

Florya Chronicles of Political Economy



İSTANBUL AYDIN UNIVERSITY

Journal of Faculty of Economics and Administrative Sciences

Year 7 Number 2 -October 2021

GENEL DOI: 10.17932/IAU.FCPE.2015.010

Year 7 Number 2 DOI: 10.17932/IAU.FCPE.2015.010/2021.702

ISSN : 2149-5750

e-ISSN: 2717-7629

Florya Chronicles of Political Economy

ISSN : 2149-5750

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Publication Period

Published twice a year

October and April

Language

English - Turkish

Academic Studies

Coordination Office (ASCO)

Administrative Coordinator

Selin YILMAZ

Proofreading

Neslihan İSKENDER

Graphic Design

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Journal of Economic, Administrative and Political Studies is a double-blind peer-reviewed journal which provides a platform for publication of original scientific research and applied practice studies. Positioned as a vehicle for academics and practitioners to share field research, the journal aims to appeal to both researchers and academicians.

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DOI Numaraları / DOI Numbers

FCPE Ekim 2021 Cilt 7 Sayı 2 DOI: 10.17932/IAU.FCPE.2015.010/2021.702

Female Entrepreneurship: The Case of Malian Women

Ahmet Sedat Aybar, Oumou Keita

10.17932/IAU.FCPE.2015.010/fcpe_v07i2001

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Emine Kambur

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Altın, Dolar, Euro (Avro) Kurları ve Konut Satışları İlişkisi: Granger Nedensellik Analizi ile Bir Uygulama

Nurgün Komşuoğlu Yılmaz

10.17932/IAU.FCPE.2015.010/fcpe_v07i2005

FROM THE EDITOR

This issue of Florya Chronicles of Political Economy includes five very interesting research articles.

The first article is by Aybar and Keita focuses on an important part of a developmental experience of a country, namely female participation in economic life. In this article, set against Malian background female entrepreneurship in Bamako, Mali has been studied to establish the impact of skills-based training on female entrepreneurship. There are few interacting areas in which the effect of such training was assessed one of which relates to the ways in which financial system influence female entrepreneurship. The effect of market information and technological advancement were also covered by this fieldwork based research in Mali. A regression analysis has been constructed, using answers to the questionnaires by female entrepreneurs in Bamako. The article concludes that skills based training, financial system, market information and technology advancement, all have significant effect on women owned enterprises. Secondly this study shows that a non discriminatory financial system and eased off access to information in Mali can generate effective business growth for women.

The second article is also drawing its case from the continent of Africa. Dinyuy and Şener focuses on employee performance in Cameroon and carries out yet another fieldwork based research. This article aims to uncover the impact of trade unions on employee performance particularly that of teachers' and drivers' unions. The paper proceeds to collect quantitative and qualitative data from teachers and the drivers trade unions with questionnaires and structured interviews. Dinyuy and Şener uses ratio analysis on their categorical data to assess their chosen variables using Chi-Square test. This study reveals that trade unions' involvement actually plays an important role in employee-performance in Cameroon. This is not an unexpected findings since this research shows that, the key reason as to why teachers and drivers join trade unions in Cameroon is basically for the protection of their' rights. Trade unions has become

The following article by Alpago and Kılınç handles a rather different and demanding topic. Its subject matter is the Turkish Republic of Northern Cyprus and Exclusive Economic Zone for coastal countries, a hot topic that is being discussed within the auspices of the United Nations and academia. This is particularly interesting since the Turkish Republic of Northern Cyprus is not an internationally recognized entity while international law puts the entire island under the Republic of Cyprus rules and regulations, hence creating a rather peculiar situation. The Greek Cypriot part of the island which is accepted as the Republic of Cyprus claiming to have the right to the Exclusive Economic Zone of the Republic of Cyprus while Turkey argues that the islands in the world are not an Exclusive Economic Zone fields, therefore considers the coastline of the mainland mass in the Eastern Mediterranean to be very important, providing her a right over the natural gas deposits. This article by Alpago and Kılınç, aims to evaluate this complex problem within the framework of neo-realism and neo-liberal perspectives.

The fourth article by Emine Kambur, tackles with a conceptual framework on a recent popular topic known as AI. Kambur refers to mainstream conceptualisation that makes a distinction between Emotional and Artificial Intelligence. Her article is innovative in the sense that she attempts to combine these concepts. She looks at the causal relationship between Emotional Intelligence and Artificial Intelligence before setting forth to a fieldwork research to ground her approach. She uses data collected to carry out a correlation analysis. Her work finds out that there exists a significant relationship between emotional intelligence and artificial intelligence. These findings help her to conclude that the significant cause-effect relationship between emotional and artificial intelligence can be captured by the concept of Emotional Artificial Intelligence.

The final paper is by Nurgün Komşuoğlu Yılmaz, tackling with the relationship and causality in the real estate market with that of the price movements in gold, euro and USD. Since property purchases are also seen as an alternative means of financial investments that weigh against these variables, Komşuoğlu explores whether such a relationship exists by using Granger – Sims Causality analysis. She focuses on the period between January 2013 and November 2019, that does not include the period with Covid 19. Her findings indicate that such causality can only be robustly established if other factors are also taken into consideration. Hence, between these chosen variables, causality tests provide a rather complex picture.

We are happy to announce that Florya Chronicles of Political Economy is now going to receive further recognition as our international index listings continue to grow. Since the beginning of the FCPE (Florya Chronicles of Political Economy) we have done a lot of progress, including going online through Dergipark. Now we are receiving and refereeing articles through our website at Dergipark.

Finally, once again we are very grateful to our colleagues at the Faculty of Economics and Administrative Sciences at the IAU (Istanbul Aydın University) with our Dean Prof. Dr. Celal Nazım İrem at the lead, to the Rector of IAU, Prof. Dr. Yadigar İzmirli and to Associate Professor Dr. Mustafa Aydın, President of IAU, for their continued support for the FCPE.

Editor
Prof. Dr. Sedat AYBAR

Female Entrepreneurship: The Case of Malian Women

Sedat Aybar¹
Oumou Keita²

ABSTRACT

The study set to assess the female entrepreneurship in Mali focusing on factors that affect the women Entrepreneurship in Bamako Mali. The study objectives were to establish the effect of skills-based training on female entrepreneurship in Bamako Mali, to determine the effect of financial system influence on female entrepreneurship, to assess the effect of market information influence on female entrepreneurship and finally to examine the effect of technological advancement on female entrepreneurship in Bamako Mali. The study employed a descriptive research design based on regression analysis; the study used questionnaires attained from 334 respondents who were women in Bamako holding businesses. Skills based training, financial system, market information and technology advancement have a significant effect on women enterprises. The study concludes that skills-based training has a significant effect on female entrepreneurship in Bamako Mali indicating that the presence of female entrepreneurs' skills if improved is an icon for female businesses support. Secondly, the study concludes that the financial system influences female entrepreneurship. The study concludes that developing a financial system for the females in Mali can generate effective business growth for the females in Mali. Thirdly the study concludes that there is less access to market information, most existing networks are male dominated and difficult for women to access. Finally, the study conclude that the technology advancement was not significant in women businesses. The study recommend for government and non-government organizations should start focusing on cluster development in entrepreneurship based on the natural resource availability.

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*Research Article. Received: 02.08.2021, Accepted: 12.08.2021.
DOI: 10.17932/IAU.FCPE.2015.010/fcpe_v07i2001

This policy must keep a provision of collateral free loan, credit without interest or low rate of interest, loan for long time duration for Female entrepreneurs. There is further need for enhancing marketing schemes by either woman forming organizations that can support market research and attainment of market environment information sufficient for their businesses.

Key words: *Female entrepreneurship, business growth, Mali.*

INTRODUCTION

Background to the Study

The study investigated the Female Entrepreneurship: Malian women acting Entrepreneurial.

Female Entrepreneurship is a tendency that is considered in the growth of the proportion in the choice of the start in consideration in the growth for the management in the businesses (Mekonnen and Castino, 2017). The instances for the means in global entrepreneurship rates in the rise across the world for the recent decades and has a high effect on the continent (GEM, 2016). The entrepreneurship function is a contribution to progress in acknowledgement that is still in special sub-Saharan Africa and women Entrepreneurs in the necessity for the study (GEM, 2017).

Globally, businesses monitor reporting that the women Entrepreneurs earn jobs, wealth, and innovations at the 37 countries that were surveyed. The countries are rated in growth among the ones in creation of the businesses that are of growth in Entrepreneurs (Shinnar, Giacomini and Janssen, 2012). Women's Business Research, World Bank (2008) contend that close to 10.4 million US organizations are under ownership of the women employing more than 12.8% million people and attract the 1.9 trillion dollars as sales. The growth rate for the women owned firms has been 42% in comparison to 24% of the companies in the United States of America.

In Africa, women businesses are of development mix in the recent emergence of the lays in emphasizing that the economic values for the women participate. Close to 35% of the households in worldwide form of women and participated in the labor force provided in the countries and a comparison of the increase in proportion in formal sector activities in the developing countries in the world. In Kenya, more than 32% of households are headed by women (Sullivan and Meek, 2012), the many were starting to venture in the same form of the scales of activities needed in self-employment activities (Uy, Foo and Song, 2013).

Mali presents a status of women situation that limit entrepreneurial development amongst women. The inspirations for the seen in various development initiatives encouraging the people in expansion in the learning for absorption of the entrepreneurship minds in the tools for practice (Vanuytsel and Ceppens, 2019). Entrepreneurship training provision in

the government in space that are exposed in connection to the NGOs and private initiative resulting in greater in the success. The abilities in the Entrepreneurs in obtaining loans in Bamako is of extreme restriction in the bank unwillingness in the business in corruption surrounding being assessed for the loan in final interest in making borrows in thus realization plans.

Statement of the Problem

Women constitute almost fifty percent of the world population. The socio-economic participation of women at the international, regional, national, and local levels means using significant potential resources more effectively (Kelley, Baumer, Brush, Greene, Madhavi and Marcia, 2017). Though women in Mali have undertaken Entrepreneurship development, majority of the women in Mali do not possess any assets and cannot formally offer the necessary securities against loans (AfDB, 2019). Due to the complexities in the social environment and administrative structure, women's entrepreneurship in Mali is more challenging skills-based training, financial system influence, market information and technological advancement are pivotal in influencing the female entrepreneurship (Fatouma, 2019). It is incumbent to this that the research on female entrepreneurship in the context of Mali is conducted to establish the status quo and provide remedies to improving the status quo.

Objectives of the Study

- 1) To establish the effect of skills-based training on female entrepreneurship in Bamako Mali
- 2) To determine the effect of financial system influence on female entrepreneurship in Bamako Mali
- 3) To assess the effect of market information influence on female entrepreneurship in Bamako Mali
- 4) To examine the effect of technological advancement on female entrepreneurship in Bamako Mali

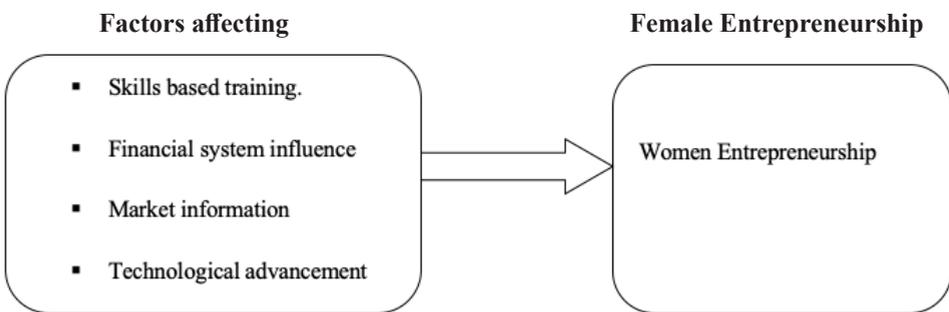
Significance of Study

For academicians and researchers, they would do an in-depth investigation on the effect of female entrepreneurship in social development projects in

Mali. The research will help in building an understanding on the regulation and the recommendations that are applicable in the necessary for the social development in the business management. The research will assess the process that will provide information on measures for the developed in addressing the challenges that affect the increases and declines in female entrepreneurs.

Figure 1: Factors Affecting and Female Entrepreneurship

Conceptual Framework



The framework predicts the factors that influence/ have a bearing on female Entrepreneurship. The study predicts that female entrepreneurship has been affected by skills-based training, financial system influence, market information and technological advancement that is pivotal in influencing the female entrepreneurship development or slowing the development of the businesses in the women environment.

Definitions of Key Terms

Woman entrepreneur, A woman entrepreneur is the woman who does business management in the process of the capital for setting up scale enterprise and active involvement in management of the businesses in the areas of management and earning the livelihoods for the families that are of business nature belonging to the incomes.

Financial system is key in implementation of procedures that are tracking the financial activities for the company. The regional scale financial systems for systems in enables lending and borrowing for exchanging funds.

Technology advancement, A technological advance is a situation in which resources are combined in such a way that the same volume of resources results in greater output or a lesser number of resources creates the same output as before.

Market information, The market research is used in planning for the future marketing in product development activities where information comes from single sources in the systems of Collections.

Literature Review

The chapter intended to present the theories and empirical review, knowledge, and information necessary information to the study of the themes in the research. The research provides the chapters focusing on the reviews by different scholars on female entrepreneurship.

Skills Based Training on Female Entrepreneurship

Katerina L S, et al (2010) did a study on entrepreneurship training for the women in the attainment of innovations needed for the case of development. The study reveals that the 1 hundred and sixteen information from businesses are attained in the form of small and medium enterprises for the information collected through questionnaires in collection of the data in cross tabulations and verification of the data needed. The study shows that businesses owned by the SMEs and managers are provided in the small businesses needed for the people in Grece and providing the forms of creativity and innovations.

Financial System Influence on Female Entrepreneurship

Mariam (2013) shows that capital access in strategic and business growth is selected for the women businesses in Sokot Metropolis, the findings show that there is a positive connection between capital access and business growth. The women entrepreneurs/ businesses are a source of capital for the many savings that are of the reason in the business growth or failures. Government has hence provided a strong effect in achieving the business values. it was found that governance has a key effect on attainment of the business.

Leonard (2013) contends that women lack assets because of the gender discrimination generally aimed at inheritances in practice for the countries that hinder access for the resource's controls.

The author provides that access for the controls in resources has a negative effect on women businesses, for instance, Leonard (2013) provided that female headed business in the claim for inability for saving the capital that prevent them in business engagement.

Jandeska & Kraimer (2015) provided that the assessment for the effect of microfinance industries that become the global situation. The study examines the financial products aimed for the women businesses and call for the products in saving the account, in money transfer loans for the domestic equipments needed.

Market Information Influence on Female Entrepreneurship

Nosa (2013) contends that women businesses are of own basis and small and medium enterprises are of complain in the lack of demand for the products due to the issues of responses increased in markets. The factors needed to limit the women incomes generated in activities that can provide the access for the markets.

The state of inexperienced form of the entrepreneurs is a liked form for dependence in the advice for the close friends that are somehow known and trusted and friend that provide offers in opportunities for the resources that affect the businesses for the women. Small businesses are relying on the advice for the people in relative forms for the orders in the maintenance of the confidential controls for the business's environments for the avenues in the study management determined.

Sandberg (2013) contends that women business mentors need to be confident in the skills for the service that is good for the mentors needs in the models for women in businesses (Kickul & Gundry, 2006). Technological Advancement on Female Entrepreneurship

Jain (2006) provided that the prevalence of ICT provides a key aspect in the form of information necessary for the women in small and medium businesses. It's for instance an aspect for the use of phones to show how technology can be manipulated to value the women lives by saving the travels and connection between the markets and suppliers which allow women to ask for the product prices and add the facilities for the constant judge provided in the family activities. The use of ICT is connected to the effect of women having the limited access in the roads and credit for the

development. ICT needs to have some skills and assume that the provision of the facilities is key, and every community has an immediate embracing of the technologies.

Hafkin and Taggart (2001) started that the communication, transportation and issues that hinder development of ICT is good for the women in development where the development is provided in the world that have access for the abundance in alternatives. The need for great concentration is hence an aspect for the people in villages that women are of gender sensitivity empowering the people in Nigeria and Ethiopia local government in the instance the global scale becoming positive in the world and promotion of the gender equity for the women activities to reduce the poverty, hunger, diseases in a mode for stimulation in development for the truly sustainable for ensuring the values in technology and information for the communicating technology needed in available forms.

METHODOLOGY

Research Design

The study employed a descriptive research design. The descriptive research design was employed to determine the existence of women Entrepreneurship in Mali based in Bamako assessing the influence of factors on the women businesses. The study was quantitative based on closed ended questionnaires that solicited information from women Entrepreneurship. The design is deemed fit since it enables the attainment of the data needed for assessing the degree of the effect presented on women entrepreneurship.

Population of the Study

The study targeted these women in the bid to establish the state of their existence in Bamako- in a bid to assess the female Entrepreneurship situation in Bamako. The sample Population for the study was 379. The data was collected from 334 respondents who responded or provide back the questionnaire who were female business owners.

Sample Selection

The study employed stratified and random sampling technique was used to collect quantitative data from the respondents. Stratified Sampling was used to obtain data from the staff from the different strata categories where the central business district was stratified into different categories, they're after simple random sampling was used in the selection of women in this strata areas.

Data Collection Instrument (Questionnaires)

Questionnaires are questions designed by the researcher and given to the respondents to have them filled. Questionnaires were designed based three sections, section A= Demography of respondents, section B, questionnaire on factors influencing Entrepreneurship of women such as skills-based training, financial system influence, technological advancement and market information influence and section C= on status of female Entrepreneurship.

Data Analysis

After the collection for the data, information was compiled, sorted, edited and coded to have a required form of quality accuracy and completed forms. The study used SPSS version 22 to analyze the data which was done descriptively using frequency and percentages and mean and standard deviation and thereafter the mean and standard deviation was done to present information on the degree of how the factors influencing Entrepreneurship of women such as skills based training, financial system influence, technological advancement and market information influence and section and status of female Entrepreneurship. Still, data analysis was carried out following the study objectives whereby data on objective one, two and three and fourth objective was analyzed using simple regression analysis to attain the degree and nature of effect between factor influence and status of female Entrepreneurship in Bamako Mali.

This chapter presents the findings from the study with specific emphasis on examining the effect of female entrepreneurship in Mali focusing on factors that affect the women Entrepreneurship in Bamako Mali. The data was collected 334 respondents who provided information through the use of questionnaires

Table 1: Demography of Respondents

Gender	Frequency	Percent
Male	228	68.3
Female	106	31.7
Education		
Primary and secondary	119	35.6
Diploma	40	12.0
Degree	92	27.5
others	83	24.9
Age		
Below 20 Years	12	3.6
20 - 30	51	15.3
30 – 40	99	29.6
40 – 50	100	29.9
50+	72	21.6
Time		
Less than 5 years	87	26.0
6-10years	51	15.3
10-14 years	114	34.1
15 Years above	82	24.6
Total	334	100.0

Source: Primary Data, 2021

Data presented in the table 1.1 on the gender for the respondents revealed that many of the respondents were male who were 68.3% of the study, female were 31.7% of the study. The study results reveal that majority of the respondents were primary and secondary school leavers constituting 35.6% of the respondents followed by degrees with 27.5%, other qualifications who included post graduate and professional qualifications were 24.9% while diploma holders were 12%. The study findings reveal that majority respondents were in the age of 40 to 50 with 29.9% followed by 30-40 with 29.6% respondents, 50 years above had 21.6% respondents while for 20-30 years had 15.3% and those of below 20 but above 18 years were 3.6% respondents finally on the time of stay in Bamako, The study results indicate that majority respondents had been in Bamako for a period of 10-14 years for 34.1%, followed by those of less than 5 years were 26%, those of 6-10 years were 15.3% and finally, those with more than 15 years were 24.6% of the respondents.

Effect of Skills-Based Training on Female Entrepreneurship in Bamako Mali

The first objective of the study was to establish the effect of skills-based training on female entrepreneurship in Bamako Mali. To attain the effect the researcher used simple regression analysis to establish the effect between skills-based training on female entrepreneurship in Bamako Mali.

Table 2: Regression Analysis on Effect of Skills-Based training on Female Entrepreneurship in Bamako Mali

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.121 ^a	.015	.012	.54739		
a. Predictors: (Constant), Skills based training						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.488	1	1.488	4.965	.027 ^b
	Residual	99.480	332	.300		
	Total	100.967	333			
a. Dependent Variable: Female entrepreneurship						
b. Predictors: (Constant), Skills based training						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.826	.141		20.107	.000
	Skills based training	.117	.052	.121	2.228	.027
a. Dependent Variable: Female entrepreneurship						

Source: Primary Data, 2020

Regression analysis on effect of skills-based training on female entrepreneurship in Bamako Mali reveal that the r-value of .121 was attained indicating that skills based training contribute 12.1% effect on female entrepreneurship in Bamako Mali, the rest is contributed by other factors other than skills training. The standard error of .54739 indicates the closeness of data.

In the analysis of the variance for the study the significance value was .027^b indicating that there is a significant effect of skills based training on female entrepreneurship in Bamako Mali implying that the status of the skills based training induce the entrepreneurship meaning that improved skills based training highly affect the female entrepreneurship.

The coefficients for the independent variable (skills-based training) were in acceptable ranges to support the relevance in the model where it had a

computed t value for 2.228, which was more than 1 and significant value of 0.027 less than 0.05 that implies that skills-based training contribute significantly to female entrepreneurship in Bamako Mali. It worths arguing that improvement of the skills-based training is an avenue that can enhance the female entrepreneurship

Effect of Financial System Influence on Female Entrepreneurship in Bamako Mali

The second objective was to determine the effect of financial system influence on female entrepreneurship in Bamako Mali. To attain the effect the researcher used simple regression analysis to establish the effect of financial system influence on female entrepreneurship in Bamako Mali.

Table 3: Effect of Financial System Influence on Female Entrepreneurship in Bamako Mali

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.208 ^a	.043	.040	.53945		
a. Predictors: (Constant), Financial system influence						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.352	1	4.352	14.954	.000 ^b
	Residual	96.616	332	.291		
	Total	100.967	333			
a. Dependent Variable: Female entrepreneurship						
b. Predictors: (Constant), Financial system influence						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.611	.127		28.373	.000
	Financial system influence	.198	.051	.208	3.867	.000
a. Dependent Variable: Female entrepreneurship						

Source: Primary Data, 2020

Regression analysis on effect of financial system influence on female entrepreneurship in Bamako Mali reveals that the r-value of .208^a was attained indicating that financial system influence has a 20.8% effect on female entrepreneurship in Bamako Mali. The standard error of .53945 indicates the closeness of data.

In the analysis of the variance for the study the significance value was .000^b indicating that there is a significant effect of financial system influence on female entrepreneurship in Bamako Mali implying that the status of financial system influence induces the entrepreneurship.

The coefficients for the independent variable (financial system influence) were in acceptable ranges to support the relevance in the model where it had a computed t value for 3.867, which was more than 1 and significant value of 0.000, below 0.05 level of significance that implies financial system influence contribute significantly to female entrepreneurship in Bamako Mali. It is worthy arguing that improvement of the financial system influence is an avenue that can enhance the female entrepreneurship. The study results agree with Mariam Alhabidi (2013) shows that capital access in strategic and business growth is selected for the women businesses in Sokot Metropolis, the findings show that there is a positive connection between capital access and business growth. Even Jandeska & Kraimer (2015) provided that the assessment for the effect of microfinance industries that become the global situation. The studies examine the financial products aimed for the women businesses and call for the products in saving the account, in money transfer loans for the domestic equipments needed.

Effect of Market Information Influence on Female Entrepreneurship in Bamako Mali

The third objective of the study was to assess the effect of market information influence on female entrepreneurship in Bamako Mali. Regression analysis on effect of market information influence on female entrepreneurship in Bamako Mali.

Table 4: Effect of Market Information Influence on Female Entrepreneurship in Bamako Mali

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.198 ^a	.110	.070	.54880		
a. Predictors: (Constant), Market information influence						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.975	1	.975	3.239	.037 ^b
	Residual	99.992	332	.301		
	Total	100.967	333			
a. Dependent Variable: Female entrepreneurship						
b. Predictors: (Constant), Market information influence						
Coefficients ^a						
Model		Unstandardized Coefficients-		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	2.862	.153		18.692	.000
	Market information influence	.088	.049	.098	1.800	.037
a. Dependent Variable: Female entrepreneurship						

Source: Primary Data, 2020

Regression analysis on effect of Market information influence on female entrepreneurship in Bamako Mali reveals that the r-value of .198^a was attained indicating that market information influence had a 19.8% effect on female entrepreneurship in Bamako Mali. The standard error of .54880 indicates the closeness of data.

The coefficients for the independent variable (market information influence) was in acceptable ranges to support the relevance in the model where it had a computed t value for 1.800, which was more than 1 and significant value of 0.037 below the level of significance of 0.005, that implies that market information influence contribute significantly to female entrepreneurship in Bamako Mali. It's worthy arguing that improvement of the market information access is an avenue that can enhance the female entrepreneurship. In the same notion, Mahbub (2000) provided that a

network for the issues that affect the women businesses, Having the good networks for the people in the matter key for success in the business lacked for the women businesses.

Effect of Technological Advancement on Female Entrepreneurship in Bamako Mali

The four objective of the study was to assess the effect technological advancement on female entrepreneurship in Bamako Mali. Regression analysis on effect of technology advancement on female entrepreneurship in Bamako Mali.

Table 5: Effect of Technological Advancement on Female Entrepreneurship in Bamako Mali

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.051 ^a	.003	.000	.55074		
a. Predictors: (Constant), Technology advancement						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.268	1	.268	.882	.348 ^b
	Residual	100.700	332	.303		
	Total	100.967	333			
a. Dependent Variable: Female entrepreneurship						
b. Predictors: (Constant), Technology advancement						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B.	Std. Error	Beta		
1	(Constant)	3.012	.132		22.874	.000
	Technology advancement	.040	.042	.051	.939	.348
a. Dependent Variable: Female entrepreneurship						

Source: Primary Data, 2020

Regression analysis on effect of technology advancement on female entrepreneurship in Bamako Mali reveal that the r-value of .051^a was attained indicating that technology advancement has had a 5.1% effect on female entrepreneurship in Bamako Mali. The standard error of .55074 indicates the closeness of data.

In the analysis of the variance for the study the significance value was .348^b indicating that there is a nonsignificant effect of technology advancement on female entrepreneurship in Bamako Mali implying that technology advancement does not influence induces the entrepreneurship meaning that the technology advancement has been of less value female entrepreneurship in Malian women. The coefficients for the independent variable (technology advancement) were outside acceptable ranges to support the relevance in the model where it had a computed t value for .939, which was less than 1 and significant value of 0.348 above the 0.005 level of significance that implies that technology advancement has been of less value female entrepreneurship in Malian women. The results are in agreement with Hafkin and Taggart (2001) started that the communication, transportation and issues that hinder development of ICT is good for the women in development where the development is provided in the world that have access for the abundance in alternatives.

Research Hypothesis Testing

Under this part, the researcher related the results found from the analysis carried out to the hypothesis in Chapter 1.

Hypothesis 1: There is a statistically significant effect of skills-based training on female entrepreneurship in Bamako Mali. Results in table 4.8 on effect of skills-based training on female entrepreneurship in Bamako Mali reveal that the r-value of .121, significance value of 0.027 indicating that skills-based training had a significant effect on female entrepreneurship. The research hypothesis H1: is therefore upheld and there is a statistically significant effect of skills-based training on female entrepreneurship in Bamako Mali.

Hypothesis 2: There is a statistically effect of financial system influence on female entrepreneurship in Bamako Mali: Results in table 4.9 on effect of financial system influence on female entrepreneurship in

Bamako Mali reveal that the r-value of .208, significance value of 0.000 indicating that financial system influence had a significant effect on female entrepreneurship. The research hypothesis H1: is therefore upheld and there is a statistically significant effect of financial system on female entrepreneurship in Bamako Mali.

Hypothesis 3: There is a statistically effect of market information influence on female entrepreneurship in Bamako Mali. Results in table 4.10 on effect of market information influence on female entrepreneurship in Bamako Mali reveal that the r-value of .198, significance value of 0.037 indicating that market information influence had a significant effect on female entrepreneurship. The research hypothesis H3: is therefore upheld and there is a statistically significant effect of market information influence on female entrepreneurship in Bamako Mali.

Hypothesis 4; There is a statistically effect of technological advancement on female entrepreneurship in Bamako Mali. Results in table 4.11 on effect of technological advancement influence on female entrepreneurship in Bamako Mali reveal that the r-value of .051, significance value of 0.384. The research hypothesis H4: is therefore rejected and the researchers contend that there is no statistically significant effect of technological advancement influence on female entrepreneurship in Bamako Mali.

CONCLUSION

The study concludes that skills-based training has a significant effect on female entrepreneurship in Bamako Mali indicating that the presence of female entrepreneurs' skills if improved is an icon for female businesses support, the low training skills have hampered the business management and handling. Secondly, the study concludes that financial system influences female entrepreneurship. The study concludes that developing a financial system for the females in Mali can generate effective business growth for the females in Mali. Thirdly the study concludes that there is less access to market information, most existing networks are male dominated and difficult for women to access. From the findings, the poor networking among women was because of poor feasibility studies and low confidence among them. Finally, the study concludes that the technology advancement was not significant in women businesses, further showing that the status of the technology advancement is less contributing to female business hence the need for adequate consideration in the same.

RECOMMENDATIONS

On the first objective of effect of skills-based training on female entrepreneurship in Bamako Mali. Government and non-government organizations should start focusing on cluster development in entrepreneurship based on the natural resource availability. There should be better established links among various organizations who are working for entrepreneurship development and women's empowerment rather than having competition for yearly target achievement amongst themselves.

On the second objective of effect of financial system influence on female entrepreneurship in Bamako Mali. This policy must keep a provision of collateral free loan, credit without interest or low rate of interest, loan for long time duration for Female entrepreneurs.

On the third objective of effect of market information influence on female entrepreneurship in Bamako Mali. There is the urgent need to improve on the existing policies and legal framework in a manner that would practically reach a satisfactory level to encourage the female entrepreneurs. There is further need for enhancing marketing schemes by either woman forming organizations that can support market research and attainment of market environment information sufficient for their businesses.

On the fourth objective of effect of technology advancement influence on female entrepreneurship in Bamako Mali, Female should be encouraged to study Science and Technology in schools and colleges / Universities. With this, they could gain access to know- how, technologies, appropriate and adequate skills, training to upgrade their technical capabilities, and their entrepreneurial skills. Create easy access for Female entrepreneurs to the local administrative support and public institutions.

REFERENCES

- [1] African Development Banking Group (AfDB). *Mali Economic Outlook -Source African Economic Outlook (AEO) 2019*. <https://tinyurl.com/yxgs6npn>
- [2] Alhabidi, M. (2013) “Saudi Women Entrepreneur Over Coming Barriers In ALKhober”, Arizona State University.
- [3] Fatouma, G. (2019) Interview with Founder and owner of Gie Faouma Aiga Onion processing firm. [In-person interview Bamako, Mali].
- [4] GEM. (2016). Global report. Retrieved from <http://www.gemconsortium.org/report>.
- [5] GEM. (2017). Global report. Retrieved from <http://www.gemconsortium.org/report>.
- [6] Gundry, L. & Kickul, J. (2006) “Entrepreneurship Strategy: Changing Patterns in New Venture Creation, Growth, and Reinvention”, 1 St Edition, ISBN-13: 978-1412916561, 2006.
- [7] Hafkin, N. & Taggart N. (2001) “Gender, Information Technology, and Developing Countries: An Analytic Study”, Academy for Educational Development (AED).
- [8] Jain, P. (2006), “Empowering Africa’s development using ICT in a knowledge management approach”, *The Electronic Library*, Volume 24, Issue 1.
- [9] Jandeska, K. & Kraimer M. (2015). Women’s perceptions of organizational culture, work attitudes, and *Journal of Gender Studies*, 4 (3), 297-314.
- [10] Kelley, D. J., Baumer, B. S., Brush, C., Greene, P. G., Madhavi, M. & Marcia Cole, M. M (2017) Global entrepreneurship Research Association (GERA). (2017). Global Entrepreneurship, Monitor: Women’s Entrepreneurship 2016/2017 Report on, Women’s Entrepreneurship. Retrieved from <http://www.gemconsortium.org/report/49812>.

- [11] Leonard, E. (2013). "Challenges Faced By Female Entrepreneurs," *Journal of International Business*, Vol. 4. Pp. 2-4.
- [12] Mahbub, U.H. (2000). "Human Development Centre, Human Development in South Asia: The Gender Question" Oxford University Press.
- [13] Mekonnen, H. D & Castino, J. (2017). The impact of institutional context on women's entrepreneurship in Ethiopia: Breaking the cycle of poverty? In M. R. Pasillas, B. Etheland M.
- [14] Nosa, U. (2013). "Challenges Faced By Female Entrepreneurs," *Journal of International Business*, Vol. 11. Pp. 33-34.
- [15] Sandberg, S. (2013). "Lean in: Women, work, and the will to lead", *American Psychological Association*, 2013.
- [16] Sarri, K. K., Bakouros, I., Petridou, E. (2010). "Entrepreneur training for creativity and innovation", *Journal of European Industrial Training*, 2010.
- [17] Shinnar, R. S., Giacomini, O. & Janssen, F. (2012). Entrepreneurial perceptions and Siba, E. (2016). *Enabling female entrepreneurs and beyond*. Retrieved from
- [18] Sullivan, D. M. & Meek, W. R. (2012). "Gender and entrepreneurship: A review and process model" *Journal of Managerial Psychology*, 2012.
- [19] Uy, M. A., Foo, M.-D. & Song, Z. (2013). Joint effects of prior start-up experience and coping strategies on entrepreneurs' psychological well-being. *Journal of Business Venturing*, 28(5), 583–597.
- [20] Vanuytsel. S. & Ceppens, F. (2019). Meeting with Beligan Embassy Staff supporting political and economic affairs". [Personal interview].
- [21] World Bank (2008). What Are the Constraints to Inclusive Growth in Zambia? Report No.44286-ZM, Washington DC: World Bank.
- [22] World Bank (2008). What Are the Constraints to Inclusive Growth in Zambia? Report No. 44286-ZM

The Impact of Trade Unions on Employee Performance in Cameroon: Teachers' and Drivers' Unions Cases

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ABSTRACT

The intention of this research is to examine the impact of trade unionism on employee performance in Cameroon. The teachers and the drivers trade unions are selected as the scope of the study. Both quantitative and qualitative data are collected with questionnaires and structured interviews. Categorical data was analysed as proportions and frequencies and the relationship between categorical variables was assessed using Chi-Square test. The findings revealed by the study evidently show that trade unions play a vital role in employee-performance in Cameroon. It is revealed in this research that, the key reason teachers and drivers joined trade unions in Cameroon is for the protection of workers' rights. The main strategies used by trade unions are organising, collective bargaining, alliance building and action. It was also revealed that trade unions have as core mandates, the promotion and protection of the rights and the socio-economic interest of their members. Therefore, as a recommendation, Trade Unions should stay away from confrontation with employers and make negotiations for collective bargaining. Also, employers should provide upskilling and training opportunities to their employees as this improves employee-performance. Conclusively, Teachers and Drivers' Trade Unions in Cameroon should set as its top priority, the protection of workers' rights and promotion of their socio-economic interests.

Key words: *Trade Union, Employee performance, Cameroon, Chi-square, Anglophone crisis*

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* Research Article. Received: 15.06.2021, Accepted: 09.07.2021.

DOI: 10.17932/IAU.FCPE.2015.010/fcpe_v07i2002

INTRODUCTION

A trade union is defined as an everlasting partnership of employees or salary earners for the aim of preserving or ameliorating their working conditions. According to TUC-RLF (2012), A trade union or worker's guild is likewise a partnership of employees to reinforce their efforts in haggling with their employers.

Throughout history, trade unions have fought for security and augmentation in wages, occupational safety at the workplace (by protecting members from unjust expulsion), wellbeing and good working conditions for their members. Trade unions in the African continent are not excluded in the quest for these priceless goals. Collective bargaining is the main tool utilized by trade unions be it at the level of the firm or at the national level. Trade unions are equally involving in persuading state bureaus for law enactments which favour employees and their families (Jones, Derek and Takao Kato, 2005).

The fundamental motivating force for establishing or being part of a trade unions and striving for collective bargaining is consequently to make even or somehow lower the imbalance of power among employers and employees (Jepkorir, 2014). Through this, trade unions are capable of breeding even-handedness, equity, impartiality, consideration for human right and workers' privileges, and communal and economic equity not focusing just on the workplace in particular but also significantly, in the community at large. This is because, individually employees, are not powerful enough to request for their privileges at the workplace. Also, there is enormous power and mutual benefits in communization and unity of workers (Clark, Kristensen, and Westergard-Nielsen, 2006).

The political, social and economic growth of the African continent has been greatly influenced by trade union activities. Trade unions in Africa were greatly involved in the fight for self-governance on all parts of the continent in the 1960s. Nonetheless, the labour movement in Africa has been experiencing many intimidating confrontations in their attempt to safeguard workers' rights and the rights of the substandard, unprotected, and vulnerable in the society since the 1980s and 1990s. The density of trade unions remain low in most African countries and union membership

has been decreasing because of the fast rate of casualization and informal characters of work (Budd, John W. and Bhawe, Devasheesh 2008).

According to Mbide (2014), the regime of Cameroon after gaining self-determination in 1960, had endorsed in 1962, the I.L.O. Treaty No. 87 of July 10th, 1948 which enforced the right to partnership, as well as I.L.O. Treaty No. 98 of June 8th, 1949, on the immunity to coordinate as well as negotiate unitedly. Freedom of association is guaranteed, giving employees and employers the right to form trade unions and employer's associations respectively as prescribed by the Labour Code. Since obtaining sovereignty in 1960, Cameroon has created about three Laws initiating the Labour Code which permitted right to associate and the privilege to formulate and negotiate collectively. The International Labour Organization, (ILO), Treaty No. 87 articulates in unit 2 inter-alia, "Workers and employers, without distinction whatsoever, shall have the right to establish and subject only to the rules of the organization concerned, to join organization of their own choosing without previous authorization." Cameroon has a wealthy and telling past concerning the labour movement. Before and after independence, Cameroon was characterized with a good number of freebie sovereign trade unions, most of these unions were found in the estates within West Cameroon. We also had a good number of trade unions in East Cameroon for instance Union des population du Cameroun (UPC) which transformed into a political party (Adesina, 2000).

From this background, this study, therefore, targets to explore the role of trade union on employee performance in Cameroon. In addition, we shall identify the reasons for joining trade unions and the core mandates and strategies towards improving employee performance within the Teachers and Drivers Unions in Cameroon.

LITERATURE REVIEW

Trade union existence bears statistical and economical important influence on employee performance and organizational productiveness (Morikawa 2010). Worker performance and overall productivity are mostly associated with good employee abilities, encouragement, and good management. Conforming to McNicholas et al. (2020), trade unions are helpful as they reduce exploitation of workers and also counteract the firm's monopolistic strength. To satisfy short and long-term objectives, corporations want to have efficient and good workers together with good cooperativeness amongst the administration and workers. If union problems are solved harmoniously and rapidly, improved performance of workers can be achieved in organizations (Nkirote, & Kiiru 2018). Broadly, it's not common to keep a great relationship between the administration and employees in bigger associations. Hence, workers turn to create trade union when they feel that there is little or no real connection between them, and the administration and attention are not given to their worries. In Cameroon just like other nations, initially, trade unions are created to boost collective bargaining, in due course, they culminate with impacts on coherence and productivity.

Nevertheless, the impact of unions in all facets like promotion in organizations without unions are based on age instead of merit which is likely to hinder the performance and productivity caused by worker discontentment. Additionally, unions might pose an adverse effect by utilising the monopoly they enjoy to pressure for high salaries and to present malpractices that hinder performance. The effect of unions on topics such as traineeship and training procedures, advertising policies, organization of work, commission level, and obligations plan and grievances procedure will feed through productivity (Poil & Knight, 2005).

Gunderson (2005) posits that combined with the renowned rent-seeking behaviour of unions, they may possess a favourable effect on performance by enunciating worker's worries, enhancing labour/management relationship, adding morale, and reducing overturn. antecedent work has proposed that this impact might be larger in the public sector as a result of growing devotion and diminished exit tendency of public workers.

A good number of studies have not been able to find any connection between unions of public workers and organizational performance. There is no direct

effect of unionization on the results fabricated by public agencies (Ash and Seago, 2004). It is worth noting however that, when combined with the growing disbursement related to unionization null operation gains for public corporations are often treated as adverse productivity consequences by scholars. Hoxby (2001), comparably found out that teachers' union increase their wages without a consequent upgrade in student performance. He deduced that trade unions were a potential reply to the puzzle of school spending more and slack pupil performance during the post-1960 era.

Unions affect the approach in which organizations react to economic fluctuations. Conforming to Freeman and Medoff (1988), in times of recessions, companies with unions have a tendency to utilize non-permanent growth rather than reductions in salaries which is not the case in non-unionized businesses. In reminiscence, in recurrent upturns, companies with unions call back comparatively more workers and non-union companies end up recruiting new workers.

METHODOLOGY

To better attend its goals, the research adopted a methodology that inspects the qualities of elements and the procedure and meanings that are not tentatively analysed or estimated. The quantitative and qualitative methods were combined to carry out this study. The study used, algebraic, mathematical and statistical investigative approach to deduce pertinent info from data that was assembled.

Sampling Design and Data Collection

The research population is defined as members of drivers' and teachers' unions in Cameroon. Convenience sampling technique is used in this study considering the cost of research and unavailability of sampling framework so our quantitative results cannot be generalised to population according to sampling technique employed. However, findings will supply strong suggestive insights for understanding the current situation and improvements to make it better. Primary data was collected by sending out questionnaires to teachers from all over the 10 regions of Cameroon, who came together during the assessment of the Cameroon General Certificate of Education (GCE) national examinations. We also handed out additional questionnaires to teachers in the towns of Yaoundé and Bamenda. The data collected from these teachers closely represent the

national territory since they came from different regions and also belong to different trade unions. Questionnaires were also given out to drivers in towns of Buea and Yaoundé in Cameroon. Although we did not use a probabilistic sampling technique which has strong generalizability, selected sample contains drivers and teachers from all parts of Cameroon for a considerable representation of the population. We reached total 308 respondents which are more than to ensure 90% confidence interval.

We aimed to have structured interviews with 20 trade union leaders and key members for the qualitative analysis of our research. Considering the current Anglophone Crisis in Cameroon, we decided to keep their names confidential. We collected qualitative data from ANCATC (l'Association Nationale Autonome des Chauffeurs d'Autobus, de Taxis et des Cars du Cameroun), CAPSU (Cameroon Public Service Union), CAPTAC (Confederation of Anglophone Parent-Teachers Associations), CATTU (Teachers' Trade Union), CNU (Cameroon National Union), CTUC (Cameroon Trade Union Congress), NUCW (National Union of Cameroon Workers), PEATTU (Presbyterian Education Authority Teachers Trade Union), SN CHAUTAC (Syndicat National Des Chauffeurs Taxis – Cars – Auto Bus et Assimilés du Cameroun), SYNDICAT (National Autonome de l'Enseignement Secondaire), SYNES (Syndicate of Teachers of Higher Education), TAC (Teachers' Association of Cameroon).

The questions were also evaluated by both academics and trade union leaders, and the comprehensibility of the questions was evaluated by conducting a pilot application with 10 people in a drivers and teachers trade unions. Participants stated that they did not have any problems in understanding the expression and content.

QUANTITATIVE RESULTS

About 358 questionnaires were distributed and 308 were answered and returned, giving a response rate of 86%. Trade union representation was almost equal, with 156 (50.6%) drivers and 152 (49.4%) teachers. For qualitative part of the study, we did structured interviews with 19 trade union leaders (9 from drivers' union and 10 from teacher's union) from 15 different trade union organisations (8 teachers' unions and 7 drivers' unions).

Demographic Results

Table 1: Distribution of Age Factor by Trade Union

Age group	Drivers N (%)	Teachers N (%)	Total N (%)
<20	2 (1.3)	10 (6.7)	12 (3.9)
20 – 30	45 (28.8)	37 (24.8)	82 (26.9)
31 - 40	62 (39.7)	46 (30.9)	108 (35.4)
41 - 50	42 (26.9)	33 (22.1)	75 (24.6)
51 - 60	5 (3.2)	23 (15.4)	28 (9.2)
Total	156 (100.0)	149 (100.0)	305 (100.0)

The majority of the respondents are between the ages of 31 and 40 (35.4%), this implies that most of them are in the active age group and can perform better in their various jobs.

Table 2: Distribution of Gender by Trade Union

Gender	Drivers N (%)	Teachers N (%)	Total N (%)
Male	144 (99.3)	86 (56.6)	230 (77.4)
Female	1 (0.7)	66 (43.4)	67 (22.6)
Total	145 (100.0)	152 (100.0)	297 (100.0)

The population was predominantly male (77.4%), this implies that most of them are in the active age group and can perform better in their various jobs. Males comprised 56.6% of all teachers and there was only 1 (0.7%) female driver. The disparity in gender gives an indication in terms of gender participation and belonging in trade union activities.

Table 3: Distribution of level of education by trade union

Level of Education	Drivers N (%)	Teachers N (%)	Total N (%)
FSLC	45 (28.8)	0 (0.0)	45 (14.6)
O Level	41 (26.3)	3 (2.0)	44 (14.3)
A Level	38 (24.4)	22 (14.5)	60 (19.5)
Diploma	17 (10.9)	21 (13.8)	38 (12.3)
Bachelors	14 (9.0)	62 (40.8)	76 (24.7)
Masters	1 (0.6)	39 (25.7)	40 (13.0)
PhD	0 (0.0)	5 (3.3)	5 (1.6)
Total	156 (100.0)	152 (100.0)	308 (100.0)

The largest proportion of respondents (24.7%) had completed Bachelors's degree. Among drivers, most had just a First School Leaving Certificate (FSLC) (28.8%), 9% had a bachelor's degree while only 1 driver had a Masters. Teachers on the other hand were more educated with majority having a bachelor's degree (40.8%). About 25% of teachers had a master's degree while 5(3.3%) had a PHD. This fact shows that both trade unions had workers who are literate and were able to read and understand the questionnaire.

Table 4: Distribution of Marital Status by Trade Union

Marital status	Drivers N (%)	Teachers N (%)	Total N (%)
Married	89 (58.6)	86 (57.0)	175 (57.8)
Single	41 (27.0)	46 (30.5)	87 (28.7)
Cohabit	14 (9.2)	11 (7.3)	25 (8.3)
Separated	7 (4.6)	6 (4.0)	13 (4.3)
Divorce	1 (0.7)	2 (1.3)	3 (1.0)
Total	152 (100.0)	151 (100.0)	303 (100.0)

Most respondents were married (57.8%), followed by single people who comprised 28.7% of respondents. Equally, the majority of drivers and teachers were married, 58.6% and 57% respectively. Divorce was quite uncommon among respondents.

Table 5: Distribution of Religion by Trade Union

Religion	Drivers N (%)	Teachers N (%)	Total N (%)
Muslim	65 (42.8)	18 (11.9)	83 (27.4)
Christian	85 (55.9)	127 (84.1)	212 (70.0)
Pagan	2 (1.3)	6 (4.0)	8 (2.6)
Total	152 (100.0)	151 (100.0)	303 (100.0)

The majority of respondents were Christians (70%). Religion distribution does not change according to being driver or teacher.

Involvement of Workers in Trade Unions

Table 6: Involvement of Trade Union Members in Activities

Do you involve in trade union activities?	Drivers n (%)	Teachers n (%)	Total n (%)
Yes	145 (93.5)	103 (68.2)	248 (81.0)
No	10 (6.5)	48 (31.8)	58 (19.0)
Total	155 (100.0)	151 (100.0)	306 (100.0)

Table 6 illustrates the involvement of respondents in trade union activities. 81% of respondents said they were involved in trade union activities. More drivers were involved in trade union activities (93.5%) than teachers (68.2%). This is expressive of their active participation, indicated by the sizeable proportion of workers who partake in trade union affairs. From the table more than 60% of respondents from both subgroups take active part in trade union activities confirming their willingness to involve in unions considering the positive impact it brings in their jobs.

Reasons for Belonging to Drivers and Teachers Trade Unions in Cameroon

The research objective aimed to identify reasons that motivate workers to join trade unions in Cameroon, besides legal provisions by the government allowing workers to legally form Trade Unions and the protection for their rights. Table 7 below presents the reasons why employees decide to be part of trade unions in Cameroon. Protection of workers is the commonest reason for joining a trade union, accounting for 65.9% of all reasons. Both drivers and teachers also chose “protection of workers” as their top reason

for joining a trade union, 71.8% and 57.7% respectively. The second most common reason was to “make one’s voice heard” (17.5%), which was also the second most common choice for both drivers and teachers. From the survey, majority of the respondents indicated that unions help to protect workers’ rights, make their voices heard and also engage in collective bargaining. Concurring to the views of respondents, Gunderson (2005), asserted that in addition to the afore mentioned points, union actions will have a positive impact on worker-performance by granting voice to members concerns, increasing their morale and improving communication between the employers and worker.

Table 7: Reasons for Belonging to A Teachers or Drivers Trade Union in Cameroon

What are your reasons for joining trade unions?	Drivers n (%)	Teachers n (%)	Total N (%)
Protection of workers’ rights	102 (71.8)	60 (57.7)	162 (65.9)
To make one’s voice heard	18 (12.7)	25 (24.0)	43 (17.5)
Collective Bargaining	8 (5.6)	19 (18.3)	27 (11.0)
Protection of workers’ rights /to make one’s voice heard	8 (5.6)	0 (0.0)	8 (3.3)
Protection of workers’ rights /Collective Bargain	1 (0.7)	0 (0.0)	1 (0.4)
Protection of workers’ rights /to make one’s voice heard /collective Bargain	5 (3.5)	0 (0.0)	5 (2.0)
Total	142 (100.0)	104 (100.0)	246 (100.0)

Understanding Strategies Used by Trade Unions to Promote Employee-performance in Cameroon

Table 8 shows that the majority (74.3%) of respondents agreed that organizing, collective bargaining, alliance building, and action are the key strategies for unionising, while 19.7% stood for plan, action and evaluation as the main strategy used by unions. 6% of the respondents said formulation, membership drive and power sharing are the main strategies used by trade union to achieve their objectives. Drivers were in more agreement than teachers that organizing, collective bargaining, alliance building, and action are the main strategies used by trade unions for attaining their objectives, representing 80.6% and 65.7% respectively.

Table 8: Strategies Used by Trade Unions to Improve Employee Performance

What are Strategies used by trade unions to improve employee performance?	Drivers n (%)	Teachers n (%)	Total n (%)
Organising, collective bargaining, alliance building and action	116 (80.6)	69 (65.7)	185 (74.3)
Plan, action and evaluation	23 (16.0)	26 (24.8)	49 (19.7)
Formulation, membership drive and power sharing	5 (3.5)	10 (9.5)	15 (6.0)
Total	144 (100.0)	105 (100.0)	249 (100.0)

Core Mandates of Trade Unions in Cameroon

Table 9 below discloses the core mandates used by trade unions in Cameroon to attain the goals of trade unionism. Data from Table 5 is analysed into two subsections; teachers trade unions and drivers trade unions.

For teachers, 78.1% of the respondents revealed that “promote and protect the right and socio-economic interest of workers” are the core mandates of trade unions, 14.3% of them said “fight for the needs of members at workplace” and 7.6% said “promote unity amongst members”. For drivers, 78% of the respondents indicated that “promote and protect the right and socio-economic interest of workers” and 8.5% of them said “fight for the needs of members at workplace” are the principal core mandates of trade unions. While 13.5% were of the opinion that to “promote unity amongst members” is the core mandates of trade unions.

Table 9: Core Mandates of Drivers and Teachers Trade Unions in Cameroon

What are core mandates of Trade Union?	Drivers n (%)	Teachers n (%)	Total n (%)
To promote and protect the rights and socioeconomic interests of workers	110 (78.0)	82 (78.1)	192 (78.0)
To fight for the needs of members at workplace	12 (8.5)	15 (14.3)	27 (11.0)
To promote unity amongst members	19 (13.5)	8 (7.6)	27 (11.0)
Total	141	105 (100.0)	246 (100.0)

Trade Unions and the Role they Play in Employee Performance

Table 10 below presents the extent to which respondents agreed or disagreed that trade unions play a vital role in employee-performance in Cameroon. Overall, the majority (40.2%) agreed, followed by 39.8% who were neutral about the role trade unions play on employee-performance. Only 0.8% of respondents disagreed.

For the teachers, 43.8% of the respondents agreed that trade unions play a vital role in employee-performance, 15.2% of them strongly agreed while only 1% strongly disagreed. Amongst drivers, most of them agreed (37.5%), 42.4% were neutral while only 0.7% disagreed.

Table 10: To What Extent Do You Agree or Disagree That Trade Union Plays a Vital Role in Employee Performance

To what extent do you agree or disagree that trade union plays a vital role in employee performance	Drivers n (%)	Teachers n (%)	Total n (%)
Strongly agree	26 (18.1)	16 (15.2)	42 (16.9)
Agree	54 (37.5)	46 (43.8)	100 (40.2)
Neutral	61 (42.4)	38 (36.2)	99 (39.8)
Disagree	2 (1.4)	4 (3.8)	6 (2.4)
Strongly disagree	1 (0.7)	1 (1.0)	2 (0.8)
Total	144 (100.0)	105 (100.0)	249 (100.0)

Determinants of trade union's role in improving workers-performance

This section aimed to determine whether a relationship exists or not between understanding of employee performance and the demographic and trade union specific factors. A chi-square test of independence was performed to examine the association. The dependent variable was “does trade union membership improve workers performance?”, while the independent variables were, demographic factors and trade union specific questions (Table 11). The analysis, therefore, seeks to identify independent factors that are associated with an improved employee-performance amongst teachers and drivers in Cameroon. The Chi-square results below are reported in the format X^2 (degrees of freedom, N = number of responses) = chi-square statistic value, p = p value. From Table 4.7 below, age group, level of education and rating of strength of trade union were statistically significantly associated with improved employee performance.

We hypothesized that age group is related to improved employee performance. In our analysis, the relation between age and improved employee performance was statistically significant, X^2 (4, N = 243) = 14.4, p = .006. The test statistic (14.4) is greater than the critical value 9.5 from the Chi-square table, therefore we rejected the null hypothesis. There is a significant relationship between Age and employee-performance.

It is hypothesized that the level of education is associated with increased employee performance. The analysis showed a statistically significant association between level of education and improved employee performance X^2 (6, N = 246) = 15.3, p = .018. From the Chi-square table, the test statistic 15.3 is greater than the critical value 12.5, therefore we rejected the null hypothesis. People with a higher level of education have more skills and ability learn faster than those of a lower level of education, this is directly reflected as an improved employee-performance.

A higher rating of the strength of a Trade Union was hypothesized to be related to improved employee performance. This study showed a statistically significant relationship between higher rating of the strength of a Trade Union and improved employee-performance X^2 (2, N = 237) = 13.9, p = .001. The test statistic 13.9 is greater than the critical value of 6.0 based on the Chi-Square Table, therefore the null hypothesis was rejected. Rating the strength of their trade union high is associated with

improved employee performance because powerful trade unions with a strong mandate and core strategies will improve the working conditions and protect its members creating better working conditions for them to be more productive and efficient, hence improving employee-performance.

However, a statistically significant association was not established between gender, marital status religion, duration of membership in trade union, level of confidence in your trade union representatives and other factors (table 11) with improved employee-performance. It was hypothesised that all other independent variables were associated with improved employee performance. However, based on Chi-square table comparison of Chi-square test statistic and critical value, the null hypothesis was not rejected for these variables. So, there was no statistically significant association between these other variables (Table .11) and improved employee performance.

Table 11: Trade Union Factors Associated with Improved Worker-Performance.

Variable	Chi square Calculated	df	Significance	Chi Square Table value	Relationship exists
Gender	0.39	1	0.532	3.841	No
Age	14.4	4	0.006	9.488	Yes
Level of education	13.275	6	0.018	12.592	Yes
Marital Status	2.348	4	0.672	9.488	No
Religion	3.001	2	0.223	5.991	No
Do you involve in Trade Union activities?	0.692	1	0.156	3.841	No
For how long have you been the member of Trade Union?	9.459	4	0.051	9.488	No
How will you rate the strength of your trade union?	13.940	2	0.001	5.991	Yes
How high is the level of confidence you have in your Trade Union representatives?	2.696	3	0.441	7.815	No
Does belonging to a union brings security to life?	2.540	4	0.638	9.488	No
What is your level of familiarity and/or involvement with the work and organization of your Trade?	3.459	4	0.484	9.488	No
To what extent do you agree or disagree that trade union plays a vital role in employee performance?	2.168	4	0.705	9.488	No

QUALITATIVE RESULTS

Since the study focused on two trade unions, it was imperative to get subjective insights from a trade unionist from both teachers and drivers trade unions. Some respondents revealed three common roles that trade unions play on employee performance in Cameroon. These were protecting employees against employer exploitation, collective bargaining, and maintain a cordial working relationship with their employers. To one of the trade union leaders, their trade union mobilises members for collective action especially in areas that concern negotiations for wages and better working conditions.

Thus, looking at the question of the role played by trade unions on employee-performance in Cameroon, the study equally revealed that when trade unions succeed to work out a deal for better working conditions and better wages, employee improved performance is guaranteed.

In conformity with some driver's trade union members and leaders questioned, trade unions play a pivotal role in worker-performance in several ways, which include union protects the right of employees, makes sure all workers work in accordance with the rules and regulation put in place, and brings unity among members and a platform where all their worries are tabled.

Still, on employee performance as a result of trade unionism, this research displays that performances of workers and overall organizational productivity increases when trade unions are well represented in times of disciplinary hearings and in times of grievances. A leader in his response cited situations where taxi drivers are either harassed or assaulted by Police officers in uniforms. He mentioned situations where some are locked up in prisons simply for having a misunderstanding with military personnel. It is for this reason according to his revelations, that such representation from the driver's union guarantee's that the results favour their members consequently motivating them to perform better.

Challenges Faced by Trade Unions in Cameroon and how they Affect Employee Performance

From the findings of the study, it was revealed that teachers' trade union(s) in Cameroon as articulated by the afore-mentioned interviewees face a lot of challenges. Findings reveals that the main challenge which is that

of managing strike actions after difficulty in establishing a dialogue, has often been the case. It was therefore evident that strikes in most cases have often resulted to low employee-performance.

In trying to understand the challenges the drivers' union face in carrying out their daily activities as per the study, a leader of a drivers' trade union indicated as some of the challenges they face, inadequate managerial capacity, extortion from the security forces and insecurity in the town on a daily basis. To him, it is therefore important for the union to strive as part of their objective, to lobby for more changes that will favour their members and eventually improve on their job-performances. Another challenge earmarked by one of the members interviewed was centered on how non-members are represented; to him it has caused a lot of problems as in most cases non-members who are drivers get into problems and turn to the union for help. He however insisted that though some unions do not come to the aid of non-members, it is a responsibility on the side of the trade union to come to the assistance of non-members. Notwithstanding, the non-members are usually schooled on the importance of belonging to a union and eventually some do see the need to adhere.

Understanding the Core Strategies Used by Unions to Promote the performance of employees Cameroon

The leader of drivers' union established that one of the major strategies used is when union members are mobilised for collective action in situations where negotiations have failed. He emphasized on the fact that trade unions play a dual role of protecting members and ensuring that they work hand in hand with management in order to boost high performance.

In an attempt to understand the core strategies, one of the teachers trade unions use a good number of strategies which are building teamwork strategies, empowering workers through seminars, coordinating the teaching activities, and promoting and protecting the rights and socioeconomic interests of union their members. These according to the study are the core founding objectives as they bring members together to fight for a common interest.

Another core strategy employed by one of the unions as cited by a leader has been employing lobbying groups through the influence of Political figures or what is called engagement of trade unions in political affairs,

which impacts employee-friendly laws. This to him is to ensure that labour unions have political powers so that they pressure the state to make or reform labour and trade laws, which are employee-friendly; thus, enhances performance.

The Anglophone Crisis in Cameroon: A Result of Trade Unions Request for Reforms

What has become a full-blown armed conflict within English-speaking regions of Cameroon started as strike actions following grievances by members of teachers and lawyer's trade unions. Considerable number teachers and lawyers in English-speaking regions of Cameroon decided to protest, reason being that they considered that the regime was marginalizing them by forcing the use French language on their courts and schools. As protest actions continued, more than 100 activists were arrested, which further escalated the protests. As a response, the administrative authorities of Cameroon formed a bureau to discourse with representatives of the CACSC. The representatives of the CACSC went to the dialogue with a set of demands ranging from reforming the legal and educational systems to proposing a change to the Federal system of government. The outcomes of the dialogue were unfruitful and consequently the government declared the CACSC illegal, and its leaders were arrested. The problem got worse as secessionist groups emerged seeking for separation from the Republic of Cameroon to form their own state called Ambazonia. Since then, the affected regions have seen repeated episodes of armed conflicts between secessionist and government forces. Schools were interrupted and frequent ghost towns declared in the North West (NW) and South West (SW) regions of the country. This equally drastically affected drivers trade unions, as they were under pressure from government to work on ghost town days declared by the secessionists. Several drivers' cars were burnt, and some lost their lives as a result of failure to comply with either party.

This crisis in Cameroon illustrates the challenging yet necessary role trade unions play in improving employee performance and reforming systems as a whole. These trade unions in Cameroon applied several strategies including organizing, collective bargaining, alliance building and action to push the government to bring about reforms that go a long way to improve employee performance. What started as peaceful protests quickly escalated

and two major dialogues have been organized in attempts to solve the problems. The second, which was a national dialogue organized by the president of Cameroon, led to major reforms and many of the demands earlier made during the first dialogue by the CACSC were granted. What happened since 2016 is not very different from an earlier drivers' trade unions strike of 2008 that resulted from increasing fuel prices. Without trade union intervention the government or employers are not motivated enough to make reforms that improve systems and employee performance. According to a leader of a teachers' Trade Union in the South West Region of the country, the present Anglophone crisis in Cameroon is evidence of how strikes can affect employee performance and the entire system if not handled effectively. It is therefore important to note that when trade union representatives fail to negotiate with the administration, strikes are the next preferred alternatives. In most cases, resolutions after the strike enhance employee performance and in some cases it reduces.

CONCLUSION

We investigated the role played by trade unions in promoting employee performance in Cameroon, with emphasis on teachers and drivers' unions. There is a general understanding that trade unionism influences union members even in their daily operations. This fact added impetus for this study. The specific objectives of the research are assessing reasons for joining a trade union, core mandates and strategies used by trade unions to promote employee-performance and the effect of trade unionism on improved employee-performance.

Our results presented that the main reason of joining teachers and drivers trade unions in Cameroon is for the protection of workers' rights. The main strategies used by trade unions are organising, collective bargaining, alliance building and action. It is also revealed that trade unions have as core mandates the advocacy and protection of the rights and the socio-economic interest of their members. Furthermore, age group, level of education and the rating of strength of trade union are statistically significantly associated with improved employee-performance. The interviewed trade union executives said that their unions play an instrumental role in employee-performance. They, however, noted that the key challenges with teachers and drivers' unions in Cameroon are the wages, working

conditions and legal protection. We can conclude that trade unions play a major role as they embark on helping employees to get their demands and improve on their job performance. Results from interviews and questions made it known that employees always involve themselves in trade union activities as part of their job requirements. Workers have different reasons for adhering into trade unions. For Cameroon, the research revealed that the objective of their adherence is for the protection of members rights and also for collective bargaining.

It is anticipated that the results of this research will give a better comprehension of the nature of the relationship between trade unionism and employee performance. Thus, the techniques on how employee-performance can be improved by trade union activities and how expectations of the respondents can be rendered depending on the findings of the research.

REFERENCES

- [1] Aziz, A. A. (2010). The Extent to Which Labor Unions Can Influence Human Resource Practices in Bahrain, Master's thesis, Open University Malaysia.
- [2] Ash & Seago, (2004). The effects of Registered Nurses' Unions on Heart-Attack Mortality. *Industrial and Labour Relations Review* 57(3).
- [3] Jepkorir, B. M. (2014). "The Effect of Trade Unions on Organizational Productivity in the Cement Manufacturing Industry in Nairobi," School of Business, University of Nairobi.
- [4] Budd, John W. & Bhawe, Devasheesh. (2008). "Values, Ideologies, and Frames of Reference in Industrial Relations", in *Sage Handbook of industrial Relations*, Sage.
- [5] Clark, A. E., Kristensen, N. & Westergard-Nielsen. (2006). Job Satisfaction and Coworker.
- [6] Devinatz, V. G. (2013). The Crisis of U.S. trade unionism and what needs to be done. *Labour Law Journal*, 64(1), 5-19.
- [7] Freeman, R. B. & J. L. Medoff (1981). "The Impact of the Percentage Organized on Union and Nonunion Wages", *Review of Economics and Statistics*, 63, 561-572.
- [8] Gunderson (2005). Two faces of union voice in the public sector/ SpringerLink; <https://link.springer.com>
- [9] Hoxby (2001). Trade Union Membership and Influence 1999-2009; centre for Union studies Uk, cep.lse.ac.uk.
- [10] Jones, Derek, & Takao Kato. (2005). "The Productivity Effects of Employee Stock-Ownership Plans and Bonuses: Evidence from Japanese Panel Data." *American Economic Review* 85 : 391-414.
- [11] McNicholas, C. L., Rhinehart, M Poydock, H Shierholz & D Perez (2020). "Why unions are good for workers—especially in a crisis like COVID-19: 12 policies that would boost worker rights, safety, and wages". *Economic Policy Institute Report*.

[12] Mbide Charles Kude, (2014). “Trade Union Freedom of Association and Collective Bargaining” The Cameroon Experience: The Evolution of Trade Unionism and the Prospects for Alternatives to the Labour Question.

[13] Morikawa, M. (2010) Labour unions and productivity: An empirical analysis using Japanese firm level data. *Labour Economics* 17(6): 1030-1037

[14] Nkirote, N. & Kiiru, D. (2018). Influence of selected trade unions activities on performance of public universities in Kenya. *International Academic Journal of Human Resource and Business Administration*, 3(4), 174-206.

[15] Trades Union Congress (TUC) – Rosa Luxemburg Foundation (RLF), “Trade Unions and Industrial Relations in Ghana”, 2012.

Examining the Economic and Political Dimensions of the Eastern Mediterranean Problem from a Macroeconomic Perspective within the Framework of Neo-Realism and Neo-Liberalism

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ABSTRACT

The United Nations Convention on the Law of the Sea uses the concept of a country's designation as an Exclusive Economic Zone for coastal countries that extend beyond its territorial waters. Accordingly, a state within a 200-mile zone has the right to extract natural resources. On the other hand, since the Turkish Republic of Northern Cyprus is not recognized by other states, according to international law, the entire island is still subject to the Republic of Cyprus. In other words, the Greek Cypriot part of the island is accepted as the Republic of Cyprus and in this respect, this region is seen as the Exclusive Economic Zone of the Republic of Cyprus. However, Turkey argues that the islands are not an Exclusive Economic Zone and therefore sees gas exploration as legitimate. Instead, Turkey considers the coastline of the mainland mass in the Eastern Mediterranean to be very important. On this basis, the Turkish government claims a part of the marine area as the Exclusive Economic Zone, and therefore the natural gas deposits here are located on the Turkish continental shelf. Turkey also demands that the internationally unrecognized Turkish Republic of Northern Cyprus receive a share of the revenues from its gas reserves. This study aims to evaluate this complex problem from a macroeconomic perspective within the framework of neo-realism and neo-liberal perspectives.

Keywords: *Eastern Mediterranean, Turkey, Greece, Cyprus, France, Neorealism, Neoliberalism, Balance of Power*

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* Research Article. Received: 29.09.2021, Accepted: 18.10.2021.

DOI: 10.17932/IAU.FCPE.2015.010/fcpe_v07i2003

INTRODUCTION

According to neo-liberal economic and political views, the primary concern of countries in international relations is to protect their own economic and political interests. However, method and policy changes occur from time to time due to the conjuncture. For example, the economic and political policies followed during the Cold War period and the policies followed in the globalizing world in line with the technological innovation and digitalization that came to the fore in every field, especially in the fields of production and consumption, differ in many respects. However, there is one thing that is common in every period and that is the economic and political interests of the countries that change over time. For this reason, social scientists in fields such as politics and economics, which have developed different theories, try to explain these changing relations within the framework of these theories. On the other hand, neo-liberal and neo-realist approaches come to the fore more economically and politically throughout the world. This fact is valid for the Eastern Mediterranean problem. Normally, this problem arises from the disagreements between Greece and Turkey. However, especially the attitude of Greece causes other actors such as France to get involved in this problem. In this respect, this study aims to address the evaluation of the Eastern Mediterranean problem with a systematic scientific approach.

When the essence of the subject is examined, the source and results of the problem can be evaluated in an understandable framework. In July 2020, Turkey announced that it sent a drilling ship to the region for the search for oil and natural gas energy resources near the island of Crete and that these studies will continue by increasing it has brought some problems with it. Turkey justified this by referring to the memorandum of understanding signed with the UN-recognised Libyan government in November 2019 on the delimitation of maritime zones in the Eastern Mediterranean. However, other Mediterranean countries such as Greece and France rejected the agreement, arguing that the agreement ignored Crete's presence between the Turkish and Libyan coasts. Later, especially France started to follow active policies against these plans of Turkey and acted as the main actor in an anti-Turkey policy.

According to neo-liberalism, states are not self-sufficient units and are not the only actors in world politics. In addition to classical intergovernmental

relations, transnational relations play an important role. That is, in addition to states, there are other influential actors such as multinational companies, banks, or scientific expert groups. States and their existence are accompanied by political power plays and power processes. Their interrelationship is an area of analysis in the interdependence approach. Since both the Eastern Mediterranean problem and other existing problems require international solutions, the necessity of international alliances comes to the fore.

On the other hand, in the world economy dominated by neo-liberal understanding, an understanding prevails that reserves such as oil and natural gas are the key to economic power, and that those who own them can own the world and then rule over it. Today, this approach is seen in this way both in terms of neo-liberalism and neo-realism. In this respect, the Eastern Mediterranean problem and the policies followed can be based on this approach. Because it has both an economic purpose due to underground energy resources such as oil and natural gas, and a political goal in terms of penetrating the region and directing the international power balance according to its own interests. For this reason, it would be more appropriate to try to explain it with neo-liberal and neo-realist theoretical approaches.

The ownership of the Eastern Mediterranean natural gas energy resources and the claims on these resources have both economic and political dimensions. More importantly, the debates on this subject have the feature of being a research topic in many respects in academic circles. Thus, it is important both in terms of international maritime law, the ownership of resources in international territorial waters and the international dimension of conflicts between countries. In this study, this situation has been tried to be evaluated by emphasizing that economic interests and political calculations have a neo-realist and neo-liberal character.

BACKGROUND OF THE RESEARCH

The natural gas dispute in the Eastern Mediterranean comes to the fore as a conflict over fossil fuels, especially natural gas, off the Cyprus coast. Disputes between the European Union, especially Southern Cyprus and Greece and Turkey regarding the underground resources in this lake have emerged since the 2000s. The gas dispute is part of the border dispute between Greece and Turkey, as well as the Cyprus conflict. Ultimately,

the problems in the Eastern Mediterranean are mainly due to conflicts of interest and sovereign rights debates between Greece and Turkey.

Thus, both the economic and political interests of the parties conflict here. In this respect, the issue can be handled in different dimensions within the framework of neo-realist and neo-liberal policies. Namely, France and Greece see Turkey as a threat to their own economic and political interests. From this point of view, the sharing of energy reserves such as natural gas, which is estimated to be found in this region, and efforts to establish dominance in the region lie in the background of the international tension regarding the Eastern Mediterranean.

Table 1: Natural Resources in the Mediterranean Basin

	Quantity (cubic meters)
Oil reserve	270 million m ³ (1.7 billion barrels)
Natural gas Reserve	3.45 trillion m ³

As a matter of fact, according to a study conducted by the US Geological Survey (USGS) in 2010, there are 3.45 trillion m³ natural gas and 270 million m³ (1.7 billion barrels) oil reserves in the Mediterranean basin. Natural gas on the Mediterranean floor can meet the energy needs of countries with direct borders such as Syria, Israel, Lebanon and Cyprus for many years. The largest known of these natural gas fields until 2013 is 510 billion m³ in Israel. In addition, it is estimated that there are 200 billion m³ reserves for the Aphrodite natural gas field in Cyprus (Yaycı, 2012:10-14). Due to the importance of these resources for the countries of the region, it is observed that new pipeline projects and equivalent alliances are formed (Ediger, Devlen, McDonald, 2012:83).

METHODOLOGICAL APPROACH

In this study, the subjects are discussed with a comparative analysis with a descriptive approach. One of the components of a research is to obtain sufficient information about the research problem. For this reason, the descriptive research method stands out as an important approach. In addition, since the approaches of Turkey and France will be discussed, the subject has been evaluated within the framework of neo-realism and neo-liberalism approaches with a comparative analysis.

The research questions of the study are:

- What is the role of energy resources in international relations?
- Why do natural gas reserves, which are estimated to be in the Eastern Mediterranean Region, cause problems between Turkey and Greece?
- Why is France intervening in the Eastern Mediterranean problem?

THEORETICAL AND CONCEPTUAL FRAMEWORK

In this study, the problems and tensions that emerged after Turkey's attempts to discover natural gas reserves in the Eastern Mediterranean were discussed within the framework of international neo-realism and neo-liberalism theory. In other words, the causes and consequences of conflicts and search for solutions in the Eastern Mediterranean have been tried to be analyzed based on the theories of neo-realism and neo-liberalism. Neo-realism or neo-realism theory is an extension of traditional power theories related to international relations and was first mentioned by Waltz in 1979 (Ünay, 1998: 208-210). Neo-liberalism, on the other hand, is a theory used to express economic liberalism and free market capitalism. Both neo-realism and neo-liberalism are evaluated in this study because they bring the economic or political interests of countries to the fore in international problems (İlhan, 2019: 362).

In conclusion, the Eastern Mediterranean problem is an event with a multifaceted and complex history. Therefore, it is important to consider it from the perspective of both economic, political and international conflicts of interest.

Since the Eastern Mediterranean problem is a current and international problem, it is the subject of many scientific articles and books, especially by Turkey. In this respect, there is no shortage of resources in the literature research. It is possible to talk about a common feature of the sources discussed in this study. In almost all of them, the Turkey side theses are defended and the issue is handled as Turkey's just cause. In this respect, this study is mostly based on these sources and the subject is limited in terms of both theoretical, methodological and content. In terms of content, the subject has been dealt with within the framework of domination wars

over energy resources. The theories used as methods and references are approaches such as neo-liberalism, neo-realism and partially dependency. However, it should be emphasized that it will not be sufficient to evaluate international problems only within the framework of a theory. It will only be able to shed light on one aspect of the problem. Because, especially in the globalizing world experiencing digital and technological revolutions, the relations between countries are experiencing a similar dynamic process.

THE PLACE OF NEO-REALISM THEORY IN INTERNATIONAL RELATIONS AND THE EASTERN MEDITERRANEAN PROBLEM

Since the 17th century, the balance of power in international politics in Europe has been the political order of sovereign states, which are in constant conflict with each other, but the weaker ones are always against them. The strongest do not wage unlimited wars against each other. In addition to the balance of power, the exercise of power by a hegemony and control of power through international agreements and institutions exist as a model for securing peace. In international relations theory, the distribution of power among states is a central theme of neorealist interpretations (Yirmibeşoğlu, 2018:120).

The founder of neo-realism, Waltz systematically presents international relations as “interacting units” composed of structures and individual states. The balance of power states that states are actors in a structure where anarchy prevails due to the lack of central power. This anarchic situation forces states to act based on security and power (help yourself principle). After all, the highest national goal is the survival of states. States are rational actors driven by interests with different powers. State security policy is expected to guarantee its own strength, and this is in theory elevated to states’ most urgent task. In this context, not only the military power of a state, but also its economic power plays an important role. According to Waltz, if there is a power imbalance, states tend to balance this power imbalance. He tries to do this with his own weapon or by forming alliances. Neo-realism theory developed by Waltz states that the international system consists of two important components. These are the structure, which is the characteristics of the international system, and the units within this system, namely the states. According to the neo-realism approach, the following three basic principles shape the national and international policies of a state (Düzgün, 2020: 263-264):

- Administrations tend to act rationally according to certain cost-benefit analysis.
- The primary purpose of a country's policy is to secure its own existence.
- Only states have the ability and legitimacy to act externally politically.

States can be considered identical in their characteristics, but of course, they differ on the basis of their military, economic and technical capabilities. Depending on the distribution of these capacities, they can have a say in the international system.

According to the neo-realist approach, the state can form alliances when necessary due to its interests. These alliances can also be between states located at opposite poles. Despite this alliance formation, it should not be assumed that a unique form of cooperation can develop between states. Such alliances are in most cases very short-term because changes in the power line-up can occur and are therefore very fragile. As a result, the prospect of comprehensive cooperation, even alliances and institutions among states, is of course extremely difficult. These will only happen if there is a concrete threat to the survival of a state (Düzgün, 2020:269-271).

Considering the Eastern Mediterranean problem in this context, both the agreement between Turkey and Libya and the agreement between France, Greece, Southern Cyprus, Egypt, and Libya are an alliance of interests and can only be valid as long as this interest continues. According to neo-realism, the international system has an anarchic structure, and every state tries to maintain the balance of interests and power to guarantee its security within this system (Kökyay, 2020: 2508).

THE PLACE OF NEO-LIBERALISM THEORY IN INTERNATIONAL RELATIONS AND THE EASTERN MEDITERRANEAN PROBLEM

Neo-liberalism basically stands out as the most realistic and updated approach to capitalism or the capitalist market economy. Neo-liberalism has little to do with political liberalism, and in a decisive respect, they can even be seen as antagonists. Political liberalism represents the primacy of political freedoms and fundamental rights over pure economic freedoms. Neo-liberalism reverses this relationship. According to neo-liberalism,

economic freedoms come first. In other words, if the economy is good, everyone is good, the approach is dominant (Safi, 2018: 1786-1789).

While the state establishes and regulates the market in political liberalism, the market is expected to regulate and shape the whole society in neo-liberalism. The principles of neo-liberalism are not freedom, equality and fraternity, but freedom of competition and property. In this respect, even democratic countries may find it appropriate to support the party that brings them more economic benefits, rather than the principles of freedom and equality, when their economic interests are in question (Yanık, 2015:47-50). Due to the geopolitical location of the Eastern Mediterranean and its rich fossil energy resources, the world market is especially aimed at Western countries, and it is tried to benefit from these resources by creating energy pipelines (Ediger, Devlen, McDonald, 2012:78). As a matter of fact, France, which follows a predominantly neo-liberal policy, supports the Greek side in the Eastern Mediterranean issue, both for political and economic reasons (Yanık, 2015: 45).

THE PLACE OF ENERGY RESOURCES IN INTERNATIONAL RELATIONS

Energy sources are different energy carriers which can be suitable for industrial use and home use, for example, Hard coal, natural gas, crude oil, hydropower, etc. The current economic situation and the increasing global demand for crude oil and natural gas support situations where these energy resources can be used by suppliers as a means of pushing political interests. The oil crisis of the 1960s can be seen as a precedent in this context. Energy resource producers of states are sometimes faced with the accusation that they instrumentalize their energy resources for political purposes (Şengöz, 2019:10-14).

After the First and Second World Wars, especially because of industrialization, the energy consumption of countries increased. This increasing energy consumption cannot be prevented as technological development and people's needs do not decrease. Fossil fuels account for the largest portion of total energy consumption and these fuels are becoming increasingly scarce. On the other hand, there is a great need for fossil energy, but not every country has sufficient oil and natural gas resources. Therefore, every country is in search of claiming rights on the

areas where this resource exists or obtaining a right by intervening in the problems of that region and country (Baysal, 2012:220-223).

In the 21st century, when neo-liberalism is dominant, the concepts of energy dependence, energy supply security and energy demand play a major role in international relations. In international relations, the economic growth of states depends on energy and energy is the main source of people's daily lives. For this reason, energy should be transported and guaranteed through uninterrupted and secure supply relations between countries. Due to the needs of globalization, the energy demand of large, industrialized countries and especially developing countries such as Turkey is getting more and more attention around the world. Therefore, energy supply plays a big and important role in both political relations and economic cooperation. Energy is an important indicator for countries to make their economic growth sustainable. For this reason, states want to meet their energy needs at cheap prices, with safe transportation routes, with less dependency and uninterruptedly (Furuncu, Akbaş, 2019:1725).

In this context, oil and natural gas are the most important energy sources. Countries are accelerating their research and exploration activities for environmentally friendly and inexpensive new energy sources such as natural gas. In this respect, the areas where new natural gas, oil, gold, and other underground reserves can be found are the new focus of the powers that are in search of resources. On the other hand, major international powers are using their power against each other to benefit more from these regions in terms of economic policy. In this respect, the estimated natural gas reserves in the Eastern Mediterranean are of great interest. More importantly, the limited energy resources and especially the regions and countries where there are reserves such as natural gas come to the fore. Moreover, countries are highly dependent on other countries with these reserves in terms of their energy needs. In this context, there is a mutual dependency between countries. In other words, there is a mutual dependency between countries in terms of energy production, supply, consumption, and energy transportation (Çukurçayır, Sağır, 2008:258-260).

As we mentioned above, Europe's energy demand is always increasing and at the same time, European energy resources are decreasing. Oil and

gas are the keys to economic political power, anyone who owns them can own and dominate the world, then exercise their political and economic will. The European Union imports about 26% of its natural gas needs from Russia. In this respect, it can be considered as a correct policy according to both neo-liberal and neo-realistic approaches that the EU should take sides with Cyprus and Greece, which are its members, in the discussions about its reserves in the Mediterranean, to reduce its energy dependence even partially (Güneş, Arslan, 2018: 39-40).

This fact can also be explained within the framework of the theory of interdependence. According to this theory, it assumes that the saving power on resources determines the assertiveness of the actor. States and their existence are accompanied by political power plays and power processes. Their interrelationship is an area of analysis in the interdependence approach. This approach focuses on domestic and foreign policy events. According to the theory of interdependence, a single state today is unlikely to make decisions without dialogue with other states that will lead to changes across national borders. This is, of course, a result of the ever-evolving globalization. In this context, energy projects create mutual dependence (Kakışım, 2019:70). Ultimately, when Turkey wants to increase its energy resources and become at least self-sufficient and even an energy exporting country, it is involved in an intensive study on the Eastern Mediterranean natural gas reserves (Öztopal, Yiğittepe, 2020:262-265).

WHY DO NATURAL GAS RESERVES ESTIMATED IN THE EASTERN MEDITERRANEAN REGION CAUSE PROBLEMS BETWEEN TURKEY AND GREECE?

There are several reasons for the conflict between Turkey and Greece in the Eastern Mediterranean. These:

- Continental shelf uncertainty
- Economic value of natural gas reserves estimated to be in the region
- Turkey's "Blue Homeland" policy
- The presence of other powers, especially France, as a balancing factor in this region

Both states have been in conflict for years over sovereign territories in the Aegean Sea and the future of the divided island of Cyprus. When the discovered energy reserves are added to these problems, when it gains a new dimension as the “Eastern Mediterranean Problem”, Greece focuses on creating strategic economic and political alliances and aims to conclude the conflict with Turkey in its favor (Ayaz Avan, 2020:99-102).

RELATIONS BETWEEN TURKEY AND GREECE FROM NEO-LIBERAL AND NEO-REALIST PERSPECTIVES

While the relations between Turkey and Greece follow a neo-liberal course, they display a neo-realist approach in problematic areas. That is, while Greece is a member of NATO and the EU, Turkey, as a country that is undergoing the EU membership process and is a member of NATO and the customs union, acts together in common areas in the same international arena as well as neighborly relations with Greece. The fact that supranational structures such as NATO and the EU take sides in the Eastern Mediterranean problem or assume the role of balancing mediator can be explained by neo-liberalism. Because, according to this theory, non-state actors play a role in the international arena, and these supranational structures are effective in ensuring security for the smooth functioning of the free market and the protection of interests. Thus, the circulation of international economic activity will be ensured to function without interruption (Minister, Şahin, 2018:143-144).

In this respect, the two countries cooperate within the framework of neo-liberal economic policies, especially in economic matters. For example, there are no restrictions on tourism activities between the two countries, and Turkish tourists can visit the Aegean Islands without a visa. From this point of view, despite the political disagreements, it is seen that there is a cooperation between them due to economic interests. This is in line with the neo-liberal spirit. Because according to neo-liberalism, economic interest is considered above all problems. On the other hand, the ambiguous issues such as the Cyprus problem, continental shelf problems, the Kardak Islands, and finally the Eastern Mediterranean natural gas reserves seem closer to the neo-realist theory approach. By establishing alliances in the two countries, each tries to shape the balance of power in their favor (Örmeci, 2021:101).

THE EASTERN MEDITERRANEAN PROBLEM IN TERMS OF INTERNATIONAL LAW REGULATION

The coastal rights of countries are regulated by the 1982 United Nations Convention on the Law of the Sea. This provides an “Exclusive Economic Zone” (EEZ) to which a coastal state is the sole owner, and each country uses the mineral resources in this zone. This EEZ extends from the coastline to the border of 200 nautical miles, which is equivalent to about 370 kilometers. If the coast of another country is closer, the arithmetic center is the border. However, Turkey is not a party country since it has not signed the UN Convention on the Law of the Sea (Alper, 2020:30-35). On the other hand, the attitude of the EU, led by France, in this issue is based on international practices and presents a situation against Turkey. According to this view, which is the basis of the EU’s position, at least some parts of the UN Convention on the Law of the Sea gain legal value due to international practices and therefore also apply to non-contracting states. In this respect, it is argued that this contract is binding within Turkey (Ayaz Avan, 2020: 93).

Turkey, on the other hand, argues that the continental shelf of its country, that is, the sea floor that extends to the Turkish coast, is the determining factor. Therefore, this situation gives Turkey an EEZ and the right to use the mineral resources around the Greek islands. In particular, Ankara denies that an island like Cyprus has its own continental shelf and can therefore claim its own economic zone (Erçakıca, 2021:266). The sharing of maritime areas negotiated between Turkey and Libya is based on this reasoning. However, this view is debated in international law and leads to objections. Especially those who oppose Turkey’s thesis accuse the Turkish government of being inconsistent here. According to these, although Turkey does not recognize the continental shelf of an island state like Cyprus, it has determined the maritime borders with the north of Cyprus (Ünver Noi, 2019:14-15).

WHY IS FRANCE INTERVENING IN THE EASTERN MEDITERRANEAN PROBLEM?

France articulates its views on preventing these searches with the allegation that Turkey’s natural gas exploration activities are against the Law of the Sea. Paris has openly sided with Greece, which sees Turkish activities as

illegal. Mutual military harassment in June revealed how tense relations between the two countries were. In order to have a greater say in the Eastern Mediterranean problem, France is trying to pursue a policy by considering its political and economic interests. In this respect, the Right Mediterranean conflict between Turkey and France is above all the result of various strategic conflicts of interest between the two countries. For this reason, Turkey's expansionist policy extending to Libya on this region is met with a special resistance in France, which sees itself as the regulatory power of the Mediterranean region (Örmeci, 2021:99-105).

From both a neo-liberal and a neo-realist perspective, Greece is in a weaker position vis-à-vis Turkey both economically and politically. In this respect, Greece resorts to the balancing strategy. According to the neo-realism balancing strategy, the side that is in a weaker position compared to its opponent seeks a stronger ally in order to be better equipped against the opponent. Thus, by getting his help, he strengthens his position. According to this majority strategy, a weak country usually engages with a potential enemy of its rival, thereby preventing any possible danger to its nation (Waltz, 1979:126). Strategies have pros and cons. However, this strategy is one of the foremost balancing/defensive approaches of neo-realist theory. Here, France represents a balancing partner against Turkey for Greece in the Eastern Mediterranean issue (Tuna, 2020:82-85).

Greece follows an international balancing policy based on the assumption that Turkey will try to weaken its position in the Eastern Mediterranean and that France will strengthen Greece's position. France, on the other hand, as a strong member of the European Union and a country with a coast in the Mediterranean, sees it as suitable for its own economic and political interests to stand by Greece, which is an EU member like itself. If we look at it with a neo-liberal approach, France's economic interests brought a cooperation with Greece.

Natural gas exploration activities in the Eastern Mediterranean region of Turkey conflict both economically and politically, especially in terms of France's position in the European Union region. In particular, the uncertain legal status of the natural gas reserves region, which is estimated to be in the Eastern Mediterranean region, in terms of international law makes it easy for France to intervene in the issue.

Especially under the leadership of Macron, the foreign policy of France sees Turkey as an important economic and political rival in the region. Likewise, under the leadership of Erdogan, Turkey's offensive neorealist or Ottomanist policy, which aims to discover new energy resources and become a stronger country in its region, plays an effective role in the confrontation between France and Turkey in the Eastern Mediterranean region. In other words, since the problem between Greece and Turkey touches the interests of France, France gets involved in the problem. If we look at this approach of France from the perspective of neo-realism, it is acceptable to act pragmatically in international relations, especially for security reasons, and to establish cooperation and new alliances for a short time accordingly (Şeker, 2019:285).

France not only stated that it sided with Greece, but also made diplomatic efforts to encourage stabilizing forces such as NATO and the USA to act in favor of Greece. France also aimed to limit Turkey's maneuvers in the region by making cooperation agreements with Egypt and Libya (Algür, 2020:58). As a result, Greece turned the balance of power in its favor, causing Turkey to suspend natural gas exploration activities in the region. As a matter of fact, ORUÇ REİS, which was carrying out natural gas exploration activities in the region, withdrew. However, this development does not mean that Turkey abandons its pursuit of rights in this region (Oral, 2021:227).

France aims to weaken Turkey's position in the Mediterranean region by cooperating not only with Greece and Southern Cyprus, but also with the countries in the region, especially Egypt and Israel. From this point of view, both Greece and France follow a neo-liberal policy economically, while politically emphasizing a neo-realist approach.

As it is known, neo-liberalism in international relations is a school of thought that believes that states are primarily concerned with absolute gains rather than relative gains compared to other states, or at least should be (Yanık, 2015: 45). From this point of view, if Turkey discovers natural gas reserves in the Eastern Mediterranean, these reserves are relatively to the benefit of France. Because the natural gas to be extracted will be easily transported to Europe and its cost will be low, it will contribute to meeting the natural gas needs of Europe, even partially. However, since Turkey will

get the lion's share of these possible reserves, this situation will be against France in terms of absolute gain.

As a result, both Turkey, Greece, Greek Cyprus, and France want to gain the status of great power internationally and regionally within the framework of their quest to have energy resources or to cooperate with countries that have these resources. Furthermore, according to Aybar, the problem of the Eastern Mediterranean above and beyond France, other Mediterranean region countries such as Egypt and Israel also want to be indirectly involved in order to defend their own interests, or they are making efforts in this regard (Aybar, 2018).

CONCLUSION AND RECOMMENDATIONS

The start of natural gas exploration activities in the Eastern Mediterranean with the Oruç Reis research ship to reduce Turkey's dependence on foreign energy and to explore potential energy sources has led to an international problem coming to the fore once again. As a matter of fact, this active policy faced obstacles not only by Greece but also by France and many other Mediterranean countries.

Thus, the problems between Greece and Turkey have reached the level of an international problem with the involvement of many countries since the discovery of natural gas energy reserves in the Eastern Mediterranean is a great economic power. While Turkey resolutely wanted to continue its work on gas reserves in the Eastern Mediterranean with the emphasis on the "Blue Homeland", EU member states such as Greece and France tried to prevent Turkey's efforts on an international basis.

It does not seem possible to solve the Eastern Mediterranean natural gas reserves problem and the conflicts arising from it soon. In addition to the dispute over the natural gas reserves in the Mediterranean, Greece's attitude towards Cyprus and its constant efforts to put Turkey under pressure, especially in the EU, render efforts to solve such problems inconclusively.

Greece and Turkey, the natural gas reserves in the Eastern Mediterranean are actually only part of the problems that have been going on for a century. It still has uncertainties since the Aegean islands were ceded to Greece after the Treaty of Lausanne. So far, both sides are discussing how the area between the Greek islands and the Turkish coast can be used, and the

issue has not been resolved definitively. Therefore, international powers are involved in this process for economic and political reasons. It was tried to explain this in a more understandable way with neo-realist and neo-liberalist approaches. On the other hand, this problem is a multifaceted and multi-actor problem as it used to be. Therefore, countries and powers such as France, the EU, the USA, Egypt, Israel, and Libya are also involved in the problem due to their own economic and political policies. In addition, Turkey's policy in the Eastern Mediterranean is considered as a requirement of its national interests. This approach can be explained by realism. Because, according to this theory, security and national interests come to the fore as the main factors that determine a country's foreign policy (Demirtaş, Bagdonas, 2012: 2).

Turkey's natural gas exploration efforts in the Eastern Mediterranean have not made any concrete progress so far due to the international initiatives of Greece supported by France. However, Turkey, both as a country with a coast on the Mediterranean and as a guarantor country of the Turkish Republic of Northern Cyprus, will not give up this right. In this respect, the conflicts with Greece, especially the Cyprus problem, will of course be reflected in all kinds of activities of Turkey in this region. However, Turkey's view on the solution of the issue through negotiations is important in finding a political solution to the problem. Because this problem has both an international dimension and an important energy source such as natural gas can cause conflicts of interest with other countries in the region. In this respect, the problem itself is complex and its solution requires an equally multidimensional approach. In this respect, in this study, we tried to evaluate the subject mainly from neo-liberal and neo-realist perspectives.

As a result, the evaluation of the problems that emerged within the framework of Turkey's latest Eastern Mediterranean natural gas exploration initiatives can be summarized with the following results:

- This problem is seen as a part of the Cyprus problem in terms of international politics.
- If the Cyprus problem is not resolved in terms of international law, such problems will arise from time to time in the Aegean and Mediterranean regions.
- This problem is not only seen as a problem between Turkey and Greece.

- Economic and political interests in this region force other countries to be involved in the problem.

There are problems between Turkey and Greece regarding the status of the Aegean Islands, the Cyprus problem, and ultimately the natural gas reserves in the Eastern Mediterranean and gaining an international dimension. Especially the Eastern Mediterranean Problem increases the interest of many countries in the region, both politically and economically, due to the natural gas reserves that are estimated to be in the region. In this case, the more countries are involved in the problem, the more difficult the solution becomes, especially for Turkey. Because Turkey is already under pressure in the international arena because of the Cyprus problem. For example, the Cyprus problem is one of the biggest obstacles to Turkey's EU full membership process. In this respect, Turkey's approach to the Eastern Mediterranean and Blue Homeland policy is negative due to the EU countries' perspective on the Cyprus problem, especially France. In this respect, the solution of the Eastern Mediterranean problem largely depends on the solution of the Cyprus problem and the development of Turkey-EU relations. However, these problems cannot be solved in the short and medium term, both in terms of Turkey and Greece, within the framework of current policies.

Ultimately, the conclusion that the Eastern Mediterranean natural gas reserves issue is a difficult and unsolvable problem in the short term comes to the fore. Looking at the policy he followed for Turkey's security and economic interests from a neo-realist perspective, it was an indication that he followed a policy at an international level that would ensure the security of the nation-state structure, which includes military and economic factors. Turkey's attempts to protect its own interests in this issue will continue. Especially, Turkey's ability to operate in this region with its own technical facilities and research vessels provides a great advantage for Turkey. However, from a realistic point of view, it does not seem possible to conclude the problem in favor of Turkey in the short term, since underground resources such as natural gas and oil require international competition and a balance of power. In this respect, the issue of how the problem will evolve in the future will be an important topic of discussion for international relations and political science.

REFERENCES

- [1] Aybar, A. (2018). “Doğu Akdeniz Enerji ‘Dalaşı’ ve Mısır- İsrail Yakınlaşması”, https://tasam.org/tr-TR/Icerik/50228/dogu_akdeniz_enerji_dalasi_ve_misir_-_israil_yakinlasmasi /Erişim tarihi: 20.09.2021
- [2] Alper, G. (2020). “Uluslararası Hukuk Çerçevesinde Doğu Akdeniz’deki Münhasır Ekonomik Bölge İlanları ve Sınırlandırmaları: Türkiye’nin Güvenliği ve KKTC Üzerindeki Etkiler”, *Anadolu Strateji Dergisi*, 2 (2), 29-42.
- [3] Algür, B. (2020). “Kıbrıs ve Doğu Akdeniz’deki Son Uluslararası Gelişmeler Işığında Değişen Türkiye, ABD ve NATO Politikaları”, *Anadolu Strateji Dergisi*, 2 (2), 55-70.
- [4] Ayaz Avan, E. (2020). “Doğu Akdeniz Deniz Yetki Alanları Sorunu: Türkiye’nin Politikası ve AB’nin Yaklaşımı”, *Avrasya Etüdüleri*, 58 (2), 87-112.
- [5] Baysal, K. (2012). “İkinci Dünya Savaşı Sonrasında Petrol Analizi”, *İstanbul Üniversitesi İktisat Fakültesi Mecmuası*, 35 (1-4).
- [6] Bakan, S. & Şahin, S. (2018). “Uluslararası Güvenlik Yaklaşımlarının Tarihsel Dönüşümü ve Yeni Tehditler”, *The Journal of International Lingual Social and Educational Sciences*, 4(2), 135-152.
- [7] Çukurçayır, M. & Sağır, H. (2008). “Enerji Sorunu, Çevre ve Alternatif Enerji Kaynakları”, *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (20), 257-278.
- [8] Düzgün, D. (2020). “Realizm Teorisinin Ortaya Çıkışı ve Gelişme Evreleri”, *Karadeniz Uluslararası Bilimsel Dergi*, 1 (47), 256-276.
- [9] Demirtaş Bagdonas, Ö. (2012). *Post-Yapısalcılık ve Dış Politika: Türkiye’nin Kıbrıs Söyleminde ‘Milli Çıkarım’ İnşası, İçinde: Dış Politika Analizinde Teorik Yaklaşımlar: Türk Dış Politikası Örneği*, Barış Yayınları, ss. 53-82.
- [10] Ediger, V. Ş., Devlen, B. & McDonald, D. B. (2012). “Levant’ta büyük oyun: Doğu Akdeniz’in enerji jeopolitiği”, *Uluslararası İlişkiler Dergisi*, 9(33), 73-92.

- [11] Erçakıca, M. (2021). “Doğu Akdeniz’de Yaşanan Güncel Gelişmelerin Kıbrıs Sorunu ve Uluslararası Deniz Hukuku Çerçevesinde Değerlendirilmesi”, *Erciyes Üniversitesi Hukuk Fakültesi Dergisi*, 16 (1), 301-334.
- [12] Furuncu, Y. & Akbaş, Z. (2019). “Neoliberal Teori Ekseninde Küreselleşmenin Türkiye’nin Enerji Politikaları Üzerindeki Etkileri: Enerji Ticareti Boyutu”, *Elektronik Sosyal Bilimler Dergisi*, 18 (72) , 1724-1741.
- [13] Güneş, M. & Arslan, T. (2018). “Enerji Bağımlılığında Avrupa Birliği, Rusya, Türkiye Üçgeni ve Doğu Akdeniz Alanı”, *International Journal of Humanities and Education*.
- [14] Oral, F. (2021). “Is the Crisis in the Eastern Mediterranean: Is it About Energy or Sovereignty?”, *Uluslararası Kriz ve Siyaset Araştırmaları Dergisi*, 5 (1) , 219-247.
- [15] Örmeci, O. (2021). “Fransa’nın Doğu Akdeniz Politikasını ve Türkiye ile Yaşanan Güncel Gerginlikleri Anlamak”, *UPA Strategic Affairs* 2 (2021): 96-118.
- [16] Öztopal, M. & Yiğittepe, L. (2020). “Türkiye’nin Enerji Güvenliği Bağlamında Doğu Akdeniz’de Enerji Rekabeti”, *Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi*, 259-272.
- [17] İlhan, S. (2019). “Neo-Liberalizm, Esneklik ve Güvensizlik”, *Fırat Üniversitesi Sosyal Bilimler Dergisi*, 29 (2), 361-368.
- [18] Kakışım, C. (2019). “Karşılıklı Bağımlılık Kapsamında Türkiye-Rusya Enerji İlişkilerinin Analizi”, *Uluslararası Siyaset Bilimi ve Kentsel Araştırmalar Dergisi*, Cilt 7, Sayı 1, ISSN 2630-6263, ss. 67-89.
- [19] Kökyay, F. (2020). “Neorealizm Kuramı ve Türkiye’nin Doğu Akdeniz Enerji Politikası”, *İnsan ve Toplum Bilimleri Araştırmaları Dergisi*, 9 (3), 2504-2528.
- [20] Ünver Noi, A. (2019). “Doğu Akdeniz’de ABD, AB ve Türkiye İlişkileri Nereye?” *EURO Politika*, 3 (2), 13-16.
- [21] Ünay, S. (1998). “Yapısal realizm ve ötesi Kenneth Waltz’un ‘Uluslararası Siyaset Teorisi’ne eleştirel bir yaklaşım”, *Divan: Disiplinlerarası Çalışmalar Dergisi* (1998): 207-216.

- [22] Safi, İ. (2018). “Neo-Liberalizmin Öncüsü Hayek’in Toplumsal ve Siyasal Kuramı”, *OPUS Uluslararası Toplum Araştırmaları Dergisi*, 9 (16), 1770-1793.
- [23] Şengöz, M. (2019). “Ekonomik Savaş Enstrümanı Olarak Global Enerji Politikaları Üzerine Bir Kritik, Enerji Güvenliği Yönetimi”, *Journal of Social Sciences and Humanities*, 3 (2) , 0-0.
- [24] Şeker, B. Ş. (2019). *Doğu Akdeniz Enerji Güvenliği Eksenli: Yunanistan-Gkry’nin Muhtemel Politikalarının Analizi ve Türkiye’nin Tutumu*, Tasam Yayınları, ISBN:978-605-4881-35-2, ss.280-319.
- [25] Tuna, F. (2020). “Türk Dış Politikasında Realist Yaklaşım: Türkiye’nin Doğu Akdeniz ve Libya Politikası”, *Uluslararası Hukuk ve Sosyal Bilim Araştırmaları Dergisi*, 2 (1), 74-87.
- [26] Yayıcı, C. (2012). “Doğu Akdeniz’de Deniz Yetki Alanlarının Paylaşılması Sorunu ve Türkiye, Bilge Strateji, Jeopolitik”, *Ekonomi-Politik ve Sosyo-Kültürel Araştırmalar Dergisi*, Cilt 4, Sayı 6, Bahar 2012, ss. 1-70.
- [27] Yanık, L. (2015). “Liberalizm: Bir Yazın Değerlendirmesi”, *Uluslararası İlişkiler Dergisi*, Özel Sayı: Uluslararası İlişkilerde Kuramsal Okumalar, 34-55.
- [28] Yirmibeşoğlu, Ş. & Yaşar Dinçer, F. (2018). “Uluslararası Ticaret Bağlamında Klasik Realizm, Neo-Realizm ve Neo-Liberalizm”. *Akdeniz Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (3) , 114-127.
- [29] Waltz, K. N. (1979). “Theory of International Politics. Massachusetts: AddisonWesley Publishing Company”

Emotional Intelligence or Artificial Intelligence?: Emotional Artificial Intelligence

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ABSTRACT

Emotional intelligence and artificial intelligence have become quite popular concepts in the relevant literature in recent years. This article combines these concepts. It examines how emotional intelligence affects artificial intelligence and the cause-effect relationship between the two. The data are collected from 152 people who have knowledge of emotional intelligence and artificial intelligence. As a result of the correlation analysis, it was determined that there is a significant relationship between emotional intelligence and the dimensions of artificial intelligence. In addition, as a result of the regression analysis, it was determined that there is a significant cause-effect relationship between emotional intelligence and the comprehensiveness, format, and timeliness dimensions of artificial intelligence.

Keywords: *Emotional Intelligence, Artificial Intelligence, Emotional Artificial Intelligence*

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* Research Article. Received: 16.08.2021, Accepted: 18.10.2021.

DOI: 10.17932/IAU.FCPE.2015.010/fcpe_v07i2004

INTRODUCTION

Emotional intelligence (EI) has become quite common on an institutional and individual basis in recent years. EI has a significant impact on individuals' life satisfaction, career development, social relations, career development, work engagement, and friendships. From an institutional perspective, EI increases employees' job satisfaction, performance, and organizational commitment. These results have an impact on the work efficiency and work determination of the employees. EI is particularly useful for employees and organizations in communication positions (Yao et al., 2019).

When it comes to artificial intelligence (AI), it is also called machine intelligence (Russell and Norvig, 2016). AI is much more effective and efficient in both digital and physical business life. It has become a popular topic in academic literature after the 1950s. AI is used in sectors such as communication, information technologies, health, agriculture, logistics, education, and aviation. It creates profit especially in banking, human resources, health, tourism, and hotel sectors. AI not only generates profits by automating mundane tasks, but it also improves the employee experience. AI using chatbots also contributes greatly to the improvement of service quality (Buhalis and Leung, 2018).

While the prevalence of AI and its impact on improving work productivity is acknowledged, concerns about employee replacement of their jobs are also growing. Robinson (2017) stated that the number of employees in fast food businesses can be reduced. It is predicted that approximately 25% of the activities in hotel establishments will be automated (Chui et. al., 2016). According to the OECD (2016) report, 9% of jobs in 21 countries will be automated. Approximately 50% of financial and insurance businesses are also expected to move to AI (He & Guo, 2018). Morikawa (2017) stated that artificial intelligence will be seen more in ordinary jobs, unlike jobs that require high-level intelligence. It has been claimed that people may be needed continuously in high-level jobs.

Articles so far on AI have focused on the technical efficiency of AI. There is no study on how it can affect people emotionally. It is thought that it may be related to AI as it affects people's EI efficiency, performance, empathy abilities, and awareness. Comprehending the interaction between EI and

AI makes it easier for individuals to analyze and accept new and complex ideas. It can add originality in synthesis and evaluation. This study explores how EI affects the perspective on AI and the relationship between the two. Particular attention has been paid to how EI affects sub-dimensions of AI.

In other parts of the article, AI and EI are explained and hypotheses are formed. Then the hypotheses are tested and the results are presented. There is a need to conduct research on how the EI of people affects their thoughts about AI. Studies mostly focus on the technical and technological aspects of AI. It does not focus on the emotional side. There is a need for careful examination of the mechanisms by which people perceive patterns of emotion. This article contributes to the literature as it mostly focuses on the emotional aspect, apart from the technical aspects of AI. As with any study, this study has some limitations. The study was carried out with 152 people reached. The sample group reached is one of the limitations of the study. Another limitation is that the study was conducted with a questionnaire. Due to the high cost, methods such as observation and interview were not preferred.

EMOTIONAL INTELLIGENCE

Advances in the field of psychology in the early 20th century triggered the investigation of individuals' emotional responses. In the 1960s, people started to express their feelings comfortably. The ability of individuals to express their emotions comfortably constitutes the beginning of the development of EI. Moreover, the development of EI is due to the detection of individuals' failure in their social lives despite their high results in general intelligence measurement tests (Seven, 2019). Accordingly, EI "has been defined as the ability to notice emotions, to distinguish and use emotions" (Mayer and Salovey, 1990). According to Goleman (2012), "it is the ability of individuals to recognize others and their own feelings and to manage these emotions".

EI includes not only evaluating the feelings of others and their own but also managing these emotions. Individuals with high EI can control these emotions and change their emotional states when necessary. Some individuals tend to be unable to control themselves, have weak structural bonds, and succumb to their anger. However, feelings must be understood and used. EI, which has qualities such as successful interpersonal

communication, empathy, and talent to control one's own emotions, may be effective in all areas of life (Kambur, 2018).

EI has four important approaches. According to Mayer et al. (2001), "the first approach is emotional perception, which shows the correct identification, expression, and differentiation of emotions; the second approach is emotional assimilation, which expresses emotion-based thinking, directing attention to important information; the third approach is emotional comprehension, which indicates the ability to recognize feelings between words and emotions and the last approach is the management of the individual's own emotions."

EI also has the potential to improve job performance and career success compared to traditional intelligence. People with high EI experience more career success, build strong personal relationships, and enjoy their health (Schutte et al., 2007). It has been determined that EI affects various business attitudes and behaviors in work environments. Lee and Ok (2012) claimed that EI is positively associated with stress and job dissatisfaction. In addition, EI affects one's ability to cope with environmental demands and pressures (Shi et al., 2014). EI positively affects employee engagement as it facilitates communication. People with high EI adapt more easily to the professional environment (Rozell et al., 2014). People who cannot control their emotions, on the other hand, engage in an internal struggle that hinders their ability to think and concentrate on their work. In addition, D'amato and Herzfeldt (2008) underlined that employees with high EI may have high job satisfaction and commitment.

As a result, EI affects every moment and area just like AI. However, it is not enough to just have feelings. Because emotions are in every person. In addition to recognizing and evaluating emotions, EI obtains information about emotions and ensures that it is reflected in daily life and work and appropriate reactions are given.

ARTIFICIAL INTELLIGENCE

The technological revolution has brought together many devices and systems to help solve the challenges faced in daily life activities. Most of these systems have been focused on solving problems. Makridakis (2017) stated that "the impact of digital and industrial revolutions has a great

impact on every aspect of life, society, companies, and employment”. One of the biggest inventions of the system related to the technological revolution is artificial intelligence (AI) technology. AI has been defined as a computer-based system designed to perform human-made tasks (Simon, 1980). According to Russell and Norvig (2009), AI is “a technology that thinks like a human, acts like a human, thinks rationally and acts rationally”. First of all, it is of great importance to understand what the basic principle of AI is. It can be said that the main principles are reasoning, planning, learning, logic, and perception (Perez and Yang, 2018).

The purpose of AI is to build machines that can do tasks that would normally require human intelligence. However, the purpose of those about the nature of intelligence is not to imitate intelligence, but to make the program intelligent. AI can make certain adjustments according to the speed of continuity (Makridakis, 2017). In addition, the importance of AI comes from improving and deepening the tasks performed by humans. This technology can process nonlinear relationships, learn, develop and make expert decisions. AI can quickly and reliably analyze vast amounts of data (Hilovska and Koncz, 2012).

In recent years, subcategories of artificial intelligence have also been widely used. Its subcategories such as data mining, predictive modeling, data analytics, and big data are among the most common. The newest and most advanced form of AI is capable of automatic processes and applications capable of changing the course of daily business life. Therefore, it is considered to have a great economic result and the potential for progress (Stoicescu, 2015).

Kaplan and Haenlein (2019) stated that “AI can be classified based on applications and evolution. Evolutionary AI can also be grouped into narrow AI, general AI, and super AI.” Narrow AI includes the primary generation of AI where certain specific tasks are applied (Siri and Tesla). Second-generation AI can solve different problems autonomously. It also takes the name personal AI because it deals with specific problems. The third group is called super AI. This generation is expected to have scientific creativity and social skills (Wirth, 2018). Analytical AI benefits multiple intelligence and active learning together to guide future decisions. Kaplan and Haenlein (2019) underlined that “This AI strain will become popular.

It is predicted that humanized AI will have cognitive, emotional, and social intelligence and be aware of their interactions with others. However, this AI system has not yet been realized. Human-inspired AI has both cognitive and emotional intelligence (EI). This AI system can understand human emotions and incorporate them into decision making.”

According to Nabiyeu (2013), “AI is intertwined with various disciplines such as philosophy, mathematics, economics, neuroscience, psychology, computer engineering, and linguistics.” The current achievements and multidisciplinary nature of AI have attracted the attention of both the public and the scientific community. AI enhances human capabilities and productivity. Many companies and organizations are increasing investments in AI. In addition, it has started to be seen in areas such as economy, marketing, health, banking. For example, in retail, Amazon uses analytics AI to support the inventory method. In the tourism industry, chatbots can generate automated answers to their questions. Despite its widespread use, its role in organizations can vary depending on the kind of works and complicity. According to Huang and Rust (2018), “complex emotional-social tasks will be performed by humans, while complex cognitive-analytical tasks will be carried out by AI.”

EMOTIONAL ARTIFICIAL INTELLIGENCE

“Can machines do what people do?” AI, which emerged with the question, has been developing rapidly since the 1950s. AI technologies perform simple and limited tasks with various programs that will make life and work easier. However, nowadays it has come to the point of detecting emotions. AI can detect emotions according to voice and face. For example, some AI technologies can need voices to understand users’ emotions. Sometimes AI can reveal emotions by analyzing the small change that occurs in the face. However, it needs to develop a little more in recognizing complex facial expressions. Strange (2019) stated that scientists want to transfer cognitive development processes from childhood to youth to AI. In this way, it is predicted that AI will have feelings like humans in the future. But emotional and cognitive processes are intertwined. So emotions based solely on cognitive processes can be far from the truth (Pessoa, 2017).

Emotional AI carefully examines unfiltered facial expressions using optical sensors or webcams. According to Eminoğlu (2019) “AI describes the human face in real-time in an image or video. Computer-visible algorithms reveal key points in the human face. Deep learning algorithms analyze the pixels in these regions in order to classify the facial expressions. Finally, the combination of facial expressions is matched with emotions.” Emotion AI also analyzes the way you speak. It observes speech tone and height to examine emotions. For example; Affective company uses “face coding and sensory identification” software to detect emotional responses of people to digital content while using Emotion AI. The only need is a camera and internet connection in a device belonging to the user. When users watch a video of the brand using this technology, they can convey their thoughts about the brand with their feelings without making a written or verbal comment. Then the emotions of all the participants watching the video are stored in a pool and can be monitored statistically on a dashboard belonging to the brand (Eminoğlu, 2019). Google Duplex, developed by Google, can also empathize and respond. This tool fulfills basic demands and interacts in ways that feel human. However, when it comes to complex demands, it needs people. iPhone X, developed by Apple, uses animojis. With the Face ID feature of the device, the facial movements of the user are defined in a completely private way. With the development of this technology, the person communicates in real time using the digital version of himself and his physical expressions. It is possible to use these digital situations in webinars, virtual career fairs and one-on-one meetings (Barrett, 2019).

As AI becomes smarter and more human-like, it can become an expectation that it is based on emotional intelligence. It can also become one of the main skills that a person needs to master in a world that focuses on emotions and in a business environment.

METHODOLOGY

The purpose of this study is to reveal whether emotional intelligence affects their perspectives towards artificial intelligence. For this purpose, correlation and regression tests have been carried out. The research hypotheses have been developed as follows:

H_1 = “There is a significant relationship between emotional intelligence and the comprehensiveness dimension of artificial intelligence.”

H_2 = “There is a significant relationship between emotional intelligence and the format dimension of artificial intelligence.”

H_3 = “There is a significant relationship between emotional intelligence and the accuracy dimension of artificial intelligence.”

H_4 = “There is a significant relationship between emotional intelligence and the reliability dimension of artificial intelligence.”

H_5 = “There is a significant relationship between emotional intelligence and the accessibility dimension of artificial intelligence.”

H_6 = “There is a significant relationship between emotional intelligence and the flexibility dimension of artificial intelligence.”

H_7 = “There is a significant relationship between emotional intelligence and the timeliness dimension of artificial intelligence.”

H_8 = “There is a positive and significant cause and effect relationship between emotional intelligence and the comprehensiveness dimension of artificial intelligence.”

H_9 = “There is a positive and significant cause and effect relationship between emotional intelligence and the format dimension of artificial intelligence.”

H_{10} = “There is a positive and significant cause and effect relationship between emotional intelligence and the accuracy dimension of artificial intelligence.”

H_{11} = “There is a positive and significant cause and effect relationship between emotional intelligence and the reliability dimension of artificial intelligence.”

H_{12} = “There is a positive and significant cause and effect relationship between emotional intelligence and the accessibility dimension of artificial intelligence.”

H_{13} = “There is a positive and significant cause and effect relationship between emotional intelligence and the flexibility dimension of artificial intelligence.”

H_{14} = “There is a positive and significant cause and effect relationship

between emotional intelligence and the timeliness dimension of artificial intelligence.”

Universe and Sample

The universe of this article consists of people who have information about EI and AI. For this purpose, 300 people have been reached. The questionnaire form was delivered to the participants online using a simple random sampling method. Research has been conducted by receiving feedback from 152 online questionnaires.

Data Collection Procedure and Questionnaires

The scales used in the study were created according to a five-point Likert (1=strongly disagree; 5=strongly agree). The data were collected between 04.20.2021-05.10.2021 by using electronic mail via the questionnaire form. The questionnaire form consists of three parts. The first part includes questions about the “Artificial Intelligence Scale” in order to determine the participants’ thoughts on AI. Wixom and Todd (2005) developed the scale evaluating participants’ perception of AI. It is used by Prentice et al., (2020). This scale has seven dimensions. These dimensions are comprehensiveness, format, accuracy, reliability, accessibility, flexibility, and timeliness, respectively. In the second part, “Emotional Intelligence Scale” is included to determine the emotional intelligence levels of the participants. The self-report scale (WEIS) was used to measure emotional intelligence. This scale was developed by Law et al. (2004). When the literature is examined comprehensively, it is seen that there are many scales developed for EI. However, WEIS was preferred in this study because it is widely used and cited in the literature. This scale also has 16 items and 4 dimensions. These dimensions are self-emotion appraisal (SEA), other-emotion appraisal (OEA), use of emotion (UOE), and regulation of emotion (ROE), respectively. The last part consists of questions about the demographic characteristics of the participants.

FINDINGS

Reliability Analysis

Reliability is defined as the measurement tool giving similar results when applied to different sampling selected from the same universe at different places, at different times. In a sense, this refers to the consistency between

the measurement results made at different times with the same measurement tool. Errors arising from the participants in the research, the environment where the measurement is made, the person making the measurement and the measurement tool can be effective in the measurements made. In addition, the fact that the measurement is about concrete and abstract issues also has an effect on reliability. Numerous measurement results made with the same measurement tool related to the concept in question, whether it is abstract or tangible, brings closer to the real score (Gürbüz and Şahin, 2017). The scale is considered to be reliable in cases where the reliability level is 0,70 and above. In some cases, 0,50 and above may be accepted. When the reliability level of the scale is above 0.70, it means that the scale is reliable. In cases where the reliability level is above 0.90, the scale has a very high reliability level and can be used safely in forming scientific judgments (Özdamar, 2015).

Table 1: Reliability Analysis Results of The Scales

Cronbach's Alpha	%	N
Artificial Intelligence	0,932	20
Comprehensiveness	0,741	3
Format	0,615	3
Accuracy	0,899	3
Reliability	0,895	2
Accessibility	0,884	3
Flexibility	0,499	3
Timeliness	0,838	3
Emotional Intelligence	0,873	13

As shown in Table 1, the reliability analysis of the scale of Artificial Intelligence is found to be 0,932, while the Cronbach's alpha values of its sub-dimensions are 0.741, 0.615, 0.899, 0.895, 0.884, 0.499, 0.838, respectively. The reliability result of the emotional intelligence scale is also determined to be 0.873. Therefore, it can be stated that the AI and EI scales are quite reliable.

Findings Regarding Demographic Features

Table 2: Demographic Information

Variables		N	%	Mean	Std. Deviation
Gender	Female	99	65.1		
	Male	53	34.9	1.34	0.478
Education Level	High school or below	16	10.5		
	Associate degree	3	2.0		
	Bachelor degree	77	50.7	3.13	0.891
	Master/doctorate	56	36.8		
Age	18-28	38	25.0		
	29-39	65	42.8		
	40-50	29	19.1	2.20	0.965
	51-61	20	13.2		
Marital Status	Married	49	32.2		
	Single	99	65.1	1.70	0.512
	Other	4	2.6		
		100	100		

As seen in Table 2 65.1% (99) of the 152 participants are female and 34.9% (53) of them are male. 10.5% (16) of the participants are high school or below graduates, 2% (3) of them are associate degree, 50.7% (77) of them are bachelor degree and 36.8% (56) have a master/doctorate degree. Thirty eight of the participants are between the ages of 18-28 years old, while 65 are the ages of 29-39. The remaining 29 participants are between the ages of 40-50 years old, and 20 are over 51 years old. When the marital status of the participants is examined, it has been found that 49 are married and 99 are single. 4 people are neither married nor single.

Relationships Between Variables

Table 3: Correlation Analysis Result Between Emotional Intelligence and Sub-Dimensions of Artificial Intelligence

	1	2	3	4	5	6	7	8
(1)Comprehensiveness	1	0.761**	0.862**	0.749**	0.419**	0.481**	0.370**	0.538**
(2)Format		1	0.746**	0.707**	0.412**	0.453**	0.404**	0.546**
(3)Accuracy			1	0.822**	0.417**	0.527**	0.466**	0.501**
(4)Reliability				1	0.598**	0.474**	0.513**	0.522**
(5)Accessibility					1	0.730**	0.458**	0.420**
(6)Flexibility						1	0.632**	0.482**
(7)Timeliness							1	0.677**
(8)EI								1

** “Correlation is significant at the 0,01 level (2-tailed).”

Pearson correlation analysis is performed to test the relationships between the variables. The coefficient in Table 3 varies between 0.4 and 0.6. According to Table 3, a moderate correlation of 0.538 strength has been determined between EI and comprehensiveness. Also, it has been revealed that there is a moderate relationship with a strength of 0.546 between EI and format; with a strength of 0.501 between EI and accuracy; with a strength of 0.522 between EI and reliability; with a strength of 0.677 between EI and timeliness. In addition; it has been found that there is a low correlation with a strength of 0.420 between EI and accessibility; with a strength of 0.482 between EI and flexibility. This relationship (0.01) is significant at the level of significance. As a result of these results “ $H_1, H_2, H_3, H_4, H_5, H_6$ and H_7 ” are accepted.

Table 4: Regression Analysis Result Between Emotional Intelligence and Sub-Dimensions Of Artificial Intelligence

Dependent Variable	Independent Variables	B	Std. Error	Beta	t	Sig.
Emotional Intelligence	Comprehensiveness	.332	.098	.391	3.40	0.001
	Format	.198	.080	.219	2.48	0.014
	Accuracy	-.149	.110	-.187	-1.35	0.178
	Reliability	-.068	.095	-.091	-.722	0.472
	Accessibility	.085	.073	.116	1.16	0.245
	Flexibility	-.120	.095	-.132	-1.25	0.211
	Timeliness	.503	.063	.608	8.02	0.000

When Table 4 is examined, it is found that EI explained comprehensiveness at the $\beta = 391$ level, so H_8 is accepted. Similarly; EI explained format and timeliness sub-dimensions at the $\beta = 219$, $\beta = 608$ level, respectively. Therefore, “ H_9 and H_{14} ” are accepted. However; since the explanatory level of the dimensions of accuracy ($p > 0,05$), reliability ($p > 0,05$), accessibility ($p > 0,05$) and flexibility ($p > 0,05$) can not be determined, $H_{10}, H_{11}, H_{12}, H_{13}$ are not supported.

In this article, t-test is done to compare the averages of two separate groups for a certain variable. However, it is determined that there is no difference between the averages of the two independent groups for the same variable. Similarly, ANOVA test is conducted to test whether the means of more than two groups are equal to each other. ANOVA test generalizes the t-test for two groups for more than two groups. Table 5 shows ANOVA test result.

Table 5: ANOVA Results Regarding the Variables

Variable	Factor	F value	Significant
Education level	Comprehensiveness	13.574	0.000
	Accuracy	4.227	0.000
	Reliability	7.313	0.000
	Accessibility	7.026	0.000
	Flexibility	4.323	0.000
	Timeliness	3.565	0.000
	EI	2.658	0.000
Age	Comprehensiveness	2.307	0.019
	Format	4.364	0.000
	Accuracy	3.629	0.000
	Reliability	7.510	0.000
	Accessibility	3.591	0.000
	Flexibility	5.118	0.000
	Timeliness	6.730	0.000
	EI	3.642	0.000

*All Levene statistics are meaningless at the 5% level.

Table 6: LSD Results According to The Factor Levels of the Variables

Variable	Factor	Level group	Mean	Sign.
Education	Comprehensiveness	High school or below&Associate degree	2.250*	0.000
		High school or below&Bachelor degree	0.778*	0.000
		High school or below&Master/doctorate	0.744*	0.000
		Bachelor degree&Master/doctorate	1.47*	0.001
Accuracy		High school or below&Associate degree	2.18*	0.000
		High school or below&Bachelor degree	0.698*	0.001
		High school or below&Master/doctorate	0.556*	0.012
		Bachelor degree&Associate degree	1.489*	0.001
Reliability		Master/doctorate&Associate degree	1.630*	0.001
		High school or below&Associate degree	2.43*	0.000
		High school or below&Bachelor degree	0.534*	0.018
		Bachelor degree&Associate degree	1.90*	0.000
Accessibility		Master/doctorate&Associate degree	2.15*	0.000
		High school or below&Associate degree	2.33*	0.000
		High school or below&Bachelor degree	0.848*	0.000
		Bachelor degree&Associate degree	1.48*	0.002
Flexibility		Master/doctorate&Associate degree	2.09*	0.000
		High school or below&Associate degree	1.45*	0.001
		Bachelor degree&Associate degree	1.28*	0.002
Timeliness		Master/doctorate&Associate degree	1.44*	0.001
		High school or below&Associate degree	1.75*	0.000
		Bachelor degree&Associate degree	1.75*	0.000
		Master/doctorate&Associate degree	2.07*	0.000
EI		Master/doctorate&Bachelor degree	0.313*	0.017
		High school or below&Associate degree	1.59*	0.000
		Bachelor degree&Associate degree	1.50*	0.000
Age	Comprehensiveness	Master/doctorate&Associate degree	1.61*	0.009
		18-28&40-50	0.449*	0.017
		29-39&40-50	0.472*	0.006

	41-51&40-50	0.645*	0.004
Format	29-39&18-28	0.521*	0.000
	29-39&40-50	0.769*	0.000
	41-51&18-28	0.414*	0.025
	41-51&40-50	0.662*	0.001
Accuracy	18-28&40-50	0.632*	0.002
	29-39&40-50	0.638*	0.000
	41-51&40-50	0.647*	0.006
Reliability	18-28&40-50	0.844*	0.000
	29-39&40-50	0.828*	0.000
	41-51&40-50	0.520*	0.030
Accessibility	29-39&40-50	0.500*	0.012
Flexibility	29-39&40-50	0.347*	0.032

*Sign.=Significant

**As a result of the ANOVA test, only significant level groups are reported.

It is made inferences that there is a significant difference in the comprehensiveness, accuracy, timeliness, reliability, accessibility and flexibility dimensions of the AI scale according to the education levels of the participants. According to the test results, those who have university, master and doctorate degrees are aware that AI's speed, comprehensiveness, confidence, and the possibility of being mistaken is low. Because the higher the education level, the higher the trust in technology. Increased confidence in technology will trigger its use. Thus, awareness of its comprehensiveness, accuracy, and speed will develop.

A difference has been found in terms of age of the participants in terms of comprehensiveness, format, accuracy, reliability, accessibility and flexibility. This difference is statistically significant. It has been determined that the difference stems from the participants between the ages of 29-50. Participants in this age range are aware of the capabilities of AI. Because they have a certain experience and business competence. They can follow the most up-to-date developments in the business world and try to add the necessary qualifications to themselves and their institutions. It is not

surprising that the difference stems from participants in this age range, as AI has emerged as the latest innovation in all existing sectors.

CONCLUSION

EI has become quite popular in predicting individual and organizational success. AI has also entered the business world. Machines are used in the business world. This situation is called transformational evolution. Given the widespread use of EI and AI, it is critical to examine how individuals are affected. AI and EI are needed in most organizations. Despite the prevalence of advanced technologies, employees with high EI are needed. Individuals with high levels of EI can have a more positive experience in performance. For individuals to have a good experience, they must produce emotional labor that requires appropriate behavioral strategies. Emotional labor strategies can produce positive organizational results.

This research investigated the relationship between EI and AI, and how EI affects thoughts about AI. As a result of the correlation analysis, it has been determined that there is a significant relationship between EI and AI dimensions of comprehensiveness, format, accuracy, reliability, accessibility, flexibility and timeliness. In addition, as a result of the regression analysis, it has been determined that there is a significant cause-effect relationship between EI and the dimensions of comprehensiveness, format and timeliness. Lona et al. (2020) reached a similar conclusion by stating that there is a relationship between EI and comprehensiveness and simplicity. Although theoretically, individuals with sound EI may place great emphasis on comprehensiveness and integrity. Geher et al. (2017) claimed that accuracy is a fundamental aspect of EI. This skill is essential in the way people relate to one another at various levels of relationship. Accuracy is also identified with comprehension, expression and communication skills. Each of these is crucial for navigating the right and positive ways in social situations. These aspects of EI predict many important life outcomes. Ertaş and Kırac (2019) reached a similar conclusion with this study, claiming that EI affects reliability. EI is an emotion that helps people to understand and connect more clearly. This feeling also affects people's skills such as reliability, speaking and listening. In addition, people with high EI will have abilities such as high motivation, entrepreneurship, proactivity, innovative thinking and creativity. Wu et al. (2020) claimed that EI affects cognitive

flexibility. EI and cognitive flexibility can contribute to high subjective well-being. Low cognitive flexibility can contribute to low subjective well-being. From a research perspective, this is one of the first studies to reveal the relationship between different types of intelligence. Similarly, Prentice et. al. (2020), claimed that there is a relationship between EI and AI and this relationship increases organizational performance. As a result of this study, it has been proven that human intelligence is superior and dominant than machine intelligence. In addition, this article can extend the technical and functionality oriented AI research in a theoretical context.

REFERENCES

- [1] Barrett, L. F. (2019). “Emotional expressions reconsidered: challenges to inferring emotion from human facial movements.” *Psychological Science in the Public Interest*, 20(1), pp. 1-68.
- [2] Buhalis, D. & Leung, R. (2018). “Smart hospitality – Interconnectivity and interoperability towards an ecosystem.” *International Journal of Hospitality Management*, 71, pp. 41 –50.
- [3] Chui, M., Manyika, J. & Miremadi, M. (2016). “Where machines could replace humans - And where they can’t (yet)”, <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/where-machines-could-replace-humans-and-where-they-cant-yet>, Online Assessible: 05.22.2021.
- [4] D’Amato, A. & Herzfeldt, R. (2008). “Learning orientation, organizational commitment and talent retention across generations: A study of European managers.” *Journal of Managerial Psychology*, 23(8), pp. 929–953.
- [5] Eminoğlu, Y. (2019). “Duygusal yapay zekâ: Tasarlanmış empati”, <https://www.projesoft.com.tr/yapay-duygusal-zekaemotion-ai-tasarlanmis-empati/> Online Assessible: 05.11.2021.
- [6] Ertaş, H. & Kıraç, R. (2019). “Sağlık yönetimi öğrencilerinin liderlik ve duygusal zeka düzeylerinin incelenmesi.” *EKEV Akademi Dergisi*, 23(80), pp. 247-262.
- [7] Geher, G., Betancourt, K. & Jewell, O. (2017). “The link between emotional intelligence and creativity.” *Imagination, Cognition and Personality*, 37(1), pp. 5-22.
- [8] Goleman, D. (2012). *Emotional intelligence: Why it can matter more than IQ*. Bantam.
- [9] Gürbüz, Ş. & Şahin, F. (2017). *Sosyal Bilimlerde Araştırma Yöntemleri* (4. Baskı), Seçkin Yayıncılık, Ankara.
- [10] Hilovska, K. & Koncz, P. (2012). “Application of artificial intelligence and data mining techniques to financial markets.” *Economic Studies & Analyses / Acta VSFS*, 6(1), pp. 62-76.

- [11] He, D. & Guo, V. (2018, September 14), “4 ways AI will impact the financial job market. World Economic Forum”, <https://www.weforum.org/agenda/2018/09/4-ways-ai-artificial-intelligence-impact-financial-job-market/>, Online Assessible: 22.05.2021.
- [12] Huang, M.H. & Rust, R. T. (2018). “Artificial intelligence in service.”, *Journal of Service Research*, 21(2), pp. 155–172.
- [13] Kambur, E. (2018). “Does emotional intelligence affect quality of service?: An application in the service sector.” *The Journal of Academic Social Science*, 6(71), pp. 587-600.
- [14] Kaplan, A. & Haenlein, M. (2019). “Siri, Siri, in my hand: Who’s the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence.” *Business Horizons*, 62, pp. 15–25.
- [15] Law, K. S., Wong, C.-S. & Song, L. J. (2004). “The construct and criterion validity of emotional intelligence and its potential utility for management studies.” *Journal of Applied Psychology*, 89(3), pp. 483–496.
- [16] Lee, J. J. & Ok, C. (2012). “Reducing burnout and enhancing job satisfaction: Critical role of hotel employees’ emotional intelligence and emotional labor.” *International Journal of Hospitality Management*, 31(4), pp. 1101–1112.
- [17] Lona, W.A.V., Fanggidae, R.E., Nursiani, N.P. & Maak, C. (2020). “The influence of emotional intelligence, intellectual intelligence, spiritual intelligence on employee performance.” *Advances in Economics, Business and Management Research*, 158, pp. 538-545.
- [18] Makridakis, S. (2017). “The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms.” *Futures*, 90, pp. 46-60.
- [19] Mayer, J. D. & Salovey, P. (1990). “Perceiving affective content in ambiguous visual stimuli: A component of emotional intelligence.” *Journal Of Personality Assessment*, 54, pp. 772-781.
- [20] Mayer, J. D., Salovey, P., Caruso, D. R. & Sitarenios, G. (2001). “Emotional intelligence as a standard intelligence.” *Emotion*, 1(3), pp. 232–242.

- [21] Morikawa, M. (2017). Who are afraid of losing their jobs to artificial intelligence and robots? Evidence from a survey. *Japan: Research Institute of Economy, Trade and Industry (RIETI)*.
- [22] Nabiyev, V.V. (2013). *Yapay Zeka-Problemler-Algoritmalar* (5. Baskı), Seçkin Yayıncılık, Ankara.
- [23] OECD (2016). “Automation and independent work in a digital economy”, <https://www.oecd.org/employment/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf>, Online Assessible: 22.05.2021.
- [24] Özdamar, K. (2015). *Paket Programlar ile İstatistiksel Veri Analizi* (10. Baskı), Nisan Kitabevi Yayınları, Ankara.
- [25] Perez, J. A., Deligianni, F., Ravi, D. & Yang, G. (2018). “Computing Research Repository.” *Artificial Intelligence and Robotics*, 1803, pp. 2-44.
- [26] Pessoa, L. (2017). “Do intelligent robots need emotion?” *Trends in Cognitive Sciences*, 21(11), pp. 817-819.
- [27] Prentice, C., Lopes, S. D. & Wang, X. (2020). “Emotional intelligence or artificial intelligence– an employee perspective.” *Journal of Hospitality Marketing & Management*, 29(4), pp. 377-403.
- [28] Robinson, M. (2017, June 13.) “This robot-powered restaurant is one step closer to putting fast-food workers out of a job”, <https://www.businessinsider.com.au/momentum-machines-funding-robotburger-restaurant-2017-6>, Online Assessible: 05.22,2021.
- [29] Rozell, E. J., Pettijohn, C. E. & Parker, R. S. (2004). “Customer-oriented selling: Exploring the roles of emotional intelligence and organizational commitment.” *Psychology & Marketing*, 21(6), pp. 405–424.
- [30] Russell Stuart, J. & Norvig, P. (2009). *Artificial intelligence: A modern approach*. USA: Prentice Hall.
- [31] Russell, S. J. & Norvig, P. (2016). *Artificial intelligence: a modern approach*. Malaysia.
- [32] Schutte, N. S., Malouff, J. M., Thorsteinsson, E. B., Bhullar, N. & Rooke, S. E. (2007). “A meta-analytic investigation of the relationship between emotional intelligence and health.” *Personality and individual differences*, 42(6), pp. 921-933.

- [33] Seven, E. (2019). “Duygusal zeka ve duygusal zekanın tüketicilerinin hedonik satın alma davranışına etkisi” Yüksek lisans tezi, Uludağ Üniversitesi, Bursa.
- [34] Shi, Y., Prentice, C. & He, W. (2014). “Linking service quality, customer satisfaction and loyalty in casinos, does membership matter?” *International Journal of Hospitality Management*, 40, pp. 81 –91.
- [35] Simon, H. A. (1980). “Cognitive science: The newest science of the artificial.” *Cognitive Science*, 4(1), pp. 33–46.
- [36] Stoicescu, C. (2015). “Big Data, the perfect instrument to study today’s consumer behavior.” *Database Systems Journal*, VI (3), pp. 29-39.
- [37] Strange, T. (2019). “How will studying cognitive development shape the next big innovation in AI?” <https://cbmm.mit.edu/news-events/news/how-will-studying-cognitive-development-shape-next-big-innovation-ai-it-pro-portal>, Online Assessible: 05.11.2021.
- [38] Wirth, N. (2018). “Hello marketing, what can artificial intelligence help you with?” *International Journal of Marketing Research*, 60(5), pp. 435–438.
- [39] Wixom, B. H. & Todd, P. A. (2005). “A theoretical integration of user satisfaction and technology acceptance.” *Information Systems Research*, 16(1), pp. 85–102.
- [40] Wu, C-W., Chen, W-W. & Jen, C-H. (2021). “Emotional intelligence and cognitive flexibility in the relationship between parenting and subjective well-being.” *Journal of Adult Development*, 28, pp. 106-115.
- [41] Yao, S., Wang, X., Yu, H. & Guchait, P. (2019). “Effectiveness of error management training in the hospitality industry: Impact on perceived fairness and service recovery performance.” *International Journal of Hospitality Management*, 79, pp. 78 –88.

Altın, Dolar, Euro (Avro) Kurları ve Konut Satışları İlişkisi: Granger Nedensellik Analizi ile Bir Uygulama

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ÖZ

Bilindiği üzere, ülkelerin para birimleri önce belirli oranlarla altın fiyatlarına ve dolara bağlanmış, ardından da serbest kur sistemine geçilmiştir. Ancak serbest kur sistemine geçilmiş olması altın ve para birimleri arasında bir ilişkinin olmadığı anlamına gelmemektedir. Ayrıca konut edinme de bir yatırım alternatifi oluşturmakla birlikte konut satış sayılarının altın, Dolar ve Euro kurları ile arasında bir ilişki olduğu düşünülebilir. Bu çalışmanın amacı altın fiyatları, USD/TL, Euro/TL kuru, ipotekli ve toplam konut satış sayıları arasında bir Granger nedensellik ilişkisinin olup olmadığını araştırılmasıdır. Çalışma kapsamında, Ocak 2013 - Kasım 2019 zaman dilimine ait aylık altın ons fiyatı, Dolar ve Euro'nun Türk Lirası cinsinden değeri, ipotekli konut satış sayıları ve toplam konut satış sayıları kullanılmıştır. Çalışmaya Covid-19 pandemi dönemi verileri dahil edilmemiştir. Mevsimsellikten arındırılan veri seti durağan hale getirildikten sonra değişkenler arasında nedensellik ilişkisinin varlığını test etmek için Granger nedensellik testi uygulanmıştır. İlk olarak altın fiyatları bağımlı değişken olarak belirlendiği nedensellik test sonucuna göre ipotekli konut satış sayısından altın fiyatına, toplam konut satış sayısından altın fiyatına, Dolar/TL kurundan altın fiyatına ve Euro/TL kurundan altın fiyatına doğru tek yönlü nedensellik ilişkileri tespit edilmiştir. İkinci olarak, toplam konut satışları bağımlı değişken olarak incelenmiştir. Altın, Dolar/TL, Euro/TL ve İpotekli Konut satışlarının toplam konut satış sayısının Granger nedeni olmadığı sonucuna ulaşılmıştır. Dolar/TL kurunun bağımlı değişken olarak tanımlandığı analizde, toplam konut satış sayısı, altın fiyatları, Euro/TL ve ipotekli konut satışları ile ilgili bir nedensellik olup olmadığı araştırılmıştır.

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*Araştırma Makalesi (Research Article). Received: 20.08.2021, Accepted: 15.10.2021.

DOI: 10.17932/IAU.FCPE.2015.010/fcpe_v07i2005

*Altın, Dolar, Euro (Avro) Kurları ve Konut Satışları İlişkisi:
Granger Nedensellik Analizi ile Bir Uygulama*

Altın, toplam konut satış sayısı, Euro/TL ve ipotekli konut satışlarının dolar kurunun nedeni olmadığı görülmüştür. Sonrasında bağımlı değişken olan ipotekli konut satış sayıları ile diğer bağımsız değişkenler arasında bir nedensellik ilişkisi bulunmamıştır.

Euro/TL oranının bağımlı değişken olarak alındığı son analizde ise altın, toplam konut satış sayısı, Dolar/TL ve ipotekli konut satış sayılarından bağımlı değişkene doğru Granger nedensellik ilişkisi tespit edilmemiştir.

Anahtar Kelimeler: *Yatırım Araçları, Konut Satışları, Granger Nedensellik Analizi, Altın, Dolar, Euro (Avro).*

Relationship between Gold, Dollar, Euro Rates and Housing Sales: An Application with Granger Causality Analysis

ABSTRACT

As it is known, the currencies of the countries were first tied to the gold prices and the dollar at certain rates, and then the free exchange system was adopted. However, the transition to a free exchange system does not mean that there is no relationship between gold and currencies. In addition, while acquiring a house is an investment alternative. It can be thought that there is a relationship between the number of house sales and gold, dollar and euro exchange rates. The aim of this study is to investigate whether there is a Granger causality relationship between gold prices, USD/TL, Euro/TL exchange rates, mortgaged and total house sales, Covid-19 pandemic period data were not included in the study. After the seasonally adjusted data set was made stationary, the Granger causality test was applied to test the existence of a causal relationship between the variables. First of all, according to the causality test result in which gold prices were determined as the dependent variable, from the number of mortgaged house sales to the gold price, from the total number of house sales to the gold price, from the dollar/TL rate to the gold price, and from the Euro/TL rate to the gold price one-way causality relationships were determined. Secondly, total house sales were examined as the dependent variable and no Granger causality was found from independent variables to the dependent variable. It has been concluded that no Granger causality from Gold, Dollar/TL, Euro/TL and Mortgage Housing sales to total house sales was determined. In the third analysis, in which the Dollar/TL rate was defined as the dependent variable, it was investigated whether there was a causality related to the total number of house sales, gold prices, Euro/TL and mortgaged house sales. It has been observed that gold, total number of house sales, Euro/TL and mortgaged house sales are not the cause of the dollar rate. Then, no causal relationship was found between the dependent variable, the number of mortgaged house sales, and other independent variables. In the final

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analysis which the Euro/TL rate was taken as the dependent variable, no Granger causality relationship is found from gold, total number of house sales, Dollar/TL and Mortgage House sales numbers toward the dependent variable.

Keywords: *Investment Instruments, Real Estate Sales, Granger Causality Analysis, Gold, Dollar, Euro*

GİRİŞ

Altın, Amerikan doları ve Euro (Avro) bugün bireysel yatırımcılar için üç temel yatırım alternatifi oluşturmaktadır. Bunlardan altın binlerce yıllık geçmişiyle Amerikan Doları'ndan çok daha uzun bir maziye sahipken Euro çok yeni bir para birimi olarak insanlığın kullanımına sunulmuştur. Tarih boyunca altın değerli bir varlık olarak görülmüş ve ülkelerin zenginlik göstergesi olarak kabul edilmiştir. Örneğin Merkantilist dönemde Merkantilizm, külçeyi para olarak ve dış ticareti ise külçe kazanmak için kaynak olarak görmüş, hatta askerlere ve donanmaya yapılan ödemeler külçe altın veya gümüş olarak yapılmıştır (Islahi, 2019).

Altın, İkinci Dünya Savaşı sonrasında, 1944 yılında New Hampshire eyaletinin Bretton Woods kasabasında imzalanan Bretton-Woods anlaşmasının sistemine kadar ülkelerin para birimlerinin karşılığını simgelemiş ve Bretton-Woods sistemiyle dolar altına dönüşen tek para cinsi olarak kabul edilerek diğer ülkelerin para birimleri de Amerikan dolarına bağlanmış ve bu sistem 1971 yılında serbest kur sistemine geçişe kadar geçerli olmuştur.

Dolar ve Euro yatırımcıların sıklıkla tercih ettikleri iki yatırım alternatifini oluştururken uzun vadeli yatırım yapmayı planlayan ve düşük risk alan yatırımcılar altın ve gayrimenkul yatırımlarını uygun bulmaktadırlar.

Ekonomiden nörobilime kadar çok geniş bir yelpazede kullanım alanı bulan Granger Nedensellik Analizi, matematiksel formülasyonu, stokastik süreçlerin doğrusal regresyon modellemesine dayanan bir yöntem olarak nedenselliğin ortaya konulmasında yararlanan bir yöntem olarak ön plana çıkmaktadır.

Bu çalışmada Ocak 2013 - Kasım 2019 arasında Altın, Dolar/TL, Euro/TL, İpotekli Konut Satışı ve toplam konut satışı arasındaki nedenselliğin yönü aylık veriler kullanılarak belirlenmeye çalışılmıştır.

LİTERATÜR TARAMASI

Altın, Dolar ve Euro (Avro) Kurları

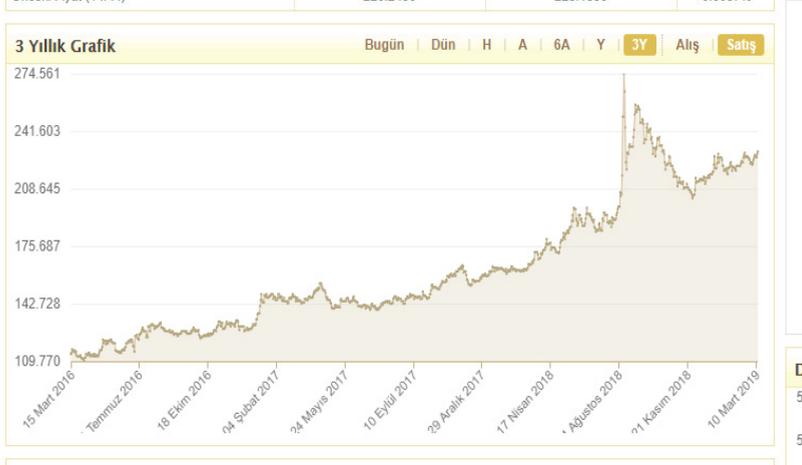
Bireysel ve kurumsal yatırımcıların tercih ettiği yatırım alternatifleri arasında altın ve döviz iki önemli alternatifi oluşturmaktadır. Bu yatırım alternatifleri arasındaki tercih bireysel, demografik ve finansal birçok ölçüte göre değişim göstermektedir. Altına yatırım yapma geleneksel amaçlarla olabildiği gibi spekülasyon amaçlarıyla (Küçükaksoy ve Yalçın, 2017) da olabilmektedir.

İnsanların altınla ilişkisine dair ispatlanabilir ilk deliller M.Ö. yıllara dayanmaktadır. Tarihsel süreç boyunca da altın en değerli maden olarak anılmıştır. Bu sürecin de etkisiyle varlıklarını elde tutabilmek ve koruyabilmek için insanlar altın olarak yastık altı tutmuşlar bu şekilde kendilerini güvende hissetmişler ve bunları kimsenin erişemeyeceğini düşündükleri yerlere saklamışlardır.

Portföy çeşitlendirme amacıyla kullanılan birçok diğer finansal aracın aksine altın bir karşı taraf riski taşımamaktadır. Genelde bir değer deposu olarak kullanılan ve yüksek likidite ile karakterize olan, evrensel olarak kabul edilen bir varlıktır. Michis (2014) tarafından yapılan çalışmada altının sadece orta ve uzun vadeli yatırımlar üzerinden değerlendirildiğinde portföy riskine en düşük katkısını sağladığı gösterilmiştir.

Yatırımcıların geçmişte portföylerinde altın bulundurmalarının ana sebeplerinden birinin, altının enflasyona karşı korunma olarak görülmesi olduğu genel olarak kabul edilmiştir. Ancak geçen birkaç yıl boyunca, uzun vadeli sermaye piyasası türbülansı ve düşük getiri, tarihsel olarak düşük sabit getirili gelirlerle birlikte anılan ve kurumsal yatırımcılar için potansiyel bir varlık sınıfı olarak görülen altının önem kazanmasına neden olmuştur. Emmrich ve McGroarty (2013) çalışmalarında altın külçesinin hemen hemen her zaman alternatif altın yatırım yöntemlerine göre portföy riskine göre düzeltilmiş getiri sağladığını tespit etmişlerdir.

Aşağıda, Şekil 1’de Türk Lirası karşısında altının 2016-2019 yılları arası üç yıllık fiyat değişimi görülmektedir.

Şekil 1: 15 Mart 2016-10 Mart 2019 Altın Fiyatları

Kaynak: <https://altin.in/fiyat/gram-altin>, (14,03,2019)

Şekil 1’den de anlaşılacağı üzere altın kuru 2018 yılının üçüncü çeyreğinde yaşanan kriz göz ardı edildiğinde, TL karşısında her zaman dengeli bir yükseliş göstermiştir.

Dünya savaşları ile ortaya çıkan ekonomik sorunlar, büyük buhran ve altın standardı sisteminin aksaklıkları yeni bir uluslararası parasal sisteme gereksinimi ortaya çıkarmıştır (Küçükaksoy ve Yalçın, 2017). Bu nedenle 44 ülke ABD’nin Bretton-Woods kasabasında bir araya gelmiştir. Temmuz 1944’te müzakere edilen Bretton Woods Anlaşması ile yeni bir uluslararası para sistemi kurulmuştur (Yücel, 2015). Anlaşma uyarınca altın standardından vazgeçilmiş ve diğer para birimleri ABD Doları’na sabitlenmiştir. Bu sistem de 1971 yılına kadar devam etmiş ve 1971 yılında serbest kur sistemine geçilmiştir. Aşağıda, Tablo 1’de 1880-2000 yılları arası döviz kuru rejimleri yıllar itibariyle sunulmuştur.

Tablo 1: 1880-2000 Yılları Arası Döviz Kuru Rejimleri

1880-1914	Altın Standardı (Çift Maden Sistemi ve Gümüş) ve Dalgalı Döviz Kuru
1919-1945	Altın Değişim Standardı, Para Birlikleri, Dalgalı ve Yönetilen Dalgalı sistem
1946-1971	Sabit Ayarlanabilen Döviz Kuru (Bretton Woods), Dalgalı (Kanada), ikili ve çoklu döviz kuru
1973-2000	Serbest dalgalı, Yönetilen dalgalı, Sabit ayarlanabilir, Sabit, Para kurulu, Parasal Birlik

Kaynak: (Bordo, 2003)

Altın fiyatlarına etki eden faktörlerle ilgili literatürde birçok çalışma bulunmaktadır. Aggarwal ve Lucey (2007) araştırmalarında altın fiyat serilerinde psikolojik engellerin varlığını incelemiştir.

Blose (2010) çalışmasında beklenen enflasyondaki değişiklikler altın fiyatlarını nasıl etkileyeceğini araştırmış ve Tüketici Fiyat Endeksi'nde oluşan dalgalanmaların altın spot fiyatlarına bir tesiri bulunmadığını göstermiştir. Ibrahim, Kamaruddin ve Hasan (2014) ise çalışmalarında Malezya'da altın fiyatlarına etki eden faktörleri incelemiştir. Çalışmada, 2003-2012 yılları arasındaki 10 yıllık verileri kapsayan bağımlı ve bağımsız değişkenler arasında anlamlı bir ilişki belirlemek için Çoklu Doğrusal Regresyon Modeli kullanmıştır. Araştırmacı, altın fiyatlarını etkileyen üç bağımsız değişken olarak ham petrol fiyatları, enflasyon oranları ve döviz kurları üzerinde inceleme yapmış ve altın fiyatlarında enflasyon oranları ile döviz kurları arasında negatif yönde anlamlı bir ilişki olduğunu, ham petrol fiyatının ise pozitif olarak önemli olduğunu bulmuşlardır. Shafiee ve Topal (2010) araştırmalarında altın fiyatı ile petrol fiyatı ve küresel enflasyon gibi diğer önemli etkileyen değişkenler arasındaki ilişkiye ilişkin bir araştırma yapmışlar ve maden ürünlerinin gelecekteki fiyatlarını tahmin etmek için bir modelleme yapmışlardır. Toraman, Başarır ve Bayramoğlu (2011) değişken olarak petrol fiyatları, ABD döviz kuru, ABD enflasyon oranı, ABD reel faiz verileri modele dahil ettikleri çalışmalarında, en yüksek korelasyon altın fiyatları ile ABD döviz kuru arasında negatif olarak bulmuşlar ve dahası altın fiyatları ile petrol fiyatları arasında pozitif bir ilişki tespit etmişlerdir. Twite (2002) çalışmasında Avustralya altın madenciliği firmalarının hisse senedi

fiyatlarının altın fiyatlarındaki değişikliklere maruz kalmasını ve altın fiyatlarına maruz kalmanın değerlendirme etkilerini incelemektedir.

Bir diğer çalışmada ise Öner (2018), altın, petrol, döviz kuru, faiz ve volatilité endeksi değişkenleri arası nedenselliği incelemede Granger nedensellik analizini kullanmıştır. Sonuç olarak altından petrole, altından EURO/USD'ye ve altından ABD tahvil faiz oranlarına doğru tek yönlü nedensellik tespit etmiştir. Araştırmanın sonuçlarına göre çift yönlü nedensellik ise ABD tahvil faiz oranları-VIX endeksi arası ve EURO/USD-VIX endeksi arası tespit edilmiştir

Konut Satışları

Gayrimenkul sektörüyle iç içe bir sektör olan konut sektöründe satışlar birçok faktöre bağlı olarak değişim göstermektedir. Türkiye'de özellikle uzun vadeli yatırım yapmak isteyen bireysel yatırımcılar konut sektörünü risksiz bir yatırım aracı olarak gördüklerinden bu sektöre yatırım yapmayı tercih etmekteledir. Konut sektörünün temel özellikleri Özkurt (2007) tarafından şöyle sıralanmıştır:

- İnşaat sektörünün bir bileşenidir ve demir-çelik ve çimento sektörü üzerinde uyarıcı etkisi vardır.
- Tarım, sanayi ve hizmetler ana ekonomik sektörlerinin konusu, tüm üretim faktörlerinin eşit kullanımının bir çıktısıdır.
- Az gelişmiş ve enflasyonist ekonomilerde yüksek kâr beklentisi doğurur.
- Cazip bir yatırım aracıdır, yüksek risk içermez ve diğer yatırımlardan daha güvenlidir.

Literatürde konut ile ilgili bulunan çalışmalardan büyük bölümü konut fiyatlarıyla ilgilidir. Bailey, Muth ve Nourse (1963) regresyon analizi aracılığıyla bir konut fiyatları endeksi oluşturmuştur. Ridker ve Henning (1967) hava kirliliği ile konut fiyatları arasındaki ilişkiyi incelemiş ve konut değerlendirme modellerinin bu çevresel değişkenlere bağlı olarak değişimini ortaya koymayı amaçlamıştır. Din, Hoesli, Hoesli ve Bender (2001) ise çevresel değişkenlerle konut fiyatlarının ilişkisini incelemişlerdir. Koetter ve Poghosyan (2010) gayrimenkul fiyatlarının, rijid arz, kalitedeki heterojenlik ve banka istikrarı üzerinde iki karşıt etki yaratan çeşitli

piyasa kusurları nedeniyle temel değerlerinden sapabileceğini Alman emlak piyasası üzerinde yaptıkları çalışmada ortaya koymuştur. Case ve Shiller (1990) çalışmalarında inşaat maliyetlerinin fiyata oranı, yetişkin nüfustaki değişiklikler ve kişi başına düşen reel gelirdeki artışların tümü, müteakip yıldaki aşırı getiriler veya fiyat değişiklikleri ile pozitif olarak ilişkilendirmişlerdir. Geltner, MacGregor ve Schwann (2003) ise çalışmalarında özel ve kamu gayrimenkul piyasalarında fiyat belirleme literatürünü gözden geçirmekte ve özellikle, özel piyasada değerlendirme düzeltmesi ve kamu ile özel piyasalar arasındaki fiyat keşfi süreçlerini tartışmışlardır. Xu ve Chen, (2012) araştırmalarında uzun vadeli gösterge banka kredi oranı, para arzı değişimi ve ipotek kredisi politikası gibi temel para politikası faktörlerin Çin gayrimenkul fiyat büyüme dinamikleri üzerine etkisini incelemiştir.

Granger Nedensellik Analizi

Çapraz spektral yöntemler, biri diğerine neden olan iki veya daha fazla değişken arasındaki ilişkiyi açıklamak için yararlı bir yol sağlar. Ancak birçok gerçekçi ekonomik durumda geribildirim oluşumuna şüpheli bakılmaktadır. Bu durumlarda tutarlılık ve özellikle faz diyagramının yorumlanması zor veya olanaksız hale gelmektedir (Granger, 1969).

Granger nedensellik veya G nedensellik, öngörülebilirlik ve zamansal önceliklilik kullanılarak tanımlanan zaman serisi verileri için ölçülebilir bir nedensellik kavramı veya yönlendirilmiş etkidir. Granger nedenselliğine göre, eğer bir X_1 sinyali, “Granger nedeni” (veya “G nedeni”) bir X_2 sinyaline neden oluyor ise, X_1 'in geçmiş değerleri X_2 'nin öngörülenmesine yardımcı olan bilgiler içermeli ve sadece X_2 'nin geçmiş değerlerini içermenin ötesinde olmalıdır (Roebroek, 2015).

Bir ekonometrik yaklaşım olarak geliştirilen “Granger Nedensellik analizi” ekonomiden nörobilime kadar oldukça geniş bir kullanım alanı bulmuştur (Barnett ve Seth, 2014).

Kendi geliştirdiği yöntemin kullanımıyla Escribano ve Granger (1998), 1971-1990 yılları arasında aylık verileri kullanarak altın ve gümüş kuru arasındaki nedenselliği analiz etmişler ve eşbütünleşmenin bazı dönemlerde ve özellikle de balon ve balon sonrası dönemlerde meydana geldiği sonucuna varmışlardır.

Hindistan’da yürütülen çalışmada Ray (2012), makroekonomik değişkenlerin stok fiyatları üzerindeki etkisini incelemek üzere Granger Nedensellik Analizi kullanmıştır. Hisse senedi fiyatı ve faiz oranı, hisse senedi fiyatı ve sanayi üretim endeksi arasında nedensel bir ilişki olmadığını, ancak hisse senedi fiyatı ile enflasyon, hisse senedi fiyatı ve doğrudan yabancı yatırım, hisse senedi fiyatı ve gayri safi yurt içi arasında tek yönlü nedensellik olduğu bulunmuştur.

Zhang ve Wei (2010), çalışmalarında petrol ve altın piyasası arasındaki ilişkiyi araştırmak amacıyla Granger nedensellik analizini kullanmışlar; iki pazar arasında uzun vadeli bir denge görülebildiği ve ham petrol fiyatlarının doğrusal olarak değişmesinin altın fiyatının oynaklığına neden olduğu sonucunu elde etmişlerdir.

Bildirici ve Türkmen (2015), çalışmalarında Türkiye’de 1973 - 2012 dönemi için BDS testi, doğrusal olmayan ARDL yaklaşımı ve doğrusal olmayan Granger nedensellik yöntemi ile petrol fiyatları ile altın ve gümüş fiyatı arasındaki ilişkiyi incelemişlerdir. Yine Bildirici ve Türkmen (2015), petrol fiyatları ve değerli madenlerin fiyatları arasındaki nedensellik ilişkisini incelemişlerdir.

Diğer bir çalışmada Simakova (1987), altın ve petrol fiyatları arasındaki ilişkiyi Granger Nedensellik Analizi, Vektör Hata Düzeltme Modeli ve Johansen Koentegresyon Testi aracılığıyla incelemiş ve incelediği değişkenler arasında uzun dönemli ilişkinin varlığını ortaya koymuştur.

Hussin, Muhammad, Razak, Tha ve Marwan (2013), ise çalışmalarında Malezya’da altın ve petrol fiyatları ile İslami Hisse Senedi Pazarı arasındaki ilişkiyi incelemişlerdir, Makroekonomik değişkenlerin hisse senedi fiyatları üzerindeki etkisini çoklu regresyon analizi aracılığıyla ortaya koymuşlar ve bu ilişkinin nedenselliği üzerine de Granger Nedensellik Analizinden yararlanmışlardır.

Bu çalışmada Granger Nedensellik Analizi ile altın, Dolar, Euro kurları ve konut satışları ilişkisi incelenmiştir. Çalışmanın değişkenlerini ve yöntemini kullanan çalışmalardan bazıları aşağıdaki tabloda görülmektedir:

Tablo 2: Literatürde Granger Nedensellik Analizi
Altın, Dolar, Euro ve Konut Satışları

Değişken	Yöntem	Çalışmalar
Altın	Granger Nedensellik Analizi	(Baur & Tran, 2014; Patel, 2013; Schweikert, 2018; Smith, 2001; Tursoy & Faisal, 2018; Yurdakul & Sefa, 2015)
Dolar	Granger Nedensellik Analizi	(Bahmani-Oskooee & Sohrabian, 1992; Bekiros & Diks, 2008; Benhmad, 2012; Nair, Choudhary, & Purohit, 2015; Nazlioglu & Soytaş, 2012)
Euro	Granger Nedensellik Analizi	(Inagaki, 2007; Krainer, 2014; Sermpinis, Dunis, Laws, & Stasinakis, 2012; Sosvilla-Rivero & del Carmen Ramos-Herrera, 2012; Wang, Yang, & Li, 2007)
Konut	Granger Nedensellik Analizi	(Hui & Yue, 2006; Mikhed & Zemčík, 2009; Yavas & Yildirim, 2011; J, Zhang, Wang, & Zhu, 2012)

Altın, Dolar, Euro ve konut değişkenlerini kullanarak yapılan araştırmalar tabloda görülenlerle sınırlı değildir. Altın, Dolar ve Euro sık çalışılan değişkenlerden olmakla birlikte konut değişkeni genellikle çalışmaların tümünde “konut fiyatları” olarak incelenmiştir. “Konut satışları” değişkeninin incelenmesi bu çalışmanın literatüre temel katkısını oluşturmaktadır. Literatürde ayrıca çok incelenen değişkenlerden biri de petrol fiyatlarıdır (bkz. Hooker, 1996; Henriques ve Sadorsky, 2008).

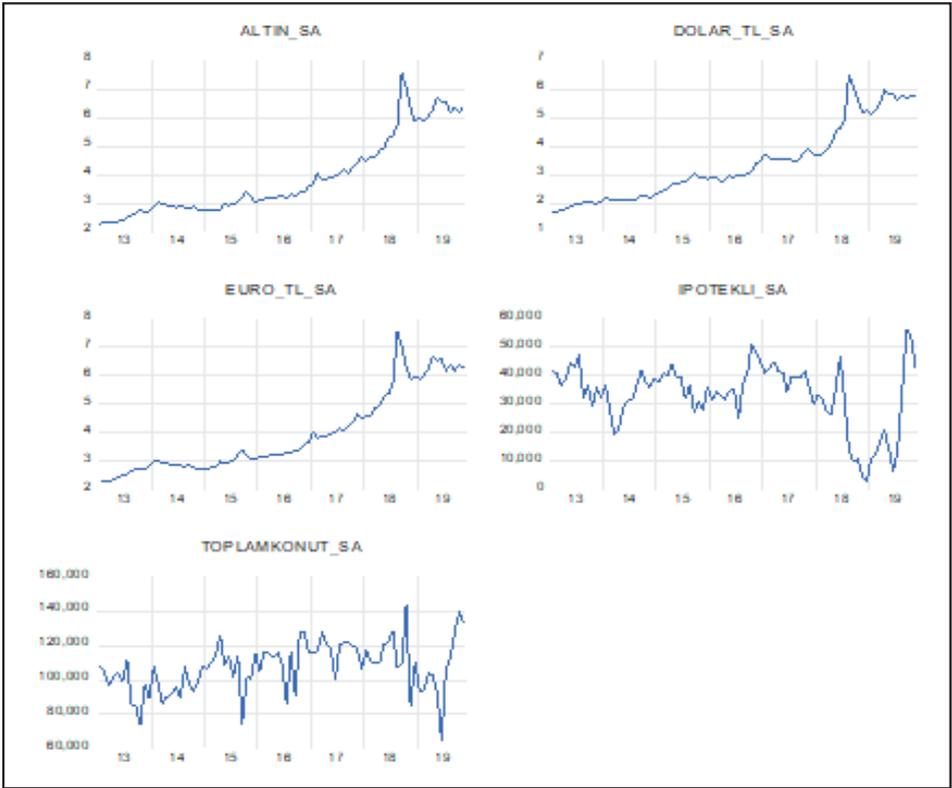
Bu çalışmada Ocak 2013 - Kasım 2019 arasında Altın, Toplam Konut Satışları, Dolar/TL, İpotekli Konut Satışı ve Euro/TL arasındaki nedenselliğin yönü aylık veriler kullanılarak belirlenmeye çalışılmıştır.

ARAŞTIRMA YÖNTEMİ VE BULGULARI

Granger nedensellik analizi, ilişkisi araştırılacak değişkenlerin aralarındaki ilişkinin nedenselliğinin yönünü istatistiksel bakış açısıyla belirleyen bir yöntem olarak kullanılmaktadır. İlişkinin tespit edilmesi ve iki veya daha fazla ilişkinin yönünün belirlenmesi açısından sıklıkla kullanılan bir yöntem olarak ön plana çıkmaktadır. Bu çalışmada, Ocak 2013 - Kasım 2019 arasında “altın”, “ipotekli konut satışı”, “toplam konut satışları”, “Dolar/TL”, ve “Euro/TL” arasındaki nedenselliğin yönü aylık veriler

kullanılarak ortaya konmuştur. Konut satış istatistikleri için gerekli verilere TUIK Türkiye konut satış sayıları (aylık) ve ipotekli konut satış sayıları (aylık), TCMB EVDS veri merkezinden derlenerek hesaplanmış ve analize dahil edilmiştir. Diğer ons ve kur verilerine investing.com sitesinden ulaşılmıştır. Altın, altın fiyatlarının aylar itibari ile TL cinsinden ons değerlerini, toplam konut satışları dönem içi gerçekleşen tüm satışları, Dolar/TL Doların TL cinsinden değerini ve Euro/TL, Euro'nun TL cinsinden değerini göstermekte olup mevsimsellikten arındırılmıştır. Aşağıdaki Şekil 2'de mevsimsellikten arındırılmış seriler değişkenler bazında sunulmuştur.

Şekil 2: Altın, Diğer Konut Satışları, Dolar/TL, İpotekli Konut Satışları ve Euro/TL Histogramı



Ardından ADF birim kök testi uygulanmıştır. Beş değişkene ait veri seti aynı derecede (birinci derecede) durağandır. Veri seti Granger nedensellik testi uygulaması adına uygun bulunmuştur.

Tablo 3: ADF Birim Kök Testi

UNIT ROOT TEST RESULTS TABLE (ADF)						
Null Hypothesis: the variable has a unit root						
At Level						
		ALTIN_SA	DOLAR_T...	EURO_TL...	IPOTEKLI...	TOPLAMKONUT_
With Constant	t-Statistic	-0.3736	-0.3145	-0.4203	-3.3030	-3.0988
	Prob.	<i>0.9078</i>	<i>0.9172</i>	<i>0.8999</i>	<i>0.0179</i>	<i>0.0306</i>
	n0	n0	n0	**	**	**
With Constant & Trend	t-Statistic	-2.2672	-2.5147	-2.3121	-3.3965	-3.7571
	Prob.	<i>0.4465</i>	<i>0.3205</i>	<i>0.4226</i>	<i>0.0590</i>	<i>0.0241</i>
	n0	n0	n0	*	**	**
Without Constant & Trend	t-Statistic	1.4410	1.6684	1.3886	-0.8542	0.0486
	Prob.	<i>0.9620</i>	<i>0.9762</i>	<i>0.9579</i>	<i>0.3429</i>	<i>0.6955</i>
	n0	n0	n0	n0	n0	n0
At First Difference						
		d(ALTIN_...	d(DOLAR...	d(EURO_...	d(IPOTEK...	d(TOPLAMKONU
With Constant	t-Statistic	-8.7724	-8.4047	-8.8111	-7.5928	-15.9195
	Prob.	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0001</i>
	***	***	***	***	***	***
With Constant & Trend	t-Statistic	-8.7580	-8.3766	-8.7797	-7.5851	-15.8601
	Prob.	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
	***	***	***	***	***	***
Without Constant & Trend	t-Statistic	-8.5496	-8.1138	-8.5841	-7.6450	-16.0014
	Prob.	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
	***	***	***	***	***	***

Notes:
a: (**) Significant at the 10%; (***) Significant at the 5%; (****) Significant at the 1% and (no) Not Significant
b: Lag Length based on SIC
c: Probability based on MacKinnon (1996) one-sided p-values.

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Veri setinin logaritmik değerleri alınarak birim kökten arındırılmıştır. Granger Nedenselliğinin araştırılacağı beş kritere ait aylık veri setinin birim kökten arındırılmış logaritmik değerleri için önce VAR modeli kurulmuştur. Gecikme uzunlukları Akaike kriterlerine göre tespit edilmiş ve gecikme uzunluğu 7 olarak belirlenmiştir (bkz. Tablo 4).

Tablo 4: Gecikme Uzunlukları

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-546,7167	NA	1,687194	14,71244	14,86694	14,77413
1	-266,9198	514,8263	0,001893	7,917860	8,844855	8,287999*
2	-234,6734	55,03375	0,001574	7,724624	9,424116	8,403213
3	-199,5862	55,20382	0,001230	7,455633	9,927620	8,442671
4	-172,4903	39,01818	0,001215	7,399741	10,64422	8,695227
5	-140,0619	42,37306	0,001072	7,201651	11,21863	8,805587
6	-117,6323	26,31737	0,001286	7,270196	12,05967	9,182581
7	-71,75855	47,70875*	0,000871*	6,713561*	12,27553	8,934395

* indicates lag order selected by the criterion

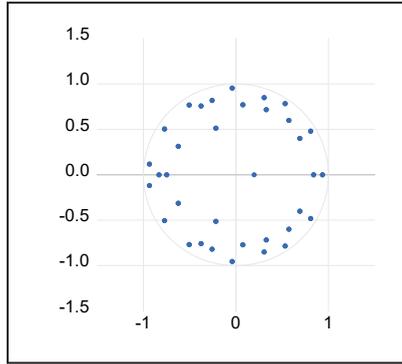
LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Şekil 3: AR Polinomu

Araştırmada ilk bağımlı değişken Altın fiyatları olarak incelemeye alınmıştır. Altın fiyatlarının, Dolar kuru, Euro kuru ve ipotekli konut satışları ve toplam konut satışları ile arasında bir nedensellik olup olmadığı araştırılmıştır.

H_0 hipotezi: Bağımsız değişkenin nedensellik ilişkisi araştırılacak bağımlı değişkenin nedeni olmadığı yönündedir.

H_1 hipotezi: Bağımsız değişken bağımlı değişkenin nedenidir şeklinde kurulur.

Prob., yani olasılık değeri $< 0,05$ olduğunda H_0 hipotezi reddedilir ve H_1 kabul edilmektedir. Altın fiyatlarının bağımlı değişken olarak alındığı analizde (her 4 değişkende $<0,05$ bulunduğu için) Dolar kuru, Euro kuru, ipotekli konut satış sayısı ve tüm konut satışları altın ons değerinin bir nedeni olduğu sonucuna ulaşılmıştır.

Tablo 5: Granger Nedensellik Analizi Sonucu (Bağımlı değişken *ALTIN*)

Değişkenler	Chi-Sq	df	Olasılık (Prob.)
DOLAR/TL	70,35462	7	0,0000
EURO/TL	15486,98	7	0,0000
İpotekli Konut Satış Sayısı	22,51845	7	0,0021
Toplam Konut Satış Sayısı	57,23109	7	0,0000

Araştırmada ikinci bağımlı değişken toplam konut satış sayısı kriteridir. Toplam konut satış sayısı altın, Euro kuru, Dolar kuru ve İpotekli konut satışları ile arasında bir nedensellik olup olmadığı araştırılmıştır. H_0 hipotezi bağımsız değişkenin nedensellik ilişkisi araştırılacak bağımlı değişkenin nedeni olmadığı yönündedir. H_1 hipotezi ise bağımsız değişken bağımlı değişkenin nedenidir şeklinde kurulur. Probability $<0,05$ olduğunda H_0 reddedilir ve H_1 kabul edilmektedir. Tablo 6'dan anlaşılacağı üzere Granger nedensellik analizi sonucunda altın, Dolar/TL, Euro/TL ve İpotekli Konut satışlarının toplam konut satış sayısının nedeni olmadığı tespit edilmiştir.

Tablo 6: Granger Nedensellik Analizi Sonucu
(Bağımlı Değişken *Toplam Konut Satış Sayısı*)

Değişkenler	Chi-Sq	df	Olasılık (Prob.)
Altın	6,786876	7	0,4514
DOLAR/TL	7,577385	7	0,3713
EURO/TL	8,745685	7	0,2714
İpotekli Konut Satış Sayısı	6,005195	7	0,5391

Araştırmada üçüncü bağımlı değişken olarak Dolar kuru (Dolar/TL) kriteri alınmıştır. Dolar/TL kurunun toplam konut satış sayısı, altın fiyatları, Euro/TL ve ipotekli konut satışları ile arasında bir nedensellik olup olmadığı araştırılmıştır. Dolar/TL kurunun bağımlı değişken olarak

alındığı analizde olasılık değerleri 0,05' ten büyük çıkmıştır. Bu sebep ile H_0 hipotezi kabul edilir ve bir Granger nedensellik ilişkisi bu bağımlı değişken adına bulunmamıştır sonucuna ulaşılır.

Tablo 7: Granger Nedensellik Analizi Sonucu (Bağımlı Değişken *DOLAR/TL*)

Değişkenler	Chi-Sq	df	Olasılık (Prob,)
Altın	5,668838	7	0,5789
EURO/TL	8,234970	7	0,3123
İpotekli Konut Satış Sayısı	7,667050	7	0,3629
Toplam Konut Satış Sayısı	6,138233	7	0,5237

Araştırmada dördüncü bağımlı değişken İpotekli Konut Satışlarıdır. İpotekli konut satış sayısı ile toplam konut satışları, altın fiyatları, Dolar ve Euro kurları ile arasında bir nedensellik olup olmadığı araştırılmıştır. Probabilty <0,05 olduğunda H_0 hipotezi reddedilir ve H_1 hipotezi kabul edilmektedir. İpotekli konut satış sayıları bağımlı değişken olarak alındığı analizde H_0 hipotezi kabul edilir. Bağımlı değişken olan ipotekli konut satış sayıları ile diğer bağımsız değişkenler arasında bir nedensellik ilişkisi bulunmamıştır.

Tablo 8: Granger Nedensellik Analizi Sonucu
(Bağımlı Değişken *İpotekli Konut Satış Sayısı*)

Değişkenler	Chi-Sq	df	Olasılık (Prob,)
Altın	3,588772	7	0,8257
Dolar/TL	6,347252	7	0,4998
Euro/TL	9,637797	7	0,2100
Toplam Konut Satış Sayısı	1,936456	7	0,9633

Araştırmada beşinci bağımlı değişkeni olan Euro/TL, Euro'nun TL cinsinden satış fiyatıdır. Euro'nun TL cinsinden satış fiyatının, ipotekli konut satış sayısı, diğer konut satışları, altın fiyatları ve Dolar/TL fiyatı ile arasında bir nedensellik olup olmadığı araştırılmıştır. Euro/TL'nin bağımlı değişken olarak alındığı analizde bir Granger nedensellik ilişkisi tespit edilmemiştir.

Tablo 9: Granger Nedensellik Analizi Sonucu (Bağımlı Değişken *EURO/TL*)

Değişkenler	Chi-Sq	df	Olasılık (Prob,)
Altın	6,786876	7	0,4514
Dolar/TL	7,577385	7	0,3713
İpotekli Konut Satışları	8,745685	7	0,2714
Toplam Konut Satış Sayısı	6,005195	7	0,5391

SONUÇ VE ÖNERİLER

Araştırmada ilk bağımlı değişken olarak altın fiyatları belirlenmiş ve nedensellik bağımsız değişkenlerden bağımlı değişken yönüne nedensellik ilişkisi test edilmiştir. Altın fiyatlarının ipotekli konut satış sayısı, toplam konut satış sayısı, Dolar/TL kuru ve Euro/TL kuru ile arasında bir Granger nedensellik ilişkisi olup olmadığı araştırılmıştır. Her dört bağımsız değişken için p ile gösterilen olasılık değeri 0,05 değerinden küçük çıkmıştır. Bunun sonucu olarak bağımsız değişkenlerden bağımlı değişken yönüne H_0 hipotezi reddedilir. Dolar kuru, Euro kuru, ipotekli konut satış sayıları ve toplam konut satış sayılarından bağımsız değişken yönüne Granger nedensellik ilişkileri tespit edilmiştir.

Araştırmada ikinci bağımlı değişken toplam konut satış sayısı kriteri seçilmiş ve Granger nedensellik analizi uygulanmıştır. Toplam konut satış sayılarının altın, Euro kuru, Dolar kuru ve İpotekli konut satışları ile arasında bir nedensellik olup olmadığı araştırılmıştır. Granger nedensellik analizi sonucunda p değerinin her bir alt kriter için 0,05'ten büyük olduğu bulunmuş ve altın, Dolar/TL, Euro/TL ve ipotekli konut satışlarının toplam konut satışlarının nedeni olmadığı tespit edilmiştir.

Araştırmada üçüncü bağımlı değişken olarak Dolar kuru (Dolar/TL) kriteri alınmıştır. Dolar/TL kurunun, toplam konut satış sayısı, altın fiyatları, Euro/TL ve İpotekli konut satışları ile arasında bir nedensellik olup olmadığı araştırılmıştır. Granger nedensellik analizi sonucunda p değerinin her bir alt kriter için 0,05'ten büyük olduğu bulunmuş ve altın, toplam konut satış sayısı, Euro/TL ve ipotekli konut satışlarının Dolar kurunun nedeni olmadığı tespit edilmiştir.

Araştırmada dördüncü bağımlı değişken İpotekli Konut Satışları alınmış ve nedensellik analizi uygulanmıştır. İpotekli konut satış sayısı ile toplam konut satış sayısı, altın fiyatları, Dolar ve Euro kurları ile arasında bir nedensellik olup olmadığı araştırılmıştır. İpotekli konut satış sayıları bağımlı değişken olarak alındığı analizde olasılık değeri p her bir bağımsız değişken için 0,05'ten büyük bulunmuştur. Sonuç olarak bağımsız değişkenlerden ipotekli konut satış sayılarına yönlü bir Granger nedenselliği bulunmamıştır.

Araştırmada beşinci bağımlı değişkeni olan Euro/TL'nin ipotekli konut satış sayısı, toplam konut satışları, altın fiyatları ve Dolar/TL fiyatı ile arasında bir nedensellik olup olmadığı araştırılmıştır. Euro/TL'nin bağımlı değişken olarak alındığı analizde bağımsız değişkenlerden bağımlı değişken yönüne bir Granger nedensellik ilişkisi tespit edilmemiştir.

Granger nedensellik analizinin kullanım alanları olarak Altın, Dolar ve Euro sık çalışılan değişkenlerden olmakla birlikte konut değişkeni literatürde yer alan çalışmaların büyük bölümünde "Konut fiyatları" olarak incelenmiş, konut satışları değişkenini konu alan çok sayıda nedensellik analizine rastlanmamıştır. Bu değişkeninin incelenmesi çalışmanın literatüre temel katkısını oluşturmaktadır. Literatürde ayrıca çok incelenen değişkenlerden biri de petrol fiyatlarıdır. Müteakip çalışmalarda petrol fiyatları da çalışmaya dahil edilerek araştırma genişletilebilir.

KAYNAKLAR

[1] Aggarwal, R. & Lucey, B. M. (2007). Psychological barriers in gold prices? *Review of Financial Economics*.

<http://doi.org/10.1016/j.rfe.2006.04.001>

[2] Bahmani-Oskooee, M. & Sohrabian, A. (1992). Stock prices and the effective exchange rate of the dollar, *Applied Economics*, <http://doi.org/10.1080/00036849200000020>

[3] Bailey, M. J., Muth, R. F., Nourse, H. O. (1963). A Regression Method for Real Estate Price Index Construction, *Journal of the American Statistical Association*,

<http://doi.org/10.1080/01621459.1963.10480679>

[4] Barnett, L. & Seth, A. K. (2014). The MVGC multivariate Granger causality toolbox: A new approach to Granger-causal inference, *Journal of Neuroscience Methods*,

<http://doi.org/10.1016/j.jneumeth.2013.10.018>

[5] Baur, D. G. & Tran, D. T. (2014). The long-run relationship of gold and silver and the influence of bubbles and financial crises, *Empirical Economics*, <http://doi.org/10.1007/s00181-013-0787-1>

[6] Bekiros, S. D. & Diks, C. G. H. (2008). The nonlinear dynamic relationship of exchange rates: Parametric and nonparametric causality testing, *Journal of Macroeconomics*,

<http://doi.org/10.1016/j.jmacro.2008.04.001>

[7] Benhmad, F. (2012). Modeling nonlinear Granger causality between the oil price and U.S. dollar: A wavelet based approach, *Economic Modelling*, <http://doi.org/10.1016/j.econmod.2012.01.003>

[8] Bildirici, M. E. & Turkmen, C. (2015). Nonlinear causality between oil and precious metals, *Resources Policy*,

<http://doi.org/10.1016/j.resourpol.2015.09.002>

[9] Bildirici, M. & Türkmen, C. (2015). The Chaotic Relationship between Oil Return, Gold, Silver and Copper Returns in TURKEY: Non-Linear ARDL and Augmented Non-linear Granger Causality, *Procedia - Social and Behavioral Sciences*,

<http://doi.org/10.1016/j.sbspro.2015.11.387>

[10] Blose, L. E. (2010). Gold prices, cost of carry, and expected inflation, *Journal of Economics and Business*,

<http://doi.org/10.1016/j.jeconbus.2009.07.001>

[11] Bordo, Michael D. (2003). “Exchange Rate Regime Choice in Historical Perspective,” NBER Working Paper No, 9654.

[12] Case, K. E. & Shiller, R. J. (1990). Forecasting Prices and Excess Returns in the Housing Market, *Real Estate Economics*,

<http://doi.org/10.1111/1540-6229.00521>

[13] Din, A., Hoesli, M., Hoesli, M. & Bender, A. (2001). Environmental variables and real estate prices, *Urban Studies*,

<http://doi.org/10.1080/00420980120080899>

[14] Emmrich, O. & McGroarty, F. J. (2013). Should gold be included in institutional investment portfolios? *Applied Financial Economics*, <http://doi.org/10.1080/09603107.2013.839858>

[15] Escribano, A. & Granger, C. W. J. (1998). Investigating the relationship between gold and silver prices, *Journal of Forecasting*, [http://doi.org/10.1002/\(SICI\)1099-131X\(199803\)17:2<81::AID-FOR680>3,0,CO;2-B](http://doi.org/10.1002/(SICI)1099-131X(199803)17:2<81::AID-FOR680>3,0,CO;2-B)

[16] Geltner, D., MacGregor, B. D. & Schwann, G. M. (2003). Appraisal smoothing and price discovery in real estate markets, *Urban Studies*, <http://doi.org/10.1080/0042098032000074317>

[17] Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods, *Econometrica*, <http://doi.org/10.2307/1912791>

[18] Henriques, I. & Sadorsky, P. (2008). Oil prices and the stock prices of alternative energy companies, *Energy Economics*, <http://doi.org/10.1016/j.eneco.2007.11.001>

[19] Hooker, M. A. (1996). What happened to the oil price - Macroeconomy relationship? *Journal of Monetary Economics*,
[http://doi.org/10.1016/S0304-3932\(96\)01281-0](http://doi.org/10.1016/S0304-3932(96)01281-0)

[20] Hui, E. C. M. & Yue, S. (2006). Housing price bubbles in Hong Kong, Beijing and Shanghai: A comparative study, *Journal of Real Estate Finance and Economics*, <http://doi.org/10.1007/s11146-006-0335-2>

[21] Hussin, M. Y. M., Muhammad, F., Razak, A. A., Tha, G. P. & Marwan, N. (2013). The Link Between Gold Price, Oil Price and Islamic Stock Market: Experience from Malaysia, *Journal of Studies in Social Sciences*.

[22] Ibrahim, S. N., Kamaruddin, N. I. & Hasan, R. (2014). The Determinants of Gold Prices in Malaysia, *Journal of Advanced Management Science*, <http://doi.org/10.12720/joams.2.1.38-41>

[23] Inagaki, K. (2007). Testing for Volatility Spillover between the British Pound and the Euro, *Research in International Business and Finance*, <http://doi.org/10.1016/j.ribaf.2006.03.006>

[24] Investing.com <https://tr.investing.com/markets/>

[25] Islahi, Abdul. (2019). Was Mercantilism a Reaction Against Muslim Power? A Discussion on the Origin of Mercantilism, Jeddah, KSA: Islamic Economics Research Center, KAA.

[26] Koetter, M. & Poghosyan, T. (2010). Real estate prices and bank stability, *Journal of Banking and Finance*,
<http://doi.org/10.1016/j.jbankfin.2009.11.010>

[27] Krainer, R. E. (2014). Monetary Policy and Bank Lending in the Euro Area: Is There A Stock Market Channel or an Interest Rate Channel? *Journal of International Money and Finance*, <http://doi.org/10.1016/j.jimonfin.2014.03.009>

- [28] Küçükaksoy, İ. & Yalçın, D. (2017). Altın Fiyatlarını Etkileyebilecek Faktörlerin İncelenmesi, *Ekonomik ve Sosyal Araştırmalar Dergisi*, 13 (2), 1-20, Retrieved from <http://dergipark.gov.tr/esad/issue/38974/456284>
- [29] Michis, A. A. (2014). Investing in gold: Individual asset risk in the long run, *Finance Research Letters*,
<http://doi.org/10.1016/j.frl.2014.07.008>
- [30] Mikhed, V. & Zemčík, P. (2009). Testing for bubbles in housing markets: A panel data approach, *Journal of Real Estate Finance and Economics*, <http://doi.org/10.1007/s11146-007-9090-2>
- [31] Nair, G. K., Choudhary, N. & Purohit, H. (2015). The Relationship between Gold Prices and Exchange Value of US Dollar in India, *EMAJ: Emerging Markets Journal*,
<http://doi.org/10.5195/emaj.2015.66>
- [32] Nazlioglu, S. & Soytas, U. (2012). Oil price, agricultural commodity prices, and the dollar: A panel cointegration and causality analysis, *Energy Economics*,
<http://doi.org/10.1016/j.eneco.2011.09.008>
- [33] Öner, H. (2018). Altın, Petrol, Döviz Kuru, Faiz ve Korku Endeksi Arasındaki İlişki Üzerine Bir Çalışma, *Akademik Araştırmalar ve Çalışmalar Dergisi*, Yıl: 2018, 10(19): 396-404.
- [34] Özkurt, H. (2007). Türkiye Ekonomisinde Konut Sektörü: Gelişimi ve Alternatif Finansman Modelleri, *Sosyal Bilimler Dergisi* 2007,(1), 159-173.
- [35] Patel, S. A. (2013). Causal Relationship between Stock Market Indices and Gold Price : Evidence from India, *The IUP Journal of Applied Finance*.
- [36] Ray, S. (2012). Testing Granger Causal Relationship between Macroeconomic Variables and Stock Price Behaviour : Evidence from India, *Advances in Applied Economics and Finance*, 3(1), 470–481.

[37] Ridker, R. G. & Henning, J. A. (1967). “The Determinants of Residential Property Values With Special Reference to Air Pollution” *The Review of Economics and Statistics*, 49:246-257.

[38] Roebroek, A. (2015). Granger Causality, In *Brain Mapping: An Encyclopedic Reference*, <http://doi.org/10.1016/B978-0-12-397025-1.00337-7>

[39] Schweikert, K. (2018). Are gold and silver cointegrated? New evidence from quantile cointegrating regressions, *Journal of Banking and Finance*, <http://doi.org/10.1016/j.jbankfin.2017.11.010>

[40] Sermpinis, G., Dunis, C., Laws, J. & Stasinakis, C. (2012). Forecasting and trading the EUR/USD exchange rate with stochastic Neural Network combination and time-varying leverage, *Decision Support Systems*, <http://doi.org/10.1016/j.dss.2012.05.039>

[41] Shafiee, S. & Topal, E. (2010). An overview of global gold market and gold price forecasting, *Resources Policy*, <http://doi.org/10.1016/j.resourpol.2010.05.004>

[42] Simakova, J. (1987). Analysis of the Relationship between Oil and Gold Prices, *Otolaryngology-Head and Neck Surgery*.

[43] Smith, G. (2001). The Price of Gold and Stock Price Indices for the United States, Working Paper.

[44] Sosvilla-Rivero, S. & del Carmen Ramos-Herrera, M. (2012). The US dollar-euro exchange rate and US-EMU bond yield differentials: A causality analysis, *Cuadernos de Economía (Spain)*, [http://doi.org/10.1016/S0210-0266\(12\)70028-6](http://doi.org/10.1016/S0210-0266(12)70028-6).

[45] TCMB EVDS Veri Merkezi, <https://www.tuik.gov.tr/>

[46] Toraman, C., Başarır, Ç. & Bayramoğlu, M. F. (2011). Determination of Factors Affecting the Price of Gold: A Study of MGARCH Model, *Business and Economics Research Journal*, <http://doi.org/10.2146/ajhp100061>

- [47] Tursoy, T. & Faisal, F. (2018). The impact of gold and crude oil prices on stock market in Turkey: Empirical evidences from ARDL bounds test and combined cointegration, *Resources Policy*, <http://doi.org/10.1016/j.resourpol.2017.10.014>
- [48] TUIK. <https://www.tuik.gov.tr/>
- [49] Twite, G. (2002). Gold Prices, Exchange Rates, Gold Stocks and the Gold Premium, *Australian Journal of Management*, <http://doi.org/10.1177/031289620202700202>
- [50] Wang, Z., Yang, J. & Li, Q. (2007). Interest rate linkages in the Eurocurrency market: Contemporaneous and out-of-sample Granger causality tests, *Journal of International Money and Finance*, <http://doi.org/10.1016/j.jimonfin.2006.10.005>
- [51] Xu, X. E. & Chen, T. (2012). The effect of monetary policy on real estate price growth in China, *Pacific Basin Finance Journal*, <http://doi.org/10.1016/j.pacfin.2011.08.001>
- [52] Yavaş, A. & Yıldırım, Y. (2011). Price Discovery in Real Estate Markets: A Dynamic Analysis, *Journal of Real Estate Finance and Economics*, <http://doi.org/10.1007/s11146-009-9172-4>
- [53] Yurdakul, F. & Sefa, M. (2015). An Econometric Analysis of Gold Prices in Turkey, *Procedia Economics and Finance*, [http://doi.org/10.1016/s2212-5671\(15\)00332-9](http://doi.org/10.1016/s2212-5671(15)00332-9)
- [54] Yücel, T. F. (2015). Cumhuriyet Türkiye'sinin Sanayileşme Öyküsü, *TTGV: Ankara*, S. 49.
- [55] Zhang, J., Wang, J. & Zhu, A. (2012). The relationship between real estate investment and economic growth in China: A threshold effect, *Annals of Regional Science*, <http://doi.org/10.1007/s00168-010-0388-2>.
- [56] Zhang, Y. J. & Wei, Y. M. (2010). The crude oil market and the gold market: Evidence for cointegration, causality and price discovery, *Resources Policy*, Volume 35, Issue 3, 2010, Pages 168-177, ISSN 0301-4207, <https://doi.org/10.1016/j.resourpol.2010.05.003>