the level of performance results compared to other organizations (Çelebi, 2011; Yılmaz, 2011). However, benchmarking is a management approach that examines how to ensure success, not what the success is (EFQM Benchmarking Guidelines, 2015: 3) to understand good practices for potential breakthrough improvements (Wasti, 2011). The focus is on understanding HOW someone does something, not just only the results they achieve (EFQM Benchmarking Guidelines, 2015: 3).

On the other hand, the best or better performance is defined by measures of performance indicators which are called "benchmarks" (Ajelabi and Tang, 2010), whereas benchmarking, as a performance improvement tool, is a learning process by which methods, conditions, environments and profile of people with which successful results are achieved

(Çelebi, 2011). Essentially, benchmarking and comparisons are inseparable because process benchmarking, on the one hand, and comparing the outputs of these processes, on the other hand, make sense when done together (Yılmaz, 2011). EFQM Benchmarking Guidelines (2015) highlight the issue that; *“In most cases, a benchmarking project will be a combination of both these activities; first comparing results to identify who is better than you, followed by benchmarking their approaches and processes to find out how they are achieving this”* (EFQM Benchmarking Guidelines, 2015: 13). The main value of benchmarking compared to other improvement tools is to learn how to improve (<https://www.globalbenchmarking.org/>) through innovative adaptations (Bogan and English, 1994). This is the true power of benchmarking (Zacher, 2020).

If a benchmarking project is to be done both effectively and efficiently, it needs to follow a structured methodology (EFQM Benchmarking Guidelines, 2015: 14) and a disciplined approach (Mann, 2015: 9). Its methodology has based on the same logic for decades including a minimum four phases that (Watson, 1992: 12; Finnigan, 1996: 40; Ajelabi and Tang, 2010: 2) “establishing the study plan, conducting the study, diagnosing the data, implementing the results and taking action” referring to the Deming’s Plan – Do – Check – Action (PDCA) cycle (Ajelabi and Tang, 2010: 2; Moriarty and Shallman, 2009: 492; Evans et al., 2012: 774; Garengo, 2019: 104) which represent a generic approach to the management process (Evans et al., 2012: 774). From this perspective, Garengo (2019) identified Benchmarking “as a cyclic process where continuous improvement is linked to constant assessment against best in class,” dividing the process into planning (Plan), data collecting (Do), data comparison (Check) and action aimed at improvement and recalibration (Act)” (Garengo, 2019: 104) to find answers to the

questions: “What to benchmark?”, “Who is the best?”, “How they do it?” and “How we are going to do it?” (Jetmarova, 2011: 80). After studying specific models, Jetmarova pointed out that (2011); “the number of phases and steps of benchmarking is not fundamentally important” (Jetmarova, 2011: 79). Bhutta and Hug pointed out the same idea that (1999); “benchmarking can be carried out in different steps; however, the essence remains the same” as in APQC’s four-phased methodology (<https://www.apqc.org/apqcs-benchmarking-methodology/>) which still consists of planning, data collecting, data analysis, reporting and adaptations of findings (APQC, 2020). As Bhutta and Hug (1999) cited from Camp (1989), “*as an applied discipline, benchmarking cannot be learned by taking a class or reading a book. It is a hands-on learning experience*” (Bhutta and Hug, 1999: 267).

The new methodologies developed by global organizations (BPIR, 2020; WBA, 2020a), within the same cyclic PDCA approach, provide guidelines on how to do benchmarking well like BPIR’s Best Practice Benchmarking Methodology-TRADE (Mann, 2015: 5) or WBA’s Transformative Benchmark Methodology (WBA, 2020a). TRADE is a five-stage methodology (Mann, 2015: 5) consisting the “plan the project, research the current state, acquire the best practices, deploy best practices, evaluate the benchmarking process and outcomes” stages (Mann, 2015; BPIR, 2020). On the other hand, WBA’s Transformative Benchmark Methodology includes (WBA, 2020a) the phases of “dialogue and research, methodology development and review, methodology publication, data collection, verification and data analysis and benchmark publication” (<https://www.worldbenchmarkingalliance.org/benchmarking/>). The only difference between the new generation methodologies (Mann, 2015) is focusing on rather strategies and competencies of

high-performing organizations under a third party's data-providing and collaboration framework (Van Vught, 2008; Alosani et al., 2016; Urlings, 2021; COER, 2013; GBN, 2018). As seen, benchmarking practices involve global partners (Evans et al., 2012: 776).

### **Success Requirements of Benchmarking**

As mentioned in the introduction section, the first purpose of the study is to evaluate the success requirements of benchmarking based on the benchmarking practices of Turkish manufacturing enterprises which use benchmarking in their performance measurement and improvement processes. Therefore, in this section, the application part of the author's doctoral dissertation examines how and to what extent benchmarking can be an effective performance measurement and improvement tool for Turkish manufacturing companies as multiple case studies within the framework of qualitative research methodology (Stake, 1995; Yin, 2011, Barker, et al., 2019), has been utilized. It is often impossible to present a whole qualitative study in one publication, as qualitative research produces a large amount of data and reveals themes, ideas and phenomena beyond what is thought (Eklemezler ve Adilođlu, 2019: 877). The data provided in qualitative research, in which the researcher examines a specific phenomenon as it occurs in its environment (Miles and Huberman, 1994), provides a rich and holistic content that enables an understanding of the factors underlying the researched phenomenon (Kılınç, 2019: 10). In the application part of the thesis, the benchmarking practices realized in manufacturing companies operating in the food and automotive sectors in Türkiye were examined within two stages as explained below;

*The first stage of the application* was conducted at a leading food company (coded X Food) to determine how benchmarking is used as performance measurement and improvement tool for a Turkish manufacturing company and to determine the factors that ensure its effectiveness. Thus, it was examined how X Food used benchmarking according to the “performance management model”, developed as a research model, by integrating it into its corporate management system, and the realization level of the research model was tried to be tested. *In the second stage*, how another company (coded Y Inc.) operating in the automotive sector performs the benchmarking according to the approaches and stages of the benchmarking method was examined. The purpose is to exemplify how the benchmarking stages are applied and to determine how it serves the purpose of performance measurement and improvement in another sector. In order to strengthen the evaluations on the subject, the benchmarking implementation stages of the other three companies operating in the automotive sector were investigated as case organizations too. “*Intermediary or complementary cases are sometimes necessary in conducting the multiple case studies*” (Baş ve Akturan, 2013: 184).

First, the performance measurement and improvement subjects within the scope of organizational performance management and then benchmarking concept in detail examined with a holistic approach as a literature background of the thesis. Further, the benchmarking adoption, definitions and practices of case organizations were investigated through multiple case study methods. The essential feature of the case study (Yıldırım and Şimşek, 2008; Coşkun et al., 2017) is the “in-depth investigation of one or more situations”, by making the research lens as explicit as possible (Yin, 2011: 270). Thus, the questions of why and how about the benchmarking applications of case



organizations are tried to be sought out (Coşkun et al., 2017: 73; Barker, et al., 2019: 66; Patton, 2014: 8) through qualitative interviews (Yin, 2011), observations and company documents (Miles and Huberman, 1994) to understand the benchmarking reality while ensuring triangulation (Barker et al., 2019: 66) for the study's credibility and trustworthiness (Yin, 2011. 9). Case study in which the role of researcher's intuition (Stake, 1995) as a primary instrument for data collection and analysis (Meriam and Distell, 2016) is extremely important in reaching reliable findings and making valid interpretations (Yin, 2011).

According to Yin, the case study is (2014) "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context" (Hollweck, 2016:2). That is why the author acted selectively (Miles and Huberman, 1994) and preferred purposive sampling method (Yin, 2011; Neuman, 2014) which allowed the study the case organizations to have comprehensive data (İslamoğlu and Alnıçık, 2014: 212; Coşkun et al., 2017: 149) from the participants' perspectives and experiences (Yin, 2011; Meriam and Distell, 2016). Therefore the application section of the thesis is based on the author's structured and semi-structured interviews, company documents and observations ( Yin, 2011: 58; Barker et al., 2019: 66; Baş and Akturan, 2013: 181) in order to gain rich data from 9 participants including senior and middle-level managers and quality coordinators of the case organizations to observe and reveal their benchmarking approaches, definitions and practices. The findings of the study contributed to the literature in terms of examining the organizational performance measurement and improvement process and the conceptual details of benchmarking (its definition, types, implementation, etc.) based on a comprehensive literature review, also to practitioners on how to relate benchmarking process to their performance

management systems and provide knowledge on how to apply benchmarking effectively for better performance indicating its success requirements drawn from the benchmarking applications of the case organizations. The specific definitions and success requirements of benchmarking in terms of the X Food and Y Inc. are explained below:

With the definitions of senior managers (board members) and quality coordinators of X Food, “*Benchmarking is the method of understanding, adapting, applying and measuring the progress of the most efficient and successful products, processes, practices and methods for superior performance in relation to the activities of product quality, process excellence and adaptation of affiliated companies to its integrated management system which is based on global management system standards*”. The purpose is to maintain the leading position in the food sector by preserving the competitiveness of the group; “*benchmarking is the determination of measurement points and change management where both the X Food and the affiliates can improve organizational performance in order to maintain or become a leader in their fields*”. X Food has been making performance benchmarking against the best national and international competitors in the food industry in order to determine the competitive position of the group’s products and services at the organizational and unit level since 1998. On the other hand, to improve the process quality, internal benchmarking is made between the group’s own companies on best practices and processes. The aim is to ensure that all affiliated companies implement management systems that provide the combination of the best standards. In addition, X Food conducts functional benchmarking in order to improve its own functions and processes by learning from a leading company in the determined subject and also strategic benchmarking before investments. In this framework, the

success requirements for the benchmarking process to serve the purposes of improvement, measurement and competitive target setting are as follows:

- First, the board of directors, executive board members, factory managers, quality coordinators, and relevant middle-level managers should believe in the benefit of benchmarking and be involved in the application to support benchmarking studies and practices. In the words of the quality coordinator, *“If the executive board believes in benchmarking, supports it and allocates the necessary resources, benchmarking is successful”*.
- Likewise, it is necessary for employees to adopt the strategic importance of the benchmarking method and to reinforce their beliefs by sharing the results.
- Benchmarking team members should be selected very well, and the team should be composed of people with positions and qualifications that will institutionalize the benchmarking. In addition, special benchmarking training should be given to the benchmarking team (training on defining critical performance indicators of processes, data collection and data analysis methods).
- To accurately determine the benchmarking subject, all key and critical processes of the enterprise should be defined; flows, limits, performance indicators and risk factors of the processes should be determined.
- The company needs to manage according to world-class systems and approaches that provide robust data and insights. In this framework, TQM, Kaizen philosophy and ISO 9001 quality assurance system should be implemented in the company.

Benchmarking For Y Inc. *“is a measurement, business-to-business comparison and learning process”*. For Y Inc, the purpose of benchmarking is *“the systematic use of worldwide brain power to improve critical operations using previously developed techniques and methods”*. The main goal is to utilize everything ready-to-use to continually measure, learn and accelerate constructive change. Benchmarking is a method used to research, find and learn the best practices in the priority processes and adapt them to their processes to measure and improve continuously according to the performance indicators required by the competition worldwide. Y Inc. has been living the benchmarking culture since 1956. As Y Automotive Inc. in Turkiye, it has been conducting benchmarking studies within the framework of the TQM philosophy and total quality programs since 1994. *“The Y Inc., which is often chosen as a benchmarking partner, constantly benchmarks itself with industry-leading companies worldwide”*. As the Sakarya Factory, it implements competitive, functional and process benchmarking and the success requirements of benchmarking at Y Inc. are as follows;

- Support of senior management is essential for benchmarking studies.
- In each benchmarking study, critical performance indicators that are most important to the customer should be determined.
- Key business processes should be well defined and documented.
- The need for change must be correctly identified. At Y Inc, Deming Cycle is used as an early warning and precautionary approach.
- The subject of benchmarking should be determined correctly and meticulous planning should be done.

- Required resources should be allocated for the benchmarking project and a competent benchmarking team should be established.
- Benchmarking study should be based on experience and practice, and benchmarking partners should be accurately identified in the context of improvement and learning.
- Benchmarking findings should be integrated into strategic plans and then translated into action plans to be implemented.

According to one of the HR professionals of Y Inc; “*as preliminary preparation, defining key and critical processes correctly and determining process performance indicators in benchmarking extremely important*”. From this perspective, benchmarking is a formal and systematic process for Y Inc. that requires a highly disciplined way. It was declared that; “*benchmarking was explained to all employees that the benchmarking method was a necessary and complementary in quality and continuous process improvement at Y Inc, and positive thoughts were developed against the method with successful benchmarking practices*”. Thus, it is observed that the motivation and participation of the employees increase as the owners of the operations and processes operate according to the best-tried solutions. In conclusion, benchmarking is an essential management tool for Y Inc. to measure and improve organizational performance.

The case organizations mostly perform internal, competitive, functional and process benchmarking and also strategic benchmarking before significant investments. Benchmarking findings are evaluated *as practical innovation and learning parameters* in the improvement of processes, integrating group companies and affiliates with the corporate management

system to make them leaders in their fields, and directing investments. Benchmarking at X Food constitutes the *engine power of performance improvements* that are continuous with internal, competitive, functional and strategic benchmarking practices. In this respect, benchmarking process is one of the indispensable performance management applications. Benchmarking for X Food has been a continuous effort to improve organizational performance since 1998.

Also, Y Inc. it is an institutionalized management tool in determining the proper performance areas and improvement targets and in measuring and improving process performance since 1994. Y Inc., which is often chosen as a benchmarking partner, constantly benchmarks itself with industry-leading companies worldwide. As the Sakarya Factory in Türkiye, Y Inc. conducts competitive, functional and process benchmarking on a sectoral and provincial basis.

As a vital element of business management, performance measurement supports the implementation of business strategies (Costa, et al., 2005:1). Benchmarking should measure things such as: “How fast, How good, How much, How form, etc.” (Harrington and Harrington, 1996). By linking benchmarking to the strategic planning process (Longbottom, 2000), understanding the “How” real advantage of benchmarking that focuses on discovering how world-class organizations developed their processes (Harrington and Harrington, 1996: 24). In this respect, benchmarking is two things (Boxwell, 1994); setting realistic goals and learning from others - learning “how much” and “how” (Boxwell, 1994:17) by conducting the following two main phases (Stapenhurst, 2009: 16);

- Comparison of performance levels to ascertain the gap between “us” and the best and ascertain from which organizations we are likely to be able to learn most.

- Studying how the best or better performers achieve their performance and adapting their practices.

### **Future of Benchmarking**

The second purpose of the study is to determine whether benchmarking has a future as a performance improvement and continuous learning methodology. For this purpose, benchmarking literature, benchmarking perspectives and approaches of BEF, EFQM Model and benchmarking practices of global organizations such as APQC, GBN, WBA, BPIR and COER have been reviewed and analyzed to answer the second research question: “Does the benchmarking have a future to support improving organizational performance, continuous learning and dissemination of good practices in the face of VUCA circumstances?”

It has been determined that the benchmarking methodology has been adapted to different applications in the last two decades (Kale ve Karaman, 2012) and has been integrated into information technologies (Mann and Welch, 2001) and transformed into a method that supports organizational learning and innovation on digital platforms (KalDer, 2017; GBN, 2020; WBA, 2020, BPIR, 2021). For example, in their study by using a benchmarking methodology in knowledge management practices of construction firms, Kale and Karaman (2012) concluded that; “*benchmarking is one of the most powerful performances modeling approaches as it provides a systematic methodology for identifying, classifying and evaluating firms’ processes, activities and performance*” (Kale and Karaman, 2012: 336). Also, in their study, Ajelabi and Tang (2010) examined the adaptation of benchmarking principles for project management performance. From this point of view, at the beginning of the 2000s, Mann and Welch (2001) realized the business excellence

and benchmarking relationship and provided benchmarking websites to do benchmarking for performance improvement by collaborating BPIR.

According to L.Higgins, CEO and President of APQC (2021), as a catalyst for change, “benchmarking helps to accelerate and manage change”. According to Ho Gland (2021), “*Benchmarking is the process of comparing and measuring your organization against others to gain information on philosophies, practices, and measures that help your organization take action to improve its performance*” (Ho Gland, 2021). Bailey (2016) emphasizes that; “the benchmarking and continuous improvement is still have a paramount importance today to the success and sustainability of organizations”. GBN views benchmarking as “*a strategic search process for identification, understanding, adaptation, and implementation of solutions leading an enterprise to superior performance*” (<https://www.globalbenchmarking.org/>). As Ho Gland explained (2021), APQC’s New Benchmarking Basics provide a project scope to focus on processes and performance measures in order to manage a benchmarking project. M. Zacher (2020), from APQC pointed out that APQC’s Benchmarking Basics contains the main tools that organizations will need to start a benchmarking project (Zacher, 2020).

Coming to the business excellence models, the Baldrige BEF (BPIR, 2021) and EFQM Model (Gardiner and Simmons, 2003), both require that an organization be involved in benchmarking activities (Stapenhurst, 2009: 10). As Boxwell explained (1994: 159), Xerox implemented a companywide benchmarking and became the winner of 1989 Baldrige Award. The 1994 Malcolm Baldrige Award criteria were “uses of comparative comparisons and benchmarking data to support quality improvement and overall company’s operational performance (Boxwell, 1994: 141). In the same way, EFQM Model was in widespread use



in many countries across Europe (Gardiner and Simmons, 2003: 16), which aimed at “providing a system perspective for performance management” (Gardiner and Simmons, 2003: 18).

Ever since Xerox became benchmarking pioneer in the 1980s, soon after International Benchmarking Clearing House (IBC) was established (Cook, 1995: 157) and then in the 1990s, benchmarking is recognized as a key quality tool by Baldrige Quality Award (Watson, 1992: 12). The approach that Baldrige Award examiners use begins with identifying an organization’s key factors that influence the organization operates and the key challenges it faces (Baldrige Performance Excellence Program, 2015). It is reported that, in the U.S., more than 35 states, regional, and sector programs that support local businesses, hospitals and more than 100 international programs use the Baldrige criteria to measure organizational excellence. (Baldrige Performance Excellence Program, 2015: 12). Baldrige Excellence Framework (BEF), is now the model behind the MBNQ Award (BPIR, 2021).

One of the well-known business excellence models is the EFQM Model, which supports organizations in managing change and improving performance (<https://www.efqm.org/efqm-model/>). The basis of the EFQM Model as a reference model for the European Quality Award (Gardiner and Simmons, 2003: 20) is to carry out self-assessment, which enables organizations to understand their organizational position and then use this benchmarking data to pursue continuous improvement (Gardiner and Simmons, 2003:20). The EFQM Model also has important role in the adoption of the benchmarking method in Türkiye since mid 1990s (Çelebi, 2011; KalDer, 2017). In the new version, EFQM prefers using the expression “good practice” rather than “best practice” (EFQM Benchmarking Guidelines, 2015: 4). In this way, the benchmarking organizations

learn why and how others do something in a certain way and decide how to make it “good practice” within their context (EFQM Benchmarking Guidelines, 2015: 4). As “*data to drive performance*”(APQC, 2021), benchmarking delivers best practices and resources for organizational resiliency to businesses operating in manufacturing, health care, education, non-profit, cybersecurity and government sectors (<https://www.apqc.org/about/>) by utilizing digital technologies (Mann, 2015) and gaining helicopter vision (Cook, 1995) in order to face megatrends. In the new version of the EFQM Model (2020), the expression of the “ecosystem approach” is adopted, taking into account the impact of global megatrends such as circular economy, self-managed systems, skills shortages against automation, environmental crises, disruptive digitalization and geopolitical uncertainties (EFQM, 2020; Çoban, 2020). On the other hand, the question “*How will be benchmarking develop in the next 20 years?*” Was asked by GBN as part of its Benchmarking 2030 Research Project (Searles et al., 2013) and the project findings reveal that (Mann, 2015); benchmarking will be used more to address megatrends that are social, economic, political, environmental and technological changes affecting many countries (Mann, 2015: 9).

Technology plays an increasing role in benchmarking, enabling organizations to share benchmarks and best practices more quickly (Mann, 2015: 9). For instance, EFQM has two digital platforms named as AssessBase and KnowledgeBase (Fonseca et al., 2021: 15) that help organizations to measure their maturity, get generic benchmarks, good practice sharing and videos to learn from content and people (EFQM, 2020; Çoban, 2020). Also, EFQM’s accreditation method has been aligned with the United Nation’s Sustainable Development Goals -UN’s SDGs ( Fonseca et al., 2021; EFQM, 2022). EFQM

is now looking for a project that other organizations can learn from with a unique implementation that would “benefit wider society” (EFQM, 2022). (WBA, 2020b); the SDGs can only be achieved through transformational change in current institutions, practices, technologies, policies, lifestyles and thinking in social, financial, decarbonization and energy, food and agriculture, nature and biodiversity systems (WBA, 2021; Urlings, 2021). Therefore, it is stated that WBA’s Methodology helps manage this transformational change (WBA, 2020a).

Looking at the subject in terms of benchmarking, awards that were given at the country level in the 1990s (Bendell et al., 1993; Harrington and Harrington, 1996) are now organized globally (GBN, 2018) to recognize those organizations that had integrated benchmarking into their organizations’ strategy and processes (BPIR, 2016; GBN, 2018). For instance, the 2018 Global Benchmarking Award was organized to share “*how benchmarking is an integral part of their improvement and innovation drive*” (GBN, 2018). The latest award is The 7<sup>th</sup> Global Benchmarking Award, held in July this year (GBN, 2022), as part of the International Best Practice Competition organized by GBN, BPIR and COER (GBN, 2022). On the other hand, BPIR’s best practices database and networking capability (BPIR, 2020) provide access to its methodology enabling members to learn and apply a proven approach for benchmarking (Mann, 2015; BPIR, 2020).

According to BPIR (2021), Business excellence models, not only BEF and EFQM, but also African, Australian, NewZealand, Canadian, Dubaiian, and Singapore models, are used by 100,000’s organizations worldwide to identify relevant benchmarks, and best practices and find benchmarking partners and contacts (BPIR, 2021). Within the same approach, KalDer has been organizing benchmarking group projects since 1999

(Özçer, 2011:30). Kalder identifies benchmarking as one of the primary learning methods and shares the good practices of organizations in its benchmarking database (<http://www.kalder.org/kiyaslama/>). In this context, benchmarking group projects have been organized under the supervision of KalDer Benchmarking Expertise Group since 2000 (KalDer, 2017). The Winners Conference (WINCO) is a powerful benchmarking platform where successful organizations in the KalDer and EFQM award processes share their knowledge and experiences (KalDer, 2020).

The Benchmarking Network, as a best practice website, is another international resource for business process research and metrics in over 165 countries, providing benchmarking database (<http://benchmarkingnetwork.com/>). Besides those global organizations and alliances, there are several international and local benchmarking councils. For instance, BenchCouncil (2021) is a non-profit international organization that aims to promote standardizing, benchmarking and evaluating big data, AI, blockchain, and other emerging technologies (BenchCouncil, 2021). Also, many local government benchmarking frameworks (Local Government Inform, 2021; Local Government Benchmarking Framework, 2021) help members understand how well their councils perform against other services. Similarly, global institutions have developed and implemented benchmarking for their members, like World Health Organization's Global Benchmarking Tool (Boojerdi et al., 2020). When looking at benchmarking-related scientific journals, such as *Benchmarking: An International Journal*, *International Journal of TQM and Business Excellence*, *TQM Journal* (COER, 2013) and *TBenchmark* are available (BenchCouncil, 2021). In addition, COER Massey University administers doctoral research programs not only

in business excellence, productivity and innovation, but in benchmarking as well (<https://www.coer.org.nz/>).

To mention the international benchmarking conferences conducted in the last decade; for example, the Dubai Quality Group (DQG) organized the 9th conference in 2015, focusing on the best practices of innovation and sustainability (DQG, 2015). The 10th one was organized by GBN in 2016, focusing on performance excellence through benchmarking for the next 10-20 years or more (GBN, 2016). Also, as a worldwide virtual event International Best Practice Competition was held in July this year (GBN, 2022). In addition to the benchmarking conferences, World Academy of Science, Engineering and Technology (WASET) organized the International Conference on “Process Management and Benchmarking in 2021” (WASET, 2021). Also, 19th Management, Enterprise and Benchmarking video conference were organized by Obuda University in Budapest in 2021 (<https://meb.kgk.uni-obuda.hu/>) based on the theme; “Problem or Opportunity - Business in pandemic times”.

Urlings (2021) noted that; “the covid-19 pandemic has shown us the linkages among public health, social well-being, the economy and the environment” (Urlings, 2021: 3). The truth is that (Schoemaker and Day, 2021), no organization could fully struggle the pandemic circumstances (Schoemaker and Day, 2021: 2). In that case, organizations need to be supported by reliable external networks and collective sensing (Schoemaker and Day, 2021: 3). That is why, interest in benchmarking is growing and it is being used now more than ever (Searles et al., 2008, Bailey, 2016). In the face of uncertainties of VUCA circumstances which are affecting businesses and countries (Mann, 2015) and likely in the future, organizations need more flexible and adaptive strategy-making processes (Schoemaker and Day, 2021), effective quality assurance tools (Bendell et al.,

1993; Van Vught et al., 2008; Sarialtın, 2015), and performance improvement, change management and continuous learning methodologies for organizational resiliency (Cook, 1995; Sarialtın, 2003; Adebajo et al., 2010; Higgins, 2021; Ho Gland, 2021; <https://www.apqc.org/about/> ) just like benchmarking.

### **Conclusion**

For the first purpose of the study, as mentioned in the introduction above, the application part of the author's doctoral dissertation has been utilized to reveal "the success requirements of benchmarking in Turkish manufacturing companies which use benchmarking in their performance measurement and improvement processes. X Food, the leader of the food sector in Turkiye and the region, and Y Inc, one of the pioneers of the automotive sector in the world, and the other three, which are also important representatives of the automotive sector in Turkiye, have been investigated through multiple case study method. Performance measurement for continuous improvement is a strategic obligatory (Costa et al., 2005; Sarialtın, 2017b) and in the measurement process benchmarking plays a crucial role in enterprise performance management (Cook, 1995; Sarialtın, 2006; Higgins, 2021).

It is revealed that; senior management support and resource allocation, determining the right benchmarking subject based on experience and practice, studying with the right benchmarking partner(s) in the context of improvement and learning, integrating benchmarking into strategic planning and/or change management strategies and also the role of the quality department on process-based management is the most important success requirements of benchmarking in terms of Turkish manufacturing enterprises. Benchmarking, as performance measurement and improvement method, helps

Turkish manufacturing companies improve organizational performance (Sarialtın, 2003) when applied within the framework of Benchmarking Code of Conduct and its own methodology. According to implementations of X Food, Y Inc., global benchmarking organizations and in line with the benchmarking literature, other priority success requirements of the benchmarking, as listed below;

- It is necessary for employees to adopt the strategic importance of the benchmarking method and to reinforce their beliefs by sharing the results.
- A competent benchmarking team should be established in order to institutionalize the benchmarking.
- All key and critical processes should be well defined and documented, including risk factors of the processes.
- In this framework, TQM, Kaizen philosophy, ISO standards, lean management and the other quality assurance and process improvement systems and/or approaches should be implemented in the company.
- In each benchmarking study or project, the critical performance indicators that are most important to the customer should be determined.
- Following disciplined work and a structured methodology are essential to any benchmarking program or project.
- Benchmarking findings should be integrated into strategic plans and then translated into action plans to be implemented.
- Conducting benchmarking as a regular searching, learning and improvement process and continually reviewing its effectiveness
- Organizations should be open to continuous learning, mutual knowledge sharing and external cooperation.

- Using the appropriate ICTs that provide access to global benchmarking databases.

For the second research purpose, current literature, benchmarking practices of APQC, GBN, WBA, BPIR, COER, and also benchmarking perspectives of Baldrige BEF and EFQM Model have been reviewed and analyzed to answer the second research question: Does the benchmarking have a future to support improving organizational performance, continuous learning and dissemination of good practices in the face of global trends of VUCA world?

As a catalyst management tool (Cook, 2015; Sarialtın, 2006; Higgins, 2021), benchmarking is a method of comparing, measuring and improving organizational performance by researching, learning and adapting good or the best approaches, practices and methods of leading organizations without imitating or copying. It has been a quality assurance and performance measurement and improvement tool as an essential part of TQM and ISO 9001 while supporting the existing change management systems and/or approaches like six sigma (Watson, 2007; Stapenhurst, 2009), process improvement, knowledge management, organizational learning, etc. (Cook, 1995; Comba et al., 2009; APQC, 2012; Higgins, 2021). Thus, it will be successful if applied consistently, integrally and continually (APQC, 2021). Benchmarking has also been a requirement of international quality awards based on global business excellence models and other regional or country-specific ones since the 1990s.

In the 2000s, many competitive firms worldwide continued to apply benchmarking for quality awards by adopting the Baldrige BEF or EFQM Model and collaborating with national and international quality and productivity centres or associations (KalDer, 2017; APQC, 2012). Looking at benchmarking



applications carried out in the 2010s and beyond, it is obvious that new benchmarking models focus on winning strategies and competencies of organizations within the framework of collaborative benchmarking by being members of global benchmarking organizations and alliances like GBN, BPIR, COER, WBA to share performance benchmarks of “how much”, and learn “how” good or best strategies, processes or practices to adapt. In that case, the value of benchmarking is learning “how much” through performance comparisons and learning “how to do” through adapting better or best practices from best-in-class organizations worldwide. This makes benchmarking a powerful concept (Moriarty and Shallman, 2009) and a catalyst managerial process in business management, beyond being only quality assurance, performance measurement and improvement tool or method (Cook, 1995; Sarialtin, 2015; Stapenhurst, 2009; Higgins, 2021).

Today, digital or network benchmarking applications are at the forefront which are carried out globally with the support of business excellence models and global benchmarking organizations in a faster and more inclusive way are being implemented within the framework of new models such as BPIR’s TRADE model, WBA’s Transformative Benchmark Model, etc. However, the basic of the methodology is pretty much similar to the quality or PDCA cycle for decades consisting of planning (plan), data collection (do), data analyzing and reporting (check), adaptation of findings and recalibrating (act) (Jetmarova, 2011, Moriarty and Shallman, 2009; Evans et al., 2012; Garengo, 2019; APQC, 2020). So, a systematic-cyclic process that is integrated into the strategic plans should be followed by collaborating with benchmarking networks and utilizing digital technologies for any benchmarking project.

Considering the not only new versions of EFQM Model and BEF, but also Turkish, African, Australian, NewZealand, Canadian, Dublin, Singapore and the other business excellence models which all require benchmarking (performance comparisons and continuously learning from others), national and International quality, productivity and benchmarking organizations and alliances such as KalDer, APQC, GBN, BPIR, COER, WBA, non-profit best practice web-based sources, benchmarking councils of many countries and also public/government benchmarking frameworks which all supporting the use of collaborative benchmarking through benchmarks and best practice case studies, videos and experiences of the award-winning organizations worldwide; it can be said that benchmarking has a future to face global trends of AI-based systems, health and supply chain crises of VUCA (Volatile, Uncertain, Complex, Ambiguous) circumstances as a management application with its universal philosophy and methodology (Higgins, 2021; Mann, 2015). On the other hand, scientific benchmarking journals, international benchmarking conferences and global benchmarking awards demonstrate that benchmarking has a future to support performance improvement, change management, knowledge management and continuous learning for organizations regardless of the industry and the country boundaries by integrating organizations' strategies with the UN SDGs focusing on high performance for not only private, public or non-profit organizations but the whole society as well.

Benchmarking has now spread to all five continents to share benchmarks and best practices by being member of national, regional, or global benchmarking organizations or alliances like APQC, EFQM, GBN, BPIR, KalDer, WBA, COER and Benchmarking Councils of many countries including participant organizations from Australia, Asia, the Middle

East, Africa, Europe and the USA. On the other hand, last two decades, empirical studies on benchmarking mostly come from Türkiye, Malaysia, India, Africa, Singapore, China, Nigeria, Bangladesh, etc. (Sarıaltın, 2003; Karabulut, 2009; Demirdöğen and Küçük, 2010; Gomes and Yasin, 2011; Hwang et al, 2013; Boniface, 2014; Adebajo, et al, 2010; Kale and Karaman, 2012; Zeinalnezhad et al, 2014; Alosani et al, 2016; Sarıaltın, 2015; Canitez et al, 2016; Sarıaltın, 2017a; Rashed and Ashraf Un, 2018). However, it is seen that most of these studies are researches on specific benchmarking implementations, with very few on the theoretical side of benchmarking (Yasin, 2002; Moriarty and Shallman, 2009). If benchmarking is to continue to help organizations adapt to the VUCA world and meet changes in the future, more literature reviews are needed that strengthen the theoretical aspect of benchmarking.

Benchmarking is used by organizations to compare, measure and improve the current state of performance and share successful solutions through searching, learning, and adapting good or better strategies, approaches, processes, or practices of leading organizations in their field. By considering the benefits of benchmarking applications carried out under today's VUCA conditions, it is possible to say that; organizations will continue to benefit from benchmarking in the future. It is predicted that benchmarking, which is being performed on digital platforms in a faster, more widespread, and more collaborative manner, will continue to help performance improvement, continuous learning and resiliency of organizations and economies in the future as it does today, however, within the framework of a disciplined approach that adopts its universal philosophy, ethics and cyclic methodology.

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# Market Structure in Olive and Olive Oil: Comparison of Italy and Turkey in terms of Cooperatives & Good Agricultural Practices

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## Abstract

Olive has been an important agricultural product in civilizations and countries bordering the Mediterranean for centuries. However, many problems are encountered in olive cultivation and processing of olives. It is seen that Italy and Turkey, which have important advantages in olive production in terms of geography, cannot adequately evaluate this advantage in terms of olive producer, production process and marketing strategy.

Olive cooperatives in Italy and Turkey remain small-scale compared to other food sectors. In this context, dissemination of Good Agricultural Practices in olive cultivation for the safe production and consumption of agricultural products in terms of economic, social and environmental sustainability in both countries will lead to significant increases in cooperatives, farmers, production, marketing, innovation, agricultural production and exports. This idea forms the basis of the study.

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Therefore, this article aims to present a comparison of olive and olive oil market structure in terms of cooperatives and Good Agricultural Practices for Turkey and Italy.

**Keywords:** Olive and olive oil market, cooperatives

### **Cooperatives and Its Place in the World**

Cooperative comes from the root of the Latin word “cooperatio,” meaning cooperation. It is known that it was first used as a scientific expression by the French in 1525 and that modern cooperatives were a social institution after the industrial revolution and spread to other industrialized countries from Europe at the end of the 19th century (Altinkaya, 2010; Bilgin and Tanyıcı, 2008). In the current sense of the world, the cooperative was founded in 1844 in the English town of Rochdale by 28 workers as the “Rochdale Society of Equitable Pioneers Ltd.” (Bilgin & Tanyıcı, 2008; Çetin, 2010; King RP & Ortman, 2007). Cooperatives were formed in Denmark in 1880 because of cheap grain imports and reduced tariff protection. Similarly, the establishment of cooperatives in France and the Netherlands stems from the farmers’ agricultural economy crisis in the late 19th century. Farmers in the Netherlands established their first cooperative in 1877 to purchase quality chemical fertilizers (Gutierrez & Carlos, 2005). In the 1880s, French farmers gathered under the umbrella of a union for joint purchases of fertilizers to combat the dominance of intermediaries over the market (Dedieu and Courleux, 2011). The most important factor that causes farmers to establish cooperatives in European Union countries can be expressed as the economic problems experienced by small-scale farmers. Due to the imbalance in marketing power, agricultural producers needed an institutional structure to improve their economic



conditions and reduce the negative effects of market failures (Chloupkova, 2002).

Today at least 12% of the world's population is a member of one of the cooperatives, the number of which reaches approximately 3 million, and cooperatives provide sustainable economic growth by providing stable and high-quality employment to 280 million people around the world, in other words, 10% of the world's working population they contribute (Pellervo Confederation of Finnish Cooperatives, 2019). Agricultural cooperatives have grown over time worldwide and have become successful economic institutions with a place in the international market. The International Cooperative Alliance (ICA) carries out a project called "Top-300" in order to draw attention to the importance of cooperatives and to show their contribution to the national economy (Anonymous, 2019). A World Co-operative Monitor report is prepared jointly by ICA and Euricse, including "Top-300" data. According to the 2018 report of this application, the largest 300 cooperatives around the world generate 2.1 trillion US dollars in revenue. Agricultural cooperatives constitute one-third of the total 2,575 cooperatives included in the analysis. The majority of these cooperatives, to be expressed in numbers, 1,855 of them operate in Europe.

The current situation of cooperatives is particularly relevant to Turkish agriculture, which faces two significant structural problems. The first problem can be expressed as how to develop modern agriculture in case of land fragmentation and small farm scale (Demirtaş and Sarı, 2016). Land fragmentation refers to a decrease in productivity and, as a result, a decrease in production. Another challenge is how smallholder farmers can combat structural changes in agri-food markets and benefit from changing market conditions. Due to the improvement

in consumers' increasing purchasing power and technical developments in food safety control, the demand for food with higher quality and stricter safety standards is increasing (Narro et al., 2009). However, with the growth of supermarkets and international trade becoming more widespread, the share of high-quality foods in international trade is increasing, and the understanding of consumption is changing (Tran et al., 2013).

Cooperatives pave the way for farmers to seize opportunities arising from export markets, local supermarkets, and differentiating firms (Bijman, 2016). However, farmers need to comply with stricter production and safety standards, better coordinate activities in the value chain and produce high-quality products. (Fritz and Schiefer, 2008; Reardon et al., 2009; Abebe et al., 2013).The distribution of cooperatives by sector is shown in Table 1.

**Table 1.** Top 10 Agricultural Cooperatives in the World

	<b>Cooperative</b>	<b>Country</b>	<b>Income (Billion \$)</b>	<b>GDP (%)</b>
1	Zen-Noh	Japonya	44,06	0,80
2	Nonghyup	Güney Kore	36,45	2,57
3	CHS Inc.	ABD	30,35	0,16
4	Bay Wa	Almanya	17,06	0,49
5	Hokuren	Japonya	14,06	0,28
6	Dairy Farmers of America	ABD	13,50	0,07
7	Fonterra	Yeni Zelanda	13,40	7,07
8	Land O'Lakes, Inc.	ABD	13,20	0,07
9	FrieslandCampina	Hollanda	12,18	1,56
10	Arla Food	Denmark	10,83	3,52

**Source:**(World Cooperative Monitor. Exploring The Cooperative Economy Report 2018).

Smallholder farmers face many challenges trying to adapt to new food markets. The difficulties faced by small farmers can be mainly attributed to their disadvantaged position in the market. When purchasing a product of a certain quality, consumers want to save on information gathering and product research costs and exclude small-scale transactions by individual farmers (Sauer et al., 2012). The lack of market information makes it difficult for farmers to adapt to quality and other needs and puts them in a weak bargaining position against other factors in the value chain. Therefore, cooperatives are considered institutional tools to help farmers cope with all these challenges. Cooperatives can increase the bargaining power of farmers in both input and output markets (Fischer and Qaim, 2012) and realize the flow of information between farmers and the market (Mojo et al., 2017). Compared to other market institutions, cooperatives generally include smallholders (Verhofstadt and Martens, 2014). With these qualities, cooperatives contribute to poverty reduction and rural development by strengthening the market position of small farmers (Bernard and Spielman, 2009).

In terms of transaction size, it is noteworthy that agricultural cooperatives and credit cooperatives have the largest share among cooperatives, with 33% (Pakdemirli, 2019). According to the report, the largest cooperatives in agriculture by income are in the USA, Japan, South Korea, Germany, Denmark, France, New Zealand, the Netherlands, Brazil, and Switzerland. In the European Union, where cooperatives have an important place in the economy, the market share of agricultural cooperatives approaches 40% (Bijman, 2016). Countries such as Scandinavian countries (Sweden, Finland, Denmark), Ireland, France, and the Netherlands have a rate of over 50% (Pakdemirli, 2019).

### **Situation in Turkey**

Olive, which has been produced since ancient times, is known as the healthiest agricultural product. The homeland of olives is expressed as Upper Mesopotamia and Southern Asia Minor, which includes the Southeastern Anatolia Region, which is located in Turkey. The progress of olive all over the world has been realized in two arms. The first spread to Tunisia and Morocco via Egypt, and the second spread to the Aegean Islands, Greece, Italy, and Spain via Anatolia (Duran, 2006). Today, approximately 97% of the world's olive tree wealth is located in countries with a coast to the Mediterranean (Özkaya et al., 2015). However, it is known that the cultivated olive production areas worldwide are 10 million hectares (Agriculture Forest SGB, 2021).

The olive tree, described as the sacred tree of Mediterranean civilizations and countries for thousands of years, is always green and shows periodicity (Tunalıoğlu, 2002). The importance given to olive and olive oil in global trade has increased in recent years due to the increasing awareness of healthy nutrition in the world and the demand for naturally produced foods. The increase in income level and the rise in living standards have led to the formation of new markets for olive and olive oil, and accordingly, there have been remarkable developments in terms of the total production and consumption of the olive sector in the world and the foreign trade market (NTO, 2014).

In the post-republican period, olive cultivation is one of the most important fields of activity. During a trip to Yalova and its region in 1929 by Mustafa Kemal Atatürk, with his instructions that olive cultivation should be emphasized, an olive cultivation campaign was started in Turkey. Accordingly, the Bornova Olive Research Institute was established in 1937 to conduct olives studies. The "Law on Breeding Olive Cultivation and

Vaccination of Wilds,” which envisages penalties for producers who are not interested in olive groves, was enacted (Özkaya et al., 2010). Olive growing increased rapidly between 1929-1950 and continued to develop even though it lost its speed between 1950-1960. However, with the abolition of the Delice Draft Bill in 1963, the production of economically different products in the 1970s, and the destruction of olive groves for different purposes with the “Tourism Promotion Law” after 1980, it slowed down and even regressed. It is stated that the transition from traditional olive farming to modern olive farming in the 1990s led to the revitalization and development of the olive sector (Tunalıoğlu, 2010).

The annual olive production of European Union countries is around 70% on average. Spain takes first place in the EU with 60% production, followed by Italy and Greece (NTO, 2014). There are fluctuations in world olive oil production from year to year. Accordingly, it was calculated as 3.21 million in the 2019-2020 period, decreasing by 1.7% compared to the 2018-2019 period due to the weather conditions (Agriculture and Forestry SGB, 2021). In the olive oil sector, as seen in olive production, Spain took first place in the world. Italy, Greece, and Turkey follow Spain, respectively. Due to its geographical location and Mediterranean climate characteristics, Turkey, along with other Mediterranean countries, is among the world’s top olive producers (Karabulut, 2013). Turkey aims to be the second largest producer in the world after Spain (IOC, 2012).

**Table 2.** 2011-2020 Olive Oil Production of Chosen Countries  
(thousand metric tons)

Country	2011- 12	2012- 13	2013-14	2014- 15	2015- 16	2016- 17	2017- 18	2018- 19	2019- 20
<b>EU-27</b>	2.450	1900	2.475	1.550	2.324	1.745	2.200	2.240	2.100
<b>Turkey</b>	145	175	140	170	170	177	263	220	250
<b>Tunisia</b>	180	180	70	340	140	100	280	140	250
<b>Morocco</b>	120	120	120	120	130	110	140	145	170
<b>Syria</b>	200	150	145	105	110	110	100	100	140
<b>Cezayir</b>	52	52	57	82	82	63	83	76	80
<b>Argentina</b>	-	-	-	-	22	38	44	20	40
<b>Jordan</b>	22	25	25	23	30	20	25	24	24
<b>Lebanon</b>	18	18	18	21	23	25	23	24	20
<b>Libya</b>	15	15	15	15	15	16	18	18	18
<b>Australia</b>	19	19	14	20	20	21	21	22	17
<b>US</b>	4	4	5	5	14	15	16	16	16

**Source:** STATISTA, 2022.

The world olive oil production in the selected countries occurred from 2011-2020. While 2,100,000 metric tons of olive oil were produced between 2019-2020 in the EU, where Spain, Italy, and Greece are the members, which produce the most olives and olive oil in the world, 250,000 metric tons of olive oil was produced in Turkey (Table 2).

The first olive oil export in Turkey took place in 1967. Today, Turkey is a net olive oil exporter that meets its own olive oil needs. In addition, a significant increase in table olive production has been achieved. The increase in the export of table olives can be expressed by the better presentation of table olives to the foreign market, the increase in the interest of exporting companies in the sector, and the exhibition of higher quality products to the foreign market compared to competing countries (Savran and Demirbaş, 2011).

**Table 3. Turkey's Olive and Olive Oil Data by Years**

	2015	2016	2017	2018	2019	Change (%)
<b>Total Olive Area (thousand)</b>	8.369	8.455	8.461	8.644	8.792	1,7
<b>Total Number of Olive Trees (thousand)</b>	171.992	173.758	174.594	177.844	182.076	2,4
<b>Total Olive Production</b>	1.700.000	1.730.000	2.100.000	1.500.000	1.525.000	1,7
<b>Table Olive Production</b>	400.000	430.000	460.000	426.995	415.000	-3,0
<b>Olive Oil Production</b>	1.300.000	1.300.000	1.640.000	1.073.472	1.110.000	3,4
<b>Olive Oil Production<sup>2</sup></b>	185.000	195.000	287.041	193.613	224.595	16,0
<b>Olive Oil Export<sup>3</sup></b>	12.831	17.819	50.217	65.940	43.862	-33,5
<b>Olive Oil Import<sup>3</sup></b>	2.632	1.307	16	4.844	23.401	383,1

**Source:** TÜİK, UZZK.

**Note:** 1/change in 2018-2019

2/ Temporary stats (UZZK)

3/ Taken from GTİP 150910

Although there are fluctuations due to seasonality in Turkey, olive production seems to follow a positive trend until 2019. One of the first reasons for this increase can be expressed as the increase in olive production areas from year to year. Recently, an increase in olive production areas has been observed with the support of the new olive orchard facility and certified olive saplings. According to TURKSTAT Herbal Olive Production Statistics, olive production was calculated as 1.32 million tons in 2020 (Agriculture Forest SGB, 2021).

The cultivated olive areas are increasing year by year. The total olive grove area in 2019 is expressed as 8.79 million decares. The first three cities with olive oil extracted areas can be listed as Aydın, Muğla, and İzmir. Seventy-five of the total

olive production, which was 1.32 million tons in 2020, consists of olives for oil. In the same year, 867,000 tons of olives for oil were obtained. Aydın, İzmir, Muğla, Balıkesir and Hatay are the main cities where olive oil production is made. Turkey is among the top five countries in the world in olive oil production. In 2020, 867 thousand tons of olives for oil were processed in different ways, and approximately 173,000 tons of olive oil were obtained. The top three cities in olive oil production are listed as Aydın, Balıkesir, and Muğla, respectively.

**Table 4.** Number of Trees and Olive-Olive Oil Values by Some Provinces in Turkey for 2019-2020

Cities	Number of Trees		Olive grain per tree (Kg)	Olives to be(Ton)	olives for cooking (Ton)	Olives to be Separated for Oil (Ton)	Olive Oil to be Obtained (Ton)	1 kg. Olive Grain for Olive Oil (Kg)
	Fruiting	Fruitless						
Aydın	22.193.288	2.430.472	17,4	386.530	77.049	306.981	62.272	4,9
Muğla	15.753.173	1.167.784	9,8	154.629	18.276	130.725	26.025	5,0
Balıkesir	11.085.551	503.547	14,7	163.131	41.307	121.824	24.365	5,0
Bursa	11.389.281	229.185	7,5	85.053	68.263	16.790	3.358	5,0
Çanakkale	5.014.305	512.902	7,3	36.811	5.274	31.536	6.307	5,0
Tekirdağ	968.310	76.606	15,5	15.048	7.548	7.500	1.500	5,0
İzmir	16.743.314	3.963.059	7,0	117.682	14.654	103.028	20.606	5,0
Manisa	19.140.329	3.325.436	7,08	135.458	87.681	47.776	7.963	6,0
Adana	2.852.670	29.000	7,5	21.500	6.500	15.000	3.000	5,0
Antalya	3.694.512	1.090.679	18,9	70.000	7.500	62.500	12.500	5,0

**Source:** ÜİB, 2021.

Table 4 shows the olive production in some cities. The number of olive trees and the amount of olive production between 2017-2021 in Turkey are given in Table 5. According to the table, while the total number of trees was 174,594 in 2017, the number of trees reached 188,679 in 2021. When we look at the total olive production, while it was 2,100,000 tons in 2017, a severe decrease was observed in the following



years, and 1,738,680 tons of olives were produced in 2021. Although olive production is a product with fluctuations in production due to seasonality, it is noteworthy that there is no increase in production despite increasing the number of trees throughout the four seasons.

**Table 5. Olive Production in Turkey in 2017-2021**

Year	Number of trees			Production (Ton)		
	Total	Fruiting	Fruitless	Total	Tableware	Oiler
2017	174.594	148.263	26.331	2.100.000	460.000	1.640.000
2018	177.843	151.069	26.774	1.500.467	426.995	1.073.472
2019	182.076	154.037	28.039	1.525.000	415.000	1.110.000
2020	187.163	159.382	27.781	1.316.626	513.140	803.486
2021	188.679	157.850	30.829	1.738.680	555.833	1.182.847

**Source:** Ministry of Forestry and Agriculture

It is seen that Turkey, which is among the top four countries in olive oil exports, exports about one-fifth of Spain, which is in the first place. Relative to the world import level, it is seen that Turkey's olive oil imports are quite low. According to the International Olive and Olive Oil Council (IOC) statistics, a total of 1.21 million exports were realized in extra virgin olive oil in 2019-2020. In extra virgin olive oil, Spain ranks first with 429 thousand tons, Italy ranks second with 211 thousand tons, Tunisia ranks third with 300 thousand tons, Portugal ranks fourth with 80 thousand tons, and Turkey ranks fifth with 456 thousand tons. In 2020, Turkey's extra virgin olive oil exports were 20.35 thousand tons. In 2020, Turkey exported 6.14 thousand tons to Saudi Arabia, 2.58 thousand tons to Spain, and 2.27 thousand tons to the United States. While the average olive producer price was 5.7 TL/kg in 2020, it increased to approximately 6.6 TL/kg in December 2020. While it increased by 2.5% compared to November, it increased by 15.7% compared to December of the previous

year. While the average consumer price of olive oil was 30 TL/kg in 2020, it increased to 35.9 TL/kg in December 2020, increasing by 6.7% compared to November and 23.5% compared to December of the previous year.

In order to develop the olive growing sector, a wide range of support policies have been presented, and these policies have changed over time. Among the previously applied support applications, input subsidies, purchases, and direct income support are available. Although the support premiums are subject to deductions by replacing them with support purchases over time, they continue to exist under the name of difference payment today. However, for the first time in 2019, an application was started to give premium to the grained olive (Agriculture Forest SGB, 2021).

In Turkey, the “National Olive and Olive Oil Council (UZZK)” was established in April 2007 to contribute to the olive and olive oil sector. UZZK aims to inform the manufacturers, contribute to the R&D studies in the sector, offer standardization and certification, organize campaigns to promote a product and encourage consumption, and direct participation in fairs. Producer Unions, Agricultural Sales Cooperatives, Ministry of Agriculture, Ministry of Commerce, Turkish Statistical Institute, Turkish Standards Institute, Undersecretariat of Treasury and Foreign Trade, State Planning Organization, Olive and Olive Oil Agricultural Sales Cooperatives and Unions, Union of Chambers and Commodity Exchanges of Turkey, Union of Chambers of Agriculture of Turkey are among the council members (Yılmaz, 2013).

### **Cooperatives as a Form of Organization in Turkey**

Organization of producers in Turkey; It is carried out within the scope of Law No. 4572 on Agricultural Sales Cooperative

Unions, Law on Cooperatives No. 1163, and Agricultural Producer Unions Law No. 5200. Most of the olive and olive oil producers are organized under the roof of Agricultural Sales Cooperatives Unions. In this respect, Agricultural Sales Cooperatives and Unions support the producer by purchasing table olives and olive oil produced in Turkey. Since the unions are strong buyers of table olives and olive oil, olive production is also carried out intensively in the purchasing regions of the unions. Agricultural Sales Cooperatives Unions, Tariş Olive, Olive Oil Union, and Marmarabirlik operating in the field of table olives and olive oil carry out production, processing, and marketing activities within the sector by making direct purchases (Ministry of Commerce, 2019). Unions can provide in-kind loans to their partners in the main production factors such as chemical fertilizers and pesticides, and they can also provide cash loans when their financial situation is suitable. In addition, they are also involved in training and publication activities for their producers (TBMM, 2008). Tariş, which is a larger union than Marmarabirlik and Güneybirlik, has 30 cooperatives as of 2022 (Taris Olive Oil, 20.02.2022). Marmarabirlik has 8 cooperatives (Marmarabirlik, 20.02.2022). Güneybirlik, on the other hand, has 13 cooperatives and 16.000 partners in the cities of Gaziantep, Adıyaman, Şanlıurfa, Kahramanmaraş, Mersin, Antakya, Mardin and Siirt. The Union has an extra virgin olive oil filling facility with 15 tons/day capacity and a storage capacity of 1,250 tons in Gaziantep (T.R. STB, 2010). Tariş Olive and Olive Oil Union have a share of 8.08% in regional production, a modern refinery with a daily processing capacity of 7,055 tons in 37 enterprises affiliated with its cooperatives, a refining capacity of 75,000 tons/year, one of 76 laboratories accredited by UZZK, an olive oil packaging capacity of 5,550

tons/year and 46 It has 51 types of trademarks registered in the country (Ministry of Commerce, 2019).

**Table 6.** Olive Oil Data in the Market: Tariş and Marmarabirlik (Price&Amounts)

Seasons	TARIŞ		MARMARABİRLİK		
	Olive Oil Purchase Amount (Ton)	Purchase Price (TL/Kg)	Olive Purchase Amount (Ton)	Separated from Olives for Oil (Ton)	Amount of Olive Oil Produced (Ton)
2010/11	6.215	4,67	29.356	3.502	639
2011/12	8.228	5,43	145.246	16.813	3.146
2012/13	11.857	4,95	44.369	3.796	774
2013/14	2.824	5,79	23.798	2.492	512
2014/15	4.732	6,93	26.760	968	150
2015/16	4.822	14,19	36.748	1.185	231
2016/17	3.503	10,35	31.582	2.407	498
2017/18	5.455	13,63	51.485	2.555	522
2018/19*	3.823	10,00	50.815	4.924	1.025

**Source:** (Ministry of Commerce, 2019). **Note:** \* by April 2019

Marmarabirlik purchases and processes approximately 36% of the region's olives, with a harvest of approximately 90 thousand tons of black table olives grown in its region and purchases of 32 thousand tons. Marmarabirlik processes some of the purchased olives as oil. In order to transfer the Union to the Olive and Olive Oil Licensed Warehouse to be established in the following periods, by making use of the support provided within the scope of the Licensed Warehouse Development Project (Agricultural Reform Implementation Project -C/3); It has built a 5,000-ton olive oil warehouse and a 13.000-ton table olive warehouse. The Union has started to buy olives by obtaining an operating permit for these warehouses, creating a significant volume in the market. The Union, which

has the ability to store 83,000 tons of olives and 4,000 tons of olive oil, causes storage costs due to the obligation to keep table olives in brine warehouses for one year (Ministry of Commerce, 2019).

### **Supporting Olive Producers in Turkey**

Types of support given to olive oil producers in Turkey, under the name of “support premium,” while determining the number of supports made directly per kg, domestic and foreign market prices, production costs, and budget situation are considered. Olive producers are given fertilizer and diesel support as of 2003 and premium support. Diesel and chemical fertilizer support payments benefited by olive producers are given quarterly. In addition to these, as of 2006, olive producers are supported to increase certified olive saplings’ use and expand at least ten decares of olive orchard facilities with healthy saplings. A support payment of 33 TL/da is made for olives as the “Biological and/or Biotechnical Control Support Payment in Crop Production,” in which the application conditions of the support payment published in 2018 are determined (Ministry of Commerce, 2019).

**Table 7.** Supports for Olive in 2018

Support for Olive in 2018	Support round (TL)
Soil analysis (TL/50 decare)	40
Diezel and fertilizer (TL/decare)	14
Good Agricultural Practices (ind-group certfi.) (TL/decare)	50-40
Organic Agriculture Applications (TL/decare)	70
Biotechnical Fight Support (TL/decare)	33
Farm Accounting Data Network Participation (RL/business)	600
Certified Sapling Production Support (vaccinated /unvaccinated) (TL/unit)	1/0,5
Certified and Standard Sapling Use Support (Standart/certificated) (TL/decare)	100/280
Rehabilitation of Traditional Olive Gardens (TL/decare)	100
Small Family Business Support for Herbal Production (TL/decare)	100
Environmental Protection of Agricultural Lands (ÇATAK) Program (TL/decare)	60/135
Agricultural Extension and Consultancy Support (TL)	38.000

**Source:** Ministry of Agriculture and Forestry

Table 7 shows the support given to olive production in Turkey in 2018. A large part of the support is given in order to improve olive production, to encourage producers to make more conscious production, to make appropriate fertilization-spraying-irrigation, to rehabilitate olive groves, to obtain reliable food with practices such as good agriculture and organic agriculture, and to have a more significant say in the market. However, whether all of these supports are used for production or whether the supports are sufficient is an important debate that needs to be addressed.

### **Olive Production and Cooperatives in Italy**

Olive cultivation in Italy is one of the most important sources of income and employment in terms of rural economy. However, it represents a characteristic element in many Mediterranean

agricultural areas. Apulian, Calabrian, and Sicilian olive groves produce approximately 80% of the national olive oil production (ISTAT, 2013). Old and large olive trees, irregular settlements, and moderate fruit ripening characterize traditional olive groves, representing the most preferred cultivation system, especially in hilly and mountainous areas (Pergola et al., 2013; Strano et al., 2014). Because of these limiting factors, agronomic methods are not economically viable (Pergola et al., 2013). However, the level of mechanization of the harvest is quite low (Giametta and Bernardi, 2010; De Gennaro et al.; 2010). Most farmers use harvesting olives from the ground, which reduces the quality of the oil obtained. Therefore, low levels of adaptation, conversion, and mechanization result in higher production costs, negatively affecting profitability (Sola-Guirado et al., 2014).

Recently, olive cultivation has been increasingly carried out for groves planned for mechanical harvesting and pruning and general optimization of production factors (Patumi et al., 2002; Stillitano et al., 2016; De Gennaro et al., 2010). Olive-density orchards are characterized by a more rational space organization to allow a higher level of mechanization and a homogeneous production that also increases harvest efficiency (Ravetti, 2014; Vieri and Sarri, 2010). All these conditions significantly contribute to achieving high-quality production by allowing the application to improve prices (Ravetti, 2014; Tous et al., 2014).

According to the 6th Italian Agricultural Census (ISTAT, 2012), olive cultivation is the main agricultural product, with 47% of the continuous products. With 1.12 million hectares of agricultural land and 902,075 farms producing olives and olive oil for fresh consumption, olive cultivation is the second most important crop after grains. Olive production is concentrated in the Southern region of Italy. Apulia is the leading producer of farmland. Calabria and Sicily follow Apulia in terms of farm numbers.

Regarding topography, 61% of olive groves are located in hilly areas, 29% in plains, and 11% in the mountains (ISTAT, 2012). Regarding the trends of olive groves, over the 30 years, namely, from 1982 to 2010, olive farms decreased by 14%, while the areas allocated to olive groves increased by 10% at the national level. While Apulia, Calabria, and Sicily are where olive groves grow the most, Lazio, Liguria, and Tuscany seem to be the regions that lost olive groves.

**Table 8.** Olive Harvest for Oil in the Four-Year Periods  
Between 2006-2018

Region	2006	2010	2014	2018	2018 / 2006
<b>Piedmont</b>	437,00	733,00	1,109	1,122	%180
<b>Aosta Valley</b>	0	0	0	0	%0
<b>Lombardy</b>	45,439	60,651	20,020	49,996	%10
<b>Liguria</b>	211,906	202,480	102,800	229,200	%8
<b>Trentino- Alto Adige</b>	10,899	16,333	16,825	28,000	%157
<b>Veneto</b>	86,833	73,012	127,540	243,705	%181
<b>Friuli- Venezia Giulia</b>	2,285	1,847	2,094	14,500	%535
<b>Emilia- Romagna</b>	56,907	56,567	32,553	72,112	%27
<b>Tuscany</b>	1.245,581	1.290,408	507,953	1.192,186	-%4
<b>Umbria</b>	877,718	624,117	223,442	374,888	-%57
<b>Marche</b>	256,736	291,170	112,765	169,597	-%34
<b>Lazio</b>	1.681,618	1.797,650	606,910	863,450	-%49
<b>Abruzzo</b>	1.406,773	1.255,100	682,423	1.215,400	-%14
<b>Molise</b>	458,550	402,000	365,728	570,600	%24
<b>Campania</b>	1.865,334	2.444,455	846,473	939,203	-%50
<b>Apulia</b>	11.988,125	10.053,610	7.844,600	5.616,560	-%53
<b>Basilicata</b>	359,506	368,000	326,877	295,573	-%18
<b>Calabria</b>	10.196,812	8.196,988	4.466,975	3.893,412	-%62
<b>Sicily</b>	2.320,732	2.939,569	1.898,965	1.993,438	-%14
<b>Sardinia</b>	469,362	406,720	350,586	303,400	-%35
<b>ITALY</b>	<b>33.541,553</b>	<b>30.408,398</b>	<b>18.536,638</b>	<b>18.066,442</b>	<b>-%46</b>

Source:<http://agri.istat.it/>



Regarding productivity, Table 8 shows the number of olives for oil harvested in the period between 2006-2018. Except for Northern and Central Italy, overall production has declined at the national level, and Friuli-Venezia Giulia is known as the region with the highest production growth. According to the 6th Italian Agricultural Census (ISTAT, 2012), organic farming represented 12% of Italian olive growing areas in 2010, with the highest proportions in Calabria (24%), Basilicata (17%), and Umbria (% 14) level. Organic oil olive grove areas increased by 112,913.19 hectares (i.e., 93%) compared to 2010 and reached 234,762.02 hectares in 2017 (Sinab, 2017). The increase in organic farming practices is due not only to new market trends but primarily to European subsidies to promote producing high-quality products.

In recent years, organic farming has led to an increasing trend among consumers interested in healthier food consumption and producers interested in the positive demand trends of new markets. Consumption of organic agricultural products increased by 10.5% in 2018, maintaining its positive trend for many years. However, organic olive production increased by 23.7% in 2018 (Coldiretti, 2018). As a result of official statistics, the traditional farming system is the most used practice among olive oil growers. The organic farming system is expanding nationally, and olives for oil are the most widely grown agricultural product. Olive farms and olive groves are mainly seen more intensely in the south of Italy (Iofrida et al., 2020). Besides, *Olea europaea* L. cultivars may possess an effective salt-exclusion mechanism operating in the root system (Demiral,2005:273).

Olive oil production is a sector related to European agriculture and industry in terms of both production and consumption. According to the International Olive Oil Council, olive oil

production has recently increased from around one million tons in 1990-1991 to 2.3 million tons in 2015-2016. The enormous contribution was followed by Spain with 1.4 million tons in 2015-2016, followed by Italy with 474.6 thousand tons. The import market in the European Union is significantly smaller than the export market and has fluctuated. The figures obtained to express the importance of Italy in the market. The Italian olive production in 2019 covers an area of approximately 1,700,000 hectares, and approximately 80% of this area is located in the Southern Region of Italy. From the Southern Region, Puglia ranks first with approximately 370,000 hectares, followed by Calabria and Sicily. Puglia, Calabria and Sicily account for more than 60% of Italian olive oil production (Iofrida, et al., 2020).

Although Italy is the largest producer of olives and olive oil after Spain, it imported \$ 788,751 worth of olive oil from Turkey in the 2015-2016 season while importing \$ 13,920,156 in the 2016-2017 season. In recent years, Turkey has made a significant improvement in its exports to Spain, the world's largest olive producer, and to the United States, one of the world's largest markets (EIB, 2018), but this is again when Turkey's assets are considered. It is seen that the export potential cannot be evaluated sufficiently. The increase in the demand for olive oil in the world and the application of current marketing strategies by the exporters in Turkey with experience in foreign markets compared to previous years have been effective in observing the developments in question (Mete, 2015).

### **Cooperatives in Italy**

The cooperative movement in Italy was born at the beginning of the 20th century (Botteri, 1978). However, forms of cooperation in agriculture have been common since the Middle Ages; in

the early 1900s, the idea of the existing cooperative enterprise spread in Italy as rural credit and consumer cooperatives. This new approach was inspired by two opposing ideologies, Socialism and the Social Doctrine of Catholicism. The aims of both ideologies can be expressed as improving the living conditions of Italian farmers, although they have different missions. The ideologies of these two groups emphasized the social role of Italian agricultural cooperatives, emphasizing the importance of supporting rural income, promoting employment, and supporting small farmers as the Italian economy faced significant changes in the early 1900s. After the Second World War, Italian agricultural cooperatives developed the current vision, focusing strongly on marketing and food processing activities and reconciling traditional ideas with practical economic goals. As a result of this synthesis, cooperatives have focused on improving the living conditions of small farmers by providing profitable business opportunities through concentration on production and integration of food processing activities.

Italian agriculture experienced significant changes in the 1990s. The General Agreement on Tariffs and Trade (GATT) has increased competition in the internal markets of the European Union, allowing access to international competitors that were previously excluded by trade barriers in various ways. At the same time, the Common Agricultural Policy (CAP) has been the scene of good major reform, which envisages a gradual reduction in public support for agriculture, particularly in price fixing. These factors, together with changes in consumer preferences, have accelerated the evolution of the European food system and called for radical innovation in the strategies of cooperatives. The industry has responded to the new conditions with a process of concentration. Initially, mergers and acquisitions were related to the distribution channel, only later at the level

of food processing (Lanciotti, 1997). Because the concentration process is too deep, a significant part of the Italian market is controlled by a small number of multinational companies (De Castro, 1995). In this scenario, small and medium-sized companies, including many cooperatives, must reconsider their strategic planning to compete. The number and size of cooperative bankruptcies in the mid-1990s raised questions about cooperatives' ability to compete in the new environment and whether cooperatives have an inherent competitive disadvantage in innovative markets (Denicolo, 1995).

Cooperatives play a minor role in the olive oil sector in Italy compared to other food sectors. There are about 400 cooperatives dealing with olive harvesting and olive processing for the purpose of obtaining oil. The total turnover of these cooperatives in 2008 was approximately € 240 million. As seen in Table 9, this value is considerably smaller than the sales revenues of cooperatives in other sectors such as dairy, fruit and vegetable, meat, and wine. Cooperatives rarely reach a significant economic size. As a result, the market share of cooperatives in this sector is low compared to investor-owned firms (Bono, 2012).

Table 9. 2006 and 2008 Values of Agricultural Cooperatives in Italy

Sectors/ Years	Agricultural cooperatives (N°)		Trading volume (billion €)		Farmer members (N°)		Employees (N°)	
	2006	2008	2006	2008	2006	2008	2006	2008
Services	1,409	1,547	7.072	6.230	271,059	269,850	18,873	14,802
Meat	502	494	5.896	7.953	23,988	20,282	18,842	20,664
Fruit and vegetable	1,155	1,321	6.012	8.158	107,620	103,276	21,777	30,448
Olive Oil and Table Olives	341	383	0.220	0.242	169,448	203,273	1,813	1,775
Dairy and Dairy	978	963	6.734	7.043	42,049	36,236	11,956	11,932
Wine	583	611	3.164	3.736	198,122	190,726	8,848	8,619
Other	780	515	1.232	1.000	54,329	39,680	8,464	5,546
Italy (Total)	5,748	5,834	30.330	34.362	866,615	863,323	90,573	93,786

**Source:** Bono, 2012.

The historical weakness of the cooperative movement in the olive and olive oil industry seems primarily to be related to the geographical position of farms and processing companies in the south of Italy: the cooperative movement is less common in this area due to the political, institutional and cultural environment that has historically been less conducive to the cooperative system has developed. However, olive oil cooperatives are usually only concerned with the first step of processing to obtain olive oil for intermediate products or farmer members; thus, the added value of the activity is usually low. However, there are cases where cooperatives put final and branded products (bottled olive oil) on the market that guarantee higher added value. Although cooperatives have tried to develop this strategy in recent years, most of the sales today are primarily for intermediate products, and it is seen that the sales market is predominantly local. Looking

at the last decade's trend, the market share of cooperatives in Italian olive oil has experienced a significant decrease from approximately 13% to 5%. This may be related to the low tendency of cooperatives to supply end-user products, the low number of foreign investors entering the sector, and, therefore, the increasing competitive position of companies with investor capital. Also, unlike what was happening in other sectors, there were no merger processes between cooperatives during the same period that could be beneficial in order to invest in the lower stages of the chain and improve their competitive position to the minimum size required to meet the demand of international retailers.

The segregation subsidies offered by the CAP health check (2008) support high-yielding olive groves, while the members of the Italian olive oil sector cooperatives are mostly small farmers whose incomes are linked to European subsidies. However, it is seen that the policies in recent years have not successfully supported the cooperatives operating in the Italian olive oil sector. Hence, members prefer not to produce more. On the one hand, the European Regulations on private storage, which had to support olive oil prices, did not function successfully in Italy mainly for two reasons. This policy has only been effective in a few cases, i.e., when market prices have fallen below the defined minimum, and the latter is generally very low compared to average olive oil prices in Italy. Considering that in many cases processing companies, and especially cooperatives, do not have the necessary storage equipment and have to rent them, that is, they have to incur more costs, the amount of support has remained too low to direct companies to store olive oil. Such support could be an essential step toward supporting Italian olive farmers and olive oil processing companies, including cooperatives, but this

support needs to be more consistent with the characteristics of the Italian industry.

Finally, it should be noted that the environmental and landscape value of olive groves (Puglia, the first region in terms of cultivated area, is also recognized by a regional law prohibiting the uprooting of olive groves) affects crop turnover, industry structure, and productivity. These features limit the effect of strategies and policies that focus on the competitiveness of cooperatives with other organizations. For these reasons, the extra economic value of olive groves needs to be taken into account more in the CAP and more generally in agricultural policies (Bono, 2012).

### **Olive Oil Regime in EU**

European Union countries have created a Common Agricultural Policy (CAP) in accordance with the Rome Agreement and have started the Common Market Order (OPD) application, including olive oil and many agricultural products. Olive oil was included in the scope of OPD application in 1968 and has been evaluated within this application until today. In the years when the European Union was founded, there was a severe demand for vegetable oils, but there was an inadequacy in domestic production, and the industry had to be supported. Vegetable oil production met only 10% of the EU's oil needs. In order to meet this need of the Union in vegetable oils, solutions such as completely opening up to oil seeds imported from third countries and importing vegetable oil with zero customs duty were brought. As a result, the market was abundant, causing the prices to fall and the demand for olive oil, which has a higher price than other oils, to fall. Especially with the objections of EU member Italy, which is a big producer and

exporter, against the current situation, it was decided to switch to the Common Market Order in olive oil (Akay, 1991).

The olive oil regime of the European Union, as in other product policies in the Common Agricultural Policy, is to ensure the continuity of supply, create better living conditions for producers, prevent price fluctuations and create new policies in order to regulate trade. When we look at the policies of the Common Market Order (OPD) on olive oil production, it is noteworthy that there has been a dynamic structure since 1968, when the olive oil policy came into effect. The EU has made differences in its practices towards olive oil, as in other areas, in the following periods, regarding the changes that have emerged within its own body and in the international arena (Özden, 2006). The purpose of the EU's olive oil policies mentioned above, concerning the problems occurring in the sector in the following years, has revealed the need for innovation in some regulations that have come into force before. In this respect, the regulations made in 1998, 2001, and 2003 are important. With the new practices carried out in Olive Oil OPD in 1998, changes were made to increase the sector's competitiveness, improve product quality, balance supply, and demand, and introduce more straightforward rules. After the reform, the National Guaranteed Quantity (UGM) system was started to be implemented, consumption aids were canceled, a unique stocking system was created instead of intervention purchases, and it was decided to establish a Geographical Information System within the scope of the registration system in order to obtain statistical data more securely. The year 2001 was determined for the transition to these innovations, but later this period was extended until the end of the 2003-2004 marketing period (Özden, 2006; Mete, 2015).



As a result of the research, it was decided in 2001 that a more comprehensive reform was needed. In this direction, it has been decided to reduce the support given to the producer by 5% to 1322.5 Euro/Ton and to give the production support to olive oil obtained from olive trees planted only before May 1, 1998, as of November 1, 2001. In line with the new regulations, it was decided to increase the maximum guaranteed amount by 31.6% to 1.78 million tons (Ülkü, 2006). The last change for olive oil was made in OPD in 2003, and payments were made to the producers. These changes aim to increase the competitiveness of the enterprises in the olive oil sector, prevent the instability in the producers' incomes and make a sustainable, environmentally friendly production where food safety is observed (Mete, 2015).

If the price of olive oil imported from third countries to the union is below the representative market price, the European Union makes a deduction called relevance, which has the feature of customs duty. Until June 30, 1995, the EU applied variable charges on olive oil imports and a 20% customs duty. However, in the perspective of the World Trade Organization's Agriculture Agreement, variable fees and customs measures have been replaced by fixed tariffs as of July 1, 1995, in accordance with the commitments. These fixed tariffs were also reduced by 20% in the six years between 1995-2001 (Tan & Çelikel, 2003).

With a decision by the European Union on 17.12.2006, quotas and taxes were imposed on certain goods imported from Turkey. 112.05 Euro/100 kg, i.e., 1.1205 Euro per kilogram, is applied to the olive oil of 15.09.10.90 GTI.P that Turkey exports to the European Union, and a 10% tax deduction are applied from this tax. A specific customs tax is applied at 127.87 Euro/100 kg. A specific customs tax of 99.18 Euro/100 kg is applied to crude olive oil and 100.34 Euro/100 kg to Lampant olive oil

(Mete, 2015). Despite all these limitations, Turkish olive oil exporters continue to export to EU countries with low profit.

**Table 10.** EU Tax Rate on Pure Olive Oil Imports to Turkey

Origin	Measuring	Tax	EU Law
Other Countries	Third World country	124,50 Euro/10 kg	R2204/99
Turkey	Tariff preference	112,05 Euro/100 kg	R2028/97

**Source:** Mete, 2015.

The European Union export prices of Tunisia, a third-world country where Turkey competes in olive oil exports, and Turkey's export prices to the European Union are compared in Table 11 over Italy and Spain.

**Table 11.** Comparison of Export Prices of Pure Olive Oil from Turkey and Tunisia to Italy and Spain

Countries	Tunisia exports				Turkey exports			
	2012	2013	Export value 2013 (thousand \$)	Export volume 2013 (ton)	2012	2013	Export value thousand dollar 2013	Export quantity 2013 (ton)
	Export value dolar/ton	Export value dolar/ton			Export value dolar/ton	Export value dolar/ton		
Italy	2.260	3.187	194.456	61.007	2.250	3.180	5.844	1.838
Spain	2.252	3.116	113.053	36.278	2.716	2.892	27.567	9.532

**Source:** International Trade Center, 25.02.2022.

Turkey, which has a world-class price in exports to Italy, cannot sell enough goods to the market due to quotas and customs duties despite the demand. Looking at the figures of Spain, Tunisia exported 36,278 tons of pure olive oil to Spain in 2013. While the export price was \$3,116/ton, Turkey exported 9,532 tons of pure olive oil to Spain in the same year. It is seen that Turkey's export price is \$2,892/ton. Consequently, despite

Tunisia's pure olive oil quality is equal to that of Turkey's pure olive oil and Turkey's pure olive oil price being lower than Tunisia, it exports less to Spain than Tunisia. Although Tunisia is exempt from customs duty and geographically much closer to Spain than Turkey, it can market its product at a high price.

Although Turkey's olive oil quality and price are at competitive levels, the quotas and taxes applied negatively affect its profitability, export volume, and export performance. Turkey, whose olive oil production is increasing rapidly, needs to identify new target markets with high-profit margins and not apply quota-tax, as well as markets with low profits from quotas, taxes, and taxes. At this point, Turkish exporters should prefer strategic marketing methods instead of classical marketing methods, determine the target market, conduct market research, and obtain financial information from the actual importing companies (Mete, 2015).

### **Good Agricultural Practices**

Unconsciously, the increase in the use of pesticides, fertilizers, and chemical inputs has led to an increase in mechanization. Improper processing of the soil has been added to this negative situation. As a result, they have encountered severe environmental problems such as deterioration in the soil's physical structure, deterioration of the nutrient balance, extinction of organic substances and living things, salinization, and barrenness (Altındaşlı, 2008). Environmental problems increased in the late 1960s and early 70s, and it was seen that the problems that were seen at the local level at the beginning of the development process and then the destructions that went beyond the borders of the country reached regional and international dimensions (Kaypak, 2011). In this transformation process in agriculture, it has been understood that the increase in agricultural production

is not a solution to the hunger problem, as expected; on the contrary, it causes negative consequences on human health and ecological balance. However, it has been realized that the agricultural techniques applied cannot be evaluated only with the improvement in the amount of production, and the effects on human, environmental and animal health should also be investigated (Altındışlı, 2008). The adverse situations experienced in agricultural methods aiming to obtain maximum efficiency from the unit area have pushed people to seek new agricultural methods (Aba and Işın, 2014). Good agricultural practices can be expressed as one of these methods.

The concept of good agricultural practices (GAP) has emerged as a result of the commitments of partners associated with the rapidly developing and globalized food economy on food production and quality, food safety, and ecological sustainability of agriculture. Stakeholders include food processing and retail companies, farmers, agricultural workers, and consumers that meet specific targets of food safety, product efficiency, food quality, and environmental gains in the medium and long term (İcel, 2007). The production of safe agricultural products as a result of the application of Good Agricultural Practices (GAP) in production and post-production processes is essential in terms of ensuring a safe food supply. Good Agricultural Practices (GAP), defined by the Food and Agriculture Organization of the United Nations (FAO), “to be applied for on-farm production and post-production processes that result in safe and healthy food and non-food agricultural products, taking into account economic, social and environmental sustainability principles” (FAO, 2016).

Good agricultural practices aim to record all practices as it is controlled agricultural activities. The records contain all the details about the type and type of the product, the reason

for the application of the fertilizer and pesticide used, the time, the amount, the name of the person who advises and the application, the competence on this subject, the time after which the product will be collected and the water quality. et al., 2013). Good agricultural practices necessitate fertilization with experts' recommendations by analyzing and determining the nutrient needs of the soil and the grown product. A close application is also carried out when spraying. Diagnosing diseases or pests that threaten the production area and agricultural product and applying the licensed drugs recommended by experts in the proper doses constitute the basic principles of spraying. Good agricultural practices aim to reduce the threat to nature and human health by minimizing the use of pesticides. Thus, traceability and sustainability are realized in good agricultural practices (Aksoy et al., 2013). Many of the importing countries and retailers, especially those organized with the domestic market, offer the GAP application as a prerequisite for purchasing from manufacturers in order to ensure the quality and safety of their products. In addition, the implementation of Good Agricultural Practices contributes to the support of sustainable agriculture and supports the achievement of national and international environmental and social development goals. It is known that GAP application encourages optimum use of resources such as pesticides, fertilizers, water, and environmentally friendly agriculture. Socially, the GAP will also protect the health of agricultural workers from the misuse of chemicals and pesticides (FAO, 2016).

In order to establish the framework of good agricultural practices, the initiative carried out by the European Retailers Product Working Group (EUREP) in 1997 aimed to ensure food safety and quality from "farm to fork" (Polat 2014). EUREP

first laid the foundations for good agricultural practices in fresh fruit and vegetables and published the EUREPGAP protocol in 1999. At the World Sustainable Development Summit held in 2002, the Food and Agriculture Organization (FAO) expressed good agricultural practices as one of the principles of agriculture and rural development. However, FAO advised WTO member countries to approve the EUREPGAP standards as a reference principle (Aba and Işın, 2014). This project, pioneered by European countries, has spread to different countries over time (Öner and Işın, 2010).

EUREPGAP was changed to GLOBALGAP at the Eighth Anniversary conference held in September 2007 to adapt the protocol to the global trade model. Within the scope of GLOBALGAP; fruit, vegetable, flower, ornamental plants, green coffee, tea, etc. Standard practices are applied to plant products, farm animals, and aquatic products (Öner and Işın, 2010). GLOBALGAP is a special protocol that leads to voluntary standardization for the certification of agricultural products. This protocol consists of equal partnerships of producers and marketers who want to establish the certification of the processes and standards required for Good Agricultural Practices. GLOBALGAP includes the standardization certification of the products starting from planting the seed until they leave the enterprise (Baghasa, 2008). With the GLOBALGAP protocol covering Good Agricultural Practices, EU countries have brought the condition that the fruits and vegetables they import are produced in a controlled and certified manner. Today, this certificate is the most commonly requested in the trade of agricultural products worldwide (Hasdemir, 2011). Sustainable agriculture systems are supported in many countries, especially in developed countries, to minimize the residues left on agricultural products by unconscious and excessive use of

inputs in agriculture and to ensure a sustainable environment. In order to reduce the pollution caused by water resources used in agricultural activities in Finland between 2007 and 2013, monetary support was provided with the Agri-Environmental Payments (AEP) application. In 2009, Payment-By-Results (PBR) and Agricultural Environmental Schemes (AES) support were provided to include less arable areas in production in Germany, France, Netherlands, and Switzerland. In addition, in the countries that are members of the Organization for Economic Cooperation and Development (OECD), incentive payments have been made to farmers under the name of Payments for Environmental Services (PES) since 2010 in order to protect the environment and maintain cultural practices (Türkten et al., 2014).

### **Turkey and Good Agricultural Practices**

Good agricultural practices in Turkey can be expressed as one of the sustainable agricultural systems implemented towards the end of the 2000s. Legal arrangements for good agricultural practices started with the Regulation on Good Agricultural Practices published on 08.09.2004 for the first time. The regulation underlines the rules and conditions of the standards regarding good agricultural practices, the form of certification procedures, and the duties and responsibilities of individuals and organizations. The purpose of good agricultural practices within the framework of the regulation; is the implementation of a production model that does not negatively affect human and animal health, accepts the ecological agricultural production approach, ensures traceability and sustainability in agriculture, and aims to protect natural resources and food safety (Official Gazette, 2004). With the GLOBALGAP protocol regarding the certification of the standards required for good agricultural

practices, international trade of good agricultural products is provided in developing countries such as Turkey (Eryılmaz et al., 2019).

GLOBALGAP-certified agricultural production in Turkey was implemented in 2003 in line with the demand from large European retailers. The main purpose of Turkey's transition to GLOBALGAP-certified agricultural production is to increase the amount of fresh fruit and vegetable exports, mostly to European countries, and to gain new markets. The GLOBALGAP certified production method preferred by European countries and the Good Agricultural Practiced production method applied in Turkey; it is thought that will make significant contributions to the protection of the natural balance and the environment, the nutrition of consumers with healthy products, the social and economic development of producers, the prevention of migration from rural to urban, the profitability of exporters and retailers, the national economy and employment (Aba and Işın, 2014).

The internationally accepted criteria of Good Agricultural Practices are implemented within the framework of the internationally applied GLOBALGAP certification system and compliance criteria. Good Agricultural Practices valid at the national level have been developed by adapting GLOBALGAP to Turkish conditions. Producers in Turkey, especially those who produce for the foreign market, can also have the GLOBALGAP certificate together with Good Agricultural Practices. The eligibility criteria are divided into two groups: requirements and recommended practices. Good agricultural practices are controlled farming. It is based on implementing applications to meet the need and record all applications. These records; contain all the details about the type and type of the product, the reason for the application of the fertilizer and pesticide



used, the time, the amount, the name of the person who made the suggestion and applied it, and his competence in this matter, how many days the product will be harvested, water quality and irrigation. Thus, the main element of the principles of traceability and sustainability in agriculture is fulfilled. Analyzes and result documents are also added to the registration system. Analyzes are carried out in authorized laboratories.

In order to switch to Good Agricultural Practices, the producer must first be registered in the Farmer Registration System. In this process of the manufacturer; It is necessary to evaluate the production area, water resources and possible pollution in its surroundings, the soil type of the production area, the existence of sustainable water resources and water quality, and the production conditions in the neighboring lands, the plant health should be kept high, the use of pesticides should be regulated, and the crop rotation should be evaluated. Afterward, the producer started good agriculture individually or as a group, T.C. The Ministry of Food, Agriculture, and Livestock must apply to the organization that has the authority of ITU control and certification. The Control Certification Body visits the manufacturer and the production area and prepares a price offer according to variables such as the number of producers, the size of the area, and the number of products, and presents it to the producer. If the manufacturer accepts the offer, the contract is signed, and the inspection process begins. All inputs used by the producer in the audit process take place under the following conditions:

- T.R. Receipt of pesticides and fertilizers by the person authorized to prepare a prescription by the Ministry of Food, Agriculture, and Livestock or with a prescription from the Ministry's Provincial/District Directorates.

- Procurement of seeds and seedlings as certified/invoiced
- Preparation and application of pesticides and fertilizers under appropriate conditions
- Saving information such as date and content in all applications

**Table 12.** Rates of Change of Good Agricultural Practices  
2007- 2020

Year	Cities	Number of producers	Production area (Ha)	Production (Ton)
2007	18	651	5.361	56.000
2020	61	14.051	254.754	5.716.616
<b>2007-2020</b>				Rates of Change
				-
				21 times
				47 times
				101 times

**Source:** T.C. Ministry of Agriculture and Forestry.

Significant developments have been recorded in good agricultural practices since 2007. In terms of the number of producers and production areas, especially after 2013. The provinces with the most good agricultural practices are Gaziantep (23.38%), Şanlıurfa (16.86%) and Adana (7.85%), respectively (Eryılmaz & Kılıç, 2018). However, when we look at the values given in Table 12, it is seen that the number of provinces that practice good agriculture has decreased to 61. While the production area with good agriculture increased 47 times between 2007 and 2020, the amount of production increased 101 times in terms of tons.

**Table 13.** Number of Producers, Production Area, and Production Amount in 2020 based on Regions and Provinces in Turkey

Good Agricultural Practices(Areas)				
Regions	Cities	2020		
		Number of producers	Production area (da)	Production (kg)
Marmara	Bahkesir	483	135.544	111.819.264
	Bilecik	14	535	727.000
	Bursa	109	68.547	142.946.424
	Çanakkale	232	46.351	55.527.742
	Edirne	159	96.483	77.492.497
	İstanbul	3	164	9.100
	Kırklareli	-	3.547	4.577.923
	Kocaeli	6	2.126	5.578.506
	Sakarya	134	9.442	7.249.500
	Tekirdağ	16	3.935	11.665.001
Yalova	8	161	436.000	
Blacksea	Amasya	96	11.542	65.293.106
	Artvin	-	-	-
	Düzce	248	6.145	3.305.018
	Çorum	10	1.739	2.979.405
	Bolu	-	-	-
	Bartın	1	191	95.377
	Bayburt	-	-	-
	Giresun	15	711	64.019
	Kastamonu	58	5.153	6.062.270
	Gümüşhane	-	-	-
	Karabük	1	6	1.100.000
	Ordu	138	3.694	369.463
	Sinop	12	1.148	948.725
	Rize	-	-	-
	Samsun	255	29.285	34.804.334
Trabzon	-	-	-	
Zonguldak	-	-	-	
Tokat	9	1.154	7.155.000	
MiddleAnatolia	Aksaray	105	18.365	65.926.350
	Ankara	207	42.258	72.410.523
	Çankırı	71	12.801	3.604.393
	Eskişehir	33	12.411	53.366.336
	Karaman	58	24.709	84.900.075
	Kayseri	214	40.281	48.605.878
	Kırkkale	31	488	858.293
	Kırşehir	121	30.837	27.943.732
	Konya	556	162.070	654.304.084
	Nevşehir	34	13.611	37.804.212
	Niğde	71	32.307	130.761.468
	Yozgat	4	602	5.169.022
	Sivas	4	2.402	5.513.173

	<b>Batman</b>	-	-	-
	<b>Şırnak</b>	-	-	-
	<b>Diyarbakır</b>	-	-	-
<b>South Anatolia</b>	<b>Adiyaman</b>	154	18.832	8.575.766
	<b>Gaziantep</b>	2475	286.797	83.774.719
	<b>Kilis</b>	194	14.569	12.221.390
	<b>Mardin</b>	1	212	4.000
	<b>Siirt</b>	58	11.650	7.997.900
	<b>Şanlıurfa</b>	1804	229.880	34.651.040
	<b>Egean</b>	<b>Afyonkarahisar</b>	57	9.516
<b>Aydın</b>		427	43.534	93.469.643
<b>Denizli</b>		300	32.060	44.736.074
<b>İzmir</b>		452	66.372	251.546.834
<b>Kütahya</b>		-	-	-
<b>Manisa</b>		629	151.209	153.636.885
<b>Muğla</b>		104	20.282	41.811.500
	<b>Uşak</b>	49	10.636	7.613.600
<b>Southeast Region</b>	<b>Elazığ</b>	27	2.502	1.401.567
	<b>Malatya</b>	10	902	1.192.790
	<b>Ağrı</b>	1	40	1.150.000
	<b>Erzurum</b>	11	203	1.080.153
	<b>Erzincan</b>	16	560	214.291
<b>Mediterranean</b>	<b>Adana</b>	1778	488.690	2.116.390.900
	<b>Antalya</b>	372	36.906	281.213.202
	<b>Burdur</b>	9	1.078	3.376.975
	<b>Hatay</b>	243	48.959	59.399.643
	<b>Isparta</b>	142	19.509	103.608.743
	<b>Kahramanmaraş</b>	316	65.159	26.112.040
	<b>Mersin</b>	870	147.041	523.018.621
	<b>Osmaniye</b>	36	19.699	41.602.500
	<b>TOTAL</b>	<b>14.051</b>	<b>2.547.544</b>	<b>5.716.615.977</b>
	<b>İl</b>	<b>61</b>	<b>61</b>	<b>61</b>
	<b>Producer</b>	<b>14.051</b>	<b>14.051</b>	<b>14.051</b>

**Source:** T.C. Ministry of Agriculture and Forestry.

Table 13 shows the number of producers, production area, and production amount in 2020 based on regions and provinces in Turkey. The provinces with the highest number of producers are Gaziantep, Şanlıurfa, and Adana, with 2485, 1804, and 1778, respectively. Adana ranks first with 488,690 in terms of production area. Adana is followed by Gaziantep in second place with 286,797 and Şanlıurfa in third place with 229,880 in the production area.

## Evaluation and Policy Implications

The main theme of our study can be expressed as the comparison of cooperatives and good agricultural practices in the olive and olive oil market in Italy and Turkey. It has been observed that Italy and Turkey have existing problems in olive cultivation from field to marketing. Italian and Turkish manufacturers cannot reach sufficient support both during and after production in order to be able to produce consciously. In the name of controlled agricultural productivity, farmers should be encouraged to proper agriculture based on Good Agricultural Practices. Good Agricultural Practices are implemented in Turkey, but since most of this practice is concentrated in a single region (South and southeast), it is necessary to focus on other regions where agricultural activities are carried out, as well as to include agricultural products suitable for regional conditions. In addition, more support should be given to olive, which has been at the forefront of agricultural activities in Turkey and Italy for hundreds of years and is an important export product. For Italy, support is mainly received from the European Union within the framework of organic agriculture in olive production. However, as mentioned before, these supports are mostly given to large producers and cannot reach small producers.

Since the “green revolution,” many problems such as chemicals used unconsciously in agriculture, wrong fertilization, spraying, improper irrigation of agricultural products, wrong mechanization in agriculture, deterioration of soil structure, and barrenness will be prevented. For this reason, it would be a more reasonable solution to support the whole producer as much as the production volume under Good Agricultural Practices and government control for every production stage and even for applying certified saplings. In addition, it will be

possible to include more foreign trade by increasing the food safety, economic, social, and environmental sustainability of Italy and Turkey, which are being discussed more and more, and in this context, the preferability of olive oil and olive oil.

One of the problems of the olive and olive oil sector in Turkey is that yield estimation studies are based only on the experience and observations of experts. Establishing a geographical information system and reliable database with remote sensing systems is necessary. First, the total number of trees and data in the sector should be determined without error. Turkey has a 75% yield loss in years when the crop is not spoiled. In Spain, this rate is around 35-40% (Ministry of Trade, (2019). In this way, significant fluctuations in production can be avoided and a continuous product supply can be created. It is necessary to modernize the maintenance processes and support the olive producer. The focus should be on production increase and, therefore, seedling production. However, it is crucial to make the correct orientation in production. This olive variety is planted in many agricultural areas as the producers can easily reach the “Gemlik Sapling.” However, the existing olive varieties and the varieties suitable for the area to be planted must be determined, certified, and genetically mapped.

Breeding studies should be carried out by determining the species with high product and tree characteristics among the local species of each region. Turkey’s olive gene roots should be protected, and the importation of saplings should be banned. Fertilization should be done with adequate and appropriate techniques. Measures should be taken to encourage analysis-based fertilization. The number of regional laboratories close to olive production areas where leaf and soil analyzes of producers can be made more efficiently should be increased.

Spraying is not enough, and the correct technique should be applied while spraying. Sprayed areas should be enlarged. The products used in pesticides should be suitable for the environment and should not interfere with organic production. A large percentage of olive groves, for example, 92%, are not irrigated. Existing wastewater facilities should be utilized, and modern techniques such as drip irrigation should be preferred and supported. Since terracing works have been neglected for a long time to prevent soil erosion, they should be encouraged with cheap and long-term loans.

While the yield per tree is 45-50 kg in Italy and Spain, it is one-third of this rate in Turkey. With a publicly supported program, appropriate pruning types should be determined according to regions and olive varieties, and mass and uniform pruning should be adopted. Old trees should be rejuvenated gradually. As a result, trees will become suitable for machine harvesting and create positive results in decreasing production costs.

Increasing the export of packaged and branded olive oil and ensuring the continuity of the markets in Turkey is possible with competition under the same conditions as EU countries. In this direction, incentives should be applied to increase the export of packaged and branded olive oil by approximately 15-20 thousand tons, and efforts should be made to promote Turkish olive oil. Olive oil consumption in Turkey is low as it is limited by the habits of the regions where it is produced. However, as a result of the studies carried out to encourage its consumption, it is seen that there is an increase in the demand and consumption of olive oil.

The production and sale of additive-free oil should be prevented by constantly controlling the market. Public inspections of polluted oil production should be increased, and legal arrangements should be made. In order to increase access to domestic and foreign markets, public support and a working group should be formed.

In Communiqué No. 2003/3 on Support Activities for the Branding of Turkish Products Abroad and the Placing of the Image of Turkish Products, arrangements should be made to support companies operating in the foreign market more effectively.

As in Italy and Spain, the sale of olive oil under the name of olive oil by mixing it with different oils should be banned, as it leads to unfair competition in terms of fraud and economically destabilizing the market. Regulations on olive oil in the EU should not be seen as the only obligation of the Community *acquis*, and a comparison should be made between these regulations and Turkey's national policies.

The idea that the olive producer should be involved not only in the production but also in the processing and marketing of the product shows the need for cooperative organizations. Farmers within the scope of Good Agricultural Practice can turn the advantage of their products, which they gain through correct and healthy production, into an opportunity with olive and olive oil cooperatives. Italian and Turkish cooperatives have common goals such as supporting small farmers, focusing on marketing and food processing activities, increasing interest in production, and raising the living standards of farmers. However, the number of olive and olive oil cooperatives in Italy plays a minor role compared to other agricultural and



food products cooperatives. Olive and olive oil cooperatives are not more numerous in Turkey, but their production volume is higher than in Italy. However, cooperative organizations and production volumes are insufficient in these two countries where olive production has a great geographical advantage. There is a need for larger-scale cooperatives that prevent price fluctuations, produce bottled olive oil with high added value, carry out licensed warehousing, promote producer products to the foreign market, encourage and support farmers for natural production.

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# Drifts In Green Marketing In Developing Economies: Perspective Of Customer And Corporates

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## **Abstract**

Today's environmental matters are of unbelievable concern in nature to business fundamentals, whether huge or less. Environmental issues have a growing standing in business around the globe. The environmental challenges are not only a concern of big business houses or big countries or governments only, but every common person has concerned about the atmosphere and talks about global warming. Therefore, in the situation of worldwide concern, business lines have engaged green-marketing as inclusion of their stratagem to encourage goods by engaging environmental entitlements either in the form of traits or about the policies, processes, and systems of the firms that manufacture or sell them. The present study discusses the trends and challenges in green marketing with a special orientation to developing nations. It also talks about the comportment of consumers to green marketing and marketing strategies carried out by marketers accordingly.

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**Keywords:** Environment, Green marketing, Purchase intention, Trends, Challenges

**JEL Codes:** A11, M31, Z32

## **Introduction**

Developing countries have realized that green marketing has to be dealt with responsibly, and companies have started covering a broad range of activities under green marketing. Green Marketing covers all actions intended to produce and enable any connections planned to gratify human needs in such a system that the pleasure of these desires and requirements arises by trifling unfavorable influence on the natural environment”.

The concept of green marketing has grown in prominence in the current market. The notion has intended for the re-packaging and re-marketing of current goods. Furthermore, the rise of green marketing has offered new doors. The possibility for corporations to mix and match their product items into a separate line. There is a movement in the mind of customers that marketers have noticed as an opportunity. Moreover, in the present business situation, how to gratify customers and stick to competition is the definitive concern of many organizations (Choudhury, D.K., Gulati, U., 2020).

Investors and businesses must consider the environment as a whole. Marketers must contemplate the long-term aids of this new-fangled green technology as a substantial long-term investment perspective movement. It will take much patience, and corporates cannot expect rapid results.

The trend in developing nations concerning green marketing is different from developed nations. Reasons are many and different in different arenas. The biggest task in developing

economies can be consumers' attitude to green marketing. Consumers are diffident about including green buying behavior though they express trepidation for the environment (Juwaheer et al., 2012). Sustaining a justifiable and strong environment is a matter of concern for several around the globe (Royne et al., 2011). So, purchasing green products in place of traditional alternatives has become an ongoing way (Akehurst et al., 2012). Further, if consumers are socially accountable, they pay more attention to the environment (Cleveland et al., 2012; Rahimah et al., 2018).

This paper attempts to

- a. Shed light on terms and concepts related to Green Marketing.
- b. Trends in Green Marketing
- c. Challenges of green marketing in developing nations

### **Literature Review**

On the other hand, many consumers want a clean atmosphere without having to pay extra (Prakash, 2002). Green customers wish to meet their requirements while being environmentally conscious (Akehurst et al., 2012). Consumers do not give up their desires for the environment's sake when deciding between green and standard products (Ginsberg & Bloom, 2004). However, according to Ottman (2011), customers purchase green products to live a healthy lifestyle.

Undoubtedly, customers today have fears in the context of the impending future of the world, and as a result, they generally desire environment-friendly products. In reoccurrence to this kind of attitude of the consumers, companies have geared up and started to arrange their marketing strategies to a plea swelling consciousness of this environment-friendliness. These

marketing strategies, named green marketing, have triggered companies to accept green policies in their marketing mix. Considering that companies have social responsibilities, they cannot ignore the call for environmental awareness with all concentration by consumers.

Various research studies have highlighted variables affecting the behavior of consumers with respect to green marketing, like environmental knowledge, price and quality of product, and the way the green concept is promoted (Agyeman, 2014).

It is impossible to believe that the organizations remain oblivious to “Environmental Alertness” that might influence buyer behavior. In particular, people who are heading marketing departments come into contact with environmentally conscious customers. The previous idea of businesses as profit-driven enterprises quickly gives way to a new perception of businesses as socially conscious establishments. In green marketing, terms like ozone-friendly, environment-friendly, and recyclable items are used.

Therefore, the organization promotes green products to inform and instruct the masses, pulling their attention toward green products. Positioning on the plank of organic is carried to teach the masses about green items to change the attitude and behavior of consumers (Cherian & Jacob, 2012).

Chen and Chang (2012) specified that the readiness of a consumer to purchase a specific product bestowing to his or her environmental requirements is considered the green purchase intent.

Many businesses have realized the importance of functioning in an ecologically friendly manner. As a result, people choose to conduct their businesses to make money while also attaining environmental goals (Saini, 2013). However, for marketers, if they want their marketing approach to be effective, the

requirement is to perform three changed characteristics: primary, they have to direct the customers, essentially, they are required to be genuine, and they must afford chances for the consumers to participate (Awan & Rosa, 2010; Bukhari, 2011; Cherian & Jacob, 2012).

Trends are the source of challenges; if corporations can meet the trends, they will not face any challenges but vice versa.

### **Challenges**

The urban customer is receiving added consciousness of the returns of green products. If we see the example of India, where most of the people of India live in villages and their edification level is very low. These people are not attentive to green products and the advantages of using them. Consumers must be informed and made aware of the damage to the environment. Reaching the public for the new green movement will take a long time and effort. In developing countries, again, the challenge is identifying green consumers. Consumers' response in such countries is different towards various green products in different categories.

Green products necessitate the use of renewable and recyclable materials and modern technology. Which outcome necessitates a significant investment in research and development? On the other hand, renewable and recyclable materials are substantially more expensive. As a result, producing green products adds to the manufacturer's financial burden, and customers are unwilling to recompense a higher price for green items. In addition, green has a reputation for being a low-quality color. Customers believe that green items are of poorer quality because many of the ecologically hazardous elements that give certain products their recognizable quality are also the ones that give

them that quality. Which outcome necessitates a significant investment in research and development?

To side from manufacturing eco-friendly goods and choosing environment-friendly markets, a considerate thought of Environmentally Responsive is essential to be unified into the corporate philosophy. In demand to manufacture consumer-friendly items, reasonable costs and environmentally friendly products that cause less damage are essential. Environmental sensitivity and, as a result, the manufacture of environmentally friendly products is essential to project a high-quality image. Businesses should be conscious of their responsibility to the environment and society, just as they are to their customers and other stakeholders, including the workforce. Climate transformation, ecological difficulties, and societal issues drive future leaders under pressure to make effective and comprehensive judgments. Business people's priorities should be focused on the principle of environmental protection rather than the company's profitability when making these decisions.

A more challenging assignment for marketers in developing nations is to design a product that performs well. Consumers who pay a good price for green products will look for desired value, and bundling desired value with the green product is a big challenge for marketers.

### **Green Marketing Mix**

Each company has set the marketing mix. Marketers have to understand the consumers' target, and it will help them know whether greenness is a suitable selling dimension or not and how they should integrate it into the marketing mix. Innovatively, the 4Ps of green marketing are formulaic marketing, but it is challenging to implement it and follow the argumentation of green marketing.

### **Green Product**

Green product is made from recycled substantial, or minimal prepacked, nontoxic durable (Ottman, 1997). The strategy of green settled goods is to bring recycling products for pleasant and safe uses. These green-based products are the collection of recycling material to reduce substance crucial occurrence, dematerializing the good; using property origin of raw materials, and making them more durable goods; creating by mental acts goods that are repairable, making merchandise that is safe for the exploit, devising good and substance that are (Bhat, 1993; Ashley, 1993; Polonsky et al., 1997; Ottman, 1998 and Charter et al., 1999).

**Green Price:** People thinks that Green product is more costly than other product (Peattie, 1999; Polonsky, 2001). Green pricing is related to the profit and satellite to take care of the wellness of workers and assemblage and to assure economic productiveness and the consideration of people. Through customization, practicality and value can be added to change its occurrence. For example, Eco-friendly bags are encouraged for the customer to use instead of plastic bags, and these steps are taken in many retail shops to divert plastic bags to disposal or cotton cloths bags.

### **Green Place**

The green place is to reduce the carbon footprint by managing logistics to reduce transportation releases, for example, importing products from other countries to be purchased from local producers. To avoid transportation costs, shipping costs from far away, and much more significantly, the subsequent element discharge by the ships and another way of conveyance.

**Green Promotion:** According to Scholossberg (1993), as quoted by Polonsky (1997), green publicity conveys the message to



customers to come out of the “superior environmental phenomenon” it is, the missed by the environmental information. Ottman (1997) has recommended various green publicity schemes to boost the environmental content gap.

### **Evolution of Green Marketing**

Over a period of time, green marketing has changed the process of green marketing in three forms. In the first phase, “Bionomical” green marketing, the marketing activities were taken up to provide remedies for environmental problems. In the second phase, “Situation,” green marketing has to engage scheming of progressive new products shifted to clean technology and care for water issues and pollution. The third phase of green marketing is “Sustainable.” In the late 1990s and early 2009, Which came into obscurity (Oct 2013).

### **Conclusion**

Nowadays, consumers have become conscious of green terminology and the advancement and reach of resources. As a result, consumers have superb admittance to several information. This has led to an increase in human needs. For example, women have started looking for organic cosmetics like lipsticks made of green algae.

From the perspective of marketers, In Marketing, the marketers grow strategies to improve the brand name, profitability, and sales. The marketing mix formulates the basis for generating a justifiable marketing stratagem. Sustainability marketing, distinct from traditional marketing, requires adhering to sustainability ideologies all over the marketing mix. This aids in (1) reinforcing the brand distinctiveness, (2) delivering

credibility, and (3) confirming honest, open communications and vital transparency with stakeholders, one of the keystones of respect sustainability marketing values.

**Figure 1:** Factors contributing to the success of green marketing



**Source:** Self-constructed.

Adopting green marketing essentially needs satisfaction concerning two significant objectives: customer satisfaction and improved environmental quality. Demand for green marketing products in developing economies exists undoubtedly. Companies have to strategize a question how to increase market share. It is not a new concept in developing countries like India, but the recent drift is that customers are mainly concerned about green products' quality and packaging. This indicates that marketers must work on all P's of green marketing because an astute marketer is always ready to push the concept with

greater vigor. For the success of green marketing, satisfaction, safety, and sustainability are key factors.

With the menace of global warming impending hefty, it is tremendously significant for marketers to adopt the green marketing concept with a serious note and not just a fad.

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# Effect of Economic Growth and Income Distribution on Human Development: An Empirical Analysis of Selected 17 Developing Countries

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## Introduction

The globalization experienced in the 20th century has a different effect compared to previous centuries. This effect is the uneven distribution of world income and the formation of liberalization and liberalization flows. This effect of globalization has further distorted unequal world income (Yeldan, 2011 s:51). The liberalization of labor and capital markets around the area has also facilitated the movement of production factors in the globalization procedure.

Reducing logistics costs and spreading technology to other regions to expand world trade are among the results of the globalization. In the process of globalization, all countries in the world contribute to this growth process. They assumed that the globalization process will intensify the competition between the production units of various countries and thus increase the competition with the free market structure. In the last twenty years, there has been a common belief that the world's economies have spread and the private sector the position of in

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the market has increased, and that with the opening of many countries, the world trade volume has expanded. We expect that globalization will reduce inequality and be underdeveloped between countries and increase human welfare by promoting sustainability. We see that different results have been got in many studies in the literature of human development on the continuation, an increase in GDP or reduction of inequality and poverty (Kumar De ve Pal, 2011).

It is a fact that economic growth creates various effects in the economy and society. The main of these effects are; With the growth, the share of the agricultural sector in GDP decreased and the share of the industrial sector increased. The issue of altering income distribution with growth has also been brought on by the movement of workers from the rural to the industrial sectors, the concentration of the industrial sector in cities, and the expansion of the urban population (Acar, 2002).

One issue that economists since Kuznets (1955) have highlighted is the relationship between economic growth and income inequality. While studies focus on the relationship between income inequality and economic growth, the effects of various macroeconomic variables on them have been investigated. The most fundamental studies that draw attention to the effect of income inequality on economic growth belong to Kaldor (1956) and Kuznets (1955). Kaldor (1956) emphasized that as the income level is high, the marginal propensity to save will also be high, emphasizing that a positive contribution will be made to growth through saving and between growth and income inequality. Kuznets (1955) emphasized that there is an inverted U-shaped relationship in which economic development first causes an increase in income inequality and then after a

certain threshold is exceeded, economic development reduces income inequality (Riveros et al., 2022).

Regarding the relationship between economic growth and income distribution, some theories emphasize the maturity level of technological development (Ahluwalia. 1976, Robinson. 1976, Gupta & Singh. 1984, Barro. 2000). Kuznet's findings also claim that income inequality tends to increase in the early stages of technological development, and that inequality tends to decrease as it reaches maturity. There is ongoing debate over the direction of the effect, with conflicting results regarding the interaction between economic growth and income inequality. While the discussions on economic growth and income inequality continue, the issues of economic growth and human development have come to the fore, as countries cannot reach the desired growth rates, and even if they are achieved, the growth is not reflected in the society (Mo, 2000).

Human Development can be defined as improving the well-being of people by making the most effective use of opportunities. Here, rather than the assumption that economic growth will directly offer equal opportunities to everyone, it is tried to evaluate the positive effect of the development of countries on the welfare of people. Adoption of free foreign trade policy by developing countries in the post-1980 period sped up opening up and economies reached wider markets by integrating with foreign markets. In this way, growth rates have increased with the increase in technology and productivity in developing countries. Thus, income, consumption, trade, education-health systems and therefore human development have been positively affected in economies and an increase in welfare has been achieved (Ferreira et al., 2021). Human development, which is used to expand people's choices and increase their freedom of choice, is an issue within economic development.

Expanding human choices is possible by expanding human capabilities and competitiveness. In the human development approach, income is the sole determining factor for improving people's quality of life. Rising income is also one of the major ways to expand options and well-being (Alvan, 2009). While economic growth reflects only one aspect, of development, human development reflects many economic aspects including per capita output (De Kumar and Pall, 2011).

In this study, the relationship between human development, economic growth and income inequality for 17 countries selected especially among developing countries was examined. In order to analyze the specified variables, human development index, income inequality, economic growth, unemployment, inflation and trade variables were included in the model. The human development index comes together with the education, health and income indicators related to the dimension of development and is used as the dependent variable in the model. The income inequality variable has been added to the model in order to show us how the positive or negative effects of the income distribution will affect human development. The GDP variable per capita was used to examine the increase in national income and to better evaluate its impact on human development. In the study, the relationship between the variables was analyzed in more detail by applying the Panel Var method.

#### Theoretical and Empirical Discussion

Struggling with inequalities in the distribution of income and wealth in countries can be seen as ethically positive, and these inequalities are also perceived as a problem in terms of development. The relationship between growth and income inequality has been the subject of many studies in the literature. However, studies examining the interactions between the relevant variables in the axis of growth - income inequality



- human development index have only recently been studied in the literature and are few. This situation is important to fill an important gap in the literature and making an analysis on the examples of developing countries, which we think is important in the discussion, and contributing to the literature (Ferreira et al., 2021).

In general, it is understood that the effects of inflation, globalization and economic growth on income inequality are examined in the studies in the literature understood (Thorbecke 2016, Walraevens 2020, Aghion vd, 1999, Thorbecke ve Charumilind 2002, Voitchovsky 2011, Neves ve Silva 2014, Gründler ve Scheuermeyer 2018, Persson ve Tabellini'nin 1994, Keefer ve Knack 2002, Galor ve Moav 2004). That human development is also high in high-income countries shows that there is a bidirectional causality relationship between human development and income. However, although per capita income and real GDP growth are the basic tools that human development needs, they are not sufficient.

In the literature, there are many studies emphasizing the effects of income inequality on economic growth, education and health. We can classify these studies into three major groups as positive effects of income inequality on economic growth, negative effects of income inequality and effects of income inequality on human development.

Although studies in the literature emphasize that income inequality has a positive effect on growth, (Thorbecke 2016, Walraevens 2020, Aghion vd, 1999, Thorbecke ve Charumilind 2002, Voitchovsky 2011) other studies have questioned this situation and stated that income inequality has a negative effect on growth (Neves ve Silva 2014, Gründler ve Scheuermeyer 2018, Persson ve Tabellini'nin 1994, Keefer ve Knack 2002, Galor ve Moav 2004).

In the studies on the positive effect of income inequality on growth, it is emphasized that the increase in wealth will definitely benefit the poor, inequality will encourage competition, and this competition is necessary for innovation (Thorbecke, 2016, Walraevens 2020). The assumptions that the poor cannot save without consumption flattening and that savings are concentrated in rich households confirm the assumption that the rich have a greater marginal propensity to save than the poor (Thorbecke ve Charumilind 2002). Based on these assumptions, the reallocation of resources towards the rich will lead to increased savings, which in this case will have a positive impact on growth by increasing investments (Voitchovsky 2011; Aghion et. 1999).

In the studies on the negative impact of income inequality on growth, it is seen that classification is made in terms of increase in fertility rates, deficient regulations in the credit market, government expenditures and taxation, demand structure and political instability (Ferreira et al., 2021).

Neves and Silva in their study in 2014 emphasized that the problems experienced in accessing credits would lead to insufficient investments in human capital, and in this case, it would have a negative impact on growth.

Low-income families will spend less on the education of their children because of the high fertility rate, while families with high income will spend more on their children because of the low fertility rate. Some state that this situation will have a negative impact on human capital and therefore on growth (Voitchovsky, 2011, Galor ve Zeira, 1983, Gründler ve Scheuermeyer, 2018).

The final classification for the negative impact on income inequality and economic growth is political instability. It is evaluated that income inequality will cause social unrest in

the society, because of this, violence will increase and in this case, it will affect the political decisions negatively and reflect negatively on investments and economic growth (Alesina ve Perotti 1996, Keefer ve Knack 2002).

The influence of income disparity on human development may be understood by examining the impact of inequality on education and health. There is research in the literature on the good and bad impacts of economic disparity on schooling. The influence of income disparity on education expenditures and school enrolment rates was investigated in this research. The effect of economic disparity in education is described in the research as having positive and negative effects on tax income, with those with high income sending their children to private schools and those with low income sending their children to public schools (Gutierrez ve Tanaka 2009, Alesine ve Rodrik 1994, Perotti 1996).

Much research has shown that the human development index has a favorable influence on economic growth. Human capital development has been shown to benefit both developed and developing nations in the long term (Koçak ve Uçan, 2018). Findings related to the results of other studies in the literature are shared in the table below.

**Table 1.** Table of literature

Writers	Methodology	Dependent Variable	Time Range	Countries	Findings
Mbaku, (1997)	Least squares Regression	GINI	1991 - 1992	58 Countries	This study has shown that the problem may be that GNP is an incomplete measure of development
Mo, (2000)	Two-stages least square method	growth rate of GDP	1970 - 1985	Include all countries with data on Gini coefficient	GINI has negative effect on the growth rate.
Alvan, (2009)	Least squares Regression	GINI	1999 and 2002	90 Countries	GINI and HDI are negatively correlated. There is bidirectional causality. Income distribution is fairer with a high HDI, and HDI increases as income distribution become more equal.
Kappel, (2010)	Panel data regressions	GINI	1960 - 2006	78 Countries	In study emphasize disparity and penury are reduced through more developed stock markets.
Kumar De and Pal (2011)	Least squares Regression	GDP	1970 - 2007	46 Countries	The growth of human development index do not have significant impact on the growth of GDP
Malinen, (2012)	Panel DOLS	real GDP per capita	1963 - 1999	38 Countries	This long-run growth elasticity of GINI is negative in middle and high income countries.
Soukiazis and Antunes (2012)	GMM	GDP	1980-2004	14 EU countries	Regression analysis demonstrates that the relationship between human capital and commerce promotes growth.
Hamid and Amin (2013)	GMM	HDI	1992-2010	Different Income Group 24 countries	A important and plus correlation was found between trade and HDI.

Hysa (2014)	OLS Regression	GINI	1993 - 2008	151 Countries	The GINI and HDI have a statistically significant inverse connection.
Wha Lee, Lee, (2018)	OLS Regression	GINI	1980 - 2015	146 Countries	Ensuring equality at education level matters in reducing income inequality.
Rodionov et al. (2018)	Fleasible generalized least squares (FGLS)	Real GDP per person employed	2000 - 2014	68 Russian Regions	The Gini index and the HDI have a favorable association. The link between HDI and real GDP per person is favorable.
Sakodie and Adams (2020)	OLS Regression	GINI	1990 - 2017	Sub-Saharan Africa	In this study, High GINI is found to reduce HDI.

## Method

### Data

In the analysis of this study, which examines the link between human development, economic growth and income inequality, annual data for 17 developing countries\* covering the period 1995-2019 are used. Countries and periods were selected based on data availability. The Human Development Index (HDI) was chosen as the dependent variable because this data more effectively shows human development in countries. The Human Development Index data used, United Nations Development Programme, income inequality data, Standardized World Income Inequality Database and all other data are obtained from the World Bank's database. Table 2 contains descriptive information about the data set used in the analysis below.

\* Albania, Argentina, Brazil, Bulgaria, China, Georgia, Malaysia, Mexico, North Macedonia, Paraguay, Peru, Romania, Russia, Serbia, South Africa, Thailand and Turkey.

**Table 2.** Dataset - Definition and Sources

Variable	Definition	Sources
HDI	The Human Development Index	UNDP- <a href="https://hdr.undp.org/data-center">https://hdr.undp.org/data-center</a>
Gini	The Gini index	SWIID (9.2)
GDPp	GDP per capita (2017)	WB- WDI
INF	The consumer price index	WB- WDI
Unem	Unemployment, total (% of total labor force)	WB- WDI
Trade	Trade (total)	WB- WDI

### Methodology

Vector autoregression models used in econometric analysis have emerged as an alternative method to multivariate and simultaneous equation models (Sims 1980). In these models, all variables are considered both dynamically and statically as intrinsic and interdependent. Panel VAR is similar to large-scale VAR models that allow for dynamic and static interdependencies. However, cross-sectional heterogeneity differs because error terms impose a structure on the covariance matrix (Canova et al. 2013). An important contribution of the Panel Var model is that it combines allowing for unobserved individual heterogeneity panel data approach and the traditional VAR approach (Love and Zicchino, 2006; Abrigo and Love, 2016).

Moreover, this method allows for multiple types of simultaneous and delayed movements and time variations in the correlation structure of cyclic fluctuations between variables and countries. (Canova et al. 2007). In short, it has certain advantages such as providing accurate and consistent predictions, avoiding problems arising from potential endogeneity problems, taking into account interactions between variables, and responding to exogenous shocks (Teng et al. 2021). Love and Zicchino

(2006) developed the first PVAR model, which was further refined by Abrigo and Inessa Love (2016).

The aim of the study is to investigate the dynamics of human development in the selected 17 developing country groups with the Panel Var method. Human development, defined by HDI, has been defined as a function of economic growth, income inequality, trade, inflation, and unemployment.

$$HDI = f[Gini, GDPp, Inf, Unem, Trade]$$

The basic panel model used for the analysis of this study is as follows:

$$HDI_{it} = \gamma_0 + \gamma_1 Gini_{it} + \gamma_2 GDPp_{it} + \gamma_3 Inf_{it} + \gamma_4 Unem_{it} + \gamma_5 Trade_{it} + \mu_{it} \quad (1)$$

Equation 1 denotes *i* country group (17 countries) and *t* time period (1995-2019). Here, the constant term is symbolized, income inequality, economic growth, inflation and unemployment, and represents the coefficients of trade. Finally,  $\mu$  represents the error term.

### Empirical results

Before beginning the econometric analysis, it is required to analyze the variables' unit root stationarity. In Table 3, the results of the Second-Generation unit root test, which was developed by Pesaran (2007) and which predicts unit roots in heterogeneous panels and is frequently used in panel data analysis, are also included.

**Table 3.** CIPS Unit root test results

Variables	First dif.
HDI	-4.152 ***
GDPp	-3.552***
INF	-2.956***
Unem	-2.180**
Trade	-4.609***
Gini	-2.316**
Note: *** 1%, ** 5% indicate Significance levels. Critical values: -2,32 (%1) ve -2,15 (%5), -2,07 (%10).	

This result shows that the variables at the level contain a unit root. It has been determined that all series are stationary at the first difference at \*\*\* 1% and \*\* 5% levels. CIPS Test statistics were chosen as fixed. Accordingly, the results obtained from the unit root test reveal homogeneous results within the scope of the first difference values of all variables. In the first differences of the variables, the null hypothesis that the series contains a unit root can be rejected at the 1% significance level. Accordingly, when the first difference of the series is taken, it is concluded that all variables are stationary. After determining the stationarity in all variables, the second stage of the application can be started.

Table 4 will enable us to determine which delay is more appropriate for the Panel Var analysis, that is, the optimum delay. The latency with the smallest MBIC, MAIC, and MQIC values indicates the optimal latency.

**Table 4.** PVAR Lag Order Selection

Lag	C	J	J pvalue	MBIC	MAIC	MQIC
1	.999951	1.539.494	.0024588	-4.755.767	-6.205.059	-2.268.232
2	.9999371	1.050.432	.0067167	-3.146.409	-3.895.685	-1.488.053
3	.9993785	4.057.782	.2755655	-1.692.642	-3.142.218	-8.634.638



Before starting the panel Var analysis, the optimal delay length was determined and it was shown that the 1st delay was the most appropriate delay. Table 5 presents the results of the Var analysis. Here, the variables on the vertical axis represent the descriptive variables, while those on the horizontal axis represent the dependent variables.

**Table 5.** Panel VAR Results

	HDI	GDPP	INF	Unem	Trade	Gımi
L. HDI	0.245*** (0.000)	0.009 (0.538)	0.2241** (0.024)	-0.010 (0.770)	0.0235 (0.197)	0.0013 (0.225)
L. GDPP	0.091*** (0.000)	1.012*** (0.000)	-0.8754*** (0.000)	-0.3662*** (0.000)	-0.076*** (0.000)	-0.0109*** (0.000)
L. INF	-0.029*** (0.000)	0.0009 (0.573)	0.548*** (0.000)	-0.028*** (0.008)	-0.0256*** (0.000)	-0.002*** (0.000)
L. Unem	-0.058*** (0.000)	0.0374*** (0.000)	-0.179*** (0.006)	0.676*** (0.000)	-0.030*** (0.000)	0.0008 (0.182)
L. Trade	0.0075 (0.662)	-0.0143 (0.154)	0.0245 (0.898)	.146 (0.106)	.9261*** (0.000)	-0.015*** (0.000)
L.Gımi	-0.440*** (0.000)	0.129*** (0.007)	-1.237* (0.091)	-1.125*** (0.000)	0.1096 (0.338)	0.945*** (0.000)

\*, \*\* ve \*\*\* sırasıyla % 10, % 5 ve % 1 istatistiksel anlamlılık düzeyini ifade etmektedir.

The Panel Var results for 17 selected developing countries to appear to be relevant and meaningful for detecting the effects of selected key variables on human development. Here, it is seen that human development, economic growth and the decrease in income inequality increase human development. On the other hand, the increase in inflation and unemployment negatively affects human development in accordance with the theory. These results support the studies of, Kumar De (2011), Sakodie and Adams (2020), Mo (2000) and Hysa (2014). Here,

we can say that the increase in human development is more positive, although a balanced distribution of wealth has not been achieved in income inequality as the cost of having high levels of economic growth, especially in developing countries where liberal policies dominate after the 1980. Two important results of the study; The decrease in income inequality has a positive effect on human development and the increase in economic growth has a positive effect on human development. Table 6 shows the results of the Granger causality test.

**Table 6.** Granger Causality Results

	HDI	GDPP	INF	Unem	Trade	Gini
HDI		0.379 (0.538)	5.061** (0.024)	0.086 (0.770)	1.668 (0.197)	1.475 (0.225)
GDPP	38.001*** (0.000)		22.040 (0.000)	31.060 (0.000)	14.887 (0.000)	81.417*** (0.000)
INF	56.960*** (0.000)	0.318 (0.573)		7.093*** (0.008)	46.807 (0.000)	44.753*** (0.000)
Unem	48.756*** (0.000)	57.270*** (0.000)	7.694*** (0.006)		14.171*** (0.000)	1.778 (0.182)
Trade	0.191 (0.662)	2.030 (0.154)	0.016 (0.898)	2.609 (0.106)		51.146*** (0.000)
Gini	22.159*** (0.000)	7.726*** (0.007)	34.784*** (0.000)	12.813*** (0.000)	0.917*** (0.338)	
***, ** and * denote 1%, 5% and 10% statistical significance levels.						

The causality results in Table 6 are summarized with the graphic representation below. Accordingly, income inequality, economic growth and unemployment are one-way causes of human development. On the other hand, there is bidirectional causality between inflation and human development. A causal relationship between trade and human development could

not be determined. These results are contrary to Hamid and Amin (2013) and Soukiazis and Antunes (2012) in literature.

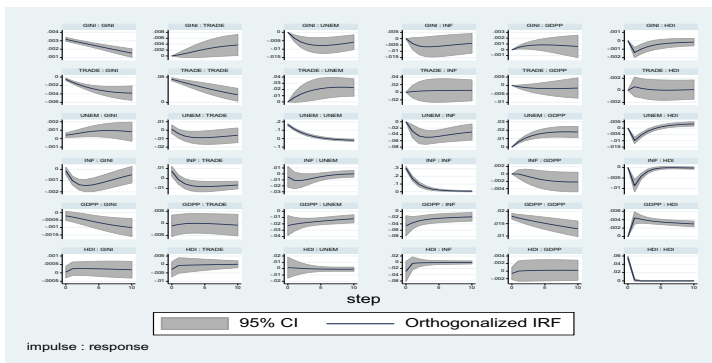
Variance decomposition analysis is performed to determine the origin of the vector variance changes in the Panel Var model. It shows the percentage of variation that accumulates over time and is explained by the shock in one variable to another variable. Variance decompositions show the magnitude of the total effect. This decomposition reports the cumulative effect over 10 years (Love and Zicchino, 2006). The results of variance decomposition analysis are summarized in the Table 7. If Table is analyzed, it shows that human development has affected itself in a decreasing manner over a 10-year period. This shows that human development is also affected by shocks from other variables in the future. At the end of 10 years, the highest unemployment rate affects human development with an average of 4.6%.

**Table 7.** The Effects of Shocks on Human Development - Variance Decomposition

HDI (Response)	Impulse					
Forecast Horizon (Years)	HDI	GDPP	INF	Unem	Trade	Gini
0	0	0	0	0	0	
1	1	0	0	0	0	0
2	.9406885	.0059676	.0233898	.0292565	.0001039	.0005937
3	.9220925	.0108861	.0282323	.0377794	.0001352	.0008746
4	.9155592	.0151022	.0289422	.0392426	.0001424	.0010115
5	.9118174	.0188822	.0289461	.0391272	.0001434	.0010835
6	.9083046	.0223406	.0288459	.0392422	.0001431	.0011235
7	.9043801	.0255332	.0287221	.0400757	.0001426	.0011462
8	.8999833	.0284928	.0285832	.0416395	.0001421	.0011591
9	.8952236	.0312417	.0284346	.0437792	.000142	.0011661
10	.8902445	.033798	.0282832	.0463617	.0001431	.0011695

Impulse-response functions (IRF) show the response of one variable to a shock in another variable while keeping all shocks in a system equal to zero. Standard errors must be considered since the matrix of impulse-response functions is built from the predicted VAR coefficients (Love and Zicchino, 2006). The graphs in the figure show the response of the variables to shocks. These results reflect the situation in which the variables affect each other and return to their original state in the medium term. Accordingly, it is seen that a shock in human development initially reduces income inequality, unemployment and inflation, and this decline stabilizes over time in the long run. Otherwise, a shock in human development boosts economic growth at first, and then this positive effect balances out in the long run.

**Figure 2: Impulse-Response Graph.**



## Conclusion and Policy Recommendations

In this study, the relationship between human development, economic growth and income distribution for 17 developing countries in the 1995-2019 data period was analyzed using the Panel Var method. In order to examine human development in this country group, economic growth and income inequality data as well as basic macroeconomic (unemployment, inflation

and trade) variables are included in the model as independent variables.

The empirical analyzes made in the study reveal that there is an important relationship between human development, economic growth and income distribution. When the results of the analysis are evaluated, economic growth and improving income distribution are two important variables for increasing human development. Results in accordance with the literature and theory were obtained. In addition, inflation and unemployment increase are two important variables that have a negative effect on human development. Macroeconomic deterioration has negative implications for human development. The causality results support the results of the study and show the importance of inflation, unemployment, economic growth and income distribution for human development. In addition, there is bidirectional causality between human development and inflation. Here we can say that human development may have an inflation cost.

As policy recommendations, countries need to develop policies that directly address inequality, which is an important component of human development, and enable them to take more concrete steps to solve this problem. The most important issue here is the increase in economic growth and the fair distribution of the welfare that this growth creates among people. Economic growth alone is insufficient for human development to occur in a system where resources are not distributed effectively. Increases in inflation and unemployment are two important problems in front of increasing the welfare of society. Especially in developing countries, high inflation and excessive increase in the unemployment rate during crisis periods constitute important obstacles to the development of countries. In addition, unemployment and inflation are also important reasons for the increase in income inequality. Therefore, countries should develop policies to maintain economic stability and ensure its equal distribution in society. As a result, in this study, in which the factors affecting human development in developing countries are investigated, the importance of ensuring economic stability and justice in income distribution for human development is emphasized.

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# Ideal Point Estimation of Turkish MPs on International Agreements' Approval Voting in the 26<sup>th</sup> Legislative Period

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## Abstract

Turkish Grand National Assembly, which constituted the Republic of Türkiye, has contributed to democracy since 1923. In this study, international agreements, which the Grand Assembly approved during the 26<sup>th</sup> legislative period, are discussed with the analysis of ideal points. The most important feature of this period, although in 2016 there was a military coup attempt against the elected government, it is worth of note that the parliament continued its functionality. In the period mentioned, the four parties have taken part in the parliament, including the ruling AK Party and three opposition parties. While the majority of the governing party's MPs in the parliament have demonstrated a moderate and more liberal attitude, the main opposition party and the MHP seem to be moderate but more conservative. At the same time, the HDP creates a very sectarian and radical opposition in voting. In this period, the power and discipline of the ruling party should not be disregarded.

**Keywords:** ideal point; political parties; parliament; party behavior; conservatism; Türkiye

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## 1. Introduction

Undoubtedly, the most critical task in the democratization of the countries falls to the parliaments, which are elected by plebiscite. The parties, expressing themselves before the public with various ideological and pragmatic programs, are represented by the number of parliament members (MPs). In the parliament, single or multiple parties constituting the majority (coalition) governs the country and make the necessary legal arrangements. The democratization process of each country is different. Considering that the constituent assembly founded the Republic of Türkiye, it is evident that the Türkiye Grand National Assembly (TGNA) is the most important political institution in the country.

As explicitly stated in the 7<sup>th</sup> article of the Turkish constitution, TGNA has exclusive legislative power authority, which is not transferable. The date of 23 April 1920 has a distinctive meaning in terms of legal, political, and historical sense as being the time when the TGNA gained the identity of a legislative body. TGNA once gathered legislative, executive, and judicial powers in one hand through the 1921 constitution (Teşkilatı Esasiye). The 1924 constitution set up the institutions of the modern Republic of Türkiye and experienced a radical transformation, such as the transition to the multiparty era. As required by the system of separation of powers adopted in the constitution of 1961 and 1982, the TGNA had the exclusive authority as the legislative body (Gözler, 2016a; Atar, 2017; İba, 2018; Özbudun, 2017; Tanör & Yüzbaşıoğlu, 1982; and Hasdemir, 2014).

This study involves approvals of international agreements and associated harmonization laws, excluding the law proposals processed in the TGNA between November 2015 and June 2018<sup>4</sup>. This legislative period is profoundly important for the

4 It comprises various protocols that are required to be voted in the assembly and law proposals and draft voted within the scope of EU harmonisation, as well as

Republic of Türkiye. Since there was a military coup attempt in this statutory period to overthrow the elected government in the country on July 15, 2016, and although the state of emergency had been declared, the parliament continued to maintain its existence. Also, the Parliamentary regime was transformed into a presidential system during this parliamentary term. From this point of view, the parliament's behavior is important in the subject period.

TGNA has put 488 law proposals in its plan in this period, including all approved or rejected law proposals and the approval and harmonization of international agreements. Out of 488 decisions brought to the list of the assembly, 388 of them are associated with international treaties. As the data source, all the decisions provided on the website by the TGNA in the 26<sup>th</sup> legislative year were compiled one by one.

The duties and powers of the TGNA are regulated in Art. 87 of the constitution. Lawmaking is just one of these powers. Indeed, apart from the legislation, to amend and annul the laws, to negotiate law proposals for budget and final account and accept them, to issue money and to decide on the declaration of war, to agree to the approval of international agreements, to decide on general and special amnesty through the decision of three-fifths of the total number of MPs of the TGNA, and to use the powers and carry out the duties provided in other articles of the constitution are put into force and duty area of TGNA (Gözler, 2016a; Atar, 2017; İba, 2018; Özbudun, 2017; and Tanör & Yüzbaşıoğlu, 1982).

Concerning the content of our study, it is necessary to discuss also the legal regime concerning the legislation and adoption of the laws in the TGNA. The suggestions for the law appear in the form of a law proposal, and each MP is authorized to propose a law. The TGNA convenes with at least one-third of

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bilateral agreements such as security, education, trade etc.

the total MPs for its entire works, including elections to be held. TGNA shall decide with the absolute majority of the participants unless there is a contrary provision in the constitution; however, the quorum cannot be less than a quarter plus one of the total MPs in any way. The laws adopted by the TGNA must be published by the President within fifteen days in the Official Gazette so that they may come into force (Cons. art. 89). The President remits the laws which are found partially or fully inappropriate to publish back to the TGNA for the purpose of discussion once more, together with their justifications. If the TGNA delivers a verbatim approval for the returned law with the absolute majority of the total number of MPs, the law shall be published by the President; If the assembly makes a new amendment to the remitted bill, the President may return the amended law to the assembly (Atar, 2017; İba, 2018; Özbudun, 2017; and Tanör & Yüzbaşıoğlu, 1982).

TGNA is composed of 550 MPs in the period of this study, and all of the MPs are elected by general votes, in other words, by general elections. With the regulations in the latest constitution, to be elected as an MP, the condition concerning the age is determined as completing eighteen years old, in a radical way when comparative law is considered. Each Turkish individual who completes the age of eighteen can be elected as MP (CON. A.76). The cases which prevent being elected as MP were also determined in Article 76 of the constitution. (Gözler, 2016a; Atar, 2017; İba, 2018; Tanör & Yüzbaşıoğlu, 1982; and Erkmen, 2018).

The rule applies to MPs of the TGNA is not mandatory deputation but representative deputation. In other words, MPs represent the whole nation, not the region or the ones who elected them (Erkmen, 2018; İba, 2018; Özbudun, 2017; and Tanör & Yüzbaşıoğlu 1982).

The parliament membership is a representative power directly elected by the nation along with the presidential election (Erkmen,

2018). Legislative inviolability is a universal legal institution in all modern legal systems that increases MPs' efficiency in legislative activities, secures their independence against other organs, and receives acceptance in the Turkish constitution as well (Gözler, 2016b and Balo, 2012). Indeed, according to article 83 of the constitution, the MPs cannot be held responsible for their votes and words which they put forward in their activities in TGNA and to repeat and express them outside the assembly unless the assembly takes a contrary decision upon the proposal of the presidency tribunal. Another institution that complements the parliamentary inviolability of MPs is legislative non-liability (Balo, 2012). Accordingly, an MP alleged to have committed a crime before or after the election cannot be held, interrogated, arrested, or prosecuted unless it is the decision of the assembly. The cases in article 14 of the constitution are exception cases of non-liability provided that there is a red-handed situation that requires severe punishment, and the investigation was commenced before the election (Atar, 2017; Özbudun, 2017; Tanör & Yüzbaşıoğlu 1982; and Gözler 2016b).

Uninterrupted fulfillment of the membership during the term of office is the rule. In exceptional cases, membership may be dropped. A decision by the TGNA is required to drop the membership, even in the case of resignation. The membership may also be dropped in case of a definitive judgment or restriction of the member. For this purpose, no further decision is required to be taken by the TGNA. It is necessary and sufficient to notify the TGNA of the final court decision. Another possibility the MP might encounter is to perform a duty or service incompatible with his/her membership capacity. Accordingly, if the MP insists on maintaining a task or service incompatible with the parliament, his/her membership can be dropped by the decision of the TGNA. For this purpose, it is necessary to determine the conditions of losing by the

authorized commission. A decision should be made on the report containing this determination through a secret ballot. Another circumstance that causes the dropping of the MP will come up for those MPs who do not participate in the parliamentary work without excuse or permission for a total of five days in a month. Accordingly, the circumstance should be determined by the parliamentary presidency of the TGNA, and the TGNA should decide it by the absolute majority of the total number of MPs. In cases where the TGNA decides the loss of the MP as a sanction, the related MP or another MP may apply to the constitutional court for cancellation of the decision within seven days starting from the date of the decision of the TGNA, with the claim of the contradiction of the decision to the constitution, the law or to the house regulations. The decision of the constitutional court is final (Atar, 2017; İba, 2018; Özbudun, 2017; and Tanör & Yüzbaşıoğlu, 1982).

Based on the vote used by MPs of TGNA, we intend to determine their legislative and political attitudes utilizing *Dynamic Item Response Theory* with *Bayesian Markov Chain Monte Carlo* (MCMC) algorithms. To this end, an *ideal point estimation* will be carried out. Ideal point estimation is based on demonstrating a voting attitude of each MP on the spatial location. In other words, MPs are located on a string from left to right in an attitudinal space. Each MP's vote is a (*latent*) variable, which presents their ideal point. The unobservable attitudes assumed to lie under the observed attitudes become observable by the MP's vote when making the decision.

Using the ideal point estimation has been started to measure political attitudes in the fields of law and political science (Bailey & Rivers, 1997; Clinton & Mierowitz, 2001; Clinton et al., 2004; Cox & Poole, 2002; Heckman & Snyder, 1997; Jenkins, 1999; Londregan, 2000; McCarty et al., 2001; Poole, 2000; Poole et al., 1997; Martin et al., 2002; and Clinton, 2004).

In the pioneering works carried out in the United States, judicial and political attitudes of the judges have been demonstrated on two axes, defined as liberal and conservative, based on the votes used by Supreme Court judges (Segal et al., 1989; Martin et al., 2002; Martin et al., 2005; Helmke et al., 2006; Martin et al., 2007; and Epstein et al., 2007).

Following the introduction, the literature containing academic studies on this subject has been cited in the study. Then, the method used in the research and the required empirical explanations associated with this method have been mentioned. The study was completed with the remarks in the conclusion section.

## **2. Literature**

Han (2007) investigates the performance of Bayesian spatial voting models of roll-call sessions in the fifth term of the European Parliament. The Bayesian method allows for measuring the estimation uncertainty, which occurs when there are too much data loss and a small number of random roll-calls. Therefore, this method enables us to make more reliable inferences about the voting behaviors of MPs of the EU parliament.

In a study made by Papavero and Zucchini (2017) on the behavior of women parliamentarians, it was concluded that women bullied group decisions of the party through inter-party cooperation. In the study, (1) on average, while men demonstrate a higher party cohesion, women exhibit a lower cohesion as a group in different parties; (2) the effect of gender over the party cohesion does not depend on personal characteristics, magnitude, and organization of parties in the parliament, and on the shares of women in the parliamentary groups; (3) different behaviors of woman MPs may depend on different nomination models in the parties.



It is worth noting that there are two different views in two different democracies concerning voting in the parliament. For instance, in a study that explores whether or not the parties influence the voting in the USA covering the period of 1871-1998 both in the senate and house of representatives, Snyder and Groseclose (2000) express that this effect is evident. On the other hand, a study involving Brazil, which has political and economic similarities with Türkiye, Zucco, and Lauderdale (2011), suggested that the chairman influences voting.

Sağdıç et al. (2013) analyzed the effect of the voting power of the ruling party in TGNA by employing the Normalised Banhalf Strength Index. They conclude that political life in Türkiye is unstable and fragile. This study aims to express the conceptual and theoretical basis of voting power and explore power distribution between the ruling party, coalition, and main opposition parties in TGNA between 1987 and 201. The voting power of these decision-maker actors is measured according to daily MP mobility and the qualified majority principle. The table and graphs demonstrate to what degree the political life in Türkiye is unstable and fragile.

Doğanay (2007) points out in his study that alternative discursive strategies which might extend the scope of the meanings attributed to democracy have been exempted from parliamentary works; moreover, reforms have been usually discussed as conjectural preferences between the bipolar issues such as secularism and religion, westernization and national interests, demilitarisation and national security, rather than being solutions to social problems.

Parliamentary inviolability has been a longstanding topic of the parliament's agenda. In order to lift these inviolabilities, there have been a series of academic writings and political initiatives. These armors have been lifted significantly in today's parliament. Özbudun (2005) has a study involving these

inviolabilities. For him, constitutional amendments that restrict inviolability were rejected to fight against corruption. The scope of parliamentary inviolability has become an emotional issue of legal discussion in Türkiye recently. There was a robust public mood for restricting, and even lifting entirely, the inviolability in the trials concerning corruption. This issue is an essential factor in the fight against corruption. Yet, two constitutional amendment proposals intended to restrict inviolability failed to receive adequate parliamentary support.

### 3. Model

MPs contribute to parliamentary works through the votes they use for legislation negotiations. There are three types of voting procedures in pursuance of Art. 139 of TGNA Internal Regulations. These are a show of hand, open, and secret voting. In voting by show of hand, MPs may vote by raising their hands and standing up in case of hesitation. In the open voting, the MPs use their votes by placing in the box their ballot paper containing their name and surname and electoral district, by electronic balloting, or by standing out and shouting one of the words of acceptance, abstention, or rejection. In secret voting, they place their ballot into the circles on the stand on which there is no sign. As a rule, voting is performed by a show of hand. Yet, the exemptions might have been indicated in the constitution, in legislation, or House Regulation of TGNA.

As the data source, they are obtained from the assembly's database, where all the international agreements and harmonization laws associated with them are stored and that TGNA has ratified in the given period. The data are tabulated, in compliance with the statistical method, by attributing the positive votes (1) to those who oppose (0). Those who did not participate in the decisions are marked as NA (Not Available). The data

obtained are transformed into Roll-call data, widely used data forms for parliamentary implementations (Poole et al., 1997).

The method used in the study, Item Response Theory (IRT), is used in the analysis, which is applied through the Bayesian Markov Chain Monte Carlo MCMC algorithm. (Armstrong et al., 2014; Jackman, 2009). The item Response model used in this study is the Quadratic-Normal method (QN) developed by Poole (2001, 2005). As the data form, the roll-call data type is used, developed by Poole and Rosenthal (1997).

Based on Jackman (2009) and Armstrong et al. (2014), standard definitions associated with the model employed can be expressed as follows. As the *roll-call* data in question  $j \in \{1, \dots, m\}$ , let the number of present and participant judges be  $i \in \{1, \dots, n\}$ , these judges have the choices as ‘cancel’ ( $\zeta_j$ ) and ‘rejection’ ( $\psi_j$ ). Let the location be defined as  $\mathbb{R}^d$ , and  $d$  denotes policy area or space,  $j^{\text{th}}$  ‘cancel’ statement of judge  $i$  in roll-call voting is ( $y_{ij}=1$ ); if not, ( $y_{ij}=0$ ). The quadratic utility function of judges is defined as;

$$U_i(\zeta_j) = -\|x_i - \zeta_j\|^2 + \eta_{ij} \text{ and } U_i(\psi_j) = -\|x_i - \psi_j\|^2 + v_{ij}$$

In the equation, while  $x_i \in \mathbb{R}^d$  denotes the *ideal point* of judge  $i$ , and  $\eta_{ij}$  and  $v_{ij}$  error or stochastic (probability) elements of the utility,  $\|\cdot\|$  represents Euclidian rule.

Implementation type of utility maximization; if  $U_i(\zeta_j) > U_i(\psi_j)$ , then  $y_{ij}=1$ , otherwise,  $y_{ij}=0$ . Error term used in this model has a normal distribution as  $\eta_{ij}$  and  $v_{ij}$   $E(\eta_{ij})=E(v_{ij})$ , and error terms have an independent distribution between *roll-call* and judges, being  $\text{var}(\eta_{ij} - v_{ij}) = \sigma_j^2$ . Under these assumptions, the equation is formed as follows.

$$\pi_{ij} = \Pr(y_{ij}=1) = \Pr U_i(\zeta_j) > U_i(\psi_j) = \Pr v_{ij} - \eta_{ij} < \|x_i - \psi_j\|^2 - \|x_i - \zeta_j\|^2 \\ = \Pr v_{ij} - \eta_{ij} < 2(\zeta_j - \psi_j)x_i + \psi_j\psi_j - \zeta_j\zeta_j = (\beta_j x_i - \alpha_j)$$

Where  $\beta_j = 2(\zeta_j - \psi_j)/\sigma_j$ ,  $\alpha_j = (\zeta_j\zeta_j - \psi_j\psi_j)/\sigma_j$  and  $(\cdot)$  denotes the function of standard normal distribution. What is defined above is compatible with the probit model, and the  $x_i$  defined

in the model represents the unobserved ideal point of the judge. Similarly, vector  $\beta_j$  indicated in the equation represents the direction of the  $j^{\text{th}}$  proposal in the policy plan, which is outlined in proportion to the 'no' position. This unidimensional ratio with the definition,  $\tau_j = \alpha_j / \beta_j = (\zeta_j - \psi_j) / 2(\zeta_j - \psi_j) = (\zeta_j + \psi_j) / 2$ , represents the limit value between the proposals. Judges are in the positions of independent, indifferent, and negligent in their choices between two proposals.

R packaged software is the most comprehensive Bayesian analysis and estimations program. In this study, these estimations have been made employing sub-programs MCMCpack (Martin et al., 2011) and pscl (Jackman, 2012) running under the R package program. The statistics of roll-call data analysis are detailed by a comprehensive study by Clinton et al. (2004).

#### 4. Empirical Assessments

As seen in the table below, acceptance is collected under the heading (1) and rejection under (0) in the roll-call voting for each law or proposal. However, we sometimes discovered the voting types: abstention or multiple votes. It has been identified that the rate of such voting is very few and does not affect the result. Hence, the MPs who participated in two or fewer votes during the entire period were excluded from the assessment.

The issues of how political parties discipline the assembly in parliamentary works and the motives for the laws to get or not get through the parliament are discussed. Below are the voting rates of participating MPs before proceeding to the analysis of the voting of these laws.

##### 4.1. Definitions and Places of Parties in TGNA

There are four influential parties in the given legislative period. These parties are sequenced according to the representation rate

in parliament instead of right-left ideological discrimination. Accordingly, in the 26<sup>th</sup> legislative period, which is the subject of the study, there are 316 AKP, 134 CHP, 59 HDP, and 41 MHP MPs in the parliament. These parties were coded as 1, 2, 3, and 4, respectively, and included in the analysis. The ideological attitudes of the parties were left in secondary importance. It is known that the AKP is conservative, the CHP is a social democrat, the HDP is instead a left-leaning party with intense ethnic context, and the MHP pursues a policy on the nationalist line. Coding for the MPs is made by the initials of the MP's names, the party's initials, and the province's traffic code.<sup>5</sup>

Concerning the assumption that there are 550 MPs in the twenty-sixth legislative period, if the following Table 1 is examined, how many MPs have voted for the agreements is seen. In the first row of the table, the number of MPs is given. The ruling party represents 57% of the parliament alone. Interestingly, AKP has participated in the voting above its representation rate, while for other parties, this rate is below the representation rate. For HDP, this rate is reduced by as much as one-third.

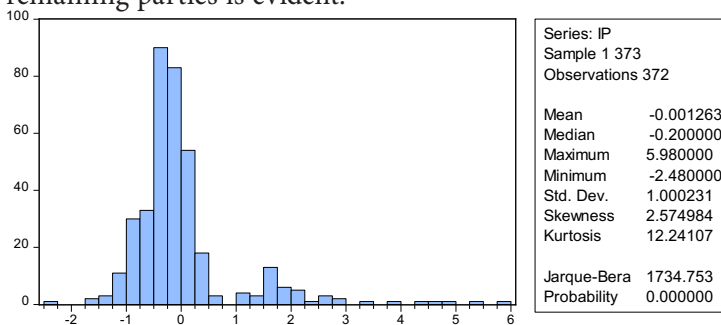
Information on the ratification of the regulations in the parliament associated with the international agreements is given in Table 1 below. When the votes were evaluated together, an average of 372 MPs participated, equaling 68% of the total MPs. The distribution of the votes to the parties seems to have decreased similarly. On average, 295 persons from the AKP and 47 from the party participated in these voting. The total number of participants from the other two parties was 30 MPs. Again, approximately 80% of the MPs who participated in the voting belonged to the ruling party. The most abstained party from the ballots seemed to be the HDP.

5 For example YA.AKP06, the first two letters denotes the name and surname of the MP, AKP denotes MP's party, and 06 denotes Ankara's traffic code.

**Table 1.** Voting Table of Parties

	AKP	%	CHP	%	HDP	%	MHP	%	Total %	
Number of MPs	316	57.4	134	24.3	59	10.7	41	7.4	550	100
Agreements	295	79.3	47	12.6	13	3.4	17	4.5	372/550	67.6

The ratification of international agreements, as well as the distribution of the results of the voting by the MPs attending the voting in the parliament, is given as follows. It is seen that the distribution is concentrated in the range (-2,1). A second accumulation point is in the range (1,3). However, it can be seen that there is a sporadic distribution to the right. As it is understood from the statistical values on the right of the graph, it shows that the ideal point distributions showing these voting results do not have a normal distribution. The difference in the distribution of voting among the ruling party and the remaining parties is evident.

**Figure 1.** The Distribution of Voting

#### 4.2. Voting Behaviour of MPs

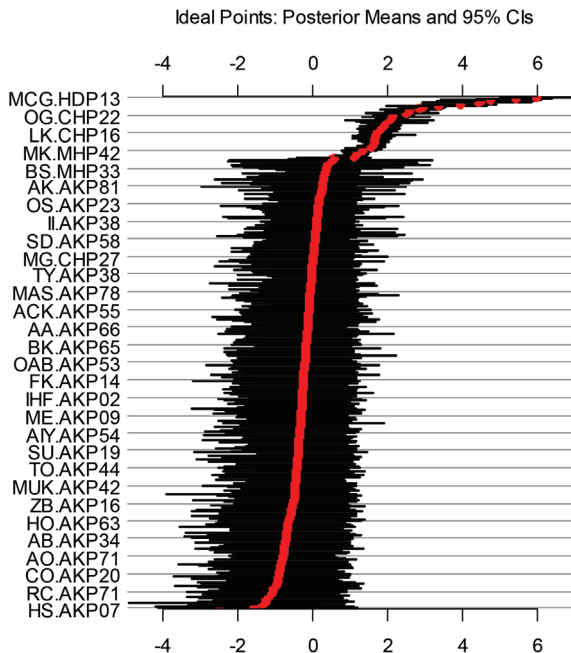
If we look at the following graph of the ideal points, the course of the voting is seen. When the left side is named as liberal, it is seen that all AKP MPs are on this side, and the main opposition party is located at the top. The voting of the

other two parties remains in the middle. In the chart below, a larger part of the vote seems to have been accumulated in the middle. Notwithstanding, it is understood that the value of ideal points has concentrated between a range of (-1,+1), only the ideal point value of an AKP MP with code HS.AKP07 is -2,48. Others are lined up in the form of much smaller absolute numbers. However, the ruling party's approval of an international agreement coming to parliament should be considered normal. The request to approve means that the MPs are more liberal. Opposition to voting is regarded as a more conservative situation. According to this result, a severe differentiation/divergence at the top of the graph attracts attention, which means that some of the MPs behave very conservatively and make serious opposition. Almost all of the deviation at the top of the graph belongs to the HDP MPs. The ideal point values of HDP MPs, excluding the two<sup>6</sup>, are in the range of 2.5<ideal points>6. No other party's MP is in this range. We can say that two Mardin MPs prefer a slightly more moderate line than others.

On the other hand, it can be said that the main opposition party, CHP, has pursued moderate opposition. The same is true for the MHP. Because it is understood from the table below that, in the process of getting the agreements through the parliament, four MPs, both from the main opposition party and MHP, have used acceptance vote generally, and their ideal point values are negative. On the other hand, the ideal point value of 46 MPs from the ruling party is above zero, that is, positive. Looking at these results, we can say that many MPs in the ruling party did not lean towards the approval of these agreements or acted together with the opposition.

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6 ED.HDP47;1.90 and MS.HDP47 1.95



**Figure 2.** Ideal Point Estimation in the voting of the International Agreements

Table 2 below gives the values of the ideal points for all the MPs in the assembly. In the table, *p* denotes the party, *pa* identity of the parliamentarian, and *ip* ideal point values. The ruling party has shown a moderate status in voting in favor of the acceptance of voting. The ideal point obsolete value of only 17 MPs from the ruling party is higher than one (> 1). The ideal point value of 24 MPs from the main opposition party (%51) is less than 1; it can be said again that this party has also pursued a moderate attitude. There is a similar situation for MHP. Yet, this cannot be said for HDP. It can be said that the HDP resisted voting in the assembly.



The most important detail in the table is that most MPs are within the range of the ideal point estimation values (-1.1). Only ideal point values of HDP MPs had ideal point values, which were approximately greater than two and less than six (6), which means that the MP of this party has demonstrated extreme resistance to the laws in the parliament. In this legislative period, it is possible to determine through further studies whether the severe reaction of the HDP is related to the content of the laws or carries a meaning of protest.

**Table 2.** Ideal Point Estimates for Voted International Agreements

p	pa	ip	p	pa	ip	p	pa	ip
1	TD.AKP01	-0,18	1	RK.AKP34	-0,32	1	CG.AKP60	-0,27
1	MSE.AKP01	-0,26	1	EKA.AKP34	-0,05	1	MB.AKP61	-0,43
1	TK.AKP01	-0,42	1	TK.AKP34	0,31	1	SC.AKP61	-0,68
1	NU.AKP01	-1,25	1	FK.AKP34	0,03	1	AG.AKP61	-0,48
1	A.B.AKP02	0,02	1	MDK.AKP34	0,04	1	ASK.AKP61	-0,04
1	IHF.AKP02	-0,29	1	MM.AKP34	-0,71	1	SS.AKP61	-0,3
1	SF.AKP02	0,1	1	MMU.AKP34	0	1	MA.AKP63	-0,3
1	VE.AKP03	0	1	NN.AKP34	-0,46	1	MAC.AKP63	-0,65
1	AO.AKP03	-0,08	1	DAS.AKP34	-0,6	1	AEFAKP63	-0,03
1	HDO.AKP03	-0,34	1	MAP.AKP34	-0,09	1	FC.AKP63	-0,31
1	CG.AKP04	-0,48	1	MBS.AKP34	-0,6	1	MKG.AKP63	-0,11
1	MNB.AKP05	0,13	1	FBS.AKP34	0,26	1	MA.AKP63.1	0,17
1	HL.AKP05	0,07	1	YS.AKP34	-0,32	1	HO.AKP63	-0,65
1	YA.AKP06	-0,04	1	HS.AKP34	-0,68	1	IHY.AKP63	-0,09
1	MA.AKP06	-0,38	1	MS.AKP34	-0,26	1	KY.AKP63	-0,04
1	AIA.AKP06	-0,2	1	HSE.AKP34	-0,39	1	MA.AKP64	-1,04
1	EA.AKP06	-0,12	1	HT.AKP34	0,12	1	AT.AKP64	-1,25
1	AB.AKP06	-0,57	1	IU.AKP34	0,03	1	BK.AKP65	-0,19
1	NC.AKP06	-0,38	1	SU.AKP34	-0,27	1	AA.AKP66	-0,14
1	LSC.AKP06	0,01	1	SY.AKP34	-0,68	1	YB.AKP66	-0,43
1	CC.AKP06	-0,16	1	MY.AKP34	-0,37	1	ES.AKP66	0,29
1	AG.AKP06	-1,13	1	HYI.AKP34	0,09	1	FC.AKP67	-0,05
1	EL.AKP06	-0,19	1	HAY.AKP34	-0,1	1	HO.AKP67	-0,64
1	AI.AKP06	-0,15	1	MZ.AKP34	-0,33	1	OU.AKP67	-0,7
1	JS.AKP06	-0,95	1	HD.AKP35	-0,51	1	CA.AKP68	-0,31
1	FS.AKP06	0,03	1	NK.AKP35	-0,39	1	IL.AKP38	0,09
1	AU.AKP06	-0,86	1	MAK.AKP35	0,09	1	MS.AKP68	-0,12

1	IA.AKP07	-0,48	1	HK.AKP35	-0,13	1	SK.AKP69	-0,2
1	SNC.AKP07	-1,07	1	KAS.AKP35	0,24	1	RK.AKP70	-0,02
1	MK.AKP07	0,3	1	IMT.AKP35	-0,78	1	RS.AKP70	0,09
1	GOE.AKP07	-0,83	1	AA.AKP36	-0,12	1	RC.AKP71	-1,09
1	HS.AKP07	-2,48	1	YSB.AKP36	-0,29	1	MD.AKP71	-0,61
1	AU.AKP07	-0,13	1	MC.AKP37	-0,1	1	AO.AKP71	-0,81
1	IK.AKP08	-0,4	1	MD.AKP37	-0,19	1	AH.AKP72	-0,44
1	ME.AKP09	-0,32	1	HK.AKP37	-0,21	1	YT.AKP74	-0,12
1	AO.AKP09	0,06	1	SD.AKP38	-0,53	1	OA.AKP75	-0,72
1	MS.AKP09	-0,4	1	ME.AKP38	-0,25	1	NA.AKP76	-0,81
1	AA.AKP10	-0,44	1	IEK.AKP38	0,05	1	FD.AKP77	-0,5
1	KB.AKP10	-1,08	1	HN.AKP38	-0,9	1	MAS.AKP78	-0,07
1	SK.AKP10	-0,54	1	MO.AKP38	-0,26	1	BU.AKP78	-0,83
1	MP.AKP10	-1,1	1	IT.AKP38	0,09	1	MHD.AKP79	-0,38
1	HE.AKP11	-1,21	1	TY.AKP38	-0,04	1	RP.AKP79	-0,92
1	EF.AKP12	-1,3	1	SM.AKP39	-0,78	1	MD.AKP80	0,28
1	CY.AKP12	-0,13	1	MA.AKP40	-0,13	1	SO.AKP80	0,13
1	VD.AKP13	-0,32	1	SC.AKP40	-0,97	1	FA.AKP81	-0,53
1	AE.AKP14	0,12	1	ZA.AKP41	-0,86	1	AK.AKP81	0,25
1	FK.AKP14	-0,26	1	SC.AKP41	-0,4	1	FO.AKP81	-0,24
1	BO.AKP15	-0,1	1	FL.AKP41	-0,24	2	IO.CHP01	1,64
1	RP.AKP15	-0,22	1	RSK.AKP41	0,12	2	ZIT.CHP01	1,64
1	EA.AKP16	-0,27	1	IS.AKP41	-0,26	2	EDT.CHP01	0,22
1	IA.AKP16	-0,82	1	CY.AKP41	-0,76	2	MT.CHP05	1,69
1	MMA.AKP16	-1,35	1	MAY.AKP41	-0,36	2	LG.CHP06	1,57
1	ZB.AKP16	-0,54	1	AA.AKP42	-0,02	2	AHH.CHP06	0,31
1	HC.AKP16	-0,49	1	ZA.AKP42	-0,74	2	BK.CHP06	0,11
1	BK.AKP16	-1,06	1	MB.AKP42	-0,61	2	SS.CHP06	-0,44
1	OM.AKP16	-0,36	1	MBA.AKP42	-0,92	2	COB.CHP07	0,38
1	MM.AKP16	0,13	1	HE.AKP42	-0,44	2	HY.CHP09	0,16
1	HS.AKP16	-0,2	1	HET.AKP42	-0,67	2	MT.CHP10	-0,25
1	CKT.AKP16	-0,45	1	MUK.AKP42	-0,47	2	YT.CHP11	0,1
1	EYG.AKP16	-0,3	1	HAO.AKP42	-0,88	2	CI.CHP16	0,37
1	AG.AKP17	-0,43	1	AS.AKP42	-0,1	2	LK.CHP16	1,72
1	BT.AKP17	-0,28	1	LSU.AKP42	-0,98	2	OS.CHP16	0,2
1	MEA.AKP18	0,17	1	OU.AKP42	-0,67	2	BO.CHP17	1,96
1	HF.AKP18	0,16	1	IG.AKP43	-0,37	2	KA.CHP20	1,72
1	LIC.AKP19	-0,35	1	VK.AKP43	-0,88	2	MB.CHP20	0,27
1	ASC.AKP19	-0,97	1	MSN.AKP43	-0,19	2	OG.CHP22	2,12
1	SU.AKP19	-0,4	1	AT.AKP43	-0,78	2	COY.CHP26	1,65
1	CO.AKP20	-0,91	1	OC.AKP44	-0,41	2	MG.CHP27	0
1	SR.AKP20	-0,13	1	TO.AKP44	-0,44	2	BYB.CHP28	1,84
1	ST.AKP20	0,34	1	MS.AKP44	-0,59	2	ST.CHP31	1,67
1	EB.AKP21	-0,01	1	BT.AKP44	-0,28	2	AA.CHP33	-0,33

1	MGE.AKP21	-0,55	1	NY.AKP44	0,04	2	HC.CHP33	2,09
1	RS.AKP22	-0,14	1	UA.AKP45	-0,48	2	EA.CHP34	1,35
1	EA.AKP23	-0,04	1	MB.AKP45	-0,38	2	SO.CHP34	1,74
1	MB.AKP23	-0,48	1	RB.AKP45	-0,28	2	AS.CHP34	2,09
1	TO.AKP23	-0,33	1	IB.AKP45	-0,25	2	BT.CHP34	0,51
1	OS.AKP23	0,15	1	SO.AKP45	0,51	2	MT.CHP34	2,55
1	SB.AKP24	-0,48	1	MIC.AKP46	-0,67	2	CA.CHP38	1,84
1	SK.AKP24	-0,7	1	MUD.AKP46	-0,6	2	VG.CHP39	0,13
1	IA.AKP25	-0,71	1	CG.AKP46	-0,17	2	TK.CHP39	2,47
1	OD.AKP25	0,57	1	VK.AKP46	-0,38	2	HA.CHP41	1,64
1	ML.AKP25	-0,32	1	IK.AKP46	-0,42	2	FKH.CHP41	-0,03
1	ZT.AKP25	-0,25	1	NR.AKP46	0,15	2	TT.CHP41	-0,08
1	ENG.AKP26	-0,44	1	MU.AKP46	-0,24	2	MHB.CHP42	0,07
1	HK.AKP26	1,12	1	CBC.AKP47	-1,58	2	VA.CHP44	0,07
1	CCC.AKP27	-0,05	1	OM.AKP47	-0,27	2	OO.CHP45	0,02
1	ME.AKP27	-0,47	1	NO.AKP48	-0,47	2	TYB.CHP45	0,37
1	AG.AKP27	0,07	1	HO.AKP48	-0,77	2	OSA.CHP48	0,07
1	ANK.AKP27	-0,26	1	MES.AKP49	-0,19	2	ND.CHP48	1,8
1	ST.AKP27	-0,1	1	MA.AKP50	0,22	2	AU.CHP48	0,47
1	AU.AKP27	-0,91	1	EG.AKP50	-1,55	2	OPG.CHP51	1,63
1	AY.AKP27	-0,18	1	MG.AKP50	-0,02	2	KZ.CHP55	-0,05
1	CO.AKP28	-0,29	1	AK.AKP51	-0,3	2	AK.CHP58	2,01
1	SO.AKP28	-0,1	1	EO.AKP51	-0,5	2	KD.CHP60	2,08
1	HOA.AKP29	-0,63	1	OC.AKP52	-0,05	3	IB.HDP21	3,95
1	CP.AKP29	0	1	MG.AKP52	-0,21	3	BY.HDP02	2,94
1	OK.AKP31	-0,89	1	NK.AKP52	0,28	3	MCG.HDP13	5,98
1	MO.AKP31	-0,33	1	ET.AKP52	-0,03	3	ML.HDP13	4,44
1	FS.AKP31	-0,16	1	HA.AKP53	-0,14	3	CD.HDP21	4,5
1	HBT.AKP31	-0,93	1	OAB.AKP53	-0,22	3	ZPHDP21	2,85
1	AY.AKP31	-0,36	1	HK.AKP53	-0,95	3	MT.HDP27	5,44
1	SSB.AKP32	-0,36	1	SD.AKP54	-0,12	3	NA.HDP30	4,75
1	SY.AKP32	0,18	1	ML.AKP54	-0,83	3	GR.HDP34	2,6
1	LE.AKP33	-0,4	1	RU.AKP54	-0,18	3	MD.HDP35	2,58
1	HO.AKP33	-0,46	1	ASU.AKP54	0,13	3	ED.HDP47	1,9
1	ACT.AKP33	-0,16	1	AIY.AKP54	-0,36	3	MS.HDP47	1,95
1	YT.AKP33	-0,45	1	AD.AKP55	-0,25	3	BK.HDP56	3,35
1	BA.AKP34	-0,32	1	CK.AKP55	0,04	4	MV.MHP01	-0,19
1	AB.AKP34	-0,72	1	ACK.AKP55	-0,11	4	EH.MHP06	1,2
1	ANB.AKP34	-0,39	1	OK.AKP55	-0,82	4	DD.MHP09	-0,05
1	AB.AKP34.1	-0,06	1	FK.AKP55	-0,77	4	KK.MHP16	-0,16
1	FB.AKP34	-1,27	1	HBK.AKP55	0	4	KA.MHP25	1,33
1	OB.AKP34	-0,29	1	YA.AKP56	-0,23	4	MNA.MHP31	1,15
1	VB.AKP34	-0,41	1	NM.AKP57	-0,21	4	NO.MHP32	0,08
1	HB.AKP34	-0,75	1	HB.AKP58	-0,78	4	BS.MHP33	0,35
1	AHC.AKP34	0,24	1	SD.AKP58	0,05	4	IFA.MHP34	-0,08

1	ABC.AKP34	-0,45	1	MHS.AKP58	-0,2	4	AE.MHP34	-0,08
1	HD.AKP34	-0,16	1	IY.AKP58	0,29	4	SS.MHP41	0,27
1	MME.AKP34	-0,3	1	MA.AKP59	0,12	4	MK.MHP42	1,32
1	AE.AKP34	-0,28	1	AD.AKP59	0,09	4	EA.MHP45	1,54
1	EE.AKP34	-0,74	1	MY.AKP59	-0,41	4	FOT.MHP46	1,1
1	ME.AKP34	-0,35	1	ZA.AKP60	-0,04	4	ME.MHP48	0,37
1	EK.AKP34	-1,21	1	YB.AKP60	-0,06	4	EU.MHP55	0,02
1	HK.AKP34	-0,3	1	CC.AKP60	-0,7	4	RE.MHP80	1,66

## 5. Conclusion and Assessment

In this study, estimations of ideal point values of the votes given by the MPs in the voting for the international agreements negotiated in the assembly, covering the legislative period of 2015-2018 of TGNA, which convened in 1920 and founded the Republic of Turkiye in 1923, were carried out *by employing Bayesian algorithms. Distinctness of this period; the parliament continued its function, although there was a military coup attempt in July 2016 against the elected government.*

When party discipline of ruling party MPs is considered in all voting, it is not surprising that they voted positively in the ballots conducted. On the other hand, it is understood that the main opposition party and MHP pursued moderate opposition. Also, we can say that an essential group of MPs in the ruling party has taken sides with the opposition in this voting. *Approximately 16% of the ruling party participating in the voting have a positive ideal point value in the ballots associated with the agreements.* According to these data, an essential fraction of the ruling party used a negative vote. At the very least, the number of votes they used negatively is higher than the number of affirmative votes they used. The third largest party of the assembly, HDP, has pursued severe opposition in all of the votes and has demonstrated extreme resistance to the ballots. In addition to their negative attitude toward the voting, it is also among the results that they did not occasionally participate in the voting to protest the assembly.

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