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Research Article

Revisiting the Role of Post-Materialist Values on Environmental Concern: An Analysis of Turkish Public Perception Over Climate Change Between the Years 2018-2020

Tuğçe Yıldız¹

Abstract

Previous studies on public environmental concerns indicate that economic factors have an impact on individuals' environmental concerns and attitudes toward environmental problems. Yet, few studies have examined the possible impact of changing economic conditions due to economic and/or financial crises on public environmental concern and especially concern towards climate change. The economic crisis starting in late 2018 in Turkey provides an interesting case to understand the impact of economic factors on environmental concerns and especially attitudes towards climate change. The study asks how changing economic conditions due to the economic crisis of 2018 affected Turkish individuals' concerns about the climate change problem. Multilevel analysis was applied to data collected from special Eurobarometer surveys between the years 2018 and 2020. The main finding in this study is that changes in the economic situation across Turkey during the crisis period do have an impact in decreasing public concern towards climate change in Turkey overall. In 2020 when the negative effects of economic recession were felt strongly, the results indicate that environmental concern is negatively correlated with the public perceptions of the national economy, household financial situation, and life satisfaction. In other words, while the prioritization of economic factors by most of the society in the period when the economic crisis was most felt, confirms the post-materialist thesis; on the other hand, the increasing awareness of the climate change crisis has started to bring the idea that the exit plans from the economic crisis should be more environmentally friendly and more sustainable.

Keywords: Post-materialism, Public Environmental Concern, Economic Factors, Turkey, Climate Change.

JEL Codes: Q54, C12, C8, G5

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Araştırma Makalesi

**Post-Materyalist Değerlerin Çevresel Kaygı Üzerindeki Rolüne Yeniden Bakış:
2018-2020 Yılları Arasında Türkiye Kamuoyunun İklim Değişikliği Algısı Üzerine
Bir Analiz**

Tuğçe Yıldız¹

Öz

Kamusal çevre kaygıları ile ilgili yapılan önceki çalışmalar, ekonomik faktörlerin bireylerin çevresel kaygıları ve çevre sorunlarına yönelik tutumları üzerinde etkisi olduğunu göstermektedir. Ancak, ekonomik ve/veya finansal krizler nedeniyle değişen koşulların, kamunun çevresel kaygıları ve özellikle iklim değişikliğine yönelik kaygıları üzerindeki olası etkisini inceleyen az sayıda çalışma bulunmaktadır. Türkiye'de 2018'in sonlarında başlayan ekonomik kriz, ekonomik faktörlerin çevresel kaygılar ve özellikle iklim değişikliğine yönelik tutumlar üzerindeki etkisini anlamak için ilginç bir örnek sunmaktadır. Bu çalışma, 2018 ekonomik krizi nedeniyle değişen ekonomik koşulların Türk kamuoyunun iklim değişikliği sorununa ilişkin endişelerini nasıl etkilediğini sormaktadır. Bu çalışmada, 2018 ve 2020 yılları arasında özel Eurobarometer anketlerinden toplanan verilere çok düzeyli analiz uygulanmıştır. Bu çalışmadaki temel bulgu, kriz döneminde Türkiye genelinde ekonomik durumdaki değişikliklerin Türkiye'de iklim değişikliğine yönelik kamuoyunun endişesini azaltmada etkili olduğudur. Ekonomik durgunluğun olumsuz etkilerinin güçlü bir şekilde hissedildiği 2020 yılında sonuçlar, çevresel kaygının halkın ülke ekonomisine, hanehalkının mali durumuna ve yaşam memnuniyetine yönelik algıları ile negatif ilişkili olduğunu göstermektedir. Diğer bir deyişle, bir yandan ekonomik krizin en çok hissedildiği dönemde, toplumun büyük kesiminin ekonomik faktörleri önceliklendirmesi post-materialist tezi doğrularken; diğer yandan, git gide artan iklim krizi farkındalığıyla birlikte, ekonomik krizden çıkış planlarının daha çevreci ve daha sürdürülebilir olması gerektiği düşüncesini de getirmeye başlamıştır.

Anahtar Kelimeler: Post-materyalizm, Kamusal Çevre Kaygısı, Ekonomik Faktörler, Türkiye, İklim Değişikliği

JEL Kodlar: Q54, C12, C8, G5

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1. Introduction

Climate change is one of the most challenging problems confronting the world. It is evident that global climate change not only results in serious alterations in the environment but also causes several serious problems such as deaths, displacements, diseases, and droughts and also floods, landslides, hurricanes, high temperatures, forest fires. According to United Nations Safe Climate Report (2019), between 2005 and 2015, over 700,000 people died due to the negative effects of climate change, over 1.4 million were injured and over a billion were affected harshly by natural disasters exacerbated by climate change. This number is expected to reduplicate by 2030 even if the countries start to take some serious plans and policies for reducing emissions today (Gould, 2019). Although many large bodies of scientific agencies and the vast majority of climatologists agree on the climate change reality, this scientific consensus on climate change has not been translated into a social consensus as it is a very difficult problem and a complex issue with political, economic, socio-cultural, psychological and ethical implications to address.

Held and Hervey (2011) emphasize that the climate change challenge is multifaceted and multilayered, which requires long-term policy commitments and solutions within the global governance framework including many actors and agencies. In order to find concrete solutions to such a complex problem, decision-making needs to take into account the multiple diverse preferences over short and longer timescales (Lorenzoni & Pidgeon, 2006). Public opinion in a such complex socio-political context is critically important to address the challenges of the climate change problem. As of interest to many social scientists and policymakers, public perceptions toward climate change give very crucial insights on effective solutions to tackle the challenges and strategies sought by policymakers dealing with designing concrete policies (Bord et. al., 1998).

In the mid-1980s, the question of global warming had begun to be included in some public opinion polls. Since then, there have been numerous public opinion polls all over the world in order to assess environmental awareness and concerns about global climate change. While assessing the results of these polls, various approaches developed within the field of communications and social psychology, have been used in order to explore key factors influencing individuals' beliefs, awareness, and action towards climate change (Marquart-Pyatt et. al., 2011). Previous research has shown that public concern for environmental problems specifically climate change is different across countries and fluctuates from time to time. This cross-national variation in environmental concern has led to the search for explaining underlying factors by using cross-national data (see Sandvik, 2008; Franzen & Meyer, 2010). Yet, while scholars have mainly focused on the local context in examining the determinants for the climate change perception (See for ex. Maibach et. al., 2009; Metag et. al, 2017) comprehensive studies in this field is very recent. Indeed, the first meta-analysis of the demographic and psychological correlates of belief in climate change has been done in 2016 (Hornsey et. al., 2016).

One of the most frequent explanations for cross-national variation in environmental concern is the "Theory of Post-Materialist Value Change" formulated by Ronald Inglehart (1990, 1995). Based on Maslow's "theory of a hierarchy of human needs", Inglehart suggests that economic development after the post-war period led to the shift from materialist values such as economic and security to "post-materialist" values such as self-actualization, creativity, and care for the environment which in turn prompted the emergence of social movements such as peace, feminism, and environmental movements. Thus, Inglehart's theory argues that people in affluent societies with more prevalent post-materialist values express higher levels of concern

for environmental issues (Brechin 1999; Brechin & Kempton, 1994; Dunlap & Mertig, 1997). However, this explanation has been criticized for its inability to explain growing environmental awareness and activism within poor nations. On the contrary, Dunlap and Mertig (1995) showed in their studies that environmental concern has a worldwide phenomenon, not one limited to wealthy nations by using the results of the Health of Planet (HOP) survey conducted by Gallup International Institute. Results showed that citizens within poor nations were more likely to show environmental concern than their counterparts in affluent nations and questioned the assumptions of Inglehart's post-materialist explanation. As a response to the critics, Inglehart revised the post-materialist explanation of environmental concern and reformulated his 'objective problems-subjective values' hypothesis to research the cross-country variation in environmental concern. Inglehart (1995) has argued that individuals in poor countries are also concerned with environmental issues because they face with local environmental problems such as polluted air, water, and soil degradation. Therefore, public support for environmental protection tends to be strong in countries with relatively severe objective (environmental) problems and explained the high level of environmental concern in poor nations. Thus, environmental concern is a result of not only post-materialist values but also objective problems. By combining both assumptions, Inglehart reformulated the framework by stating that there are two independent factors shaping environmental concern: i) post-materialist values and ii) degree of environmental quality.

Similar to Inglehart's assumptions, Weber (2010) argues that individuals experiencing the bad effects of extreme weather events are more likely to show a higher level of concern for climate change. A bulk of studies in the literature show that with an increasing number of extreme weather events such as high temperatures, floods, hurricanes and droughts, individuals recognize more visibly the existence of climate change.

Regarding this debate over the determinants of environmental concern, it is interesting to see how and why there is fluctuation in public environmental concern in Turkey over years. This study aims to investigate key underlying factors of fluctuation in public environmental concern specifically focusing one towards climate change in Turkey. In that respect, changing economic conditions at times of economic crisis as well as gradually increased numbers of environmental disasters happened in various regions in Turkey will provide a good test to examine the impact of economic conditions on public concern towards climate change issue when other possible determinants come into play.

The rest of the study consists of four parts: The second part includes literature review, theoretical framework key concepts derived from previous studies on public opinion toward climate change, research problem, aims, and hypotheses; third part includes data, methods, and empirical results; the last part gives the conclusion of the study.

1.1 Literature Review

There is a strong consensus among scientists concerning the reality of climate change and its potential consequences in the future. Given the fact that climate change is largely driven by greenhouse gas (GHG)s, there is no doubt that human behavior is the main contributor to this problem as several key GHGs such as carbon dioxide, methane, and nitrous oxide are stemmed by human activities. Although human behavior is one of the main causes of the problem and any changes to it are important to mitigate negative effects, some argue that it has been the least understood aspect of the climate change system (Gifford, Kormos, & McIntyre, 2011). In other words, the reasons for specific attitudes regarding environmental problems especially climate change have not been well-understood aspect compared to others by both scholars and politicians.

Nevertheless, over the past two decades, significant efforts have been made to integrate social and behavioral sciences into the complex climate change system and the literature. As Stern (1992) emphasized, social and behavioral sciences have a key role in the understanding of how human systems produce the proximate causes and how any change in human perception and behavior regarding environmental issues might affect the risks of global environmental crisis and climate change. Thus, understanding the role of humans in responding to the alterations in the global environment as mitigation or adaptation is crucially important for both policymakers and scientists to address this problem.

This section tries to overview previous studies on the determinants of public opinion on climate change by emphasizing the channels and sources where people get information about climate change. The fact that individuals cannot directly perceive climate change makes it difficult to accept this reality. Perception of the climate change is affected by forecasts and beliefs that obstruct certain behaviors to respond to challenges. Personal experience of extreme weather events might shape the likelihood of increased concern about climate change. According to Weber (2010), climate change is a statistical phenomenon, and it is hard to detect it by personal experience although some weather changes might be falsely attributed to climate change. In addition, Weber argues that learning from personal experience and learning from the statistical description might lead to different perceptions and actions followed even though the same information about events and their likelihood is given. Learning from personal experience is mostly fast and automatic whereas learning from statistical descriptions requires analytic processing and cognitive effort. Therefore, compared to the analytical processing of climate-related information on which scientists base their decisions and perceptions, affective and associative processing is far more likely to capture non-scientists attention. (Weber, 2010; Weber & Stern, 2011) Several studies show that extreme weather events such as floods (Spence et al. 2011), hurricanes, and droughts (Borick & Rabe, 2010), as well as increasing temperatures (Krosnick et al., 2006), increase the salience of the environmental problems which in turn leads to increase recognition of and concern over climate change. However, the probability of those extreme weather or climate events (frosts, flooding, or droughts) that people can diagnose in their daily life is small.

Lack of information also affects public concern about climate change. Information-Deficit Model introduced by Sturgis and Allum (2004) suggests that knowledge is the main determinant of attitudes toward science. Thus, lack of knowledge about climate change reality is the main impediment to the understanding of this problem as well as the increasing public concern over it. Two divergent camps of scholars suggest different assumptions about the importance of scientific information in creating awareness of climate change. On the one side, some scholars such as Reynolds et al. (2010) and Zhao et al (2011) indicate in their studies that an increase in available information to the public about climate change has a positive effect on individual concern about it. On the other side, some suggest that a better understanding of causes and practical solutions to climate change does not necessarily result in efficacious behavior. Instead, other factors such as deeply held pro-environmental values and beliefs, incentives, perceived benefits, skill and a sense of efficacy, social support, peer pressure, and practical assistance are effective in shifting behavior toward pro-environmental behavior (Moser & Dilling, 2010; Downing & Ballantyne 2007; Gardner & Stern 2002; Semenza et al. 2008; Takahashi 2009).

Media coverage is another factor that suggested that media plays a key role in informing the mass population about climate change by using language and graphics that are easier to comprehend. According to the Agenda-Setting Hypothesis (McCombs, 2004; Dumitrescu & Mughan, 2010), public opinion reflects the extent and prominence of media coverage.

Moreover, the Quantity of Coverage Theory states that public concern about environmental risks rises with increasing news coverage and decreases with diminishing coverage (Mazur 1990, 1998). The main effect of media coverage is to increase issue salience. The frequency and prominence of the specific issue in media are much more important than its detailed content. Therefore, headlines and repeated stories about that specific issue in media give the impression of that issue is particularly important to the public. Thus, media coverage might lead to a rise and fall in public concern about climate change over time. For example, according to the Eurobarometer Survey 58.0 of 2002, respondents said that nuclear power and radioactive waste, industrial activities, pollution, natural disasters, and ozone are the most worrying environmental risks rather than the climate change, because according to the survey analysts, over the last 30 years, media frequently mentioned these subjects as critical environmental problems (Lorenzoni & Pidgeon, 2006). On the other hand, results of the Special Eurobarometer Report (501) indicate that majority of survey respondents (53%) think that climate change is the most important environmental issue, followed by air pollution (46%) and the growing amount of waste (46%) (Eurobarometer, 2020) as climate change issue has gained prominence in media over the last decades.

These factors mentioned here play into two competing theoretical approaches namely Inglehart's Post-materialist Value Change explanation and Dunlap and Mertig's globalization approach, which will be discussed further in the following subsection.

1.2 Theoretical Framework

This study takes the three most debated theoretical approaches to environmental concern into consideration. The first one is Inglehart's Post-materialist Value Change approach, which was first introduced in the early 1970s suggesting that as industrialization brings material affluence, societies tend to give priority over the "quality of life" issues over material ones such as economic and physical security. Using psychological needs theory (Maslow, 1970), Inglehart (1995, 1997) argues that citizens within affluent societies are less interested in the economic struggle for their survival because they can easily satisfy their basic needs in those societies. This freedom leads to pursuing other post-materialistic goals such as political freedom, individual self-fulfillment, and environmental protection. Thus, higher environmental concern emerges because of a widespread shift from materialist values to post-materialist values as societies develop.

The hypothesis stating that there is a positive correlation between prosperity and environmental concern was assessed by Dunlap and Mertig (1995, 1997) via data of the Gallup International Institute survey conducted in 1992. Unlike the previous cross-national surveys, this survey included a more diverse set of nations that can be classified as low, medium, and high income based on GDP per capita. They found that environmental concern is not limited to the citizens of wealthy nations, but instead it exists in many third-world countries. Indeed, contrary to the conventional assumption, data only partially supported the hypothesis suggesting the correlation between environmental attitude and national affluence as prominent levels of environmental concern were also seen in some developing countries. Even more, results showed that citizens within poor nations were more likely to show environmental concern than their counterparts in affluent nations and questioned the assumptions of Inglehart's post-materialist explanation. In addition, the growing environmental awareness within poor nations has become visible in many incidents such as the participation of the vast number of grassroots organizations from those nations in the Global Forum in Rio in 1992 (Dunlap and York, 2012).

With the globalization of environmental concern, it is no longer possible to make universalistic explanations to can be proved worldwide. There are many varied factors involved in shaping public opinion regarding environmental issues within and particularly across different nations. Several studies show that environmental concerns are complex, multifaceted, and varied. Context, in this regard, is critically important to shaping environmental concerns in at least two ways: through an individual's socio-economic context and country-level contextual forces (Marquart-Pyatt, 2012). Based on previous research on individual-level determinants of public environmental concern, age, gender, education level, income and political ideology have an impact on environmental beliefs, values, and attitudes. Accordingly, some researchers found that younger people (Dunlap et al., 2000; Jones & Dunlap, 1992; Klineberg et al., 1998) with a high level of education (Van Liere & Dunlap (1980), individuals with leftist ideology (Dunlap & McCright 2008; Hamilton 2008, 2011; Hamilton & Keim 2009; Krosnick et al. 2000; McCright 2009, 2010; McCright & Dunlap 2011), and women (Bord and O'Connor 1992) have more concern on climate/environmental changes. On the other hand, previous studies on the relationship between income and environmental concern have conflicting results. While some scholars (Jones & Dunlap, 1992; Klineberg et al., 1998; Zimmer et al., 1994) argue that there is a positive relationship between income and environmental attitudes, in other words, people having higher levels of income express more likely higher levels of environmental concern, other scholars (Fairbrother, 2013) find a significant negative or no relationship between income and environmental concern over time. One prominent study of Franzen and Meyer (2010) test the hypotheses of Inglehart's theory of post-materialism, Dunlap and Mertig's globalization explanation and the prosperity approach by applying multilevel analysis to ISSP data from the years 1993 and 2000. They have found that prosperity hypothesis is correct by stating that individuals with higher relative income express higher levels of environmental concern than their compatriots. For the scope of this study, it focuses on the possible link between economic drivers and environmental concern.

1.3 Research Problem, Aims, and Hypotheses

This study examines the intensity of public concern about environmental problems and climate change in Turkey between 2018-2020 when the negative effects of economic recession are assumed to be felt by the public. Considering the mainstream theoretical approaches to the determinants of environmental concern discussed so far, this study asks how changing economic conditions due to the financial/economic crisis starting in late 2018 affected individuals' environmental concerns specifically a concern for the climate change issue in Turkey when other individual factors are not considered. Based on Inglehart's Post-Materialist Value Change, this study argues that any change in the economic conditions of one country might lead its citizens to give attention to materialistic or post-materialistic values depending on the economic situation. Starting from this point of view, economic deterioration since the beginning of 2019 might decrease public concern towards post-materialist values including environmental values. Therefore, the main aim of this study is to analyze the impact of post-materialist values on Turkish public concern regarding environmental problems and climate change by specifically focusing on the possible effects of the economic/monetary crisis on public environmental concern in Turkey.

The first and main hypothesis is constructed upon the claim that economic conditions and income levels have an impact on individuals' environmental concerns because it is expected that individuals with a high level of income can satisfy their basic materialistic needs and can turn their focus toward other post-materialistic values. Since it is not possible to gather income levels from each survey respondent and to understand whether they satisfy with that income or

not, this study takes the responses to the question asking the individuals' perceptions towards household financial situation, national economy, and world economy.

Hypothesis 1: Perceptions towards their household financial situation, national economy, and world economy affect individuals' environmental concerns related to the clash between materialist and post-materialist values. Therefore, people who have a bad financial situation in their household or think that the national economy and/or world economy is bad, are less concerned with the environmental problems and the seriousness of the climate change issue.

Closely related to the first hypothesis, the second hypothesis is based on the possible link between post-materialist values and environmental concern. Besides economic security, physical and psychological security may also affect public environmental concerns.

Hypothesis 2: Greater levels of life satisfaction bring higher levels of environmental concern as these people satisfy their basic and material needs and turn their focus on post-materialist goals.

These interrelated hypotheses are evaluated within the appropriate design of study and methods, which are introduced and discussed in the next section.

2. Data and Methods

2.1 Research Design

The main purpose of this study is to examine the relationship between economic factors and public environmental concerns, especially regarding climate change in Turkey. To reveal a possible link between these variables, this study chooses the period (2018-2020) in which sharp changes in economic conditions, as well as public perceptions regarding the household financial situation and national economy, can be visible. In addition, the year 2020 is a significant time when the COVID-19 pandemic erupted in Turkey and made millions physically and psychologically insecure. Therefore, this study applies quantitative methods as the most appropriate one for the research aims. By benefiting from the SPSS (quantitative research software programme), this study makes a correlation analysis between variables.

2.2 Data Collection

To test the hypotheses above, this research deals with an analysis of three Eurobarometer surveys (i.e. Eurobarometer 89.1 (2018), 92.1 (2019) and 93.1 (2020)). Eurobarometer data series is gathered regularly (two to five times a year) by the European Commission. The surveys consist of approximately 1,000 respondents per EU member state and the candidate countries like Turkey. The reason to choose Eurobarometer surveys as the main database is that there are no other public opinion surveys in Turkey on some specific issues including public environmental concerns conducted consistently. Despite the increasing academic interest in the perception of climate change in Turkey, the only research conducted on this issue is the "Climate Crisis Perception" surveys conducted in cooperation with Konda and Climate News since 2019. As this study aims to focus on the possible impact of economic factors on environmental concerns, the survey questions included in the aforementioned study do not meet the requirements of this research. Thus, this study uses Eurobarometer surveys, which enables the comparison of the findings over time with the same questions asked to respondents.

- Dependent Variable

The dependent variable in this study is public concern regarding climate change. In that respect, this study gets the responses to the question: "QA3a: What do you think are the two most important issues facing (OUR COUNTRY) at the moment?" In a list of multiple issues including crime, economic situation, rising prices/inflation/cost of living, taxation, unemployment, Cyprus issue, immigration, health, energy supply, etc., the responses selecting "the environment and the climate change" are taken into consideration. In the same manner, the survey asks: "QA4a: And personally, what are the two most important issues you are facing at the moment?" with the same options. Responses including "the environment and the climate change" are considered the determinant of environmental concern, which is gathered under the dependent variable.

- Independent Variables

For the aims of this study, data of independent variables are chosen from the questions reflecting the respondents' views on their household financial situation, national economy, expectations for the future, and how they are satisfied with their lives. Regardless of the real economic situation in Turkey over years covered by this study, this study is concerned with the respondents' perspectives' on the economy. Even though it is hard to define the exact period that we can see the bad consequences of the economic crisis as it could be scattered over a wide time span, sharp changes in economic conditions -household and national economy- are expected to shape public opinion on the economy. Therefore, the following questions are used in the analysis:

"QA1a How would you judge the current situation in each of the following? (national economy and household financial situation included in the analysis) (Very good 1, Rather good 2, Rather bad 3, Very bad 4, DK 5)" (Eurobarometer 89.1, 92.1, 93.1)

"D.70 On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead? (Very satisfied 1, Fairly satisfied 2, Not very satisfied 3, Not at all satisfied 4, DK 5)" (Eurobarometer 89.1, 92.1, 93.1)

3. Empirical Findings

To understand the level of environmental concern among respondents between 2018 and 2020, this study uses the responses to two questions asked in the surveys (Eurobarometer 89.1, 92.1, 93.1).

"QA3a: What do you think are the two most important issues facing (OUR COUNTRY) at the moment?" and

"QA4a:
And personally, what are the two most important issues you are facing at the moment?"

Table 1 shows the changes in the percentage of responses including the environment as one of the most important issues for the country and personally.

Table 1

Descriptive statistics for the dependent variable indicating percentage values between 2018-2020

	2018	2019	2020
Percentage of responses on important issues for the country (the environment mentioned)	2.1%	3.7%	1.2%
Percentage of responses on important issues personally (the environment mentioned)	2.6%	3.9%	1.6%

Note. Author compilation derived from Eurobarometer 89(1), 92(1), 93(1).

It is clear that while environmental concern among Turkish public opinion from 2018 to 2019 has been increasing, it dropped significantly between 2019-2020. To examine the possible link between environmental concern and economic factors, perceptions on the national economy and household financial situation are also added into the analysis.

Table 2

Descriptive statistics for the independent variables between 2018-2019

	National Economy Situation			Household Financial Situation		
	2018	2019	2020	2018	2019	2020
Very good	9,3	13,6	4	8,3	11,8	3,2
Rather good	39,7	22,9	23,8	53	35,2	34
Rather bad	38,4	37,3	39,7	28,2	39,3	42
Very bad	11,8	25,1	31,2	9,3	11,9	20,5
DK	0,9	1,1	1,2	1,2	1,8	1,2

Note. Author compilation derived from Eurobarometer 89(1), 92(1), 93(1).

Table 2 indicates the percentage of responses to the questions regarding the national economy and household financial situation. Interestingly, perceptions of the national/household economy at each extreme side (very good/very bad) have increased between 2018 and 2019. However, the number of respondents who think that the national economy/household financial situation is good has decreased from 2019 to 2020 as an expected consequence of the economic recession. This sharp drop in perceptions of the economic situation enables this study to examine the correlation between economic factors and environmental concerns. In addition to perceptions regarding the national economy and household financial situation, the level of life satisfaction is also added to the analysis. As shown in Table 3 below, the number of respondents who think that they are satisfied with their life has decreased considerably between 2018-2020.

Table 3*Percentage of responses on the level of life satisfaction between 2018-2020*

	Life Satisfaction		
	2018	2019	2020
Very satisfied (1)	27,8	24,3	16,1
Fairly satisfied (2)	47,6	42,1	49,7
Not very satisfied (3)	16,7	19,9	21,5
Not at all satisfied (4)	7,8	13,7	12,8
DK (5)	0,2	0	0

Note. Calculated using Eurobarometer 89(1), 92(1), 93(1).

As it is seen, perceptions of life satisfaction vary from year to year within the period of 2018-2020. The percentage of respondents who say that they are very satisfied with their life decreased considerably since 2018. In 2019 when the economic recession hit hard, Turkish public opinion on life satisfaction was affected negatively. To reveal the possible link between environmental concerns and economic factors, this study examines the correlations between those variables, whose results are given in Table 4 below.

Table 4*Correlation Matrix*

Note. Author compilation.

	2018					2019					2020				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
(1) imp. issues (the environment - national)	1					1					1				
(2) imp. issues (the environment - personally)	0.195**	1				-0.012	1				0.059	1			
(3) situation (national economy)	-0.62*	-0.025	1			-0.102*	-0.179**	1			-0.075*	-0.084**	1		
(4) situation (hh financial)	-0.050	-0.015	0.560**	1		-0.064*	-0.102**	0.627**	1		-0.065*	-0.009	0.474**	1	
(5) life satisfaction	-0.008	-0.038	0.328**	0.373**	1	-0.036	-0.117**	0.505**	0.472**	1	-0.048	0.000	0.397**	0.438**	1

*. Correlation is significant at the 0.05 level (2- tailed). **. Correlation is significant at the 0.01 level (2- tailed).

The correlation matrix illustrated in Table 4 indicates the correlations between variables in a three-year period (2018-2020). Accordingly, the study has found some significant correlations within each year as assumed in the hypotheses. First of all, in 2018, the study reveals that most of the respondents to the survey who says the environment/climate change is one of the most important issues for their nations, also regard this as the most important issue personally. In addition, one critical conclusion drawn from the study is that environmental concern is negatively correlated with perceptions regarding the national economy. In other words, most of the respondents who think the national economy is good, say the environment

and climate change as the most important issue at the national level. Life satisfaction, on the other hand, is positively correlated with positive perceptions regarding the national economy and the household financial situation. Secondly, in the year 2019 when the negative effects of the economic recession had been felt more strongly by the public, the results show that environmental concern is negatively correlated with the public perceptions of the national economy, household financial situation, and life satisfaction. Lastly, in 2020 when other issues (such as COVID 19) gained more prominence than the environment and climate change, the level of correlation between economic factors and environmental concern decreased and even persisted to some degree.

This study reaches two general conclusions. First, it confirms hypothesis 1 suggesting that perceptions towards their household financial situation, national economy, and world economy affect individuals' environmental concerns related to the clash between materialist and post-materialist values. As evidenced by the results of the analysis, people who think that the national economy and/or world economy is bad or have a bad financial situation in their household, are less concerned with the environmental problems and the seriousness of the climate change issue. This impact is much more visible during the economic crisis, yet before/after the first eruption of the crisis, the correlation is not significant. Second, the results partly confirm hypothesis 2 suggesting greater levels of life satisfaction bring higher levels of environmental concern as these people satisfy their basic and material needs and turn their focus on post-materialist goals. Only in 2019, this study indicates a weak correlation between life satisfaction and environmental/climate change concerns.

4. Conclusion

In Turkey located in one of the geographies that have been/will be most affected by climate change, despite the rare studies on the effects of climate change at the local and national levels, it is quite remarkable that more than half of the society have been aware of the climate change and feel its effects in their life. As scientists say that there is an important relationship between climate change and the frequency and severity of disasters caused by climate change such as droughts, floods, and forest fires, most people in Turkey think that climate change has a role in those disasters they felt in their daily life. Unlike the fragmentation of Turkish society on political, economic and social cleavages, the vast majority of Turkish people are concerned about the climate change issue. In fact, the extreme weather events in 2021 such as fires that have affected southwest Turkey and burned thousand-hectares forestland, floods, and landslides due to excessive precipitation in the Western Black Sea region, have affected the level of awareness about the climate change crisis.

Despite the increasing awareness and concern about climate change, the expectations of Turkish society for the future are based on economic needs and demands. Eurobarometer (92.1) survey in 2019 indicates that while 38.9% of people regard the economic situation and 35.9% of respondents see the rising prices/inflation as the most important issues for the country, only 3.7% of people say the environment/climate change is the most important one among other issues. These results support the post-materialist thesis partly as citizens prioritize economic factors over other issues while accepting the importance of climate change reality. This study also reveals that there is a link between perceptions regarding the national economy/household financial situation and environmental concerns. According to results, people who think that the national economy and/or world economy is bad or have a bad financial situation in their household, especially during economic crisis times, are less concerned with the environmental problems and the seriousness of climate change.

On the other hand, although small in number, studies carried out in this field in Turkey show that individuals accept the reality of climate change and feel its grave consequences in their daily lives. Even though this study has indicated that citizens have prioritized their household financial situation/national economy over the environment/climate change, the level of correlation between economic factors and environmental concern decreased when other problems such as pandemic crisis occurred and affected their life. Moreover, it has been shown in the surveys conducted that while the coronavirus epidemic dragging the world economies, which could not recover after the 2008-2009 global crisis, into a deep recession, requires governments to direct their priorities to economic recovery plans, citizens have been much more aware that these steps should be taken within the framework of more sustainable and more "green" policies.

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Research Article

Does Congruence Between Brand Name and Brand Logo Influence Brand Affection? An Experimental Study

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Abstract

Undoubtedly, design and selection of the proper brand elements have a crucial role in the long-term success of a brand. Therefore, to establish strong and favorable brand meaning prior to market entry and enhance the acceptance of the new brand, an ultimate attention should be devoted to design and select brand elements that together convey consistent meaning. Herein, this study aims to examine the effect of interaction between sounds in brand names and shapes of brand logos on brand affection drawing upon sound and shape symbolism. To test the interaction effect between sound and shape, one experimental study was conducted. The findings of the study revealed that sounds in the brand names and shapes of the brand logos alone did not influence brand affection significantly. However, the results purported that the congruent combination of sounds in a brand name and shape of a brand logo significantly influenced brand affection compared to incongruent combinations. More specifically, the results indicated that when brand names are including high (low) frequency sounds and having angular (rounded) brand logo, brand affection towards the brand increased. These results are expected to both contribute to relevant literature and ensure applicable insights to the marketing practitioners who are responsible for designing and selecting brand elements.

Keywords: Brand Logo, Brand Name, Shape Symbolism, Sound Symbolism

JEL Codes: M19, M30, M31

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**Marka İsmi ve Marka Logosu Arasındaki Uyum Marka Beğenisini Etkiler mi?
DeneySEL Bir Çalışma**

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Öz

Marka unsurlarının tasarlanması ve seçiminin bir markanın uzun dönemli başarısı üzerinde şüphesiz ki çok önemli bir rolü vardır. Bu nedenle, pazara girişten önce güçlü ve olumlu bir marka anlamı oluşturmak ve yeni markanın kabulünü artırmak için birlikte tutarlı anlam taşıyan marka unsurlarını tasarlamaya ve seçmeye son derece dikkat edilmelidir. Bu bağlamda, bu çalışma, ses ve şekil sembolizminden yola çıkarak, marka isimlerindeki sesler ve marka logolarındaki şekiller arasındaki etkileşimin, marka beğenisi üzerindeki etkisini incelenmeyi amaçlamaktadır. Ses ve şekil arasındaki etkileşim etkisini test etmek için de bir deneysel çalışma yapılmıştır. Çalışmanın bulguları, marka isimlerindeki seslerin ve marka logolarındaki şekillerin tek başına marka beğenisini önemli ölçüde etkilemediğini ortaya koymuştur. Bununla birlikte, çalışmanın bulguları, marka ismindeki sesler ve marka logosundaki şekiller arasında uyumlu bir kombinasyon olduğunda, uyumsuz kombinasyonlara kıyasla bu uyumun marka beğenisini önemli ölçüde etkilediğini göstermiştir. Daha spesifik olarak, çalışmanın sonuçları, marka isimleri yüksek (düşük) frekanslı sesler içerdiğinde ve köşeli (yuvarlak) bir marka logosuna sahip olduğunda, markaya yönelik marka beğenisinin arttığını göstermiştir. Bu sonuçların hem ilgili literatüre katkıda bulunması hem de marka unsurlarını tasarlamak ve seçmekten sorumlu pazarlama uygulayıcılarına faydalı bilgiler sağlaması beklenmektedir.

Anahtar Kelimeler: Marka Logosu, Marka İsmi, Şekil Sembolizmi, Ses Sembolizmi

JEL Kodlar: M19, M30, M31

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1. Introduction²

Since they are always at the center of every marketing activity, brand elements are considered as the main building blocks of a brand (Klink & Athaide, 2012). Thence, strategic brand management process principally starts with designing brand elements for a new product. Herein, to communicate the essence of brand's identity, there are two basic brand elements including brand name (Keller et al., 1998) and brand logo (Henderson & Cote, 1998). As per these brand elements, brand names are the vocalized side of the brands (Kotler, 1991). Whereas, brand logos are principally the visual parts of the brands (Henderson & Cote, 1998). Most of the time, a considerable part of the success of a brand depends on its brand name, and so some brands are more competitive because of having successful brand names such as Volvo and IKEA (Pathak et al., 2020). Additionally, the shape and color of logo communicates meaning about the brand and influences the perception of consumers towards the brands (César Machado et al., 2021).

The integrity between brand name and brand logo enhances the effectiveness of marketing activities and consumer experiences with the brands (Derval, 2021). So, the more consistent and stronger the relationship between brand name and brand logo, the more the brand meaning is reinforced in the minds of consumers. Accordingly, when brand names and brand logo consistently communicate similar messages, consumers could perceive brand meaning in a more synergistic way (Park & Zaltman, 1987). So, instead of establishing brand meaning created by one brand element alone, it is crucial to design all brand elements consistent with each other to establish strong and favorable brand meaning. Nevertheless, designing and selecting successful brand elements that create positive and unique brand meaning is not an easy task for contemporary marketing practitioners. For that reason, while they are designing brand name and brand logo, they have to find novel ways to easily differentiate their brands among others in today's overcrowded marketplace.

Recent years, as a novel method, sound symbolism and shape symbolism have been increasingly used to design brand name and brand logo, respectively (Baxter et al., 2015). The relevant literature also presents that there is a consistent interplay between sound symbolism and shape symbolism (e.g., Akita, 2021; Knoeferle et al., 2017). Herein, the results of many marketing research also indicate that specific speech sounds are more associated with specific shapes (e.g., Klink, 2003), while specific shapes are also associated with specific speech sounds (e.g., Abelin, 2015). Besides, the findings in relevant literature demonstrate that when there is a congruence between sounds of brand names and shapes of brand logos, the desired brand meaning would be communicated much better (e.g., Klink, 2003).

Drawing upon the consistent relationship between sound and shape, the interplay between sound symbolism and shape symbolism has been already examined within the context of brand name and package shape design (e.g., Fenko et al., 2016; Godinho & Garrido, 2017) and brand name and brand logo design (e.g., Baxter et al., 2015; Klink, 2003) in marketing discipline. However, most of these studies have tested the cross-modal correspondence between sound and shape in many major European languages such as English (e.g., Baxter et al., 2015; Klink, 2003; Lieven et al., 2015). To extend the effect of sound and shape symbolism beyond European languages contexts, it is crucial to test the cross-modal correspondence between sound and shape in different languages coming from different language families. Herein, though there is a tiny effort to test the cross-modal correspondence between sound and shape in Turkish

² Permission was obtained from the Ethics Committee of Afyon Kocatepe University with the decision dated 26.10.2022.

within the context of brand name and package design (Yaran Ögel, 2022), there is still a little knowledge about the interaction between sound and shape symbolism in brand name and brand logo design in Turkish. So, to prove the universal existence of cross-modal correspondence between sound and shape, and to make sound and shape symbolism an effective tool for marketing practitioners in design of brand name and logo globally, this interaction should be tested in other languages coming from different language families like Turkish.

Additionally, it is also important to test the effects of congruence between sounds of brand names and shapes of brand logos on consumers responses. In relevant literature, the effects of sound symbolism used in brand name design and the effects of shape symbolism used in brand logo design have been examined within the context several consumer responses such as brand attitude and memory (Jun & Lee, 2022), attribute perception (Baxter et al., 2015), brand gender perceptions and consumer preferences (Lieven et al., 2015) and product evaluation and purchase intention (Yaran Ögel, 2022). However, there are also other consumer responses which should be addressed within the context of sound and shape symbolism in consumer behavior literature. Herein, brand affection, which refers to positive feelings a consumer has towards a brand (Thomson et al., 2005), seems one of the constructs which have not examined yet within sound and shape symbolism context in brand element design. Thus, though, brand affection can be readily regarded as an important factor which could determine the success of a brand, still little is known about how congruence between sounds in a brand name and shape of a brand logo influence feelings of consumers towards a brand.

Overall to address these gaps, this study aims to explore the role of cross-modal correspondence between sounds of brand names and shapes of brand logos in brand affection in Turkish. In doing so, it is expected to be the first study in Turkish which indicate the interaction between sound and shape symbolism within the context of brand elements design. This study is also important in terms of displaying the effect of interaction between shape and sound on brand affection as a previously untapped context within sound and shape symbolism literature. Thence, the findings of study are also expected to contribute to existing literature on sound and shape symbolism as well as providing a novel understanding to marketing practitioners in designing brand elements effectively.

The rest of the study is organized as follows. First, literature review about sound symbolism, shape symbolism and brand affection are briefly given. Second, drawing upon the relevant literature, the hypothesis of the study is established. Then, the experimental study including research issue, stimuli, research design, measure and procedure is precisely described. After that research findings are reported and discussed. Followingly, theoretical contribution of the findings and their practical implication in marketing discipline are presented. Finally, limitations of the study and suggestions for further research are indicated.

2. Literature Review

In this section, sound symbolism, shape symbolism and brand affection, which provide a context for the experimental research, are briefly introduced.

2.1. Sound Symbolism

By contrast with foundational principle of modern linguistics, sound symbolism presumes that there is a consistent (Sapir, 1929), direct (Hinton et al., 1994), non-arbitrary (Sapir, 1929) and systematic (Jepersen, 1922) relationship between sound and meaning. Particularly, when the words are unfamiliar or meaningless, the sounds creating the words can be used as tools by individuals to understand meaning about the words. Accordingly, since sounds stimulate the perception of individuals, sound symbolism can be delineated as a cross-

modal correspondence in which sounds lead to multi-modal correspondence to other sensory attributes (Fenko et al., 2016).

In sound symbolism theory, even the tiniest bits of sounds in a word are capable of communicating inherent meaning about the word (Lowrey et al., 2007). So, though this phenomenon is originated from linguistics, the expressiveness of the sounds has also recently explored within the context of marketing (e.g., Jun & Lee, 2022; Motoki et al., 2022). Notably, since brand names are frequently made up by combination of speech sounds, sound symbolism has been specifically examined within the context of creating distinctive and meaningful brand names that can communicate inherent meaning about product or brand characteristics (Baxter & Lowrey, 2011; Klink, 2000; Lowrey & Shrum, 2007).

Drawing upon the several marketing research on sound symbolism, it can be observed that brand names including specific speech sounds consistently convey specific meanings about appearance of the product like shape (e.g., Fenko et al., 2016; Velasco et al., 2014) and appearance of the brand in terms brand elements such as brand logo (e.g., Baxter et al., 2015; Klink, 2003; Klink & Athaide, 2014). Herein, the results of several marketing research display that majority of respondents associate vowels sounds (i.e., /i/, /e/) and fricatives (i.e., /v/, /s/) with angular shapes; whereas they match back vowels (i.e., /o/, /u/) and plosives (i.e., /b/, /g/) with rounded shapes (e.g., Klink & Athaide, 2014). So, this systematic linkage between sound and shape makes sound symbolism as a novel tool used to create inherently meaningful brand names that convey messages about shape-related issues about a product and a brand.

2.2. Shape Symbolism

As well as sounds, shapes can communicate meaning, and they send messages to the target audience without using any words. This is widely-known as shape symbolism, whose root is traced back to the end of 1920s (Köhler, 1929; Sapir, 1929), though at that time it was only referred to sound symbolism instead of shape symbolism. The main idea behind shape symbolism is that individuals can relate specific attributes with specific shapes, which are usually varying in degree of their angularity or roundedness and/or in their size (Spence and Ngo, 2012). Accordingly, as well as sound symbolism, shape symbolism can be considered as a specific form of cross-modal correspondence (Spence, 2011). Thence, the phenomenon of shape symbolism can be delineated as a cross-modal mapping that can be observed between shapes and other sensory attributes such as sound (Spence, 2012).

The phenomenon of shape symbolism has come from the findings of the studies of German psychologist Köhler (1929;1947). Based on his findings, it was reported that majority of the respondents match the meaningless name, “baluma”, (Köhler, 1929) or “maluma” (Köhler, 1947) with a rounded and curvy shape due to the open articulation of these words occurred in their pronunciation. Whereas, most of the respondents match meaningless word, “takete”, with a spiky and angular shape (Köhler, 1929). Consistent with the studies of Köhler (1929; 1947), the neuroscientists Ramachandran and Hubbard (2001) presented the “bouba-kiki effect”, drawing upon articulatory hypothesis, which assumes that a shape imitates the articulatory movements of speech organs during the pronunciation of the words. Herein, since one’s tongue is sharply inflected when the word “kiki” is pronounced, this word is mostly matched with sharp and angular figures. On the other hand, when one’s lips and oral cavity are rounded during articulation of the word “bouba”, this word is mostly matched with rounded figures. Overall, it was concluded that the words including high frequency sounds (i.e., fricatives and vowel sounds) are more associated with angular shapes, while words including low frequency sounds (i.e., plosives and back vowels) are more associated with rounded shapes.

These studies have paved the way for further research on shape symbolism by examining the interplay between sound and shape within the context of marketing (e.g., Athaide & Klink, 2012;2014; Klink, 2000; 2003). Undoubtedly, shape symbolism has particularly become a prominent on marketing studies about labelling (e.g., Klink, 2003) and packaging (e.g., Fenko et al., 2016). Thence, the findings of these studies give a powerful set of tools to marketing practitioners to design packaging of the products and their brand marks.

2.3. Brand Affection

Affection refers to warm feelings a consumer has towards a brand (Thomson et al., 2005). Accordingly, affection leads to positive evaluations regarding a brand, and so it makes consumers develop positive emotional responses towards the brand from using the brand itself (Chaudhuri & Holbrook, 2001). Affection for a brand also emphasizes a long-term relationship with the brand and presents the proximity between the brand and a consumer (Albert et al., 2009). More specifically, the more the degree of affection towards a brand, the more the brand is perceived as unique by the consumer who uses it. In this context, brand affection can be considered as one of the outstanding consumers' behaviors which have a substantial relation with brand loyalty (Hemsley-Brown & Alnawas, 2016). So, affection has also a crucial role in the success of a brand in an overcrowded marketplace.

Emotional relationship between a customer and a brand is also crucial in establishing strong brand in the mind of the customer (Hulten, 2011). Undoubtedly, to build a strong brand in the minds of the consumers, the design of a proper brand meaning, which defines a brand itself, its function, its values and its personality (Keller, 2013), is a must, as well. Thence, to enhance brand awareness and create a strong, unique and favorable impressions towards the brand, brand meaning should be determined and operationalized prior to market entry for every new brand (Aaker & Keller, 1990).

In a nutshell, brand meaning communicates the essence of a brand's identity (Keller, 2013), and it can be reinforced depending upon interaction among a wide range of marketing activities. Herein, since they are at the heart of every marketing activity, brand elements such as brand name and brand logo have a special role in communicating brand meaning (Klink, 2003). For instance, if a brand has a strong brand name, it is more likely to bring satisfaction and loyalty (Silalahi et al., 2016). Accordingly, in terms of leading to loyalty, brand affection can be related to brand meaning with respect to brand name and brand logo. Besides, consumers may develop strong affective attachments and relationships with brands through several instruments such as the design of the product (Bhattacharya & Sen, 2003). Herein, since the design of the brand elements for a new product can also be included in design of the products, brand affection could also be examined within the context of design of brand elements. Therefore, it can be used as a dependent variable in this study.

3. Hypothesis Development

If stimulation of one sensory modality affects the perception regarding another modality regardless of any direct stimulation to the second modality, cross-modal correspondence is observed (Harrison & Baron-Cohen, 1997). For instance, sound as a sensory modality can trigger a perception about vision such as shape (Klink, 2003) or vision can trigger a perception about a sound (Abelin, 2015). This is a cross-modal correspondence between sound and shape (Ramachandran & Hubbard, 2001).

Recent years, marketing researchers have also accepted the effects of cross-modal correspondences, and they have started to examine this effect within the context of interplay between brand name and shape-related decisions regarding brands such as designing brand logo

(e.g., Klink, 2003; Klink & Athaide, 2014). The results of these research consistently indicate that brand names including high frequency sounds (i.e., front vowels and fricatives) are more associated with angular brand logos than brand names including low frequency sounds (i.e., back vowels and plosives) in English (Klink, 2003) and Hindi (Klink & Athaide, 2014). Moreover, the results emphasized that shape of a brand logo can strengthen sound symbolic meaning of a brand name, and so the congruence in meaning conveyed through brand name and brand logo enhances the brand liking (Klink, 2003).

In extant literature, unfortunately, there is no any research on the interplay between sound and shape symbolism in Turkish within the context of brand element design. However, it is proved that brand names including vowel sounds are more matched with angular shapes than brand names including back vowels within the context of packaging design (Yaran Ögel, 2022). Moreover, it is found that the congruence between sound and shape (i.e., brand names including high frequency sounds and brands with angular package) also significantly affect the consumer responses such as product evaluation and purchase intention compared to incongruent combinations (Yaran Ögel, 2022). Though there is no any research which directly concentrates on the role of the interaction between sounds of a brand name and shape of a brand logo in affection towards a brand, drawing upon the results of empirical research in relevant literature, this study hypothesizes that;

H₁: A brand with angular (rounded) logo and brand names including high (low) frequency sounds leads to more brand affection than a brand with angular (rounded) logo and brand names including low (high) frequency sounds do.

4. Experimental Study

Herein, the experimental study in terms of research issue, stimuli, design, measure, procedure and results is briefly introduced.

4.1. Research Issue

This experimental study is primarily designed to explore how interaction between sound symbolism and shape symbolism affects consumers in branding context. Thence, by specifically addressing H₁, this study attempts to analyze how the congruence between sounds in brand names and shapes of brand logos influences brand affection of consumers.

4.2. Stimuli

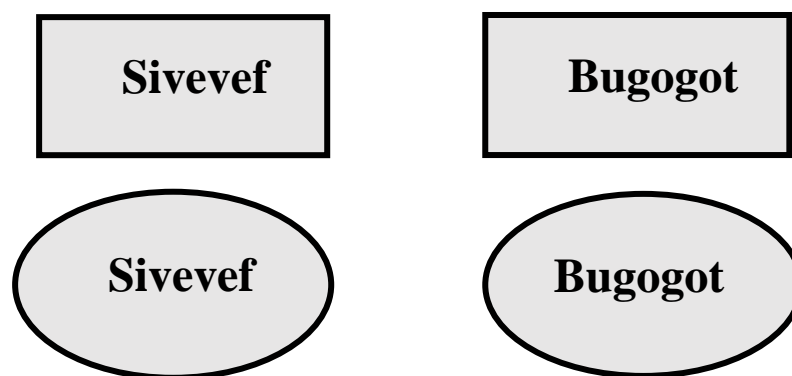
In order the test H₁, it is initially required to invent two fictitious brand names which are used as stimuli. Herein, one brand name pair which includes a brand name including only high frequency sounds and a brand name including only low frequency sounds is created. In phonetics, high frequency sounds include fricatives and front vowels; whereas low frequency sounds cover plosives and back vowels (Hinton et al., 1994). As per high frequency sounds, fricatives are produced with partial blocking of the airflow that leads to audible friction, while plosives, as low frequency sounds, are produced by fully blocking the airflow which leads to a sudden release of sounds from the mouth (Özsoy, 2004). In Turkish, fricatives include “c”, “ç”, “f”, “h”, “j”, “s”, “ş”, “v”, “y”, and “z” and plosives include “b”, “d”, “g”, “p”, “t”, and “k” (Ergenç, 2002). The other high frequency sounds are vowel sounds, which are produced, when the tongue is more towards the front of the mouth during the pronunciation of a sound (Özsoy, 2004). On the other hand, the other low frequency sounds, back vowels, are produced when the tongue is more towards the back of the mouth during the pronunciation of a sound (Ergenç, 2002). In this context, in Turkish, the sounds “ı”, “o”, and “u” are included in back vowels, whereas “i”, “e”, “ö”, and “ü” are included in front vowels (Göksel & Kerslake, 2005).

In extant literature, to test the sound symbolism effect with respect to fricatives and plosives distinction, fricatives /v/, /f/ and /s/ are frequently contrasted with plosives /g/, /b/ and /t/ (e.g., Klink, 2000). Moreover, to test the effect of sound symbolism with respect to distinction between front and back vowel, the front vowels /e/ and /i/ are mostly contrasted with back vowels /o/ and /u/ (Klink, 2000; 2003; Lowrey & Shrum; 2007; Yorkston and Menon, 2004). Accordingly, in this study, the brand name including high frequency sounds was created through the combination of fricatives /s/, /v/ and /f/ with front vowels /e/ and /i/, while the brand name including low frequency sounds was created through the combination of plosives /b/, /g/ and /t/ with back vowels /o/ and /u/. Overall, two non-sense brand names, “Bugogot” and “Sivevef” were used as stimuli to reflect brand names including low frequency sounds and high frequency sounds, respectively.

All non-sense brand names were created in three-syllables and in a similar format with respect to alliteration. Before using the brand name pair, it was pretested with 30 participants to check whether the brand names in a pair might be more likely to remind them any existing words or brand names. Then, for shape symbolism, angular and rounded shapes were selected to be used in logo design. To check the brand name and brand logo effect on brand affection, all other details were kept identical. So, all stimuli were prepared using “Times New Roman” as a font type and “18” as a font size. Additionally, all stimuli were created in bold font and grey was used as a background color because of its neutrality. Finally, fictitious words and selected shapes were combined to create the stimuli of the experimental study. Thence, four experimental conditions were prepared within the context of two fictitious brand names and two brand logo shapes. These stimuli in each experimental condition are given in Figure 1.

Figure 1

Stimuli of the Study



Note. Created by the author.

4.3. Design

This study adopts two-way ANOVA for testing H1 because there are two factors: sound (brand names including front vowels vs. brand names including back vowels) and shape (angular logo vs. rounded logo).

4.4. Measure

In this experimental study, dependent variable is determined as brand affection which can be measured with multi-item scales taken from existing literature and adapted for this study.

In this regard, brand affection is measured with four items used by Hemsley-Brown & Alnawas (2016). A five-point Likert-type scale, which is anchored from “totally disagree (1)” to “totally agree (5)”, is adopted to measure these three items regarding brand affection. The items and Cronbach’s α as a reliability coefficient of the construct are reported in Table 1. The value for Cronbach’s α , which is higher than 0.70, shows that the construct has good reliability (Nunnally, 1978).

Table 1
Brand Affection Items and Its Reliability

Construct	Items	Cronbach’s α
Brand affection	The brand name and brand logo are affectionate.	0.971
	The brand name and brand logo are lovely.	
	The brand name and brand logo are peaceful.	
	The brand name and brand logo are friendly.	

Note. Calculated by the author.

4.5. Procedure

To decrease the bilingual effect, the freshmen and sophomores from Afyon Kocatepe University were purposively selected as the participants of the experimental research because they had lower foreign language skills compared to juniors and seniors. Additionally, participants were selected among the freshmen and sophomores who spoke Turkish natively, could not speak other language fluently, and have never visited abroad before to minimize any bilingual effect on their perception, as well. In a nutshell, participants were reached by using purposive sampling method. Overall, 109 students were participated in the experimental study (57 female and 52 male, 18-22 years old, M: 19.67, SD: 1.52). Details about the participants per experimental condition were reported in Table 2.

The data were collected from 20.10.2022 to 10.11.2022 with structured questionnaire. Since a survey method was utilized in this study as a data collection method, the permission has been obtained from Ethics Committee of the Afyon Kocatepe University with a decision on the date of 26.10.2022 and 136502 document number. Herein, it is important to remark that all participants stated their consent to participate in this experimental study. Finally, since visual stimuli were prepared for this study, all participants stated that they had normal sense of vision.

In the experimental study, a 2 pages survey booklet, in which the first page was separated for informing the participants that they were going to follow during the data collection procedure, was given to each participant. However, they were not really informed about the real purposes of the study. Stimulus which presented the different combination of brand name and brand logo was visually presented to the participants in the second page of the booklet. Then they were asked to answer items regarding brand affection on the basis of five-point Likert type scale, after being exposed to given stimulus. One of the 4 stimuli was randomly assigned to each participant. After responding to every item in brand affection scale, participants were requested to answer demographic data questions. Then they were debriefed. Each section lasted approximately for 10 minutes.

Table 2
Demographics of Participants Per Stimuli

Experimental Condition	Gender (N)		Mean age (years old)	Class (N)		Total (N)
	Female	Male		Freshmen	Sophomore	
Brand Name "Sivefef" with "angular" logo	13	14	19.12	18	9	27
Brand Name "Sivefef" with "rounded" logo	15	13	19.72	16	12	28
Brand Name "Bugogot" with "angular" logo	15	12	20.02	11	16	27
Brand Name "Bugogot" with "rounded" logo	14	13	19.64	15	12	27

Note. Calculated by the author.

4.6. Results

In order to test H_1 , two-way ANOVA in SPSS was adopted (See Table 4). Referring to the descriptive statistics given in Table 3, the brand name including high frequency sounds, Sivefef, led to higher brand affection with the angular logo ($M= 3.574$, $SD=0.768$) compared to brand name Sivefef with rounded logo ($M= 2.893$, $SD=0.750$) ($p < 0.05$). Consistently, the brand name including low frequency sounds, Bugogot, led to higher brand affection with the rounded logo ($M= 3.481$, $SD=0.686$) compared to brand name Bugogot with angular logo ($M= 2.472$, $SD=0.936$) ($p < 0.05$). Overall, these results confirmed that when brand names including high frequency sounds such as front vowels (i.e., /i/, /e/) and fricatives (i.e., /s/, /v/, /y/) and angular brand logo come together, this congruent combination more enhanced the brand affection compared to incongruent combination. Consistently, when brand names including low frequency sounds such as back vowels (i.e., /o/, /u/) and plosives (i.e., /b/, /g/, /t/) and rounded brand logo come together, this congruent combination more enhanced the brand affection compared to incongruent combination.

Table 3
Descriptive Statistics

Dependent variable: Brand Affection						
Sound	Shape	Mean	Std. Deviation	Std. Error	95 % Confidence Interval	
					Lower Bound	Upper Bound
Brand name including high frequency sounds (Sivefef)	angular logo	3.574	0.768	0.152	3.273	3.876
	rounded logo	2.893	0.750	0.149	2.597	3.189
Brand name including low frequency sounds (Bugogot)	angular logo	2.472	0.936	0.152	2.171	2.774
	rounded logo	3.481	0.686	0.152	3.180	3.783

Additionally, as respects to the results reported in Table 4, no significant main effect of sound ($F(1, 105) = 2.873$, $p > .05$) and no significant main effect of shape ($F(1, 105) = 1.174$, $p > .05$) on brand affection were found. On the other hand, the results revealed that there was a significant interaction effect of sound and shape ($F(1, 105) = 31.171$, $p < .05$) on brand affection.

So, these results revealed that the congruence between sounds of a brand name and shape of a brand logo significantly increases affection towards the brand.

Table 4
Results of Two-Way ANOVA

Dependent Variable	Independent Factor	F-Value	Sig.
Brand Affection	Sound	2.873	0.093
	Shape	1.174	0.281
	Sound x Shape	31.171	0.000*

5. Discussion

This study explores the role of interaction between sounds of a brand name and shape of a brand logo in brand affection drawing upon sound and shape symbolism. Consistent with the findings of previous research conducted in English (Klink, 2003) and Hindi (Klink & Athaide, 2014), the findings of the experimental study conducted in Turkish revealed that the brand name including high frequency sounds such as fricatives and front vowels are more associated with angular logos; while the brand name including low frequency sounds such as plosives and back vowels are more associated with angular logos. Additionally, the findings of the study displayed that though there was no significant main effect of sounds of the brand name and shape of the brand logo on brand affection, there was a significant interaction effect of sounds in the brand name and shape of the brand logo on brand affection. More specifically, the findings presented that when a brand name including high frequency sounds such as fricatives and front vowels (Sivevef) and an angular brand logo come together, this combination significantly enhances the affection towards the brand. Similarly, when a brand name including low frequency sounds such as plosives and back vowels (Bugogot) and an angular brand logo come together, this combination significantly enhances the affection towards the brand.

In this context, this experimental study provides important contribution to relevant literature as follows. First, to the best of our knowledge, it is the first study in Turkish which indicate the interaction between sound and shape symbolism within the context of brand elements design. Second, as it is previously mentioned that the interaction effect of sound and shape on product evaluation and purchase intention has already been examined within the context of brand name and brand package design (Yaran Ögel, 2022). Different from that research, this study displays the effect of interaction between shape and sound on brand affection as a previously untapped context within sound and shape symbolism. Finally, the findings of the study also validated the sound symbolism effect in Turkish by supporting the universal sound symbolism argument (Ulan, 1978).

5.1. Managerial Implications

As well as contributing the literature, the findings of the study provide applicable insights to marketing practitioners in following aspects. First, the findings of the study guide marketing practitioners about how to design their brand elements by emphasizing congruent combination of sounds in a brand name and shape of a brand logo. In this context, to enhance the affection towards their brands, marketing practitioners should be careful about using some speech sounds in their brand names together with specific shapes in their brand logo. For instance, to enhance the positive feelings of consumers towards their brands, they should use high frequency sounds such as fricatives and front vowels in brand names with angular shapes in brand logos or they should combine brand names including low frequency sounds such as plosives and back vowels with rounded shapes in brand logos.

Second, it is widely known that brand names and brand logos are good at communicating the essence of the brands. So, they are mostly used to increase favorable brand associations regarding the brands. Based on the findings of the research, marketing practitioners would use congruent combinations of sounds in brand names and shapes in brand logos to improve the formation of strong, unique and favorable brand associations which in turn lead to brand affection. In this context, the findings of the study also help marketing practitioners about how to design their brand names and brand logos which together better communicate their brand meanings.

Finally, a successful brand name and a well-designed brand logo increase the brand awareness and strengthen brand image by supporting brand positioning. Depending upon the results of the study, if marketing practitioners combine appropriate sounds in brand names with appropriate shapes in brand logos, they could pave the way for synergy between brand name and brand logo in terms of communicating similar meanings that contribute to establishment of brand knowledge. Since brand knowledge leads to positive customer-based brand equity outcomes such as brand loyalty, the findings of the study would also provide valuable insights to marketing practitioners about how to design their brand elements to increase customer loyalty towards their brands.

6. Conclusion and Suggestions for Further Research

Brand elements are at the center of every marketing activity such as packaging and advertising. Thence, many times they are considered as the elements which the customers are mostly exposed. Particularly, to establish and strengthen the brand image and enhance the brand awareness, brand elements have a significant role in branding decisions. This explains why their design for a new product is the first decision in strategic brand management process. However, in today's overcrowded marketplace, designing brand elements, which easily differentiate a brand among the others, is a very difficult task. So, marketing practitioners have to find novel ways to design their brand elements.

To provide explanation to this issue, this study emphasizes the importance of sound and shape symbolism in brand element design. Accordingly, the findings of the study purported that if there is a congruent combination between sounds in brand names and shapes in brand logos, this interaction between sound and shape increases the positive feelings a consumers has towards the brand. Overall, the results of the study indicated the applicability of sound and shape symbolism in brand name and brand logo design, respectively. So, consistent with the previous research, the findings of study provide a set of tools to marketing practitioners to design their brand name and brand logo, effectively.

Limitations of the Study and Future Research Directions

This study has some drawbacks which must be remarked. First, in order to reach participants on the basis of some specific criteria, purposive sampling method was used in the experimental study. However, purposive sampling method is one of the non-probabilistic sampling methods which could not be effectively used to generalize the findings to entire population. In this context, to generalize the results to larger sample size, probabilistic sampling methods would be used in further studies instead of non-probabilistic sampling methods as used in the experimental study. Second, freshmen and sophomores were the participants of the experimental study. Though the findings of the study supported the previous findings regarding sound and shape symbolism, it would be beneficial to work with different sample groups such as millennials, white-blue collars, housewives and so on in further studies. Third, in this experimental study only the interaction between brand name and brand logo was examined. On

the other hand, brand mark could also include some other factors such as color, font style, font size and so on. So, in further studies, it would be better to include other visual parameters regarding brand name and brand mark in the experimental design to provide broader insights about designing and selecting brand elements. Finally, this study only concentrated on brand affection as a dependent variable to check the interaction effect of sound and shape symbolism. However, to derive a better conclusion about the effects of sound and shape symbolism in brand element design, other dependent variables such as loyalty, satisfaction, and expectation would be employed by further studies.

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Research Article

The Relationship Between Job Satisfaction and Organizational Commitment in Female Employees

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Abstract

In this study the relationship between job satisfaction and organizational commitment in female employees has been examined. The structural equation modelling technique was used to analyze complex models with both direct and indirect relationships. Quantitative data was gathered by utilizing questionnaires. To demonstrate convergence validity, confirmatory factor analysis was used. Composite reliability and AVE scores were calculated to assess the scales' reliability and discriminant validity. The AMOS statistical program's structural equation model method was used to test the hypotheses. Out of six hypotheses, two of them were supported. It has been empirically proven that Internal Job Satisfaction has a direct effect on Affective Commitment and Normative Commitment, where External Job Satisfaction does not have a direct effect on any sub-dimensions of organizational commitment. Although job satisfaction and organizational commitment have been examined individually in many studies, this research focused on female employees working in the service sector while evaluating the relationship between the two concepts in the light of current data.

Keywords: Job Satisfaction, Organizational Commitment, Female Employees

JEL Codes: M10, M12, M54, D23

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Araştırma Makalesi

Kadın Çalışanlarda İş Tatmini ve Örgütsel Bağlılık Arasındaki İlişki

M. Çağrı Pehlivanoglu¹, Emre Eymür², Mustafa Emre Civelek³

Öz

Bu çalışmada, kadın çalışanlarda iş tatmini ile örgütsel bağlılık arasındaki ilişki incelenmiştir. Yapısal eşitlik modelleme tekniği, hem doğrudan hem de dolaylı ilişkilere sahip karmaşık modelleri analiz etmek için kullanılmıştır. Nicel veriler anketler vasıtasıyla toplanmıştır. Yakınsama geçerliliğini göstermek için doğrulayıcı faktör analizinden faydalanılmıştır. Ölçeklerin güvenilirliğini ve ayırt edici geçerliliğini değerlendirmek için bileşik güvenilirlik ve AVE puanları hesaplanmıştır. Hipotezleri test etmek için AMOS istatistik programının yapısal eşitlik modeli yöntemi kullanılmıştır. Altı hipotezden ikisi kabul edilmiştir. İşsel İş Tatmininin, Duygusal Bağlılık ve Normatif Bağlılık üzerinde doğrudan bir etkiye sahip olduğu, Dışsal İş Tatmininin ise örgütsel bağlılığın herhangi bir alt boyutu üzerinde doğrudan bir etkisinin olmadığı ampirik olarak kanıtlanmıştır. Birçok çalışmada iş tatmini ve örgütsel bağlılık tekil olarak incelenmiş olsa da, bu araştırma mevcut veriler ışığında iki kavram arasındaki ilişkiyi değerlendirerek hizmet sektöründe bulunan kadın çalışanlara odaklanmıştır.

Anahtar Kelimeler: İş Tatmini, Örgütsel Bağlılık, Kadın Çalışanlar

JEL Kodlar: M10, M12, M54, D23

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1. Introduction⁴

In today's economic climate, where businesses face numerous challenges, many attempts are being made to provide equal rights to persons of both genders in the workplace. Engaging men and women in the labour force is crucial for boosting countries' social and economic welfare. Enterprises all over the world attach importance to gender diversity on the job. In this context, female employees' job satisfaction and organizational commitment of female employees stand out as factors that will increase organizational success. Therefore, this research scrutinizes the relationship between the two structural concepts in female employees.

Females account for 49.6% of the global population (The World Bank, 2020). In European Union member countries, the gender ratio in management roles is 63% males and 37% women (European Union, 2021). Women CEOs account for 8.2% of Fortune 500 firms, according to the 2021 list (Fortune, 2021). These statistics show that women are offered fewer management role opportunities than their population. It is crucial to implement changes that will allow women to work comfortably in the workplaces to equalize the odds over time. From this perspective, job satisfaction and organizational commitment of female employees in a corporate setting is a topic that requires significant attention and additional research to understand the positive and negative consequences fully.

Weiss et al. (1967)'s Minnesota Job Satisfaction and Meyer & Allen (1991)'s Three-Component Model of Organizational Commitment scales were used as measurement tools in this research. This study contributed to the former studies by investigating the relationship between job satisfaction and organizational commitment in female employees to gain a more profound understanding of management and organization research using recent data.

2. Conceptual Background

The main constructs of the study, Job Satisfaction and Organizational Commitment are explained in this part with respect to the literature. Also the Theoretical Model is developed accordingly.

2.1. Job Satisfaction

Job satisfaction is a significant concept for employees and societal factors in an organization. It has numerous positive consequences for people and institutions, including enhanced job productivity and motivation, physical and mental well-being, and inner serenity of personnel. Job satisfaction is linked to a person's job expectations and performance, and it is attained when outcomes fulfill expectations mutually. Therefore, employees are content with their jobs, and are thus expected to contribute more to their organizations (Brief, 1998).

Historically, during the 1930s, Hoppock (1935) made one of the initial studies to explore the concept. Later, Maslow (1943)'s hierarchy of needs on describing the stages of growth in humans has been a critical study that sheds light on the satisfaction of individuals. In the 1960s, psychologists began to develop critical theoretical perspectives. Herzberg et al. (1959) introduced two-factor theory; Porter (1962), Adams (1963), Locke (1969) worked on discrepancy theories of job satisfaction; Vroom (1964) developed a satisfaction theory derived from his more comprehensive expectation theory of motivation; also, Smith et al. (1969)'s Job Descriptive Index and Weiss et.al. (1967)'s Minnesota Satisfaction Questionnaire

⁴ Permission was obtained from the Ethics Committee of Istanbul Commerce University with the decision dated 30.10.2022.

scales were formulated. In the 1970s the social information processing theory by Salancik and Pfeffer (1977, 1978), and the job characteristics model of Hackman and Oldham (1975) were some additional vital theoretical contributions to job satisfaction theory. A well-known job satisfaction model is Locke (1976)'s range of affect theory. The primary principle of this theory is that an individual's job satisfaction is specified by a gap between what one seeks and what one has in a job. Likely, the narrower the gap between what an employee wants and gets the more satisfied the employee will be. In subsequent years, researchers have further examined job satisfaction. Newstrom & Davis (1985) explored the idea of job satisfaction in two fundamentally distinct sub-dimensions and categorized it as favourable or unfavourable view of work among employees. Arnold & Feldman (1986) interpreted job satisfaction through the employee's overall positive feelings and identified the employee's favorable sentiments toward the workplace as a significant input that positively influences job satisfaction. Additionally, Knoop (1995) evaluated the concept of job satisfaction via the perspective of the employees and contended that employees are engaged in a continual process of evaluating their job satisfaction, enhancing their perspective on the job. Similarly, Spector et al. (2006) delineated job satisfaction as the total of an employee's feelings regarding all facets of the work. Consequently, either excellent or negative job satisfaction findings will emerge.

Measures of job satisfaction vary depending on whether researchers focus more on the job's cognitive or affective aspects. In this research, Weiss et.al. (1967)'s Minnesota Job Satisfaction Questionnaire was applied a measurement tool. This scale identifies the elements of the job that employees are satisfied with, including the sense of accomplishment, appreciation, level of responsibility, working conditions, prospects for promotion and compensation, etc. The Minnesota Job Satisfaction Scale is utilized in numerous scientific research because it is a comprehensive evaluation method in internal and external aspects (Hirschfeld, 2000). According to this scale, higher ratings indicate greater job satisfaction. The scale has two dimensions: (1) Internal Job Satisfaction, (2) External Job Satisfaction.

2.1.1. Internal Job Satisfaction

Internal Job Satisfaction, as a term, describes the nature of actual job tasks and employees' feelings toward work (Spector, 1997). The internal dimension is assessed as a job satisfaction factor related to employees' emotions, personality, genetics, and psychological well-being. The study by Cote & Morgan (2002), indicates that enhancing positive emotions increases job satisfaction while suppressing negative emotions decreases job satisfaction and increases quitting. People's personalities immediately impact the internal dimension of their job satisfaction. Characteristics is essential to guide personality. However, characteristics are related to genetics and some people may be born with good intrinsic characteristics, while others may be born with negative innate features. The studies show that these genetic differences might be valid for up to 30% of employees at work (Arvey et al., 1989). Psychological well-being is related to life, work, family, and society. Numerous psychological and emotional aspects impact job satisfaction (Kammeyer-Mueller, 2008). Internal satisfaction is the satisfaction tied to the people's sense of success and ambition, irrespective of incentives, and it varies from external satisfaction (Deniz, 2005). From the start of a person's working career until the end, changes in social life might have a good or negative impact on the internal job satisfaction dimension. The 20-item Minnesota Job Satisfaction Scale includes 12 items to measure internal dimensions; consequently, the internal satisfaction score is derived by dividing the total internal dimension.

2.1.2. External Job Satisfaction

External Job Satisfaction is the opposite of the internal dimension and is unrelated to one's personality traits and genetic characteristics. Organizational factors influence the external job satisfaction. This dimension encompasses all good actions that occur outside of the person. External job satisfaction refers to motivational components like rewards and appreciation statements that employees receive in exchange for good efforts. An organization's human resource policy and how employees' views of the organizational culture contribute to external work satisfaction. Therefore, salary, management style, working environment, and promotion conditions are various factors that influence external job satisfaction. Salary is among the major sources of motivation for employees to perform business. Fair salary management improves job satisfaction and, through increased individual productivity, slightly improves business financial satisfaction. Employees' job satisfaction and dedication will decline in a setting where salaries are insufficient or unfair (Kangas et al., 1999; Bartolo & Furlonger, 2000). Management style is another factor in external job satisfaction. Especially unpredictability in management style has a detrimental impact on employee work satisfaction whereas using accurate and concise job descriptions contributes to job satisfaction (Greenberg & Baron, 2003). The working environment is another factor for the employee's external job satisfaction (Youssef & Luthans, 2007). Workplace factors directly correlate with job satisfaction (Batugal & Tindowen, 2019), if employees perceive significant constraints in their workplace, they are more inclined to be dissatisfied at work (Spector, 1997). Promotion conditions are another factor. The results of earlier studies demonstrate a favourable link between job satisfaction, promotions, and title opportunities (Smucker, et al., 2003). Job satisfaction tends to improve with title advancement (Bilgiç, 1998). Since the title is an essential form of self-expression that influences the employee's authority over other employees and the prestige of the social environment, possible title confusion negatively affects job satisfaction (Robie et al., 1998). The factors forming the external dimension can change considerably more easily than the factors of the internal dimension. While internal satisfaction mostly consists of personal characteristics that people have made a habit of for many years, the external dimension has content that can evolve more easily compared to the flexible structure of organizations and can increase its effect on job satisfaction (Yousef, 1998). The 8 items of the 20-item Minnesota Job Satisfaction Scale are targeted at understanding the external dimensions. Because of this scale, the total scores acquired in the items of this dimension are divided by 8 and the external satisfaction score is achieved.

2.2. Organizational Commitment

Organizational commitment is acknowledged as a crucial factor in understanding employee behaviour in the workplace, such as satisfaction, intention to leave, or loyalty (Juaneda-Ayensa, et al., 2017). It is a psychological condition that influences employees' relationships with the company and their decision to stay or leave (Meyer & Allen, 1991). At least three interconnected aspects describe the theoretical construct in the literature: a powerful conviction of the purpose of the organization; a readiness to show significant endeavor for the organization's ideals, and an aspiration to continue being a part of the group (Mowday et al., 1979). Organizational commitment encompasses belongingness and the willingness to put in additional effort for the company (Drummond, 2000).

Due to its favourable effects on business practices, organizational commitment is a topic that draws the utmost attention in the literature from organizational behaviour and organizational psychology. Numerous scholars have conducted in-depth studies on

organizational commitment (Etzioni, 1961; Kanter 1968; Buchanan II, 1974; Salancik, 1977; Mowday et al., 1979; Reichers, 1985; O'Reilly & Chatman, 1986). These researchers have all classified organizational commitment under specific dimensions. However, the most important concern was the discrepancy in construct descriptions. Meyer & Allen (1991) developed an approach based on earlier commitment research in response to the many viewpoints and studies. This approach incorporates various attitude phenomena and gauges employees' attitudes toward the organization. In their view, to fully understand the conceptual framework, each of the three constructs of organizational commitment—*affective*, *continuance*, and *normative* commitment—should be analyzed separately. Each element is thought to emerge because of several circumstances and to have various consequences for behaviour at work. This conceptual model, which attaches three features of past commitment studies, is still often hailed in much research for evaluating organizational commitment. Due to this fact, also in this research, Meyer & Allen (1991)'s Three-Component Model of Organizational Commitment survey has been utilized as the measurement tool.

2.2.1. Affective Commitment

Affective Commitment describes an individual's emotional connection, involvement, and integration with the organization. As a major aspect of organizational commitment, affective commitment is an important factor determining how strongly an employee feels a bond to the organization. An employee that is effectively devoted passionately supports the organization's aims and wants to stay there. Affective commitment strengthens with encounters with upper staff and organizational units. High-affective-commitment workers show up to work each day and put their skills to use (Lok & Crawford, 1999). Compared to the other components, affective commitment strongly influences work behaviors (Mercurio, 2015). Many studies have significantly proved that affective commitment can lead to positive outcomes, which are seen in decreased absenteeism, decreased turnover, improved organizational behavior, and increased organizational performance (Noraazian & Khalip, 2016; Gonzalez & Guillen, 2007; Meyer & Allen, 1997; Wasti, 2012).

2.2.2. Continuance Commitment

Continuance Commitment is measured by the willingness of an employee to stay with the company. Generally, employees make reasonable decisions and weigh the cost of quitting. Employees choose to stay in the company longer if quitting would incur significant fees. Everything that raises the cost of leaving an organization fosters continuation commitment, with side bets and the presence of alternatives serving as its precursors (Allen & Meyer, 1990). The financial penalty of quitting the company so sheds light on ongoing commitment. Becker (1960) highlights the fundamentals of continuing commitment and raises the challenges a worker would encounter if they left the position. These hurdles include the possible dangers that may make the person feel anxious and concerned, such as the emotional emptiness the person would feel after leaving work, the drop in income, and the disruption of professional progress. Additionally, stressful circumstances like the hassle of finding a new job, the possibility of not getting one, and a reduction of negotiating power because of unemployment might be included among these losses. Therefore, employees' loyalty to their current company will be higher if they perceive there are fewer potential alternatives obtainable (Allen & Meyer, 1990; Wiener, 1982).

2.2.3. Normative Commitment

Normative Commitment is strong when employees constantly witness the employer's dedication to their welfare. A committed employee has a higher chance of having a favourable

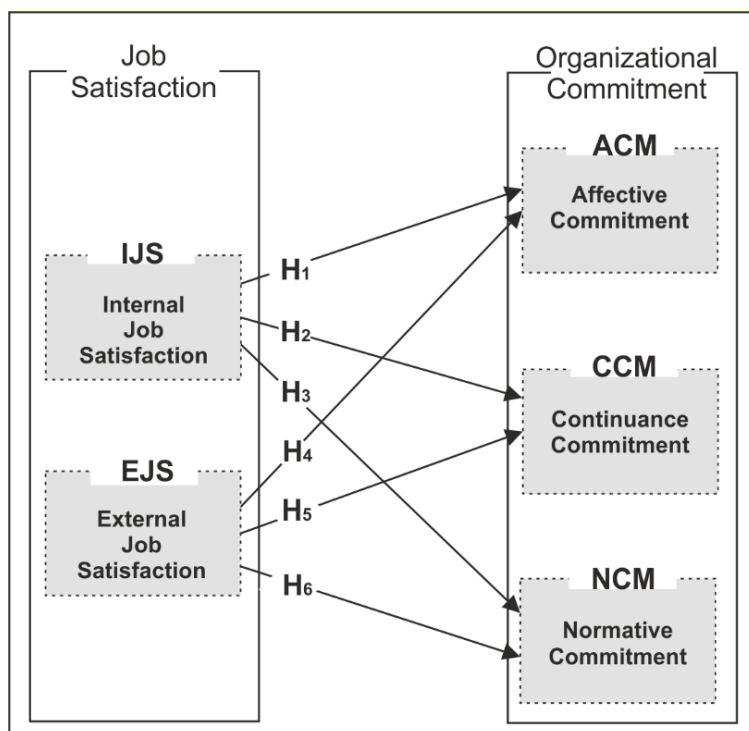
influence on the company's success, is frequently satisfied with the job, and is more devoted to the company. Employees who feel that remaining with the company is a responsibility and a moral obligation are normatively committed. As a result, high normatively committed personnel engage more with the company. High work satisfaction levels lower staff turnover and improves an organization's capacity for talent acquisition and retention (Gregson, 1992). In general, normative commitment is explained as the ethical responsibilities' employees take on for the good of the company (Weiner, 1982). People internalize it fully and demonstrate an ethical commitment to their organizations when they are exposed to socialization in which loyalty to one's bosses is praised and valued (Randall, 1987). This gives employees the impression that they should be doing something to earn the company's cash rewards and incentives. Employees who feel appreciated form a normative bond with their employers (Meyer, et al., 1993).

2.3. Theoretical Model

This study sought to clarify the relationship between job satisfaction and organizational commitment dimensions. A theoretical model was developed in accordance with the theoretical underpinnings of these notions, as depicted in Figure 1.

Figure 1

Theoretical Model



Note. Created by the authors.

3. Hypothesis Development

Many studies have been conducted on the relationship between job satisfaction and organizational commitment. For Mowday et al. (1979), commitment differs from work satisfaction as an attitude. Commitment denotes a broad affective engagement with the organization which develops slowly over time. In contrast, job satisfaction means a person's

attitude toward the job or certain job-related aspects and reflects more instant reactions. As expressed by Williams & Hazer (1986), job satisfaction is a defining input of organizational commitment. As per Glisson and Durick (1988), an organic connection exists between the concepts, and each shouldn't be considered independently. According to various research that examines the link between the two concepts in terms of dimensions, job satisfaction is an essential requirement for organizational commitment (Testa, 2001; Currivan, 1999). Considering that the dimensions of job satisfaction, internal and external, both include different satisfaction processes, their relations with the dimensions of organizational commitment were tested with different hypotheses. Accordingly, the following hypothesis was developed for the objectives of the research considering the apparent relationship between the two concepts in the literature.

H₁: Internal Job Satisfaction has a direct effect on Affective Commitment

H₂: Internal Job Satisfaction has a direct effect on Continuance Commitment

H₃: Internal Job Satisfaction has a direct effect on Normative Commitment

H₄: External Job Satisfaction has a direct effect on Affective Commitment

H₅: External Job Satisfaction has a direct effect on Continuance Commitment

H₆: External Job Satisfaction has a direct effect on Normative Commitment

4. Research Methods

Permission from an Ethics Committee from a university is required in every survey conducted after 2020. Since a survey was used in this study as a data collection method, the permission has been obtained from Ethics Committee of the Istanbul Commerce University with a decision on the date of 30.10.2022 and document number 9-1. The research scales were derived from previous studies. Questionnaires have been used to collect quantitative data. The structural equation modeling approach was used to examine complex multiple-variable models and pinpoint relationships between direct or indirect variables. Confirmatory factor analyses were fulfilled to ascertain the convergent validity. Composite reliability and AVE values were calculated to evaluate the scales' reliability and discriminant validity, respectively. The theoretical model's hypotheses were tested in the AMOS statistics software by using structural equation modeling, a multivariable statistical approach (Meydan & Şen, 2011). The approach has been utilized to comprehend the theoretical model's indirect and direct effects (Civelek, 2018). Furthermore, this method was preferred to reduce measurement errors (Byrne, 2010). The statistical programs SPSS and AMOS were utilized to perform the analyses.

4.1. Sampling and Measures

The constructs in the research's theoretical model are assessed using scales derived from existing literature. From strong disagreement to strong acceptance, 5-point Likert scales were applied. More than 500 questionnaires were distributed and 424 of them were valid. The questionnaires were collected from female employees working at service sector in Turkey. As measurement tools, Weiss et al. (1967)'s Minnesota Job Satisfaction Questionnaire with 20 items short version, and Meyer & Allen (1991)'s Three-Component Model of Organizational Commitment survey with 18 items were used. Both scales were translated into Turkish.

4.2. Construct Reliability and Validity

Before performing confirmatory factor analysis (CFA), exploratory factor analysis (EFA) is done to purify the research data (Anderson & Gerbing, 1988). Twenty-seven components were left after the principal component analysis. Convergent validity was subsequently determined using CFA. The fit indices values for the CFA were deemed adequate, with values such as $\chi^2/DF = 2.714$, CFI=0.924, IFI=0.925, and RMSEA= 0.064 (Civelek, 2018). In Table 1, the factor loads from the CFA outcomes are displayed. Table 2 shows that the average extracted variance values fell within allowable bounds (i.e., 0.5). (Byrne, 2010). These results showed that the constructs had convergent validity. The square roots of each variable's AVE values were calculated to establish discriminant validity. The square root of the AVE values is displayed in Table 2's diagonals. The correlation values in the same column are all exceeded by the square root of AVE values. The evidence confirms that the discriminant validity (Civelek, 2018). Each structure's reliability was evaluated independently. Cronbach's alpha and composite reliability values are close to or greater than the proposed cutoff value of 0.7 (Fornell & Larcker, 1981).

Table 1

Results of Confirmatory Factor Analysis

Variables	Items	Standardized Factor Loads	Unstandardized Factor Loads
Affective Commitment (ACM)	ACM0121	0.748	1
	ACM0323	0.820	1.055
	ACM0424	0.825	0.974
	ACM0222	0.725	0.843
	ACM0626	0.828	1.047
	ACM0525	0.852	1
Continuance Commitment (CCM)	CCM0127	0.602	1
	CCM0632	0.711	1.144
	CCM0430	0.761	1.244
	CCM0228	0.747	1.254
	CCM0329	0.792	1.325
	CCM0531	0.803	1.380
Normative Commitment (NCM)	NCM0537	0.767	1
	NCM0133	0.519	0.524
	NCM0335	0.645	0.656
Internal Job Satisfaction (IJS)	IJS0606	0.524	1
	IJS0707	0.614	1.266
	IJS1010	0.774	2.092
	IJS0404	0.729	1.693
	IJS0303	0.668	1.681
	IJS0808	0.745	1.646
	IJS0909	0.678	1.582
External Job Satisfaction (EJS)	ESJ0618	0.934	1
	ESJ0719	0.659	0.626
	ESJ0820	0.759	0.848

ESJ0214	0.773	0.810
ESJ0113	0.874	0.968

$p < 0.01$ for all items

The descriptive statistics for the dimensions, Cronbach's alpha, composite reliability coefficients, average extracted values for variance, and Pearson correlations between the dimensions are all displayed in Table 2.

Table 2

Construct Descriptive, Reliability and Correlation

Variables	1	2	3	4	5
1. Affective Commitment	(.801)				
2. Continuance Commitment	.117*	(.739)			
3. Normative Commitment	.507*	.458*	(.652)		
4. Internal Job Satisfaction	.697*	.146*	.428*	(.680)	
5. External Job Satisfaction	.549*	.205*	.385*	.649*	(.806)
Composite reliability	.915	.877	.684	.856	.901
Average variance ext.	.642	.546	.425	.463	.649
Cronbach α	.909	.870	.712	.861	.878

* $p < 0.05$

Note. Values in diagonals represent the AVEs' square root.

4.3 Test of the Hypotheses

Covariance-based structural equation modelling (CB-SEM) was used to test the hypotheses. The results are as seen in Figure 2. CB-SEM is a confirmatory technique (Civelek, 2018), and so, it is employed in this study to support the hypotheses established using literature-based foundational theories. The structural model's fit was evaluated using the goodness of fit indices and the results for the structural model were deemed satisfactory (i.e., $\chi^2/DF = 2.348$, CFI = 0.944, IFI = 0.945, RMSEA = 0.056) (Civelek, 2018).

Table 3

Results of Tests

Relationships	Standardized Coefficients	Unstandardized Coefficients	Hypotheses	Results
IJS \rightarrow ACM	0.768*	0.961	H ₁	Supported
IJS \rightarrow CCM	0.115	0.261	H ₂	Not Supported
IJS \rightarrow NCM	0.553*	0.801	H ₃	Supported
EJS \rightarrow ACM	0.051	0.107	H ₄	Not Supported
EJS \rightarrow CCM	0.098	0.243	H ₅	Not Supported
EJS \rightarrow NCM	0.052	0.158	H ₆	Not Supported

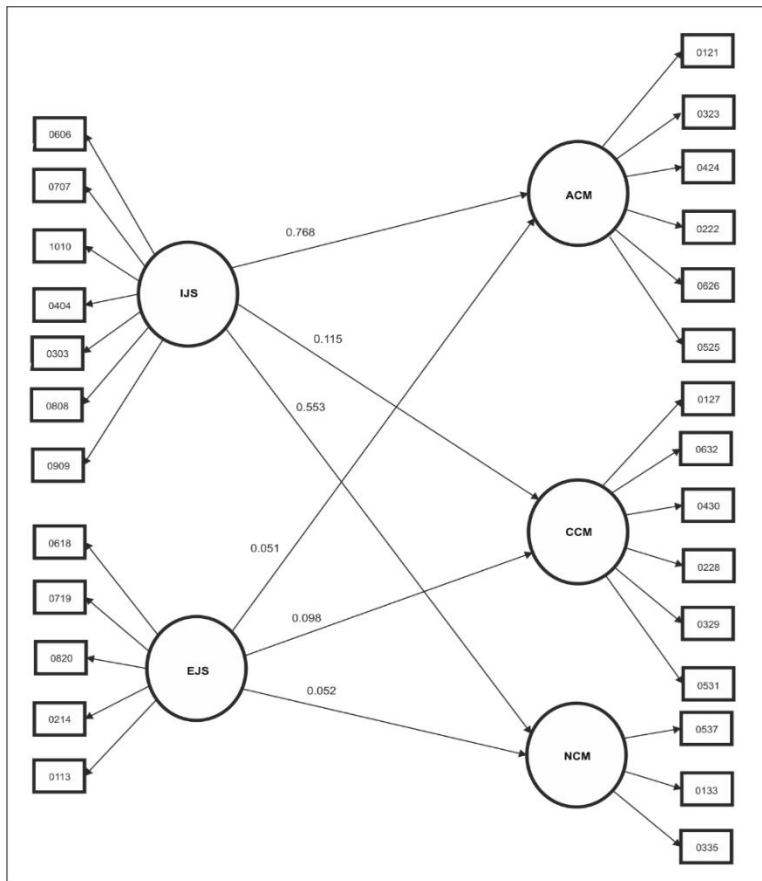
* $p < 0.05$

H₁ hypothesis is confirmed. This means Internal Job Satisfaction (IJS) directly effects Affective Commitment (ACM). H₂ hypothesis is unsupported. This means Internal Job Satisfaction (IJS) directly effects Continuance Commitment (CCM). H₃ hypothesis is confirmed. This means Internal Job Satisfaction (IJS) has a direct effect on Normative

Commitment (NCM). H_4 hypothesis is unsupported. This indicates that External Job Satisfaction (EJS) does not directly affect Affective Commitment (ACM). H_5 hypothesis is unsupported. This indicates that External Job Satisfaction (EJS) does not directly affect Continuance Commitment (CCM). H_6 hypothesis is unsupported. This indicates that External Job Satisfaction (EJS) does not directly affect Normative Commitment (NCM).

Figure 2

Results of the SEM Analysis



Note. $\chi^2/DF = 2.348$, CFI = 0.944, IFI = 0.945, RMSEA = 0.056

Note. Created by the authors.

6. Discussion

A wide range of conclusions has been drawn from the former research when the relationships between the dimensions of the two theoretical constructs have been studied. The results of this research conform with the extant literature. The findings in the literature have revealed that improving organizational success depends on employee job satisfaction and organizational commitment. Many past studies distinguished positive relationships between job satisfaction and organizational commitment (Thomas & Kevin, 2002; Karataş & Güleş, 2010). Accordingly, high organizational commitment is expected of employees who have greater job satisfaction, and raising organizational commitment has a positive effect on job satisfaction

(Guatam et al., 2004; Sığrı & Basım, 2006). Additionally, it is presumed that job satisfaction is a requirement for organizational commitment (Doherty & Fulford, 2005; Sergeant & Frenkel, 2000). Many researchers determined positive relationships between the dimensions of these two constructs and described job satisfaction as a concept that fosters organizational commitment (Porter et al., 1974; Dubinsky et al., 1992; Conley & Wooley, 2000; Ruyter et al., 2001; Top, 2012). Some of the research findings that reach similar results in the national literature are as follows: Çelen et al., (2013) examined the relationships between the constructs based on their dimensions and determined that employees with high affective and normative commitment had high job satisfaction levels, while a similar link could not be found between continuance commitment and job satisfaction. Açıkalm (2011) observed that internal and external job satisfaction affect affective and normative commitment but not continuance commitment.

5. Conclusion

Employees have a key role in an organization's success. The study contributes to the literature by delivering up-to-date insight into how female employees' job satisfaction relates to organizational commitment. Depending on the findings obtained from this research, it has been observed that internal job satisfaction directly affects affective commitment and normative commitment. Another notable outcome of the study is that there was no relationship between external job satisfaction and organizational commitment dimensions. The processual difference between internal satisfaction, which centers on the employees' sense of satisfaction while doing their job, and external satisfaction, which focuses on physical conditions and rewarding employees after doing the job, affects the employees' commitment to the organization. Low, or high external job satisfaction among female employees is not identified as influencing organizational commitment in this study. In practice, the knowledge acquired by monitoring the link between internal job satisfaction factors and the participants' affective and normative commitment may be valuable in developing, supporting, and rewarding female employees. Internal satisfaction, in which emotional components are prominent, considerably impacts women's emotions about the organization according to the population of this study. These findings can be used to study further the link between women's internal job satisfaction and affective and normative organizational commitment. However, the findings cannot be extrapolated to other occupational settings and geographical areas because the research was focused on individuals working in the service sector in a single country. Future studies should aim to collect a broader and more representative sample of employees.

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Research Article

Income Inequality and Economic Freedom: The 2000s¹

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Abstract

This study examines the relationship between income inequality and economic freedom by using two concepts developed in institutional economics, namely “extractive and inclusive institutions”. We argue that income inequality might be high both in countries with extractive institutions, where the level of economic freedom is low, and in countries with inclusive institutions, where the level of economic freedom is high. We propose a U-shaped relationship between income inequality and economic freedom. We use a panel data set containing 1415 country-year observations from 137 countries for the years from 2000 to 2018 to test our proposition. The results confirm our expectation that the relationship between income inequality and economic freedom is negative at low levels of economic freedom, but positive at high levels of economic freedom.

Keywords: Income Inequality, Economic Freedom, Equality, Gini Coefficient.

JEL Codes: O15, E02, P16, C33

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Araştırma Makalesi

Gelir Eşitsizliği ve Ekonomik Özgürlük: 2000’li Yıllar¹

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Öz

Bu çalışmada, Kurumsal İktisat alanında geliştirilen iki kavram olan “sömürücü ve kapsayıcı kurumlar” kullanılarak gelir eşitsizliği ve ekonomik özgürlük arasındaki ilişki incelenmektedir. Hem ekonomik özgürlük düzeyinin düşük olduğu sömürücü kurumlara sahip ülkelerde hem de ekonomik özgürlük düzeyinin yüksek olduğu kapsayıcı kurumlara sahip ülkelerde gelir eşitsizliğinin yüksek olabileceğinden hareketle gelir eşitsizliği ve ekonomik özgürlük arasındaki ilişkinin U-şeklinde olabileceği önerilmektedir. Bu öneriyi test etmek için 137 ülkeye ilişkin ve 2000-2018 yıllarını kapsayan 1415 ülke-yıl gözlemini içeren bir panel veri seti kullanılmıştır. Sonuçlar, gelir eşitsizliği ile ekonomik özgürlük arasındaki ilişki konusundaki öngörülerimizi doğrulamaktadır: Bu iki değişken arasındaki ilişki düşük ekonomik özgürlük seviyelerinde ters yönlü, yüksek ekonomik özgürlük seviyelerinde ise doğru yönlüdür.

Anahtar Kelimeler: Gelir Eşitsizliği, Ekonomik Özgürlük, Eşitlik, Gini Katsayısı.

JEL Kodlar: O15, E02, P16, C33

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1. Introduction

What is the relationship between income inequality and economic freedom across countries, and through time? Is it negative; that is, if the level of economic freedom increases in a country, should we expect a decrease in the level of income inequality in that country in the future? Or is it positive; that is, would an increase in the level of economic freedom of a country lead to a less egalitarian income distribution in that country? Or maybe it is much more complicated than a straightforward relationship. These are important questions that interest not only theoretical economists, but also economic policy makers. Answering these questions correctly and understanding the true nature of this relationship between income inequality and economic freedom may better prepare us for things that might face us when we implement policies that increase, or decrease, individual economic freedoms.

At first glance, this discussion on economic freedoms that individuals enjoy and the income inequality in the economy in which these individuals live may seem unnecessary. As in Mankiw (2020), in most introductory level economics textbooks, the trade-off between economic efficiency and economic equality is emphasized or at least mentioned. That people become more productive and industrious when they are free to use their own skills, energies and knowledge as they wish, i.e., when they have economic freedom, is a well-known conviction of both classical and modern economists. Therefore, a straightforward positive relationship between economic freedom and income inequality may seem logical since economic freedoms lead to economic efficiency which is in a trade-off relationship with economic equality.

Table 1

Countries with the Highest Gini Coefficients in 2006

	COUNTRY	GINI (percent)	EFI	QUARTILE OF EFI
1	Namibia	65.80	6.57	3rd quartile
2	South Africa	59.60	6.96	2nd quartile
3	Botswana	58.00	7.10	2nd quartile
4	Zambia	55.00	7.06	2nd quartile
5	Haiti	52.50	6.58	3rd quartile
6	Central African Republic	52.40	4.94	Least free (4th quartile)
7	Lesotho	52.10	6.36	3rd quartile
8	Honduras	51.70	7.33	2nd quartile
9	Colombia	51.50	6.51	3rd quartile
10	Peru	50.40	7.66	Most free (1st quartile)

Note. Sources are the Standardized World Income Inequality Database (SWIID, version 8.2) and the Economic Freedom of the World Index (Fraser Institute).

Nonetheless when we look at the data on income inequality and economic freedom from countries across the world, we do not see this straightforward positive relationship. Table 1 shows Gini coefficients and economic freedom indexes of ten countries with the highest Gini coefficients in 2006 within the data set we have. As it is widely known the Gini coefficient measures the income inequality within an economy and theoretically it ranges from 0 (perfect equality) and 1 (maximal inequality). On the table Namibia has the highest Gini coefficient with a value of 65.8 percent. Its economic freedom index is equal to 6.57 and it is within the third quartile of economic freedom, that is, when countries are sorted by economic freedom index from largest to smallest, Namibia is below the median, but above the third quartile

number, which divides the countries below the median into two equal halves. Since a higher economic freedom index number means a higher level of economic freedom, Namibia, with its low level of economic freedom and high level of income inequality, does not fit in well with the idea that there is a positive straightforward relationship between economic freedom and income inequality. A closer look at Table 1 does not change this impression. On this list of countries, in which the world's highest economic inequalities prevail, there is only one country (Peru) with an economic freedom index number high enough to be in the top (first) quartile of economic freedom. Out of nine other countries in the list, one is in the "least free" category, that is, it is in the bottom (fourth) quartile of economic freedom; four are in the third quartile; and four are in the second quartile.

Table 2
Countries with the Highest Gini Coefficients in 2006

	COUNTRY	GINI (percent)	EFI	QUARTILE OF EFI
1	Slovenia	23.80	7.15	2nd quartile
2	Denmark	23.90	8.17	Most free (1st quartile)
3	Sweden	24.30	7.72	Most free (1st quartile)
4	Norway	25.00	7.75	Most free (1st quartile)
5	Czech Republic	25.50	7.48	2nd quartile
6	Belgium	25.60	7.55	2nd quartile
7	Finland	25.60	7.93	Most free (1st quartile)
8	Slovak Republic	25.60	7.62	Most free (1st quartile)
9	Croatia	26.40	6.65	3rd quartile
10	Netherlands	26.60	7.88	Most free (1st quartile)

Note. Sources are the Standardized World Income Inequality Database (SWIID, version 8.2) and the Economic Freedom of the World Index (Fraser Institute).

Table 2 similarly shows Gini coefficients and economic freedom indexes of ten countries with the lowest Gini coefficients in 2006 within the data set we have. On the table Slovenia has the lowest Gini coefficient with a value of 23.80 percent. Its economic freedom index is equal to 7.15 and it is within the second quartile of economic freedom, that is, when countries are sorted by economic freedom index from largest to smallest, Slovenia is above the median, but below the first quartile number, which divides the countries above the median into two equal halves. Among the ten countries on Table 2, which have the world's most egalitarian income distributions, six countries are in the "most free" category, that is, they are at the top (first) quartile of economic freedom. Three of them are in the second quartile and only one is in the third quartile. Such a situation is in stark contrast with the expectation that we will witness high income inequality in economically most free countries.

Not only do Table 1 and Table 2 fail to support the suggestion that there must be a straightforward positive relationship between income inequality and economic freedom, but they also suggest the opposite. If we assume a straightforward (monotonic in mathematical terms) relationship between income inequality and economic freedom, by looking at the Gini coefficient and economic freedom index pairs in these tables we can only propose that this relationship must be negative rather than positive. But, how can we justify such a straightforward negative relationship? Suggesting that economic freedom leads to a decrease in income inequality, i.e., a more egalitarian income distribution, would force us to ignore or reject the two main ideas that almost all economists accept: (i) Economic freedom leads to economic efficiency and (ii) there is a trade-off between economic efficiency and economic equality.

Certainly, these ideas are at the core of economic thinking and discarding them is something that we do not intend to. Thus, we need to suggest another kind of relationship between economic freedom and income inequality and drop the assumption that they are in a straightforward (monotonic) relationship.

In this paper, we propose a non-monotonic relationship between economic freedom and income inequality. The logic of our proposition is clarified in Section 3 which is after the brief literature review in Section 2. In Section 4, model specification and estimation method are explained. The data is described in Section 5 of the paper. The empirical results are discussed in Section 6. Conclusion follows.

2. Related Literature

Berggren (1999) is one of the first papers that concentrated on the topic of how economic inequality and economic freedom are interconnected to each other. The data used in the study are from the years between 1975 and 1985. The empirical results of the paper show that in those countries that increased their level of economic freedom between the years 1975 and 1985, income distribution around the year 1985 was more egalitarian. Therefore, the paper concluded that a country can make the income distribution in its economy more egalitarian by increasing the economic freedoms that its citizens enjoy. Especially trade liberalization and financial deregulation is ascertained to be important in decreasing inequality.

Scully (2002) investigated how economic freedom affects economic growth and income distribution. The 26 countries in sample used for the empirical study in the paper are mostly developed countries, but there are a few newly industrializing Asian countries as well. The country observation years are 1975, 1980, 1985 and 1990. The results of the study indicate that economic freedom enlarges the proportion of national income that the poorest 40 percent of the society (two lowest income quartiles) gets, but lowers the proportion of national income that the richest 20 percent of the society (highest income quartile) receives. Thus, it concludes that the correlation between economic freedom and income inequality is negative.

Carter (2007) used a fixed effect model to examine how economic freedom affects income inequality. The control variables of this study include industrial composition, education, income per person, demographics and political structure. The data set of the estimations consists of 39 countries with 6 time periods, which are 1980, 1985, 1990, 1995 and 2000. Due to missing observations on some variables, number of observations used in the estimations are only 104. The results indicate that trade-off exists between economic freedom and income equality; i.e., there is a positive relationship between income inequality and economic freedom. The inequality increasing effect of economic freedom is somewhat milder in nations with low levels of economic freedom.

Clark and Lawson (2008) tried to contribute to the empirical discussion concerning the effect of tax policy on income distribution and economic growth. By using data of the years 1980-1922, they regressed Gini coefficient (income inequality variable) on yearly growth rate of real GDP per person, square of yearly growth rate of real GDP per person, the highest marginal tax rate, change in the highest marginal tax rate, composite economic freedom rating and change in composite economic freedom rating. Their findings suggest that there is a very vigorous negative correlation between income equality and economic freedom.

By using cross-sectional data about U.S. states for three time periods, which are 1980-82, 1990-92, and 2001-03, Ashby and Sobel (2008) tried to understand how economic freedom affects income inequality. They found that increases in the level of economic freedom lead to higher income levels and higher income growth rates and also decreases in relative income

inequality. Nevertheless, their work fails to find support for a strong negative relationship between income inequality and the level of economic freedom. They suggest that by reducing minimum wages and taxes, states can promote higher income levels, higher income growth rates and greater income shares for the poorest 20 percent of the population.

Bennet and Vedder (2013) also used data for U.S. states in order to investigate the dynamics of the relationship between income inequality and economic freedom. Their data set covers the years from 1979 to 2004. Their regression analysis indicates that increases in the level of economic freedom are related to reductions in income inequality. It is discovered that the starting level of economic freedom affects the nature of the relationship between these two variables. It is suggested that an inverted U-shaped relationship might exist between them. Their explanation for this kind of relationship is that at the low levels of economic freedom improvements in economic freedom lead to more inequality since it increases the incomes of the rich more than the poor, but as improvements in economic freedom continue, the situation changes and the poor relatively gets more than the rich. Therefore, the relationship between income inequality and economic freedom might be positive at low levels of economic freedom, but negative at high levels of economic freedom.

Murphy (2015) investigated the long run effects of economic inequality on economic freedom across countries. The data set used in the study contains observations from 70 countries for the years 1980, 1985, 1990, 1995, 2000 and 2001. The regression results of the study show that increase in income inequality leads to worsening (reduction) in economic freedom. This outcome has certain policy implications. It suggests that those who want to promote economic freedom should better start with the liberalization reforms that also decrease income inequality. By this way, they can increase the chance of further uplifting economic freedoms in the future.

Pérez-Moreno and Angulo-Guerrero (2016), using a panel data set on 28 European Union member countries for the time span from 2000 to 2010, examined the relationship between economic liberalization and income inequality. Their empirical analysis discovers a strong (positive) relationship between income inequality and economic freedom. By looking at effects of different areas of economic freedom on income inequality, they ascertain that especially the linkage between size of government and income inequality is quite strong. This is not surprising when considering the fact that within the EU context the size of government could be regarded as an indicator of welfare state characteristics.

Ahmad (2017) examined the relationship between economic freedom and income inequality by taking into account the role of political regime. The data set used in this study covers 115 nations for the time span from 1970 to 2014. The results of the analysis conducted in the study indicates a positive relationship between economic freedom and income inequality. Political regime affects the intensity of this effect; in democracies this inequality increasing effect of economic freedom is low compared to undemocratic regimes.

Apergis and Cooray (2017) use a panel data set consisting of 138 countries in order to examine the relationship between economic freedom and income inequality. Their linear regression analysis shows a negative relationship between these two variables. Their non-linear regression analysis on the other hand shows that this relationship is negative up to a certain threshold, and after that threshold it is positive.

Bennet and Nikolaev (2017) review previous literature on the relationship between capitalistic institutions and income inequality. Their survey indicates that there is no commonly accepted results or conclusions that could be extracted from the previous literature. They argue that this is due to the fact that previous studies used different variables and measurements to

describe income inequality and also the time periods and country sets used in these studies were different from each other. The authors themselves conduct a functional polynomial regression analysis in order to understand whether there is a non-linear relationship between income inequality and economic freedom. Their results are not unambiguous, that is, although some of their regression results suggest a U-shaped relationship between inequality and economic freedom, some others show the opposite (inverted U-shaped relationship).

De Soysa and Vadlamannati (2021) not only investigate the effect of economic freedom on income inequality, but also on the equity of access to opportunity. They argue that in order to understand the effect of economic freedom on overall economic equality in an economy it is not adequate to look at only the income inequality variable. Since an increase in income inequality can occur even when all incomes in an economy increase and everyone becomes better off, it is necessary to look at the effect of economic freedom on other variables that effect people's relative economic well-being. In order to see these effects, they use a data set consisting of 128 countries and the time period 1990-2017. Their results indicate that although economic freedom increases income inequality, it also increases people's access to health, education and justice, which implies that economic freedoms that increase economic growth rates do not impede future economic gains of poorer segments of society.

The literature review that we have provided above shows that the previous literature on the subject of our paper has mixed results. Some papers show a positive linear relationship between these variables and some others suggest a negative linear one. There are also papers which indicate a non-linear relationship (either U-shaped or inverted U-shaped). Overall, the effect of economic freedom on income inequality debate is an ongoing one and it does not seem that it will lead to a consensus in the foreseeable future.

3. Conceptual Framework

In order to understand the true nature of the relationship between income inequality and economic freedom, we believe that we should use the concepts developed by Acemoglu and Robinson (2012). The most useful concepts for our purposes are extractive and inclusive institutions. Institutions, which are basically formal and informal rules that people follow when they interact with each other in a society, could be inclusive or exclusive. Inclusive institutions protect economic rights of wide sections of society and provide economic freedom to a large portion of the society. Under such conditions people have high incentives to increase their productivity since they can freely reap the benefits of their own efforts. In contrast to inclusive institutions, extractive institutions do not protect economic rights of wide sections of society. Instead, they provide special privileges for the elites who are almost always a minority in society. As a result, elites, who contribute less to economic production, get richer and richer at the expense of large segments of society, in which most people do not get a fair share of the economic pie of the society. It is not surprising that most people will have no incentive to increase their productivity since they cannot freely reap the benefits of their own efforts under such conditions.

If we consider the level of economic freedom that individuals enjoy in a country to be an indicator of how close the country is to the ideal inclusive institutions -in other words, how far away the country is from the most extreme exclusive institutions-, then we may have a better chance of understanding the true nature of the relationship between income inequality and economic freedom. When we look at the subject of this paper from this new perspective, the first thing that we notice is that income inequality might be quite high both in countries where institutions are extractive and the level of economic freedom is low, and in countries where institutions are inclusive and people enjoy high level of economic freedom. In countries where

institutions are extractive, the elite class, which holds political and economic power although it is only a small segment of the whole population, controls, regulates and manipulates markets. It imposes high and unfair taxes on the rest of the society and does not allow non-elites to enter certain markets. Naturally in such an environment, labor productivity and overall economic efficiency cannot be high. But at the same time, income distribution becomes extremely unequal because of the elites' extraction of economic wealth from the rest of the society. On the other hand, in countries where institutions are inclusive, we might also see high level of income inequality because of a different reason. Since individuals enjoy economic freedom in these countries, they may use their own skills and energies as they wish in order to increase their incomes and economic well-being. Overall people will become more productive and more industrious and the country will prosper. On the downside of this development, because of the fact that skills and energies, which play a significant role in income determination in free economies, are not uniformly distributed among the individuals, we will witness a rather important level of income inequality. When we look at who gets rich, or rather prosperous, compared to others in society; we see that in countries where institutions are extractive, elites who hold political and economic power get richer by exploiting other segments of society whereas in countries with inclusive institutions people who have better skills and exert more effort in the production of goods and services get more prosperous. Although in both situations we see income inequality in the society, it is not unreasonable to say that in the case of extractive institutions the inequality that we see in the society is completely unfair, whereas in the case of inclusive institutions it might be regarded as somewhat "fair".

The fact that we witness high income inequality both in countries with extractive institutions and in countries with inclusive institutions, albeit for different reasons, allows us to make predictions about the direction and the trend of the relationship between economic freedom and income distribution. If the extractive character of the institutions of a country with extractive institutions increases, that is, if these institutions become more extractive, the economic freedoms of individuals will be further restricted and the control of the elite class over income distribution and consequently its income share will increase. In such a case, it is clear that income inequality will increase even more. On the other hand, if the country with extractive institutions starts making its institutions less extractive and more inclusive, the decrease in the influence and power of the elite on the income distribution together with the increase in economic freedoms of large segments of society may lead to an increase in the incomes of non-elites and a decrease in the incomes of the elites, which reduces the income inequality. While economic freedoms increase, we can expect income inequality to continue to decrease for a while. However, it would not be surprising if, after a certain level of economic freedom, an increase in economic freedoms may again cause an increase in income inequality since these freedoms allow talented and hardworking people to increase their incomes in free markets much more than others. In short, as the level of economic freedom progresses from the lowest to the highest, it is expected that income inequality will first decrease, then reach a minimum at a certain point, and then increase again, thus forming a U-shaped graph.

4. Model Specification and Estimation

Our discussion in the previous section indicates that income inequality is a quadratic function of economic freedom. Thus, we specify the following model to analyze this relationship:

$$\ln(\text{inequality})_{it} = \alpha_0 + \alpha_1 \ln(\text{efreedom})_{it} + \alpha_2 \ln(\text{efreedom})_{it}^2 + \mathbf{x}'_{it} \boldsymbol{\beta} + \varepsilon_{it} \quad (1)$$

where, *inequality* is income inequality, *efreedom* is economic freedom, \mathbf{x}' is a vector of controls

for other potential influences, including property rights protection, growth in GDP per capita, the standard deviation of inflation, FDI inflow, trade openness, unemployment, educational expenditures, agricultural employment, and year, and ε is the idiosyncratic error. The reason why we have included *year* as an explanatory variable is to control for unobserved time-varying factors causing contemporaneous movements (e.g., upward trends) in our dependent and explanatory variables.

The assumption of independent and identically distributed normal errors, which is generally needed for valid inferences, is unlikely to hold in our context, because our study utilizes a panel data set that includes repeated observations on a set of countries. Thus, the error term in Equation (1) most likely contains the effect of unobserved country-specific heterogeneity that may create correlations between the error term and included explanatory variables, violating the assumption of independent and identically distributed errors. This problem generates the omitted variable bias in the OLS estimate of Equation (1). We further stipulate that there might be time-fixed effects that exert influences on our dependent variable. We address these problems by first decomposing the error term, ε , into three parts as follows:

$$\varepsilon_{it} = \tau_t + \omega_i + \epsilon_{it} \quad (2)$$

where, τ represents the year-specific effects in terms of dummies for all (19-1=18) years covered by our sample, ω represents the country-specific unobserved (time-invariant) heterogeneity, and ϵ is the remaining error.

Consequently, we estimate the following equation:

$$\ln(\text{inequality})_{it} = \alpha_0 + \alpha_1 \ln(\text{efreedom})_{it} + \alpha_2 \ln(\text{efreedom})_{it}^2 + \mathbf{x}'_{it} \boldsymbol{\beta} + \tau_t + \omega_i + \epsilon_{it} \quad (3)$$

Although several estimators are available to estimate Equation (3), empirical works generally employ either the fixed-effects (within) estimator or the feasible generalized least-squares (FGLS) estimator, also known as the random-effects estimator. While the FGLS estimator is more efficient, it is not consistent if the individual (the country-specific) effects are related to the included explanatory variables, which is generally the case. Also, the Hausman test ($\chi^2 = 110.84$; $p\text{-value} < 0.0005$) favored the use of the fixed-effects (within) estimator in our dataset. Thus, we test our hypothesis based on results from the fixed-effects estimate of Equation (3).

5. The Data

We combine data from four sources to examine the relationship between economic freedom and income inequality. Our data of income inequality come from the Standardized Income Inequality Database (Version 8.2). Because of its broad coverage, this database has been favored in previous works by researchers across a wide range of disciplines (for more detail on this database, see Solt, 2020). To measure economic freedom, we exploit the Economic Freedom of the World Index available from the Fraser Institute (see Gwartney et al., 2017). The data on this index are available for intervals of five years from 1965 to 2000, and for every year since then. The data used to measure our control variables were obtained from the World Bank, the Freedom House, and the Fraser Institute. Table 3 presents the specific variables that we use in our analysis, how we measure these variables, and their sources. Our final dataset is unbalanced due to missing observations on some variables and it contains 1415 country-year observations from 137 countries for the years from 2000 to 2018.

Table 3
Variables Used in This Study

Variable	Description	Years	Source
Inequality	The extent to which income is distributed unequally in a country. As our measure of inequality, we use the “gini_disp” indicator taken from the Standardized World Income Inequality Database (SWIID, v. 8.2). “gini_disp” is an estimate of the Gini index of inequality measuring “the distribution of money after all direct taxes and government transfers ... across the entire population.” (Solt, 2020: 1196). In our analysis we use the natural log-transformed values of this variable.	1960-2018	SWIID (v. 8.2)
Efreedom	We use Fraser Institute’s Economic Freedom of the World Index data as our overall measure of economic freedom. In our analysis, we use the natural log-transformed values of this variable.	1965-2020	Fraser Institute
Political rights	An indicator coded on a scale from 1 (best) to 7 (worst), measuring the extent to which citizens in a country enjoy a wide range of political freedoms and rights (Tag, 2021).	1973-2022	Freedom House
Growth in GDP per capita	The yearly percentage growth rate in GDP per capita. GDP is measured at market prices.	1960-2021	WDI
Inflation Std. Dev.	The standard deviation of the annual inflation (CPI).	2000-2021	Fraser Institute
FDI inflow (%GDP)	Annual foreign direct investment net inflow as a percentage of GDP. In our analysis, we use the natural log-transformed values of this variable.	1970-2021	WDI
Trade openness	The sum of imports and exports as a percentage of GDP. In our analysis, we use the natural log-transformed values of this variable.	1960-2021	WDI
Unemployment	The share of the labor force seeking but unable to find employment.	1990-2021	WDI
Educational expenditures	General government expenditures on education as a percentage of total general government expenditures.	1980-2021	WDI
Agricultural employment	The share of employment in the agriculture sector.	1990-2021	WDI

6. Results

We start with a simple inspection of our data. Table 4 indicates that the average Gini coefficient (that is, the average inequality) in our data set is 37.7. This number is quite close to the long-term average, which is 38.2. Figure 1 shows the median splines of the Gini coefficient over the period from 1960 to 2018. According to Figure 1, median inequality began to increase around early 1970s and remained relatively high until 2006, when it started steadily decline. Meanwhile, there has been a substantial increase in economic freedom around the world (see Figure 2). However, it appears that the improvement in economic freedoms has stalled and even started to decline after 2010. Whether these two trends are related, and if so, how they are related are empirical questions, to which we turn next.

Table 4
Decriptives

Variables	Obs.	Mean	Std. Dev	Min.	Max.
Inequality	1,415	37.68	8.47	21.80	66.10
E Freedom	1,415	6.94	0.95	3.92	8.85
ln (Inequality)	1,415	3.60	0.23	3.08	4.19
ln (E Freedom)	1,415	1.93	0.14	1.37	2.18
Political rights	1,415	2.65	1.87	1.00	7.00
Growth in GDP per capita	1,415	2.59	3.93	-15.04	33.00
Inflation Std. Dev.	1,415	12.43	288.24	0.12	10799.60
FDI inflow (% GDP)	1,415	1.79	1.17	-4.31	6.81
Trade openness	1,415	4.34	0.51	0.18	6.08
Unemployment	1,415	7.54	4.96	0.21	33.29
Educational expenditures	1,415	4.55	1.51	0.79	12.08
Agricultural employment	1,415	24.85	23.22	0.06	92.30

Figure 1
Median Splines of Inequality

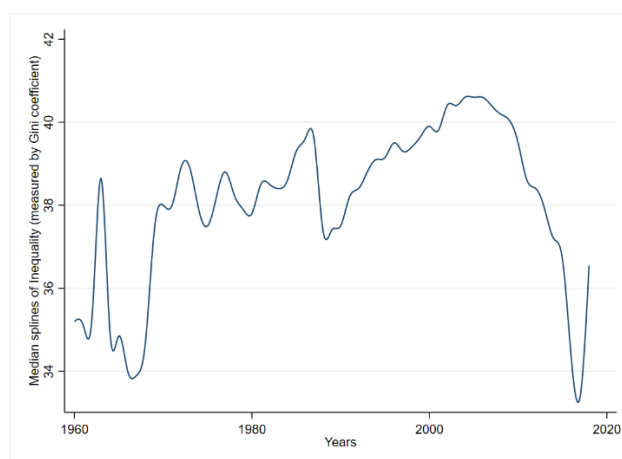


Figure 2
Median Splines of Economic Freedom

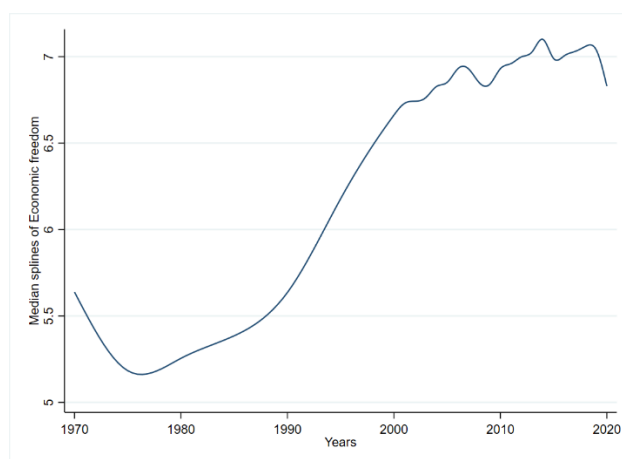
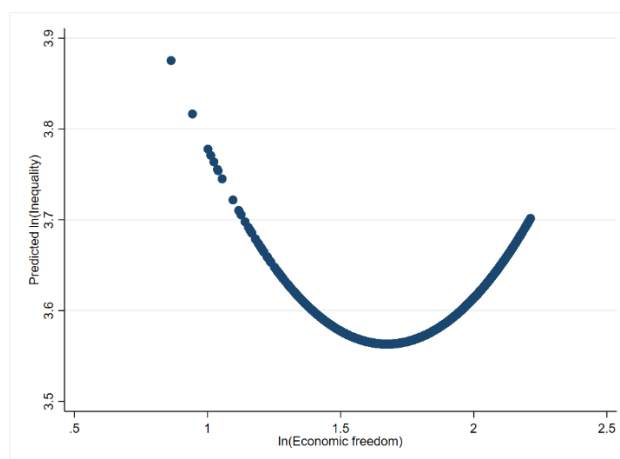


Table 5 presents the results of our fixed-effects (within) estimates of the relationship between economic freedom and inequality. Column (1) presents the estimate of a model specifying a simple linear relationship between the two variables. This estimate shows that there is a positive and significant relationship between economic freedom and inequality. Assuming that there is no misspecification in this model, the results seem to suggest that 1% increase in the index of economic freedom is associated with 0.14% increase in inequality. However, as we have argued in previous sections, a model specifying a non-linear (U-shaped) relationship between economic freedom and inequality may better explain our data. Column (2) presents the fixed-effects estimate of a model, that is, Equation (3), with a quadratic term in economic freedom. This estimate provides strong support for a U-shaped relationship between economic freedom and inequality. Overall, the data indicate that the relationship between economic freedom and inequality depends on the level of economic freedom. That is, inequality tends to be high when the level of economic freedom is either low or high. On the other hand, inequality is relatively lower in countries with medium levels of economic freedom. Figure 3 illustrates this relationship by plotting economic freedom against predicted inequality using the results of Column (2).

Figure 3

The Relationship Between Economic Freedom and Predicted Inequality



Regarding the control variables, our results in both columns show that increases in the standard deviation of inflation, international trade openness, and unemployment worsen inequality. On the other hand, the inflow of foreign direct investment is negatively related to inequality. Lastly, an increase in educational expenditures (as a share of total government expenditures) has negative impact on inequality, though this relationship seems to be marginally significant.

Table 5
Fixed-effects (within) Estimation Results

	(1)	(2)
ln (E Freedom)	0.1360*	-1.5910***
	(0.0617)	(0.4650)
ln (E Freedom) ²		0.4754***
		(0.1335)
Political rights	-0.0002	0.0003
	(0.0022)	(0.0021)
Growth in GDP per capita	0.0002	0.0003
	(0.0003)	(0.0003)
Inflation Std. Dev.	0.0001*	0.0001*
	(0.0001)	(0.0001)
ln (FDI inflow % GDP)	-0.0028*	-0.0027*
	(0.0011)	(0.0011)
ln (Trade openness)	0.0266	0.0269*
	(0.0139)	(0.0135)
Unemployment	0.0031**	0.0036***
	(0.0010)	(0.0010)
Educational expenditures	-0.0040	-0.0039
	(0.0025)	(0.0024)
Agricultural employment	-0.0003	-0.0002
	(0.0008)	(0.0007)
Year	-0.0016	-0.0018
	(0.0012)	(0.0011)
Constant	6.4535**	8.2652***
	(2.3244)	(2.3163)
Std. dev. of the fixed effects	0.253	0.248
Std. dev. of the error term	0.027	0.026
ρ	0.989	0.989
N	1415	1415
Number of countries	137	137
F	1.97	2.57
Prob > F	0.006	0.0001
R ² (within)	0.18	0.23
R ² (between)	0.00	0.00
R ² (overall)	0.04	0.09
Time fixed effects	YES	YES
Country fixed effects	YES	YES

Note. ***p-value is less than one-thousandth; **p-value is less than one-hundredth; *p-value is less than five-hundredth. The dependent variable is natural logarithm of inequality, which is measured by the Gini coefficient. Heteroskedasticity-robust standard errors are given in parentheses. All tests are two-tailed.

7. Conclusion

In this study we have examined the relationship between income inequality and economic freedom by using two concepts developed in institutional economics, namely extractive and inclusive institutions. We argue that income inequality might be high both in countries with extractive institutions, where the level of economic freedom is low, and in countries with inclusive institutions, where the level of economic freedom is high. In countries where institutions are exclusive, elites, who constitute a small minority in society, receive an unfairly large share of economic output by preventing the rest of the society from having political and economic rights; whereas in countries where institutions are inclusive, people enjoy economic freedom and get their share of economic output by using their skills and exerting their efforts in the production of goods and services in free markets. The reason of inequality in countries with extractive institutions is outright theft endorsed by political power, while in countries with inclusive institutions, it is simply the fact that skill and stamina are not uniformly distributed in society.

When we consider the characteristics of extractive and inclusive institutions and take into account how they affect economic agents' actions through the incentives and/or disincentives they create, we can predict the dynamics of income inequality when a country changes its institutions. When a country with extractive institutions increases the level of economic freedom that its citizens have, i.e., when its institutions become less extractive, the income distribution in the country must become somewhat more egalitarian than before because of the decreasing income share of the elites and the increasing income share of the non-elites. On the other hand, when a country with inclusive institutions moves farther along the way of inclusiveness, i.e., when it further increases the level of economic freedom that its citizens enjoy, then the income distribution in the country must become less egalitarian than before, because this new increase in the level of economic freedom will increase the income share of those -people with high skills and stamina- who are already in an advantageous position in an economically free environment. Thus, as the level of economic freedom moves from lowest to highest, income inequality is expected to first decrease, then reach a minimum at a certain point, and then increase, forming a U-shaped graph.

The results of the empirical analysis that we have conducted by using a panel data containing 1415 country-year observations from 137 countries for the years from 2000 to 2018 fully support our proposition. The relationship between income inequality and economic freedom seems to be negative at low levels of economic freedom, but positive at high levels of economic freedom, which means that it is U-shaped as we suggested.

In the literature there are very few papers which indicate a U-shaped relationship between income inequality and economic freedom. For example, some of the econometric models Bennet and Nikolaev (2017) used indicate a U-shaped relationship, but some of their other models indicate the opposite (an inverted U-shaped relationship). But these papers do not provide the type of justification (economic reasoning) as we have done by using the concepts of "inclusive institutions" and "extractive institutions".

The policy implications of our findings are twofold. First, in countries where institutions are extractive and the level of economic freedom is low, market-based reforms that increase economic opportunities for large segments of society could be desirable not only because of their growth-enhancing nature but also because of their potential contribution to a more egalitarian society. Second, in countries where institutions are inclusive and the level of economic freedom is high, further liberalization might lead to an increase in income inequality which might weaken the support for economic liberalization in the future. Therefore, those who

want to go further along the way of freedom in these countries had better think about finding ways of limiting inequality increasing effects of these policies.

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Research Article

Energy Security, Armed Conflict and the limits of Commitment Strategy: EU-Russia Relations and the War in Ukraine

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Abstract

Russia-Ukraine War altered the political landscape in Eurasia fundamentally even before we could see the end of the armed conflict. Not only through its direct impact but mostly because of a series of spillover effects, this massive military confrontation is already affecting the power distribution in the region. EU-Russia relations, from the perspective of energy security, has already been discussed extensively but a new dimension will have to be added to this crumbling cooperation. Similarly, the preponderance of Russia in former Soviet space may be collapsing. The strategies pursued by the Western Bloc and Russia can be analyzed withing the framework of a “commitment” policy. A strong strategy, binding one actor to a certain path, might be a strong signal to push the adversaries for cooperation. Yet, carries high risks, for in case of a non-cooperative response might multiply losses for all parties. The war dynamics and energy security situation in Eurasia displays characteristics of this high-risk strategy that might possibly not bring the desired outcome. This study evaluates the energy policies as well as Russia’s wartime policies from a perspective of commitment strategy.

Keywords: Russia-Ukraine War, Russia-EU Relations, EU Energy Security, Commitment

JEL Codes: H56, H12, H50, C70

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Araştırma Makalesi

Enerji Güvenliği, Silahlı Çatışma ve Bağlanma Stratejisinin Sınırları: AB-Rusya İlişkileri ve Ukrayna Savaşı

Akif Bahadır Kaynak¹

Öz

Henüz sonuna gelmememize rağmen Rusya-Ukrayna savaşı şimdiden Avrasya'da politik görünümü temelden değiştirdi. Sadece doğrudan değil, aynı zamanda dolaylı yoldan bu büyük çatışma bölgedeki güç dağılımını etkiliyor. AB-Rusya ilişkileri, enerji güvenliği perspektifinden şimdiye kadar çokça tartışıldı ancak şimdi bu çöken iş birliğine yeni bir boyut eklendi. Benzer biçimde Rusya'nın eski Sovyet coğrafyasındaki hakimiyeti sonlanıyor olabilir. Batı Bloku ve Rusya arasında bu süreçteki stratejiler "bağlanma" politikası çerçevesinde inceleyebilir. Bir aktörü, net biçimde belirli bir politika patikasına bağladığından bu güçlü strateji rakipleri iş birliğine zorlayan bir sinyal olabilir. Ancak karşı tarafın çatışmacı bir yanıt vermesi halinde kayıpları katladığından yüksek risk taşır. Savaş dinamikleri ve Avrasya'daki enerji güvenliği durumu bu yüksek riskli stratejinin isteyen sonuçları getirmeyebileceğini gösteriyor. Bu çalışma hem enerji politikalarını hem de Rusya'nın savaş stratejilerini bağlanma stratejisi üzerinden ele alıyor.

Anahtar Kelimeler: Rusya-Ukrayna Savaşı, Rusya-AB İlişkileri, AB Enerji Güvenliği, Bağlanma

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1. Introduction

The war that started in February 2022 between Russia and Ukraine is a major game changer in many ways in international politics. The armed confrontation started as a relatively limited operation by Moscow, but its magnitude increased as Ukraine's response grew stronger and became more complex in time. Indirect intervention by Western powers, requires an analysis that incorporates the actions of a multitude of actors with varying interests. Going along with the realist perspective we will accept states as unitary and rational actors yet asymmetric information makes defining dominant strategies and likely outcome extremely difficult.

Sticking to the same tradition it might be possible to analyze how different actors that are actively engaged in this conflict utilized "commitment" strategy on different occasions and how successful they were in obtaining the desired outcome with their strategies (Weinstein, 1969). That naturally should come with a detailed analysis of under which circumstances the "commitment" strategy worked for different actors.

In this sort of a game theory framework, where all the actors take rational decisions in order to achieve their objectives, a realist perception of international relations comes to mind. This vision is based on an anarchic order of the world rather than international arrangements to support an interdependent system (Krasner, 2000) while independent actors choose strategies to maximize their payoffs given the available information. Even during Cold War, the presence of common security organizations was a major game changer as in the case of NATO, and especially after the collapse of the Soviet Union we have witnessed the emergence of security frameworks which emphasized security as a common good (Krahman, 2008). The success of these sort of arrangements for three decades cannot be denied even though the dissolution of Yugoslavia, two Gulf Wars the conflict in Afghanistan and finally the geopolitical earthquake after Arab Spring, especially Syrian civil War illustrated that the World is still far from the dreamland of perpetual peace. Despite all this, international politics still seemed relatively peaceful as armed conflicts remained limited and did not involve full scale involvement of major powers.

In that sense, the war in Ukraine seems like a major turning point, especially after the conflict escalated after the initial phase rather than dying down on its own momentum. We have once again found ourselves in a world where the most basic principles of international politics, like territorial integrity of sovereign nations is imperiled and a game of survival seems to be in place as the threat to escalate even to nuclear warfare seems to be on the agenda.

This study aims to understand and compare EU-Russia energy relations and Moscow's strategies in the Ukrainian war through a commitment strategy lens. Although the strategy is commonly used in politics and elsewhere on various occasions, Russia-Ukraine war has displayed interesting qualities for illustrating its limitations in energy security and conduct of war. The hypothesis that whether Russia-EU energy cooperation can be categorized in the context of commitment will be tested, while the factors on why and how this winning equilibrium was derailed will also be overseen as well. Similarly, Russia's strategy of binding itself to a forward position is a question with its implementation and limitations. The study uses previous academic works to establish a framework to test its hypothesis while the energy crisis and conduct of war information is collected from newspapers and online sources.

2. Commitment to Energy Cooperation and Peace

Ukraine declared its independence in 1991 after Russian Federation withdrew from the Soviet Union following the failed coup d'état. Those were times when almost all post-Soviet countries struggled to find their way in uncharted waters to be integrated to the rest of the world, while international system was re-designed to embrace the power vacuum created by the collapse of one of the poles of the Cold War (Ferguson, 2004). Throughout the nineties Russia was too weak to assume the role of a major power (Smith, 2014: 5-6) and was rather focused on re-lifting its economy that was in shambles. Moscow also had to deal with a two round Chechen War that imperiled the territorial integrity of their country. After a humiliating failure to suppress the Chechen uprising during the first war, Russia managed to put down the insurgency in their second attempt by indiscriminate bombing of all targets.

In economic terms, the first decade after the Cold War was at first better for oil exporters, including Russia, as energy prices started to recover after the bust of eighties that came as a result of market share wars (Ramady, 2015, 45-46). However, the Asian Crisis of 1997 led to a collapse of global demand that was immediately reflected to the markets for primary goods and commodities. Still heavily reliant on income from fossil fuel sales Russia's export earnings fell dramatically. One year later the unfavorable conditions led them to declare moratorium on the payments of its public debt (Desai, 2000). Looking back, we could say that this was the nadir of Russia's economic and political power as after that point, Moscow managed to regain its strength under the leadership of Vladimir Putin. That was helped by a continuous rise in commodity prices in the first decade of the millennium, allowing the Russian government to balance its finances (Appel, 2008). The population witnessed a steady increase in its standard of living, that resulted in increasing support for Putin's leadership while military capabilities were upgraded thanks to the fiscal recovery that came with favorable changes in terms of trade.

It was not only the change in external conditions but a well-planned policy by Moscow that positioned it as a key energy supplier to neighboring regions, especially Europe, that brought this economic improvement (Lough, 2011). Although Russia was a key petroleum producer even during Cold War and started supplying natural gas to Europe decades earlier, the cooperation intensified and became more broad-based as political tension eased. Pipelines connected customers in Europe with gas fields deep inside the country. Those massive investments that required billions of dollars of cash outlay bound Russia and Europe together after the polarized atmosphere of the Cold War. Long term "pay or take" agreements necessary for undertaking those extensive capital investments were justified by the "commitment" of both parties (Schaffer, 2008) to this mutually beneficial trade. Russia, with its immense natural resources and relatively low costs committed itself to provide uninterrupted energy to Europe while the old continent was bound to purchase the volumes produced for their use.

The outcome is a classical cooperative equilibrium where all parties benefit by choosing a win-win outcome. The liberal perspective on international relations and energy security would claim that the cooperative outcome is stable as none of the parties have an incentive to change their strategies. From that point of view, the continuity of the transaction is guaranteed by the fact that all sides are content with that particular equilibrium (Proedrou, 2007).

This outcome is challenged by a realist tradition that focuses on the dependence of the consumer countries on Russian energy (Baran, 2007). Accordingly, although a cooperative outcome has been reached, the likely losses from a diversion from this equilibrium (Harsem & Clae, 2013, s. 785-786) are not distributed evenly. Russia may lose income from an interruption

in its sales receipts but that can be partially recompensated by rediverting its productions elsewhere. More importantly the seller can resort to its accumulated financial reserves to weather any contingency and wait for the buyer to yield. Looking at the other side of the transaction, the consumers need a steady flow of gas for the functioning of their economies and have less flexibility in case of disruptions. Houses need heating, industry needs energy on a continuous basis, so in an extended time frame, the seller of energy may extort benefits from the buyers under threat of interruption of supplies.

Nevertheless, in the post-Cold War environment European, especially German policy makers opted for increased cooperation with Russia in the field of energy (Westphal, 2020). The main tenet of their approach was that a mutually beneficial trade would bring together those two actors closer and make a conflict highly unlikely, if not impossible. Russians were also keen on committing themselves to their European partners and the most significant sign of their dedication to this cooperation would be the massive infrastructure investments undertaken to provide natural gas into the continent (Hubert & Cobanli, 2015).

In fact, the gas trade with Europe had already started in the Cold War years, though the volumes were much lower compared to the decades that followed the collapse of Soviet Union. Most of the early pipelines used Ukraine as a transit route into Europe as Russians did not consider Kiev as a separate actor that could spin out of control at one point in time. Even after 1991, an independent Ukraine still played the same tunes with its superpower neighbor so Russian policy makers did not perceive a threat to their long-term energy strategies. Russia gladly subsidized gas sales to Ukraine, a standard incentive given to Moscow's friends in the post-Soviet world (Woehrel, 2010). Only after the Orange Revolution in 2005, when Ukraine started to stray away from the Russian control Putin decided to remove subsidies and squeeze Kiev economically (Fraser, 2008). That would be the beginning of a significant realignments in energy markets that resulted in important policy changes for Moscow. The pipelines that established Russia as the supplier, Ukraine as the main transit corridor (Stern, 2006, 2-4) and Europe as the destination seemed to create a stable equilibrium where all sides had no incentive to switch their dominant strategies. Yet, this was only true if the policy making could be reduced to a single objective, that is the natural gas trade.

In 2005, after the Orange Revolution, Kiev took the first steps to move away from Moscow's orbit. The political stalemate between the West and East over Ukraine continued for another decade but that was just enough to trigger the first phase of energy crisis that compromised Kiev's role as a transit corridor. One of Russia's well-known tactics when using energy as a political leverage against its customers is implementing different tariffs to friends and foes. States, especially post-Soviet ones, that followed pro-Russian policies were allowed to purchase gas at favorable rates and terms whereas the others had to buy at market prices. Ukraine's re-orientation to the West created a similar situation and when Ukrainian government failed to pay overdue bills gas from elevated prices. Eventually Gazprom took the decision to suspend gas deliveries to the country. If this had been an isolated incident, it would not mean much but Ukraine, being a transit country met its needs from the gas flowing into Europe, as a last resort. Hence flows into Europe were interrupted twice in 2006 and 2009 (Rodríguez-Fernández, Fernández Carvajal, & Ruiz-Gómez, 2020). Even though this temporary interruption did not lead to major economic disruptions, and the problem was fixed in a short while, both ends of this transaction drew important lessons and started to implement their own programs to eliminate the possibility of a repetition of the same situation.

For Russia, extreme reliance on Ukraine as a transit route finally appeared to be a reckless strategy. The positive payoffs on being a part of supply chain in global energy trade

was not enough to anchor Kiev to Moscow politically. From the point of view of Russian policy makers, insubordination of Ukraine to Moscow's policy priorities could not be tolerated and they should be taken out of the new energy equilibrium (Aune, Golombek, Moe., Rosendahl,, & Le, 2017). Although this policy required substantial infrastructure investments at the initial stage, it was nevertheless economically feasible. By having direct access to the largest gas import market in the world, that is Europe, Russia could guarantee cash flows that could justify the initial outlays on infrastructure. However, the new routes should be chosen carefully so as not to repeat a similar situation that had taken place in Ukraine. The traditional animosity of Poland made it an unsuitable route for access to Europe, so a more secure but more vigorous path from a technical perspective was undertaken. Nord Stream pipeline connected Russia directly with Germany with a pipeline going under the Baltic Sea. The depth of the underwater pipeline and the capacity made it a major technological achievement, but eventually Russian gas made it to Lubmin, the German terminal of the pipeline. The cost exceeded 10 billion dollars, but it enabled carrying a volume of a total of 55 billion m³ annually, replacing a significant part of the gas through Ukraine (Westphal, 2008, 108-109).

This pipeline was one of the most contested investments in the energy business, as it consolidated Russia's role as the main supplier in European gas markets. Especially US objected to increased European reliance on Moscow claiming that it could be used as a political leverage eventually and given revisionist tendencies in Russian foreign policy, could be dangerous. European Union, exposed to Russia's whims might be inclined to give in to political blackmail in the future (Baran, 2007: 135). That assessment is a product of a world view that sees the international system as a zero-sum game environment and assumes Russia might seek to dominate the continent rather than cooperate with it.

On the other hand, a more commercial point of view focused on a double commitment from both ends of the pipeline as the buyer and the seller has significant losses in case of disruptions. While Europe and particularly Germany committed itself to buying Russian gas as a substantial part of its energy mix, Gazprom took on a massive investment to be the primary supplier of the continent. Besides as Ukraine denied its role of a transit country, Germany assumed a similar responsibility being the principal distribution center of Russian gas in the Continent. Cheap, undisrupted flow of Russian gas would provide the main input for a competitive European economy (Bilan, Strielkowski, Karbach, & Mentel, 2017) in the global trade wars. In return, Russia would specialize itself as the primary provider for an economic giant.

This setting seems to be a stable equilibrium where all parties benefit significantly from adhering to the cooperative strategy. Shirking, obviously results in a worse off situation for all related actors. Evidently neither of the parties were naïve enough to rely on a single outlet or supplier but the weight of the transaction was on this mutually beneficial relationship.

European Union tried to reduce its risks by the Third Energy Package that aimed to reduce Russia's share as a supplier and more importantly by detaching upstream, midstream, and downstream components of the operations (Stančík, Osička, & Overland, 2021, 4). That would ensure a smooth functioning of the markets according to law of supply and demand with minimum intervention from the realm of politics. In parallel, investments on renewables intensified balancing fossil fuel's share in the mix. Yet while solar and wind energy boomed, attitude towards nuclear remained ambivalent at best. France persisted in its preference for nuclear power but after the Fukushima disaster in 2011, EU countries, particularly Germany developed a cold shoulder for this source until the Ukraine crisis unfolded. On the other hand, Russia developed alternative outlets for its gas in Far East (Avilova, Safina,, & Demidova,,

2019) and in non-EU countries such as Turkey. The share of LNG remained low while pipelines continued to be the main route to markets. Hence Russia's diversification attempts were relatively weaker in that period.

To sum up, all actors were aware of the limits of the win-win game in energy markets and adverse shocks' potential to disrupt the mutually beneficial equilibrium, yet emergency plans turned out to be inadequate in a real crisis. Obviously, the commitment of both parties to the cooperative outcome were real and both relied on mutual severe losses would be mechanism to keep their partners in line.

3. Russia-Ukraine War: Limits of Commitment Strategy

Russia's troubles in Ukraine are not new and goes back almost two decades to the first signs of Kiev's distancing itself from Moscow. Ukraine became an independent country in 1991 as the Soviet Union collapsed but it would not immediately leave Moscow's orbit as was the case in Baltic states. The relations between Russia and Ukraine were so close as one could hardly classify those two capitals as separate political entities. In fact, the proximity of both nations and significant Russian influence in Ukraine are factors to explain Moscow's intolerance for its neighbor's. independent posture. Not only there is a significant Russian minority living in the country but also the lines separating both nations and countries seemed superfluous from Moscow's point of view. That explains how Khrushchev accepted transfer of Crimea, a strategically important piece of land, to Ukraine in 1953. Clearly there was no risk perceived in Kremlin at times, from the possibility of Kiev parting its ways. This belief seems to persist in the first decade of the post-Cold-War years as Russia's leaders did not bother to question the sovereignty rights over neither Crimea nor Donetsk nor Luhansk, two regions with large Russian populations. On the other hand, while Russian political and economic power reached a nadir in the 1990s Ukraine did not have any intentions to exploit this weakness by reorienting it towards the West.

The decade after the Cold War was a period where post-Soviet republics, especially Baltic states moved away from Moscow, a fact that was, although reluctantly accepted by Kremlin. Not only EU expanded to the east by incorporation former Socialist Bloc countries in two phases in 2004 and in 2007 but also those countries also became NATO members. So, NATO and EU expanded almost in tandem with few exceptions, Sweden and Finland being the most important, countries in EU but not NATO members.

The situation changed in the new millennium, surprisingly at a time when Russia started to recover from its troubles of 1990s. Under the leadership of Putin, Russia crushed the Chechen uprising that had cost significant material and prestige loss while Moscow showed its intention to return to its former role as a global player. This vision will have to backed by force several times. First in 2003, Shevardnadze, a former Politburo member and President of Georgia since independence was removed from power by popular protests. Next year, same pattern repeated in Ukraine where a popular uprising against Yanukovich's reelection, allegedly by electoral fraud, took to the streets. Eventually the elections were repeated in 2005 and pro-Western Yushenko became the new President of Ukraine (Karatnycky, 2005). This initiated a protracted struggle between Moscow and the West for influence in Ukraine, a country and a society "thorn" by its allegiances (Huntington, 2000, 165-167). Nevertheless, this was not yet the decisive moment of rupture between Kiev and Moscow as Putin's candidates continued to occupy important positions in Ukraine's politics. During this interregnum, Russia illustrated how it would react to its former colonies decisively moving out of its orbit as in the case of Georgia. In 2008, Russian Army intervened in Southern Ossetia and Abkhazia crushing Georgian

forces, under the pretext of protecting minorities (Allison, 2008). Putin avoided a complete occupation of the country and did not interfere with oil and gas flows to the West but clearly demonstrated its preponderance in the southern Caucasus region. Georgia was clearly considered as a country where Moscow had a privileged position and the West had nothing to do but appease Putin in that case.

This lesson did not deter Ukrainian nationalists to rise in 2014 Maidan demonstrations and overthrow the pro-Russian government. It was a decisive point where Ukraine finally made a choice for further integration with Europe at the cost of keeping a distance with Russia (Aslund, 2014). That must be the reckoning moment for Russian policy makers who recklessly assumed that Ukraine would always be under their control and there was no reason to worry about the risk of losing it. The most important strategic loss with decoupling of Ukraine from Russia was obviously Crimea, a very valuable piece of land, a peninsula with key position for the control of Black Sea.

Since Küçük Kaynarca Treaty that established Russia as a Black Sea power, the importance of southern sea routes became a priority. Ukrainian grain was the most important export item for decades, maybe centuries so controlling choke points that could imperil their access to world markets were among the main imperatives for Russian foreign policy. Domination of Black Sea and access to Mediterranean became a major concern where an emerging Russia dictated its priorities upon a weakening Ottoman Empire in the 19th century. The Crimean War and ensuing Paris Conference of 1856 reversed Russian gains temporarily in the mid-century but did not change the prerogatives of their policy.

During the Cold War years, Moscow, along with its satellite states dominated the Black Sea basin while only Turkey remained as a rival power still controlling the Straits. Soviet concerns were mitigated by the clauses of Montreux Treaty that established Black Sea as a zone mostly exclusive for littoral states due to tonnage constraints on foreign warships (Güçlü, 2000). Consequently, it was a relatively stable region during Cold War as security needs of all parties concerned can be met. Evidently in that setting, Ukraine and Crimea were securely attached to Moscow and was considered part of their exclusive zones. That equilibrium in the Black Sea ended gradually and Maidan Revolt, a symbolic incident leading to Ukraine's political shift towards the West, made Black Sea a contested zone (Åtland, 2021). It is no surprise that Putin's Russia reacted to such a geopolitical shift with a military intervention in Crimea to maintain its dominance over the basin.

The invasion of Crimea and parts of Donbas in 2014 is on the one hand a clear violation of territorial integrity of a sovereign nation. On the other hand, it illustrates how Russia tried to limit its geopolitical losses on a very pivotal zone for their security concerns. Although the invasion in Donbas can be understood in terms of ethnic revisionism, the case of Crimea is more a geostrategic initiative (Blockmans, 2015). The naval base in Sevastopol leased for 49 years to Moscow, already provided a foothold but clearly was not a permanent solution to Russia's quest for dominance in the Black Sea basin. Hence the occupation of the peninsula in 2014 resolved the issue decisively for Kremlin

It should be noted that this move came when the dual commitment between Moscow and Kiev in energy cooperation was already over. Russia had already decided to by-pass Ukraine as a transit nation by two alternative corridors in the north and south to have access to its European markets when the political crisis after Maidan was unfolding. Hence despite initial sunk costs, Russia was able to circumvent Ukraine, an increasingly troublesome neighbor. Nevertheless, self-reliance on access European market, did not mean Putin could let loose Kiev to do choose an independent foreign policy.

Since 2014, invasion of Crimea and Donbas, Ukrainians continued to perceive an increased threat from their powerful neighbor. Putin's article in the summer of 2021 is a clear expression of a broader agenda going far beyond concerns over specific matters, meaning that the political differences could not be resolved by tactical moves (Kremlin, 2021). Russian leader's perspective was a direct challenge to territorial integrity of Ukraine, in fact overall existence of such a country. Days before the invasion, Putin made a speech that gave references to historical events (Reuters, 2022), that according to him would give legitimate reasons to assert Russian domination over the region. Accordingly, the existence of an independent Ukraine was the result of a blunder by early Bolshevik leadership as well as political ineptness as Soviet Union collapsed. Putin's remarks clarified that Russia saw beyond its borders a Novorossiia; a part artificially detached from the motherland.

Eventually when Russian troops started the operations on the 24th of February 2022, there was no illusion for a limited invasion, rather there were suspicions whether Putin would order his troops to go all the way to take control of whole Ukraine. The fact that militarily Moscow targeted multiple fronts, including the capital city implied the target was a change of government and vassalization of the whole country. Ukraine would be snatched from the jaws of Western influence and brought back to Russian orbit where it belonged. This model, already in place in Belarus, seemed feasible at first keeping in mind the weak resistance by Ukrainian armed forces during 2014 invasions. According to Kremlin's expectations, the overwhelming military power of Russia could not be matched by its weaker neighbor. However, shortly after the operations started, Putin's Army was bogged down on several fronts barely managing to advance on certain sectors, particularly eastern Ukraine to secure the land connecting of Crimea with Donbas. Overstretched Russian forces facing stiff resistance around Kharkiv, and Kiev suffered heavy casualties and failed to reach their military objectives.

This initial phase of the conflict, where it was understood that a swift victory was out of question, brought both parties to negotiating table, although at a lower level at Belarus and later Turkey. These early meetings were far away from ending the conflict as the gap between the demands of both countries' positions was wide and Ukraine refused to submit to Russian demands amid increasing Western military and diplomatic support. Hence the second phase of the war started with Russia reshuffling its priorities and changing objectives. Having understood the difficulty of taking over the whole country Kremlin refocused its efforts to selected regions mainly, securing Donetsk and Luhansk completely as well as Zaporizhzhia, a key region for security of Crimea. This brought a temporary feeling of relief to the Russians as their troops were able to advance to some of their objectives. However, the influx of Western equipment, military aid and money helped Ukraine to resist further advances and the war front looked like it would freeze by the end of summer.

Once again, the battlefield brought surprises as Ukrainian Army launched a counterattack around Kharkiv region in September leading to chaos in Russian forces. Only at this point Putin had to raise the stakes and once again commit himself to an intransigent position at a time when his military power seemed unable to deter their adversary. The defeat at Kharkiv brought an array of measures by the Russian leadership that can be classified under commitment strategy in a game theory framework. The first decision taken by Putin was to declare a partial mobilization to draft 300 thousand recruits for the war effort (Cancian, 2022). After trying to pursue the armed conflict with mercenaries for more than six months, Russia finally realized the difficulty of matching a fully mobilized enemy with half measures. That decision obviously was not the A plan for Putin, because since the beginning he insisted that what was undertaken in Ukraine was a special operation to counter an imminent threat. Russian people were not expected to make sacrifices for a minor military operation but after the difficulties in the field

draft became inevitable. This cannot, by itself, be considered as a commitment strategy but a necessity to hold the front amid increasing pressure from Ukraine.

The second measure announced by Putin was a political one committing itself to the existing position. After highly controversial referendums on four occupied regions Donetsk, Luhansk, Zaporizhzhia and Kherson, Moscow annexed those territories (Aljazeera, 2022). This move implied that any attempt to retake those provinces would be considered as an attack on Russia proper. A third measure complemented the abovementioned measures although it was voiced by Russian authorities rather implicitly. Accordingly, any attempts on Russian soil could be countered by a nuclear strike if necessary. Moscow basically implied that Ukraine's desire to recapture its occupied provinces would be classified as an attack on Russia and might trigger a nuclear response. Although this would be conducted with tactical nuclear weapons, not in the order of destroying whole Ukraine, still a major threat was underway.

The position taken by Moscow after the Kharkiv offensive can be seen as a political escalation rather than a military one. The fact that a partial mobilization was declared, was more of a desperate measure to hold the existing precarious military balance. The reason behind Putin committing himself to an aggressive posture seems understandable but there are risks associated. Russia adopted a policy of not falling back and negotiating on the basis of the military *status quo* to discourage Kiev and its Western supporters from prolonging the war. Once Russia established its position as a final one, it expected its adversaries to negotiate from that position. With the referendums of annexation Putin made the situation irreversible and military pressure meaningless from its opposition's point of view.

This political escalation is the result of military weakness and a perception that the tide of the war is turning to Ukraine's favor. As Russian Army seemed to have reached its limits with conventional warfare, the balance of power in the warzone started to tilt towards Kiev while continuous flow of state-of-the-art weapons poured in from the West (NYT, 2022). As a result, unable to stop the tide of the setbacks against Ukrainian forces, Putin decided to anchor himself politically. The annexation of those four provinces made Russia's back-stepping so costly that it hoped to induce its adversaries to think twice before pressing on. A classical case of burning the ships upon landing, destroying the route to retreat meant a resolution to keep fighting on. Once this scenario is bought, one would expect the adversary to go easy in the negotiating table. A Russia with its back to the wall, could be dangerous. A country with nuclear weapons, having already declared annexation of occupied territories would have no way to back off even if it agreed to freeze the situation. In fact, that was obviously what Putin had in mind, as his armies did not have the capacity to advance further after suffering a bad defeat outside Kharkiv.

Yet, from the start, Russia's strategy of committing itself to the *status quo* on the battlefield and defending it as the ultimate framework for a peaceful resolution was not accepted by Ukraine and its supporters. A short while after annexation referendums, Zelensky reiterated its position indicating that negotiations would only be possible after Russian forces evacuated the territories that they occupied (Kyiv Independent, 2022). Ukrainian President's demands included Donbas and Crimea that were occupied in 2014, making a compromise by Putin even more painful. Evidently, the commitment strategy that Putin undertook did not in any way convince Zelensky to pace down its efforts to win the war.

The reason for the failure of the commitment strategy overlaps with the weak spots of any similar game plan. If the player's deterrence is not credible enough the antagonist is inclined to challenge it, multiplying the eventual losses of a non-cooperative strategy (Johnson, Leeds, & Wu, 2015). In this particular case, Russia's insistence on annexing Ukrainian territories and

implicitly backing this position by a nuclear threat seemed out of proportion. Two main issues can be highlighted with regards to Moscow's plan. First, if the West yielded against Russian threat that would set an example where they would have to back down against any similar escalation. Military aggression followed by a nuclear threat would become a winning strategy for Moscow in similar situations and all other actors in the grey zone, meaning non-NATO member would automatically bandwagon (Mearsheimer, 2001, 162-163) if Russia could achieve its political objectives with a mix of those policies. Even if NATO has no obligations to defend non-members, failure to counter aggression would erode the credibility of the Western alliance. Hence, first and foremost, US had a clear incentive to double down on the commitment strategy of Moscow.

Second, even if nuclear weapons are powerful deterrents against any aggression, it is not a tool that can be used except for critical self-defense purposes. The only occasion where nuclear weapons were ever used was at the very end of World War II against Japan, when only US possessed them. In the second half of 20th century there were other members joining the nuclear club but none of them had ever used those weapons of mass destruction. The political implications of touching the launch button are so adverse that they stayed off the table (Waltz, 1990). During the Korean War, as early as 1950s General MacArthur advised going against PRC with nuclear weapons and he was immediately replaced despite his reputation as a World War II hero. Afterwards, during Vietnam War, US did not resort to weapons of destruction even though the defeat was humiliating and costly for Washington. On the other end, Soviet Union did not use them at Afghanistan despite the ongoing war's military and political costs. Under these circumstances, Moscow's threats were not credible enough unless Ukraine attacked Russia proper. Annexation of Ukrainian territories were a superficial move and did not provide the desired effect.

4. Conclusion:

The strategies undertaken in the last decades by Russia, EU or Ukraine have failed to stabilize the political situation at a cooperative equilibrium in energy politics. The incentives to commit to a win-win case failed due to overpowering external factors. Similarly, Russia's committing itself to a forward position in the war against Ukraine backfired. In any case, what at first seemed like the best of options for all parties, went off tracks for different reasons.

In all cases, we should accept that actors want to maximize their power and influence given the information available. As in all real-life circumstances, existing information may be insufficient to select the optimum course of action and/or there might be biases in decision making process. Putting those aside, and accepting the rationality actors, we might assume that there are external factors that led to deviation from cooperative outcome. The presumably control variables cannot be isolated and may create effects that deviate actors from the equilibrium.

Table 1*Factors Driving Towards and Away from Equilibrium*

Actors / Issue	Context	Forces Driving towards Equilibrium	Forces Pushing away from Equilibrium
Ukraine-Russia Energy cooperation	Russia is the supplier of natural gas while Ukraine assumes the role of a transit country for flows into Europe	Economic benefits for both parties as well as strategically positioning Ukraine in the natural gas markets	Russian quest to dominate Ukraine, while Kiev drifts towards Europe in search for material benefits and security
Russia-EU Energy Cooperation	Russia is the main supplier of natural gas to EU. Pipelines, huge investments with massive initial outlays are already undertaken to connect gas fields with customer in Europe	While Russia benefits from a steady stream of income from sales to a huge market, EU positions Moscow as a key reliable supplier, allowing access to cheap and uninterrupted energy	Russia's insistence in having exclusive privileges in former Soviet states, particularly Ukraine. EU sticks to the autonomy of Kiev despite the costs of conflict. Political advantages of keeping Ukraine in the Western orbit are overwhelming
Russia-Ukraine (West) War	Russia annexes 4 regions backed by threat of nuclear war. They imply that an attack to recover occupied Ukrainian provinces would be classified as an attack on Russia and may trigger nuclear response.	A nuclear war has devastating costs for all related parties. The disputed regions carry little strategic value except for Crimea so escalation seems out of proportion for all parties. The extreme costs of conflict and minor gains deter support for Ukraine	An appeasement policy against Russia may induce further aggression against non-NATO members. The military balance has tilted towards Ukraine and Moscow's threat of a nuclear escalation seems not credible

Note. Created by the Author

The conclusion drawn from those examples cannot be that commitment strategies will not work. In fact, in the mentioned cases there are bigger concerns that drive players away from a stable equilibrium. The actors maximize their benefits on a larger time frame; moreover, international politics cannot be reduced to a single agenda. Policy makers are facing intertemporal trade-offs as well as having to choose between different priorities. Neither EU-Russia energy relations are completely and indefinitely terminated, nor we have reached the end of Ukraine-Russia conflict. So, the actors may change their strategies in the face of new developments.

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Research Article

Re-examining the Collateral Consequences of Felon Disenfranchisement in the U.S

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Abstract

Extant literature on felon disenfranchisement has generally focused on the justicity of disallowing felons to vote and its implications for social stratification in the United States. Punishment for crimes does not often end with sentence completion. Post-conviction restrictions block felons' access to economic, social, and political opportunities long after they have paid for their crimes. Some studies have demonstrated that felon disenfranchisement affects the African American community disproportionately. However, there is a paucity of studies on the study of the possible effects of felon disenfranchisement on election outcomes. During presidential elections, millions of Americans with felony convictions are denied the right to vote. It is estimated that up to five million felons were denied the right to vote in the 2020 presidential election. This paper examines how felon disenfranchisement might affect presidential election outcomes and its danger to equal citizenship and democracy.

Keywords: Felon Disenfranchisement, Political Representation, Election, Citizenship, Crime and Punishment

JEL Codes: K4, K40, K42, Y1, Z00

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ABD'de Suçluların Haklarından Mahrum Bırakılmasının İkincil Sonuçlarının Yeniden İncelenmesi

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Öz

Suçluların haklarından mahrum bırakılmasına ilişkin mevcut literatür, genellikle suçluların oy kullanmasına izin vermemenin adaletine ve bunun Birleşik Devletler'deki sosyal tabakalaşma üzerindeki etkilerine odaklanmıştır. Suçların cezası genellikle cezanın tamamlanmasıyla bitmez. Mahkumiyet sonrası kısıtlamalar, suçluların suçlarının bedelini ödedikten çok sonra bile ekonomik, sosyal ve politik fırsatlara erişimini engeller. Bazı araştırmalar, suçluların haklarından mahrum bırakılmasının Afro-Amerikan toplumunu orantısız bir şekilde etkilediğini göstermiştir. Bununla birlikte, suçluların haklarından mahrum bırakılmasının seçim sonuçları üzerindeki olası etkilerinin araştırılmasına ilişkin çok az sayıda çalışma bulunmaktadır. Başkanlık seçimleri sırasında, ağır suçlardan hüküm giymiş milyonlarca Amerikalı oy kullanma hakkından mahrum bırakılıyor. 2020 cumhurbaşkanlığı seçimlerinde beş milyon kadar suçlunun oy kullanma hakkından mahrum bırakıldığı tahmin ediliyor. Bu makale, suçluların haklarından mahrum bırakılmasının cumhurbaşkanlığı seçim sonuçlarını nasıl etkileyebileceğini ve bunun eşit vatandaşlık ve demokrasiye yönelik tehlikesini incelemektedir.

Anahtar Kelimeler: Suçlu Haklarından Mahrum Bırakma, Siyasi Temsil, Seçim, Vatandaşlık, Suç ve Ceza

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1. Introduction

The propriety of American criminal disenfranchisement has come under increasing scrutiny in recent times, even as the nation will experience another election cycle in 2024. The number of disenfranchised felons has risen dramatically in the last 44 years, from 1.17 million in 1976 to 6.11 million in 2016 and marginally declining by 15 percent to 5.2 million in 2020. (Uggen et al., 2020). The U.S. Supreme Court has asserted that felon disenfranchisement is not a punishment. Regardless of the court's interpretation, many felons still perceive restrictions on voting rights as punitive and an act of disenfranchisement (Re, & Re, 2011; Miller, & Agnich, 2016).

Felon disenfranchisement has become a significant public policy issue, raising questions about the threat of a carceral state to political representation and fairness in American democracy (Meredith & Morse, 2015). In states where felons are required to complete their parole, probation, prison, and post-sentence period, they are not guaranteed the privilege of having their civic right to vote restored (Heath, 2017). Felon disenfranchisement laws in the United States are unique in the democratic world. Nowhere are millions of offenders who are not in prison are so denied the right to vote. Some of the earliest felon disenfranchisement measures were holdovers from medieval legal systems. An essential clue from these traditional systems is that it eliminated the sequencing of the adoption of felon disenfranchisement laws in many states after the property and other restrictions. However, one factor—race—seems to recur again and again. (Manza & Uggen, 2008). Once you are labeled a felon, the old forms of discrimination — employment discrimination, housing discrimination, denial of the right to vote, denial of educational opportunity, denial of food stamps and other public benefits, and exclusion from jury service — are suddenly legal. It is a world of legalized discrimination and permanent social exclusion. They become members of America's new undercast (Alexander, 2012).

Several advocates are working to roll back felon-disenfranchisement laws. At the same time, those who back the restrictions contend that people who have committed felonies need to demonstrate they are genuinely reformed to regain the vote. Forty-eight states removed voting rights in some way from people convicted of crimes, but policies vary widely. Some, like Florida and Kentucky, revoke such privileges permanently and require petitioning for reinstatement. Others, such as Indiana and Massachusetts, automatically restore voting rights upon release from prison. According to the National Conference of State Legislatures, the general trend has been toward reinstating voting rights during the past few decades. Still, the rank of disenfranchised felons is increasing, reflecting decades when incarceration rates were swelling. Between 1976 and 2016, their number grew more than fourfold to 6.1 million, according to the Sentencing Project (2017), which advocates for loosening restrictions. The election impact of re-enfranchising tens of thousands of new voters in a particular state is unclear. Due to differences in state laws and rates of criminal punishment, states vary widely in the practice of disenfranchisement. Some researchers have concluded that disenfranchisement laws favor Republicans because those affected are disproportionately minorities, who are more likely to vote for Democrats (Campo-Flores & Kamp, 2018; Uggen et al., 2016). This paper examines how felon disenfranchisement may have affected the 2020 presidential election outcomes and its danger to equal citizenship and democracy. The primary analysis was done through qualitative content analysis of secondary data sources, comparing the 2016 presidential elections vis-à-vis the 2020 presidential elections, and reviewing turnout in key battleground states and the effect on electoral outcomes.

2. Literature Review

2.1. Felon Disenfranchisement and Voter Turnout

For years, scholars have attempted to examine the collateral consequences of felons' disenfranchisement on democratic representation (Morris, 2020). Disenfranchisement of convicted felons is a nationwide phenomenon in the United States. In principle, an individual who commits a crime is punished often with incarceration. But paying for one's crime does not end there. The penalty for criminal convictions in the United States is a forfeiture of voting rights. The constitutionality of felon disenfranchisement is found in the Civil Rights Restoration Act (2014, S. 2550). This provision permits the denial of American citizens from voting if they are convicted of a violent criminal offense, serving a sentence, or term of probation. Felon restriction to vote varies from one state to another in the United States. Each state decides on the voting rights of felons and there are currently no federal guidelines to provide directions.

Partisanship has been identified as one factor for the differing approach by the states to the voting rights of felons (Sherman, 2018). Some states permanently bar felons from ever voting, while others restore felons' voting rights after some post-conviction years (Miles, 2004). For example, felons never lose their right to vote while incarcerated in the District of Columbia, Maine, and Vermont, whereas 48 other states have different prohibitions on felon suffrage while incarcerated or pending parole (ACLU, 2020; National Conference of State Legislatures, 2020; ProCon, 2020; The Sentencing Project, 2017). This paper places emphasis on suffrage because voting serves as a form of accountability since it allows citizens to elect representatives that protect their rights and interests. This calls into scrutiny the basic foundation of the right to vote.

Felon disenfranchisement undermines suffrage as a fundamental right and raises a major social concern for the citizenship rights of felons. While the right to vote has been ruled as a fundamental right (*Reynolds v. Sims*, 1964; *Yick Wo v. Hopkins*, 1886), the courts are torn on this issue as they have ruled that any burden on voting such as having a voter ID is weighed against the state's interests (*Crawford v. Marion County Election Board*, 2008; *Frank v. Walker*, 2014). The effect of this ruling proves that the right to vote is not absolute because the burden placed on voting could be revoked if it serves the interest of the state. The Voting Rights Act serves as the litmus test for whether a person's right to vote is breached, whereas felons lack a balancing test standard when their voting rights are taken away. The lack of consensus as to whether the right to vote is a fundamental right creates a gap in policy interpretation for persons incarcerated for a felony. This division is evident in the rising number of felons disenfranchised and votes that are lost in any given election. Although some studies have stated that felon disenfranchisement had no impact on voter registration when compared amongst states with higher disproportionate rates of disenfranchisement (Miles, 2004), other studies have found that felon disenfranchisement policies have created a voting bias in the political space because it negatively affects African Americans and Hispanic voters and the poor (Bowers & Preuhs, 2009; Uggen & Manza, 2002; Demeo & Ochoa, 2003).

2.2. Disproportional Disenfranchisement of African Americans

Felony disenfranchisement affects all communities in the United States. But several studies have demonstrated that felony disenfranchisement disproportionately impacts minorities, particularly the African American community because of their disproportionate incarceration (Uggen & Manza, 2002; King & Erickson 2016; Klumpp, Mialon & Williams 2017; Morris, 2020). In the same vein, most disenfranchised felons have low-income status. The median income of felons within the age range of 27 - 42 was \$19,185 (PPI, 2015) compared

to the median income of \$32,505 (PPI, 2015) for non-felon within the same age range. Again, more than 60 percent of prison inmates in 2017 were minorities, of which 33.1 percent were African Americans, despite that they constitute only 13 percent of the U.S. population (The Sentencing Project, 2017). Studies have also shown that minorities tend to be favorably disposed to the Democratic Party, in comparison to the Republican Party whose base tends to be made up of mainly white people (Miles, 2004; Yoshinaka & Grose, 2005).

Some scholars have however argued that the disenfranchisement of African Americans is not a function of their race but their status as felons which serves as a side effect of high crime rates (Brooks, 2005). This rationale does not take into effect arguments that proffer that race is a significant indicator of criminal punishments in the United States (Behrens et al., 2003). Studies have demonstrated over time that minorities are disproportionately incarcerated more than their white counterparts due to concentrated disadvantages (Nellis, 2016; Davis, 2017). Yet, felon disenfranchisement cannot be discussed independently of race and the historical process that underlines racial discrimination in the United States. There are several discussions on equality and helping felons reintegrate into the community. This involves giving them a sense of belonging in the community. A necessary step towards offender reintegration involves restoring their right to vote. As Mauer (2004) observed, voting is a constitutional right, and restoring it to felons will serve as a safety net against undue hardship and discrimination in society.

There are several discussions on equality and helping felons reintegrate into the community. The reintegration of felons back into the community involves making them feel like a part of the community. A necessary step needed to achieve reintegration involves restoring their right to vote. Mauer (2004) stated this clearly when he asserted that democracy requires the observance of free speech of which voting is a part. Implementing voting as a fundamental right and restoring such voting rights to felons and ex-felons will serve as a safety net against undue hardship and discrimination in society.

3. Findings

3.1. Voting Rights of Felons in the United States

Voting rights for felons in the United States varies depending on the state and the period in question. As of 2020, as can be seen from table one below, only in two states, Maine and Vermont, and the District of Columbia do felons never lose the right to vote. In 2021, New York passed legislation allowing felons that are not in prison at the time of election to vote. Other states maintain various positions. In 17 states, felons regain their right to vote once they are released from incarceration except in Maryland where they must be pardoned before they can vote. In 20 other states, felons can only regain voting rights automatically when they have completed incarceration, and all probation and parole. Even though California belongs to this group, those in Californian jails can vote while prison inmates in the state and those in federal prisons cannot vote until they have completed their sentences and parole.

In 11 states, felons can only vote after they have completed their sentence, fulfilled all parole obligations, and gone through a waiting period depending on the state. There may also be other conditions to fulfill such as paying off all court fees, fines, restitutions, and completing all conditions attached to their crime. In addition, they may have to be pardoned by the governor of the state for certain felony crimes like murder and sex crimes. For example, in Florida, if a felon was convicted on murder or sex charges they completely lose their right to vote except if pardoned by the governor on a case-by-case basis. Each of the 11 states in this category has

other conditions that must be fulfilled to regain voting rights (National Conference of State Legislatures (NCSL), 2020).

Table 1
Restoration of Voting Rights after Felony Convictions

Felon Voting Rights	Never Lose the right to Vote (1)	Lost Only While Incarcerated Automatic Restoration After Release (2)	Lost Until Completion of Sentence (Parole and/or Probation) Automatic Restoration After (3)	Lost Until Completion of Sentence In Some States a Post-Sentencing Waiting Period Additional Action Required for Restoration (4)
States	District of Columbia	Colorado	Alaska	Alabama
	Maine	Hawaii	Arkansas	Arizona
	Vermont	Illinois	California (2)	Delaware
		Indiana	Connecticut	Florida (4)
		Maryland (3)	Georgia	Iowa
		Massachusetts	Idaho	Kentucky
		Michigan	Kansas	Mississippi
		Montana	Louisiana	Nebraska
		Nevada	Minnesota	Tennessee
		New Jersey	Missouri	Virginia
		New Hampshire	New Mexico	Wyoming
		North Dakota	New York (5)	
		Ohio	North Carolina	
		Oregon	Oklahoma	
		Pennsylvania	South Carolina	
		Rhode Island	South Dakota	
		Utah	Texas	
			Washington	
			West Virginia	
			Wisconsin	
Totals	3	17	20	11

Note. Adapted from the National Conference of State Legislatures, (NCSL) Retrieved October, 12, 2020 from <https://www.ncsl.org/research/elections-and-campaigns/felon-voting-rights.aspx>

The estimated number of disenfranchised felons increased in line with the increase in incarcerations over the years, while some states became more restrictive over the years as they expand their restriction of felons' post-conviction (See column 4 of Table 1). Column one is the least restrictive and column 4 is the most restrictive. Florida alone accounts for 27% of the nation's disenfranchised population as at 2016. Even more disturbing is that in the same year, the ratio jumps to 48% of disenfranchised felons when considering post-conviction due to Florida's restrictive laws, (Uggen, et al., 2016).

When comparing the disenfranchised population as a percentage of the voting population in states between 1980 and 2016, increases were reported in estimated disenfranchised felons in states with the most restrictions (Uggen, Larson & Shannon, 2016) as seen in table two below:

Table 2

Comparison of Rates of Estimated Felon Disenfranchisement, as a Ratio of the Voting Population in Selected Most Restrictive States. 1980 and 2016.

State	Rate of felon disenfranchised to the voting population in 1980	Rate of felon disenfranchised to the voting population in 2016
Florida	2.6%	10.4%
Mississippi	3%	9.6%
Kentucky	2.2%	9.1%
Tennessee	0.7%	8.3%
Virginia	2.6%	7.8%
Alabama	4.9%	7.6%
Wyoming	0.4%	5.3%

Note. Adapted from Uggen, Larson and Shannon, 2016. Retrieved October, 12, 2020 from <https://www.sentencingproject.org/publications/6-million-lost-voters-state-level-estimates-felony-disenfranchisement-2016/#II.%20Disenfranchisement%20in%202016>

3. Discussion

The 10 states with the highest estimated disenfranchisement rates in 2016 are highlighted in table three. They are Florida (10.43%), Mississippi (9.63%), Kentucky (9.14%), Tennessee (8.26%), Virginia (7.81%), Alabama (7.62%), Wyoming (5.33%), Arizona (4.25%), Nevada (4.02%) and Georgia (3.23%) in that order. It is pertinent to note that they all belong to column 4 with the most restrictive policies. In table one; exceptions are Georgia (column 3) and Nevada (column 2). In 2020, for the most part, there was a slight increase in five states, a slight reduction in four, and a new entrant (Arkansas) into the top ten with the highest estimated disenfranchisement rates. Mississippi had the highest rate at 10.55%, while its rate was 9.63% in 2016. Other states with increases are Tennessee, 9.19% up from 8.26% in 2016; Alabama 8.94% up from 7.62% in 2016; Arizona with a slight increase to 4.86% from 4.25% in 2016; and Georgia 3.79%, from 3.23% in 2016. Surprisingly, Florida with the highest rate of 10.43%

in 2016 was down to 7.69% in 2020. Virginia, dropped to 6.00% from 7.81% in 2016; Kentucky to 5.92% down from 9.14% in 2016; and Wyoming down to 2.64% from 5.33% in 2016. Arkansas is a new entrant to the top 10 states with a rate of 3.97% in 2020. Nevada with a rate of 4.02% in 2016 dropped out of the top 10 states with the highest rates in 2020.

In the states with the most restrictive felony disenfranchisement policies (see columns 3 and 4 of table one above), these policies prevented an estimated 4 million of the 52.8 million voting age population (7.61%) across ten states, from voting in 2016. In 2020, though there is a reduction in the estimated number of disenfranchised felons, 3.3 million of a 49.7 million voting age population, 6.68% are still being prevented from voting. Looking at some individual states closely, in 2016, Florida had the highest number of estimated disenfranchised felons, with an estimated 1,686,318 out of the 16,166,143-voting age population in the state with a disenfranchisement rate of 10.43%. In 2020, while the number of estimated disenfranchised felons in the state reduced to 1,132,493 out of a possible voting age population of 14,724,113, those locked out of voting still represent 7.69% of the voting population. Other states with such high rates are Mississippi, Tennessee, and Alabama. In 2016, Mississippi's rate was 9.63% but this jumped to 10.55% in 2020. Tennessee had a rate of 8.26% in 2016, this jumped to 9.19% in 2020, even with a reduction in the voting age population. This trend continued with Alabama which had a 7.62% disenfranchisement rate in 2016 jumping to 8.94% in 2020. Wyoming had the lowest number of disenfranchised felons for both 2016 and 2020 respectively among the top ten states selected in table three.

Table 3

Top 10 States, Rate of Estimated Felony Disenfranchisement, as a Ratio of the Voting Population in 2016 and 2020.

2016				2020			
State	Estimated No of disenfranchised felons in 2016 (a)	Voting age population in 2016 (b)	a/b *100 in 2016 (c)	State	Estimated No of disenfranchised felons in 2020 (a)	Voting age population in 2020 (b)	a/b *100 in 2020 (c)
Alabama	286,266	3,755,483	7.62%	Alabama	328,198	3,671,110	8.94%
Arizona	221,170	5,205,215	4.25%	Arizona	233,816	4,812,764	4.86%
Florida	1,686,318	16,166,143	10.43%	Arkansas	87,187	2,195,870	3.97%
Georgia	248,751	7,710,688	3.23%	Florida	1,132,493	14,724,113	7.69%
Kentucky	312,046	3,413,425	9.14%	Georgia	275,089	7,254,693	3.79%
Mississippi	218,181	2,265,485	9.63%	Kentucky	197,672	3,338,198	5.92%
Nevada	89,267	2,221,681	4.02%	Mississippi	235,152	2,228,659	10.55%
Tennessee	421,227	5,102,688	8.26%	Tennessee	456,480	4,964,909	9.19%
Virginia	508,680	6,512,571	7.81%	Virginia	366,065	6,096,244	6.00%
Wyoming	23,847	447,212	5.33%	Wyoming	11,403	432,284	2.64%
Totals across 10 states	4,015,753	52,800,591	7.61%	Totals across 10 states	3,323,555	49,718,844	6.68%

(c) - Rate of disenfranchised felons by total state voting age population (a/b*100)

Note. Adapted from Uggen, Larson and Shannon, 2016

Retrieved November, 1, 2020, from <https://www.sentencingproject.org/publications/6-million-lost-voters-state-level-estimates-felony-disenfranchisement-2016/#II.%20Disenfranchisement%20in%202016>, and

Uggen, Larson, Shannon and Pulido-Nava, 2020.

Retrieved November, 1, 2020, from <https://www.sentencingproject.org/publications/locked-out-2020-estimates-of-people-denied-voting-rights-due-to-a-felony-conviction/>

When examining these states in the case of elections, several issues come to light. Each election cycle is different but in some election cycles, there is a state or states that decide the election by close margins. The two most recent cases in point are the 2000 election between George W. Bush and Al Gore which was decided by about 537 votes in the state of Florida, and in 2016, between Hillary Clinton and Donald Trump. In 2016, three states Michigan, Wisconsin, and Pennsylvania decided the presidential elections with about 77,744 votes (Federal Election Commission, n.d.). These three states had 44,321 (Michigan), 65,606 (Wisconsin) and 52,924 (Pennsylvania), a total of 162,851 number of disenfranchised felons as at 2016 (Uggen et al., 2016). If these felons were allowed to vote, considering their overwhelming favor of the Democratic Party, it could have changed the elections in favor of

the Democrats. These three states delivered the crucial electorate votes to clinch the presidency for the Republicans in 2016. It is important to note that in both 2000 and 2016, the Republican party won the election with the 2000 case going to the Supreme Court.

Looking at Florida which has the most restrictive felon voting rights in 2000 in particular, if the 58,000 number of disenfranchised felons in the state were allowed to vote, they could have swayed the election in favor of the Democrats. Even more disconcerting was that out of the 58,000 disenfranchised felons, 12,000 were errors, people who did not even have felony convictions but were denied the right to vote. It is also important to note according to Berman (2015) that these 58,000 voters were purged from the voting list shortly before the election. Berman (2015) analyzed the Florida purge and stated,

If 12,000 voters were wrongly purged from the rolls, and 44 percent of them were African-Americans, and 90 percent of African-Americans voted for Gore, that meant 4,752 black Gore voters—almost nine times Bush’s margin of victory—were prevented from voting. It’s not a stretch to conclude that the purge cost Gore the election (para. 10).

Therefore, we can assume and conclude that in 2016, if the 1,686,318 disenfranchised felons in Florida and the combination of 162,851 felon voters in Michigan, Wisconsin and Pennsylvania were allowed to vote, they may have also swayed the vote in favor of the Democrats (Uggen et al., 2016).

4. African American Felony Disenfranchisement

Historically, irrespective of the preferred candidates African Americans choose to vote for, black voters in some states are more political inclined than in other states (Jackson et al., 2017). For example, Colorado, Maine, North Carolina, Mississippi, and Kentucky recorded the highest turnout of African Americans voters in the 2016 presidential election compare to other states (McCann, 2020). However, with the high rate of disenfranchised felons in these states, the African American votes did not have as much impact on the 2020 election.

As shown in the tables four and five below, states with high population of African Americans have the highest felony convictions in 2016, with African Americans topping the list. Voting age population of all felons in Florida in 2016 was 2,338,940 out of which African Americans were 499,306, and 21.35% of this number are disenfranchised felons. Similar trend cut across all the states in the table. Wyoming with the lowest voting age felon population, 3702, in 2020, as seen in the table below, have African Americans occupying the highest number of the felon’s population with 1,341 convictions. Of this number 28.31% cannot vote. Interestingly, even though Wyoming has the lowest voting age felon population, the state has the highest number of disenfranchised African Americans with post-conviction restrictions.

It is interesting to note that majority of the states in the table have a high population of minorities, with African Americans topping these numbers. Needless to say, that the disenfranchised felons’ lists are highly populated by the racial minorities, of which the African Americans top list. As a result, disenfranchisement disproportionately affects racial minorities, particularly the black Americans. Invariably, the population of racial minorities in the disenfranchised felon list will have a significant effect on the outcome of minority’s votes, thus, reducing their chances of voting the candidates of their choice into policy-making political positions; a highly needed avenue to make their voice to be heard and their concerns addressed.

Table 4*States with the Highest Estimated % of Disenfranchised African American Voters in 2016*

State	No of African Americans with Felony Convictions	Voting Age Population - All felons	% Disenfranchised African Americans	<i>No of disenfranchised African Americans with Post Conviction - Cannot vote</i>	<i>% No of disenfranchised African Americans with Post Conviction - Cannot vote</i>
Kentucky	69,771	266,806	26.15	53,902	20.20
Virginia	271,944	1,241,868	21.90	217,759	17.53
Florida	499,306	2,338,940	21.35	418,224	17.88
Tennessee	173,895	817,457	21.27	132,042	16.15
Wyoming	966	5,621	17.19	712	12.67
Mississippi	127,130	801,471	15.86	94,325	11.77
Alabama	143,920	952,671	15.11	113,629	11.93
Arizona	25,492	214,412	11.89	12,645	5.90
Nevada	21,568	183,389	11.76	13,566	7.40

Note. Adapted from Uggen, Larson and Shannon, 2016. Retrieved November, 3, 2020 from <https://www.sentencingproject.org/wp-content/uploads/2016/10/6-Million-Lost-Voters.pdf#page=17>

Table 5*States with the Highest Estimated % of Disenfranchised African American Voters in 2020*

State	No of African Americans with Felony Convictions	Voting Age Population - All felons	% Disenfranchised African Americans	No of disenfranchised African Americans with Post Conviction - Cannot vote	% No of disenfranchised African Americans with Post Conviction - Cannot vote
Wyoming	1,341	3,702	36.22	1,048	28.31
Tennessee	176,368	814,576	21.65	142,415	17.48
Mississippi	130,501	817,493	15.96	95,980	11.74
Virginia	190,605	1,195,603	15.94	139,970	11.71
Alabama	149,716	962,519	15.55	118,478	12.31
Florida	338,433	2,194,488	15.42	255,066	11.62
Kentucky	38,665	256,024	15.10	25,157	9.83
*South Dakota	962	6,999	13.74	-	-
Arizona	26,914	212,026	12.69	13,078	6.17
Iowa	7,263	63,856	11.37	1,130	1.77
Nebraska	6,126	57,843	10.59	3,468	6.00

*Note. South Dakota does not have Post-Conviction Disenfranchisement. See Table One

Adapted from Uggen, Larson, Shannon and Pulido-Nava 2020

Retrieved November, 3, 2020 from <https://www.sentencingproject.org/publications/locked-out-2020-estimates-of-people-denied-voting-rights-due-to-a-felony-conviction/>

5. Conclusion

There is a racial dimension to felon disenfranchisement that has remained controversial. Since minorities, particularly African Americans are disproportionately incarcerated, their capacity to influence election outcomes have been largely reduced. Suppression of African American votes has become a recurring theme during election cycles. Studies have demonstrated that felon disenfranchisement disproportionately affects African Americans more than other racial groups. For example, one in 16 African Americans is unable to vote due to felon disenfranchisement, a rate 3.7 times higher than that of other racial groups, while over 6.2 percent of African Americans of voting age are disenfranchisement in comparison to 1.7 percent for non-African American population (Uggen et al., 2020). Latinos are disenfranchised less at 2 percent of the voting population (Uggen et al., 2020).

Scholars have long been curious about whether the course of history could have been different in some of the past presidential, state and indeed local election outcomes if disenfranchised felons had been able to vote which would have probably favored the Democratic Party more because of their large support among minorities and the poor (Finetti, Ramirez & Dwyre, 2020). The rising population of minorities whose percentage of the American population is about 40 percent has made over-reliance on white votes by the Republican Party an increasingly difficult pathway to achieving electoral victory in an ever-diversifying country. Recent population estimates suggest that four in about 10 Americans identify as non-white (United States Census Bureau, 2020). Without broadening its political agenda to accommodate minority interests, the weaponization of felon disenfranchisement and other voter suppression strategies will appear to be the key strategic means for the Republican Party to achieve electoral success in the near future.

The 2020 presidential election, for instance, was largely fueled by high turnout among minorities so much so that the different voter suppression strategies employed by the Republican government could not just turn the electoral tide in their favor. Interestingly, complaints of election fraud by the Republican Party largely targeted states which had large African American voter turnout and it is unclear to what extent the felons in those states helped to swing the election in favor of President Joe Biden who had seven million more votes than Donald Trump. The large turnout in the 2020 presidential election included a significant number of ex-felons from states that allowed them to vote. But it is unclear how significantly ex-felons voting affected the outcome of the election. Nonetheless, voting rights continue to be a hot-button topic in the United States as Republicans and Democrats joust for advantage in their quest for political power. According to the Brennan Center, as of February 19, 2021, 253 bills that seeks to restrict voting access that included provisions expanding felon disenfranchisement in 43 states had been introduced, while 704 bills that seek to expand voting access in a different set of 43 states have been put forth (Brennan Center, 2021). From the foregoing, it appears that the raging controversy over felon disenfranchisement is unlikely to abate anytime soon.

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Research Article

Capital Structure and Financial Performance of Manufacturing Companies in Nigeria

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Abstract

This empirical research aimed at establishing the effect of capital mix on the financial performance of ten chosen manufacturing firms among companies listed on the Nigerian Exchange (NGX) for twelve years period, 2009 to 2020. Secondary data were extracted from the audited accounts and reports of the chosen firms. This research employed descriptive and inferential statistical analyses for data estimation. The results of this work reveal that debt in relation to equity (DER) has insignificant adverse effect on return on asset (ROA) of the selected firms. Contrarily, DER has a direct significant effect on return on equity (ROE) and a direct insignificant effect on the net profit margin (NPM) of the sampled manufacturing companies. Total debt to total assets (TDTA) has positive but insignificant effect on all the financial performance indicators. The study also found that short-term debt to total assets (SDTA) and long-term debt to total assets (LDTA) have negative negligible effect on all the dependent variables. The outcomes of the study imply that the management of these companies need to always be guided appropriately in their capital mix decisions in order to optimize their financial performance. Therefore, the main thrust of this study is that optimal capital structure is essential for the profitability of manufacturing companies in Nigeria.

Keywords: Debt Equity Ratio, Return on Assets, Return on Equity, Regression Analysis.

JEL Codes: M21, M42, G3

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Araştırma Makalesi

Sermaye Yapısı Yönetimi ve Nijerya'daki İmalat Firmalarının Finansal Performansına Etkileri

Clement Olatunji Olaoye¹ & Olufemi Dadeo Adesina²

Öz

Bu ampirik çalışma, 2009'dan 2020'ye uzanan on iki yıllık bir süre içinde Nijerya Borsası'nda (NGX) işlem gören şirketler arasından seçilen on imalat firmasının sermaye yapısının finansal performansı üzerindeki etkisini ortaya koymayı amaçlamıştır. Bu çalışma için seçilen firmaların beyan ve raporları kullanılmıştır. Bu araştırmada veri analizi için betimsel istatistikler, korelasyon ve panel veri regresyon analizleri kullanılmıştır. Bu çalışmanın sonuçları, borç özsermaye oranının (DER), seçilen firmaların aktif getirisi (ROA) üzerinde olumsuz ve önemsiz bir etkiye sahip olduğunu ortaya koymaktadır. Aksine, borç özsermaye oranı (DER), Nijerya'daki örneklenen imalat firmalarının özkaynak karlılığı (ROE) üzerinde pozitif anlamlı bir etkiye ve net kar marjı (NPM) üzerinde pozitif ancak anlamsız bir etkiye sahiptir. Toplam borcun toplam varlıklara oranı, tüm finansal performans göstergeleri üzerinde pozitif ancak anlamsız bir etkiye sahiptir. Çalışma ayrıca kısa vadeli borcun toplam varlıklara (SDTA) ve uzun vadeli borcun toplam varlıklara (LDTA) göre tüm bağımlı değişkenler üzerinde negatif ve anlamsız bir etkiye sahip olduğunu bulmuştur. Bu çalışmanın bulguları, bu şirketlerin yönetiminin finansal performanslarını optimize etmek için sermaye yapısı kararlarında her zaman uygun şekilde yönlendirilmesi gerektiğini göstermektedir. Bu nedenle, bu çalışmanın ana fikri, Nijerya'daki imalat firmalarının karlılığı için en uygun sermaye yapısının gerekli olduğudur.

Anahtar Kelimeler: Borç Özkaynak Oranı, Aktif Kârlılığı, Özkaynak Kârlılığı, Regresyon Analizi.

JEL Kodlar: M21, M42, G3

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1. Introduction

Competition among manufacturing companies is very keen and vigorous in this era of globalization. According to Wulandari, Paminto and Kusimawardani (2022), Long-term competitiveness is influenced by a strong capital structure. For any company to compete favourably in this era, it must be well focused on three decisions areas. A dividend policy decision, an investment decision, and a financing decision. There is a strong connection among the three types of decisions. The company's investment decisions are crucial. If they are not taken properly, it will affect every other decision. Management must consider different options before borrowing money or using its own capital. (Endri, Mustafa & Rynandi, 2019). A financing decision is based on determining the most appropriate financing mix or capital structure. Financing decisions are influenced by decisions regarding fixed assets and current assets. Company sustainability and growth are dependent on dividend policy decisions. A company's ability to pay dividends from earnings is important to shareholders. The company performance in financial terms will be enhanced if it makes sound decisions in these three areas. This will enable it to meet its objectives of profit maximization and wealth creation for its shareholders as well as meeting the needs of other stakeholders. Companies determine their capital structure by analyzing how readily available funds are, how capable they are to bear risk, and how much cost and benefit are derived from each funding source. Management can proceed once the debt and equity mix has been determined. (Endri, Mustafa & Rynandi, 2019). A measure of the DER indicates extensiveness to which the borrowed funds or liabilities and equity support the assets of a business. An entity with a significant proportion of debt will be highly geared. As a result, creditors are at an increased risk of default if the ratio is high. An appropriate mix of equity and debt must be used to structure capital. Financial performance and the long-term survival of a company are inextricably linked to an optimal capital structure.

According to Barbosa & Louri (2005), profitability measures the company's overall financial indicators. ROA indicates the efficient use of company's assets in generating profit. Higher returns are indication of effective management of assets of the company. Net profit attributable to shareholders is known ROE. It is essential to state that shareholders are interested in higher ROE. The net profit margin (NPM) measures how much profit a company has per unit of corporate turnover. The higher ratio, indicates more profitability to the company. These profitability indicators are of interest to the management, investors and other stakeholders of the company.

Different researchers have produced divergent results in their capital structure empirical analysis globally. The reasons for the divergence might be as a result of sample size, selected firms and statistical analyses adopted. It could also be as a result of variables used as the dependent and independent variables. Debt financing has been shown to positively impact the performance of manufacturing companies in several studies, including Leon (2013), Nirajimi and Priya (2013), Addae, Nyarko and Hughes (2013), Aliu (2010), Simeon-Oke and Afolabi (2011), Akinyomi (2013), Zeitun and Tian, 2007, Akingunola, Olawale and Olaniyan (2018), Mukunmbi, Eugene and Jinghong (2020) and Abdullah and Tursoy (2021). As opposed to this, Onaolapo and Kayode (2010), Lawal, Edwin, Kiyanjui and Adisa (2014), Akeem, Terer, Kiyanjui and Kayode (2014), Abeywardhana (2015), Deepika (2015), and Appah, Okroafor and Bariweni (2016), Uremadu and Onyekachi (2018) have found that debt negatively impacts financial performance of firms. There have been other studies with varying findings regarding the impact of different components of an organization's capital structure and market value, they are Ashraf, Ameen and Shahzadi (2017), Oke, Saheed and Quardri (2018), Akinleye and Akomolafe (2018), Dinh and Pham (2020), Winata, Endri, Yuliantin and Hamid (2020), Edri,

Ridho Marlapa and Susanto (2021), Opoku-Asante and Shcarifzadah (2022), Dsouza, Rabbani, Nawaz, and Demiraj (2022), Kurniashi, Rustam, Heliantono and Endi (2022).

The study needs to be conducted in Nigeria incorporating all the elements of capital structure both in the short term and long term. None of the previous studies incorporated these variables in single study. Also, none of the previous studies incorporated ROA, ROE and NPM in a study. The impact of capital structure on each of these variables will be investigated in this study. In addition, none of the previous studies was extended to year 2020 except Kurniashi et al (2022) which was carried out in Indonesia. These gaps in the literature are addressed in this study.

2. Literature Review

2.1. Conceptual Literature

2.1.1. Capital Structure

In a company, long-term debt is combined with equity in the capital mix, as described by Brealey, Myers, and Marcus (2009), while Abor (2005) considers it as a blend of various and distinct financial securities instruments. Nirajini and Priya (2013) have a broad perspective of the concept; therefore, they included bank loans, debentures, preference share, convertible loan and ordinary shares and reserves, bank overdraft, trade creditor as components of capital. A company's capital structure is influenced by its financial strategy regarding debt financing and equity financing, according to Ross, Westerfield, and Jordan (2001). External and internal capital sources make up an organization's capital structure.

When investors understand the capital structure, they can determine how risk and return are balanced (Sulindawati, Yuniarta, & Purnamawati, 2017). DER ratio measures the amount of debt compared to equity capital financing in a corporate entity. By having a significant proportion of debt, it indicates the greater chance of defaulting. Proportion of total debt in financing the assets (TDTAR) can be calculated. In contrast, SDTAR reveals the proportion of short-term funding in the company's assets. LDTAR reveals how long-term funding supports asset financing, while SDTAR determines how much short-term funding supports asset financing. These elements will have divergent effect on the company's profitability.

2.1.2. Financial Performance of the Company

Revenues are generated by the efficient use of a company's resources. Decisions made regarding business development, managerial control, and asset acquisition will be guided by the analysis of financial performance. Performance evaluation also reflects a company's monetary achievements over time. Comparing similar firms in the same industry can also be done based on such achievements. Financial ratios and market data can be used to determine shareholders values from time to time through clear financial performance analysis (Zeitun, & Tian, 2007).

Companies can measure their financial performance with relative and absolute metrics of their operational and administrative expenditures and income and revenue. A number of indicators can be used to measure performance. ROE and ROA are commonly cited measures of performance in most studies.

3. Theoretical Review

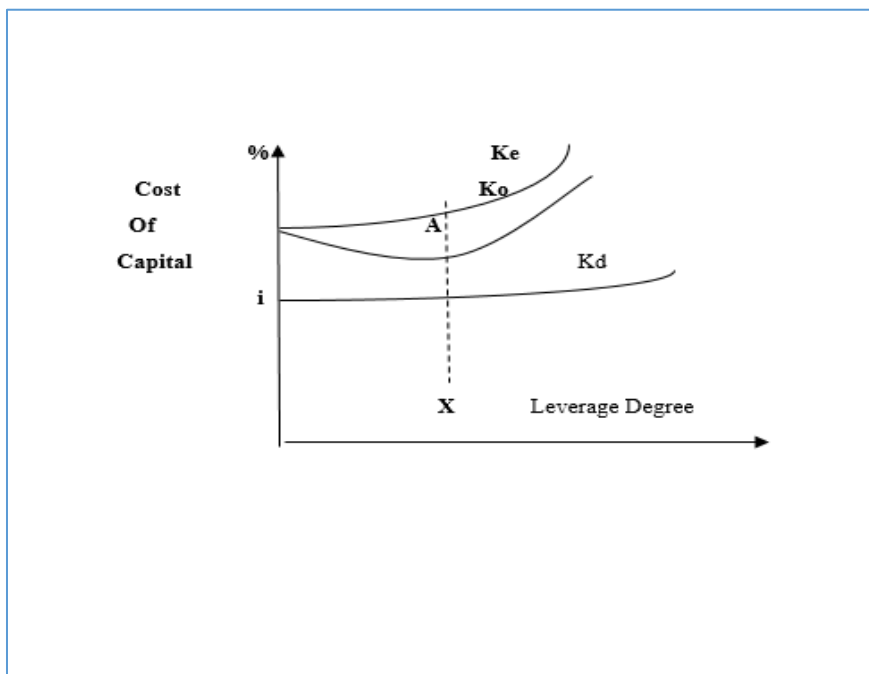
3.1. Conceptual Literature

3.1.1. Capital Structure Traditional Theory Approach

According to the traditional theorists an optimal capital mix is at the point where equity financing's marginal cost and debt financing's marginal cost are the same. Weighted average cost of capital (WACC) has reached the minimum level that maximizes asset market value at this point. However, the theory believed that if the proportion of debt continues to increase, it will get to a stage where it will increase the financial risk which in turn will influence the decision of ordinary shareholders in requesting for higher returns on their investments.

Figure 1

M&M Efficient Market Structure and with Tax Hypothesis



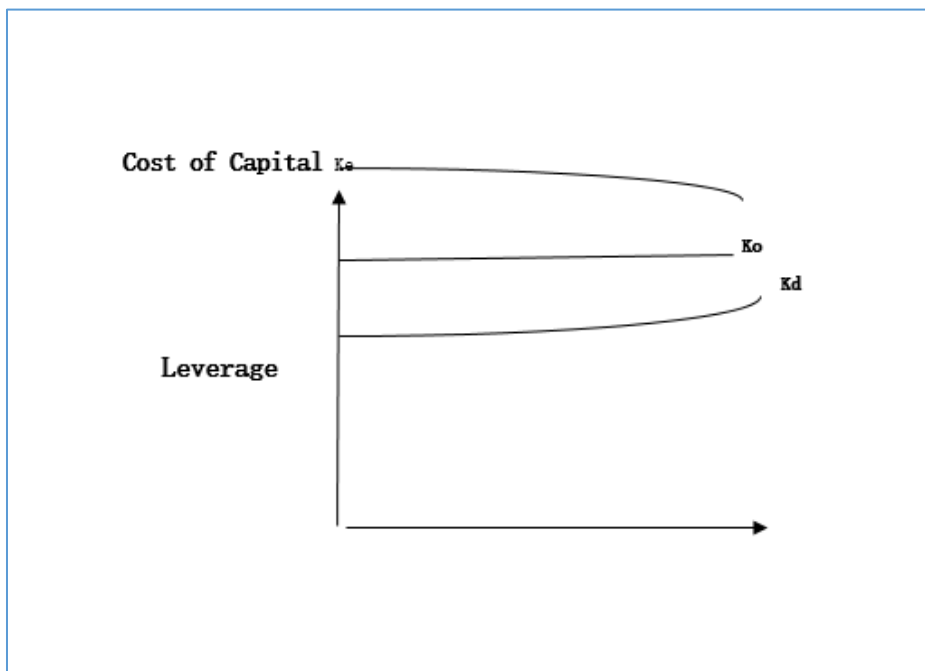
Note. Pike and Neale, 2009, p.498

3.1.2. Modigliani and Miller Efficient Market Structure and with Tax Hypothesis

A market structure that is efficient was proposed in 1958 by Modigliani and Miller with assumptions that there would be no taxes, absence of bankruptcy cost and asymmetric information. These assumptions neutralize the effect of financing options. Therefore, raising capital through debt has no effect on capital structure. In 1963, M&M admitted that tax reduces the cost of a company's debt. Further, the company's market value will be maximized at 100% gearing as the WACC will be reduced as gearing increases.

Figure 2

M&M Theory of Cost of Capital and Leverage



Note. Moh'd Zira Al-Hadid 2017, p.12

3.1.3. Trade off Theory

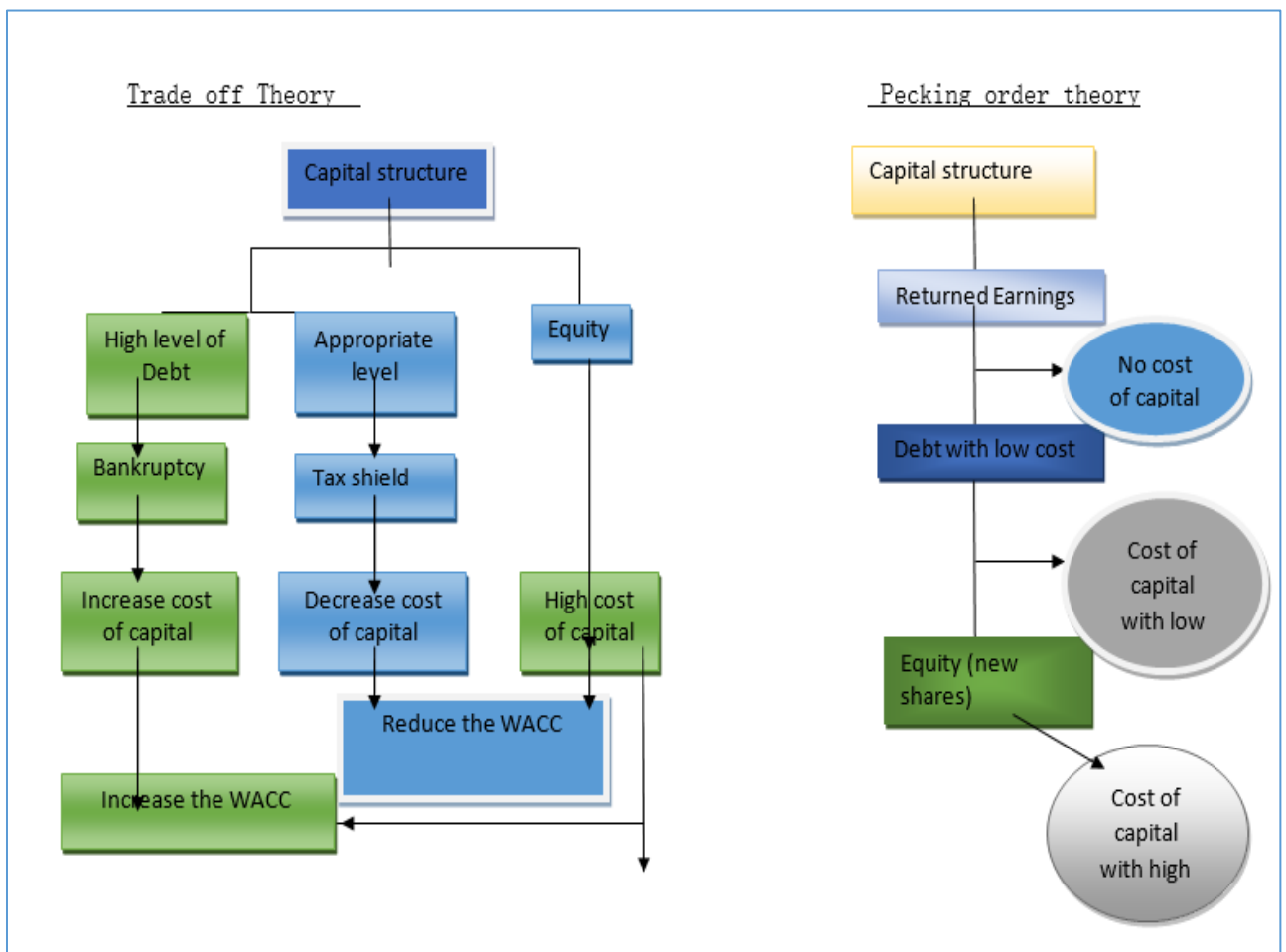
Kraus and Litzberger developed the trade-off theory which states that an efficient capital mix depends on the benefits that can be derived from a particular source of financing as well as the costs involved. For instance, the debt financing has tax relief benefits while bankruptcy costs should be considered along the line. Considering the cost-benefit analysis of the option, decisions on capital mix will have a strong effect in influencing the company's performance.

3.1.4. Pecking Order Theory

Pecking order theory was modified by Myers and Majluf modified in 1984. This theory emphasized that there should be a specific order of sourcing for funds. The theory places emphasis on the cost implications and degree of asymmetric information. Preference is given to internal sources which are reserves and other earning retained. The next best option is debt financing, while financing through equity should be considered as the last option. It is established that where the degree of asymmetric information is higher, the cost of funding will be higher.

Figure 3

Trade-off Theory and Pecking Order Theory



Note. Moh'd Zira Al-Hadid 2017, p.14

3.2. Empirical Literature

Zeitun & Tian (2007) studied the capital structure of one hundred and sixty-seven Jordanian companies (167) over a period of 15 years spanning 1989-2003. Market value was significantly positively impacted by Debt with a short maturity date but ROA and ROE were negatively affected by total debt proportion in total capital. Akinyomi (2013), in the capital mix structure of three manufacturing companies selected at foods and beverages sector of consumer goods on the Nigerian Stock Exchange. Regression analysis, indicates that debt/equity, short-

term financing and long-term financing are significantly positively correlated to financial performance indicators. Food and beverages sector in Nigeria was examined in the study.

A study of 32 Nigerian listed firms and the effects of capital structure on their financial performance were assessed using panel data regression analysis by Appah, Okoroafor and Bariweni (2016). During the study period, the selected companies' annual financial statements were analyzed. Based on regression analysis, STD, LTD and TD all negatively affect the ROA and ROE of the selected companies. In another study by Ashraf, Ammen, and Shahzadi, K (2017), capital structure was examined as a factor of profitability in 18 cement companies. Performance indicators for cement companies were negatively impacted by long-term debt ratios, but ROA and ROE were positively impacted. ROE was significantly affected by the debt equity ratio, but ROA was not. Compared to total assets, short-term assets positively impacted ROA and ROE. It is interesting that this study produced mixed results regarding cement companies' profitability in Pakistan.

Akingunola, Olawale, and Olaniyan (2018). A study conducted on twenty-one Nigerian companies from 2011 to 2015 found a direct and significant effect of short-term debt on the profitability of the companies examined. Similarly, Uremadu and Onyekachi (2018) examined how corporate capital structures impact on the performance indicators of companies in consumer goods in Nigeria. Regression analysis indicates that DER has no significant effect on ROA when compared to LDTA.

Oke, Saheed, and Quadri (2019) examined capital structure mix of six conglomerate firms on the Nigerian Stock Exchange from 2008 to 2017. SDTA significantly influenced ROA for the companies. Accordingly, short-term debt financing is the most effective way for conglomerate companies to finance their assets. Akinleye and Akomolafe (2019) carried out research on the appropriate capital mix for some companies used in their study. The results showed that long-term debt financing had a significant positive effect on the profitability of the selected companies, whereas short-term debt financing had a significant negative impact. Profit after tax was significantly influenced by share capital, with a coefficient, while share premiums had a negligible impact.

Mukumbi, Eugene, and Jinghong (2020). Based on the results, the selected companies' financial performance was positively influenced by their capital structure. This would indicate that the financial performance of firms increased as debt financing increased. According to the study, debt financing should be a greater than equity financing for improvement in financial performance and increase in shareholder wealth. Also, Dinh and Pham (2020) investigated capital mix and its effect on the profitability of thirty (30) pharmaceutical companies listed in Vietnam. The company's annual reports from 2015 to 2019 were analyzed to collect secondary data. ROE was negatively affected by equity financing using least square regression as the estimation model. Conversely, DER, TDTA, and LDTA, all significantly affect ROE. The study supports the trade-off theory of capital mix structure. Pharmaceutical companies are the only ones included in this study. According to Winata, Endri, Yuliantin, and Hamid (2020), capital mix structure affects the value of listed companies on the Indonesia Stock Exchange. DER and TDTA are used to measure capital structure. Therefore, debt to equity negatively affected the value of selected companies.

According to Abdullah and Tursoy (2021) on non-financial German companies that were examined over a 25-year period. Regression showed the significant effect of capital structure mix on the financial performance of the selected companies. Low interest rates and

lower debt costs contributed to this. The trade-off theory therefore matches capital structure. A study conducted by Endri, Ridho, Marlapa, and Susanto (2021) examined forty-two listed mining companies on the Indonesian stock exchange. As independent variables, DER, DAR, LDTE, LDTC, and growth are used to determine the capital structure. ROA and EPS were positively but insignificantly affected by DER, whereas ROE was negatively impacted; ROA and EPS were significantly negatively affected by DAR, but ROE was significantly positively affected by DAR; ROA and EPS were significantly positively affected by LDTC. ROE was significantly negatively affected by LDTC, and EPS was insignificantly positively affected by LDTC. It significantly affected ROE and EPS, but had no significant impact on ROA. In terms of ROA, ROE, and EPS, growth has a significant positive impact.

According to Opoku-Asante, Winful, Sharifzadeh, and Neubert (2022), the capital structure of some Nigerian and Ghanaian companies was associated with their financial performance. Both Ghanaian and Nigerian companies achieve similar results. In this study, only total debt was found to be negatively correlated with financial performance. Debts can result in poor profitability. Using seventy-two (72) telecommunication companies in the United States from 2012 to 2020, Habibniya, Dsouza, Rabbani; Nawaz and Demiraj (2022) examined the impact of capital structure on profitability using (ROA) and (ROE) measured by total liabilities to total assets (TLsTAs) and total equity to total assets (TETAs). TLsTAs significantly impacted ROA at 1% significance level, TLsTAs had a statistically significant positive effect on ROE. The results are complicated and mixed. In their research, Kurniashi, Rustam, Heliantono and Endri (2022) analyzed the effect of capital mix structure and cost of capital and firm value for the period 2013-2020, using the financial data of selected pulp and paper companies in Indonesia. The study reveals capital mix affects firm value positively.

3.2.1. Gaps in the Empirical Literature Review

Most of the earlier studies on capital mix structure analysis commonly used ratios are debt to equity, and debt to assets ratio. This study segregates capital mix structure into debt/equity ratio, debt asset ratio, short term debt and long-term debt to total assets ratios. Also, none of the previous studies used ROA, ROE and NPM in a study. All these performance indicators will be examined in conjunction with the capital structure in this study. These financial indicators are of vital importance to all stakeholders, but investors and management need them the most. A study conducted in Indonesia, Kurniashi et al (2022), is the only previous study to extend to 2020. Accordingly, this study examines ten Nigerian manufacturing companies that are involved in consumer goods, industrial goods, and health care covering a twelve-year period from 2009 to 2020. These companies were chosen because they manufacture essential goods that are necessary for the well-being and survival of the people. A second reason for selecting them was their availability of financial data throughout the period.

4. Methodology

4.1. Sampling Technique and Data Collection

In this research work, secondary data were extracted from audited accounts of the selected manufacturing firms. The sample for consumer goods is six (6), Industrial goods two (2), and health care two (2). These companies were purposely selected among the firms listed on the Nigerian Stock Exchange because of their significance in providing or manufacturing

essential goods which are necessary for the well-being and survival of the populace. Availability of their financial data throughout the period under consideration is another reason for their selection.

4.2. Theoretical Framework

The theory upon which this study is based is Trade-off theory. It is expected that financing business using debt is expected to reduce the cost of capital because of tax savings which in turn improves business performance. It is also expected that the rate of returns will be greater than the cost of debt, therefore with the use of debt, profitability is expected to increase.

Model Specification and Measurement

Model Specification

$$ROA = f(\text{DER}, \text{TDTA}, \text{SDTA}, \text{LDTA}) \dots\dots\dots (1)$$

$$ROE = f((\text{DER}, \text{TDTA}, \text{SDTA}, \text{LDTA})) \dots\dots\dots (2)$$

$$NPM = f((\text{DER}, \text{TDTA}, \text{SDTA}, \text{LDTA})) \dots\dots\dots (3)$$

In order to estimate the coefficients of independent variables, the panel data regression is expressed in linear form as follows:

$$ROA_{it} = \beta_0 + \beta_1 \text{DER}_{it} + \beta_2 \text{TDTA}_{it} + \beta_3 \text{SDTA}_{it} + \beta_4 \text{LDTA}_{it} + U_{it} \dots\dots\dots (4)$$

$$ROE_{it} = \beta_0 + \beta_1 \text{DER}_{it} + \beta_2 \text{TDTA}_{it} + \beta_3 \text{SDTA}_{it} + \beta_4 \text{LDTA}_{it} + U_{it} \dots\dots\dots (5)$$

$$NPM_{it} = \beta_0 + \beta_1 \text{DER}_{it} + \beta_2 \text{TDTA}_{it} + \beta_3 \text{SDTA}_{it} + \beta_4 \text{LDTA}_{it} + U_{it} \dots\dots\dots (6)$$

Where:

i = cross-sectional

t = time series

β_0 = Intercept or the constant parameter;

$\beta_1 - \beta_4$ = are the shift parameters;

U = Stochastic error term.

ROA, ROE and NPM are dependent variables as proxies for performance measurements. While, DER, TDTAR, SDTD are proxies for capital structure. These variables were selected as financial metrics because they are critical to decision making by various stakeholders: shareholders, managements, creditors, bankers, investors, statutory regulators and others.

4.2.1. 'A-priori' Expectation

The 'a priori' expectation in the models is that debt equity ratio is expected to have a direct impact on the financial performance. It is equally expected that total debt to total assets, long-term funding and total assets will be positively related to performance. This is based on the assumption that the capital structure is appropriately mix with equity and debt. The effect of short-term duration debt may be positive or negative effect. This depends on the magnitude of the amount sourced from short-time to finance the assets of the company. Thus it is expressed as : $\beta_1, \beta_2, \beta_4 > 0$

Table 1*Measurement of Variables*

ROA	Net Profit after taxes/total assets	Dependent Variable
ROE	Net Profit after taxes/ Shareholder Equity	Dependent Variable
NPM	Net Profit after taxes/Turnover	Dependent Variable
DER	Debt/Equity	Independent Variable
TDTA	Total Debt/Total Asset	Independent Variable
SDTA	Short-term Debt/Total Asset	Independent Variable
LDTA	Long-term Debt/Total Asset	Independent Variable

Note. Authors Compilation 2021

4.2.2. Data Analysis Methods and Estimation Techniques

In the study, cross-sectional and time series data were used in a balanced panel dataset. The estimation models are pooled ordinary least squares (OLS), fixed effect models, and random effect models. Hausman specification tests will be conducted to determine the appropriate model for the estimation of coefficients. It may be appropriate to use an OLS model when there are no unique characteristics among companies. In cross-sectional analyses, fixed effect models are used when the unique features of companies do not change over time. An analysis of cross-sectional companies with systematic random effects will be conducted using random effect models if the companies' unique, time-constant features are uncorrelated with their independent variables.

4.2.2.1. Fixed Effect Panel Data

The equation for the fixed effects model becomes:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} \quad [\text{eq.1}]$$

4.2.2.2. Random Effect Panel Data Regression

$$Y_{it} = BX_{it} + \alpha_{it} + U_{it} + \varepsilon_{it} \quad [\text{eq.2}]$$

5. Presentation and Discussion of Results

5.1. Presentation

5.1.1. Descriptive Statistics

Table 1 below presents the descriptive statistics. The average ROA is 0.0865191 equivalent to 9%, while the mean of ROE is 0.2149472 representing 21%. The figure of 0.3768599 for NPM represents 38% gross profit margin on the average. The DER is 1.45:1. The average TDTAR is 0.53:1. SDTAR is 0.2022715:1, LDTAR debt is 0.3329034:1. The maximum ROA is 0.2795998, while 1.338432, 29.82333, 7.403083, 0.880996, 0.674413 and 0.7382042 are for ROE, NPM, DER, TDTAR, SDTAR and LDTAR, respectively.

Table 2

Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
ROA	120	0.0865191	0.0958604	-0.1804474	0.2795998
ROE	120	0.2149472	0.2705338	-0.5109267	1.338432
NPM	120	0.3768599	2.717123	-0.268242	29.82233
DER	120	1.45251	1.118644	0.2420378	7.403083
TDTAR	120	0.535155	0.146077	0.1948715	0.880996
SDTAR	120	0.2022715	0.1244715	0.0378208	0.674413
LDTAR	120	0.3329034	0.1569491	0.0173689	0.7382042

Note. Authors Compilation 2021

5.1.2. Correlation Analysis

Table 2 below presents the correlation analysis. There exists a strong positive relationship of 0.842446 between ROA and ROE. Also, there is a very weak positive relationship of 0.023507 between ROA and NPM. Also, there are weak positive correlations of -0.052086, 0.009956, 0.043833, and a very weak negative correlation between ROA and DER, TDTAR and SDTAR, and LDTAR, respectively. On the relationship among ROE and other

variables, there are moderate positive relationships of 0.413655, 0.301922, between ROE and DER, TDTAR, respectively. There is a weak direct positive relationship of 0.27149 and 0.065669 between ROE, SDTAR, and LDTAR respectively. Weak negative relationships was established between NPM and the DER, TDTAR and LDTAR, whereas a weak positive relationship was discovered between NPM and SDTAR.

Table 3

Correlation Matrix

	<i>ROA</i>	<i>ROE</i>	<i>NPM</i>	<i>DER</i>	<i>TDTAR</i>	<i>SDTAR</i>	<i>LDTAR</i>
ROA	1						
ROE	0.842446	1					
NPM	0.023507	-0.00648	1				
DER	0.052086	0.413655	-0.09076	1			
TDTAR	0.009956	0.301922	-0.17064	0.860829	1		
SDTAR	0.043833	0.27149	0.043831	0.325272	0.335243	1	
LDTAR	-0.0256	0.065669	-0.19359	0.543193	0.664745	-0.48099	1

Note. Authors Compilation 2021

5.1.2. Regression Panel Data Analysis

MODEL 2 - ROA: f (DER, TDTAR, SDTAR, LDTAR)

Table 4 below presents the random effect model of the panel data. It shows a negative coefficient of -0.005411 for DER. The implication is that every N1 increase in DER leads to a fall in ROA by -0.005411k in ROA. The probability value of 0.657 confirmed the statistical insignificance of the coefficient. There is a positive coefficient of 11.0294 for TDTAR. However, there are negative coefficients of -11.13071 and -11.00871 for SDTAR and LDTAR, respectively. The probability values indicate that capital structure mix had no significant effect on ROA.

MODEL 2 - ROE: f (DER, TDTAR, SDTAR, LDTAR)

In the table 4 below the Random effect model 2 indicating a positive coefficient of .0925067 for DER. The probability value of 0.007 confirmed the statistical significance of the coefficient. In the same direction, there is a positive co-efficient of 12.4309 for TDTAR with ROE. However, there are negative coefficients of -12.64258 and -12.71858 for SDTAR and LDTAR with ROE, respectively. Apart from the DER, all other coefficients are statistically insignificant.

MODEL 3 - NPM: f (DER, TDTAR, SDTAR, LDTAR)

In the table 4 below the Random effect model indicating a positive coefficient of .497372 for DER with NPM. The probability value of 0.253 confirmed the statistical insignificance of the coefficient. In the same direction, there is a positive insignificant coefficient of 252.3028 of TDTAR with NPM. However, coefficients of -257.2123 and -259.4546 of SDTAR and LDTAR, respectively, confirmed inverse relationship of SDTAR and LDTAR with the NPM. The negative relationships are not statistically significant with the probability value of 0.773 and 0.711, respectively.

Table 4*Panel Data Regression Results*

CONST.	ROA	ROE	NPM
Coefficient	.1081993	.2194094	3.033242
Prob.	0.012	0.060	0.022
DER			
Coefficient	-0.005411	0.0925067	0.497372
Prob.	0.657	0.007**	0.253
TDTAR			
Coefficient	11.0294	12.4309	252.3028
Prob.	0.632	0.849	0.777
SDTAR			
Coefficient	-11.13071	-12.6058	-257.2123
Prob.	0.629	0.847	0.773
LDTAR			
Coefficient	-11.00871	-12.71859	-259.4546
Prob.	0.633	0.846	0.771
No of Observation	120	120	120
No of Groups	10	10	10
R-Square	0.4063	0.4596	0.4286
Wald Test	5.84	12.50	6.28
P-square	0.2115	0.0140**	0.1790
Hausman Test	2.93	5.01	1.90
Chi-square p-value	0.5688	0.2863	0.7534
Estimation Model	Random effect	Random effect	Random effect

Note. Authors Compilation 2021.

Sig at 5% level, ** ROA, ROE, NPM, DER, TDTAR, SDTAR, LDTAR

6. Discussion of Results

As indicated in the descriptive statistics, the average ratio is above the ideal ratio. It means that the firms were over-leveraged or high-gearred. The implication here is that the companies are exposed to more risks which will necessitate an increase in demand for higher returns by the providers of funds. The companies are obliged to pay the interest on borrowed fund whether the business is profitable or not. Companies are burdened by the increase in interest rates. In addition to the average, over half of the assets were financed by total debt. A business' debt-to-assets ratio shows how much debt supports its assets. Present or future creditors are more at risk when the ratio is higher. About 20 percent of the assets value were financed on a short-term basis. Based on the companies' total assets, this reflects their short-term financing strategy. One-third of LDTAR is financed by long-term funds, which translates to 33 percent of total assets. A conservative financing strategy was adopted by these companies.

6.1. The Effect of Capital Structure on Return on Assets (ROA)

6.1.1. The Effect of DER on ROA

A statistically insignificant negative effect of DER was observed on ROA in the study. According to traditional theory of capital structure, if the leverage (gearing) level should increase beyond a reasonable level, it could worsen the effect of DER on ROA. The present study is in line with the theory of traditional capital structure in which debt financing increases capital costs and financial risk. Consequently, the company's financial performance suffers. The study aligns with Lawal, Edwin and Adisa (2014) and Akeem, Kiyanjui and Kayode (2014) and Deepika, (2015) that total debt/total equity ratios had adverse effects on firms' profitability. This result, however, disagrees with the result of Edri *et al* (2021) who found a positive insignificant effect of DER on ROA.

6.1.2. The Effect of TDTAR, SDTAR and LDTR on ROA

A positive but insignificant relationship was established between ROA and TDTAR. This outcome agrees with Akinyomi (2013). However, there are likelihood of two options, if the long-term funding is properly structured, the financial performance will be significantly improved, otherwise it will get to a level whereby the profitability will be eroded because of the high risk associated with debt financing. Traditional capital structure theory is based on this argument. However, there was a negative insignificant effect of SDTAR, LDTR, on ROA. These results are in agreement with the outcome of the study by Uremadu and Onyekachi (2018). If the trends continue, significant adverse consequence of capital mix on ROA is eminent. It is therefore advised for companies to carefully manage the debt proportion in asset financing.

6.2. The Effect of Capital Structure on Return on Equity (ROE)

6.2.1. The Effect of DER on ROE

The study found a direct correlation between DER and ROE. Thus, increasing debt equity ratios leads to increasing ROE. An effect of positive significance is statistically significant. Therefore, debt is better for financing capital than equity, according to the Pecking order theory. Debt financing is argued to be less expensive than equity financing. According to the study, debt financing reduces costs through its tax yield effect. It is possible that this is why DER increases ROE in a positive way. This study agrees with those of Leon (2013) and Nirajini and Priya (2013), and Akinyomi, (2016). Opoku-Asate, (2022) also found a positive effect of capital structure on ROE. This result contradicts that of Edri *et al* (2021) who found a negative significant impact of DER on ROE.

6.2.2. The Effect of TDTAR, SDTAR and LDTR on ROE

There is a positive effect of TDTAR on ROE. Although, the effect is not significant. However, if there is appropriate long-term financing structure, the shareholders will benefit by improving their return. This study is in consonance with Dinh and Pham (2020), Abdullah and Tursoy (2021) who found positive impact of capital structure on ROE, however, their results are significant statistically which is against this study that established a positive but insignificant effect of long-term debt to assets on ROE. Thus, equity holders will benefit from this financing arrangement. This study is in agreement with Opoku-Asate, (2022). However, there are negative insignificant relationships among ROE, SDTAR, and LDTR.

6.3. The Effect of Capital Structure on Net Profit Margin (NPM)

6.3.1. The Effect of DER and NPM

On the effect of DER on net profit margin (NPM), a positive but insignificant statistical relationship was established. In the same direction, a direct positive relationship was also established between NPM and TDTAR. This study agrees with Akinleye and Akomolafe (2019) that established a direct and significant effect of long-term debt on profit after tax. The outcomes are in consonance with the traditional theory. However, SDTAR and LDTAR, had negative but insignificant effect on NPM.

7. Conclusion and Recommendations

7.1. Conclusion

We investigated the financial performance of selected Nigerian manufacturing firms based on their capital structure. After analyzing and discussing capital structure, we can conclude that debt equity ratios (DER) have a marginal adverse effect on return on assets (ROA) of the selected firms. On the other hand, debt equity ratio (DER) has a positive significant effect on return on equity (ROE) and a positive but insignificant effect on net profit margin (NPM). All financial performance indicators are positively affected by total debt to total assets, but the effect is insignificant. An adverse insignificant effect was also found on all dependent variables for SDTA and LDTA. According to the study, none of the selected companies had an appropriate capital structure mix. Financial performance was not affected significantly by any of the elements of capital structure, except for debt-equity ratio, which had a significant positive effect on ROE. The appropriate optimal capital mix is possible with the lowest weighted average cost of capital. Thus, manufacturing companies must understand how capital structure theories apply to their business. The outcomes of this study are contrary to *a priori* expectation, except for the effect of DER on ROE.

A proper capital mix can enhance optimal performance in companies, according to the empirical findings of this study and failure in managerial ability will increase the financial risk and gearing level of the companies. This study will guide various stakeholders in the manufacturing companies in making appropriate financing and investment decisions.

7.2. Recommendations

The following policy recommendations are derived from the study's empirical findings, firstly, the companies must strive to maintain good and appropriate capital mix so as to ensure that capital structure elements have significant positive effect on ROA of the selected companies. Secondly, there is a need for companies to strive further to ensure that total debt to total assets, long term to total asset and short-term to total assets have positive and significant effect on financial performance. Thirdly, it is important that the selected companies achieve significant positive relationship between net profit margin and capital structure. This is of utmost importance since profitability is a strong motivation and rationale for being in business. Generally, this study recommends that the companies selected for this study must always be guided appropriately in their capital structure decisions so as to optimize their financial performance of their companies.

8. Suggestion for Further Studies

The study was limited to a sample of ten (10) manufacturing firms purposively selected by the researchers. Although, these companies had major trading activities on the floor of Nigerian Exchange. However, the sample size can be increased to fifty firms from different sectors. This will form a good representation of the manufacturing firms in Nigeria. Moreover, the agriculture sector was not considered in this study despite its significant contribution to Nigeria's Gross Domestic Product. This study also did not consider unlisted on the Nigerian Exchange. Further researches in areas not addressed by this study are recommended by the authors in the future studies.

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Research Article

A Social Insecurity as Predictor: Dynamics of Senior Secondary School Students Achievements in Agricultural Science in Ekiti State

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Abstract

This study sought to establish whether perceived insecurity of the school environment can predict the achievement of senior high school students in Agricultural Science in Ekiti State. It also sought to find out whether gender has any influence on perceived insecurity of school environment as a predictor of achievement in senior secondary school students in Agricultural Science Education. There are two research questions and null hypotheses which were formulated to serve as a guide to the study. The findings of this study showed that the Perceived Precariousness of the school surrounding significantly predicts senior secondary school students' achievement in agricultural science education while gender does not significantly influence the achievement of students in agricultural science in a perceived precariousness situation. The conclusion of the study was that secondary school students should be educated on the importance of perceived Precariousness in the school community as a predictor of their achievement in agricultural science education. It was recommended that strong awareness or orientation should be given to students on the significance of perceived Precariousness in the school community as a predictor of achievement in agricultural science.

Keywords: Perceived Precariousness, School Community, Predictor, Agricultural Science

JEL Codes: Q10, Q19, A20, A29

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Araştırma Makalesi

Yordayıcı Olarak Sosyal Güvensizlik: Ortaokul Son Sınıf Öğrencilerinin Ekiti Eyaletinde Tarım Bilimleri Eğitiminde Başarı Dinamikleri

Pius Olanrewaju Ogunjobi¹ & Veronica Ibitola Makinde ²& Deborah Bolanle Fabamise³

Öz

Bu çalışma, okul ortamında algılanan güvensizliğin Ekiti Eyaletindeki son sınıf lise öğrencilerinin Ziraat Bilimlerindeki başarısını tahmin edip edemeyeceğini belirlemeye amaçlamıştır. Ayrıca cinsiyetin, Tarım Bilimleri Eğitiminde lise son sınıf öğrencilerinde başarının bir yordayıcısı olarak okul ortamında algılanan güvensizlik üzerinde herhangi bir etkisinin olup olmadığını bulmayı hedeflemiştir. Bu çalışmanın bulguları, okul çevresinin Algılanan Güvensizliğinin, lise son sınıf öğrencilerinin ziraat bilimleri eğitimindeki başarılarını önemli ölçüde yordadığını, cinsiyetin ise, algılanan güvensizlik durumundaki öğrencilerin ziraat bilimlerindeki başarılarını önemli ölçüde etkilemediğini göstermiştir. Çalışmanın sonucu, olarak ortaokul öğrencilerinin, tarım bilimi eğitimindeki başarılarının bir yordayıcısı olarak okul topluluğunda algılanan Güvensizliğin önemi konusunda eğitilmesi gerektiği ortaya çıkmıştır.. Öğrencilere, okul topluluğunda algılanan Güvensizliğin tarım bilimindeki başarının bir göstergesi olarak önemi konusunda güçlü bir farkındalık veya yönlendirme yapılması önerilmektedir.

Anahtar Kelimeler: Algılanan Güvensizlik, Okul Topluluğu, Yordayıcı, Tarım Bilimi

JEL Kodlar: Q10, Q19, A20, A29

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1. Introduction

Agriculture has been defined as the art and science of cultivating crops and raising animals for food, other human needs for economics gains (Harris and Fuller, 2014). Agriculture was defined by Ogunjobi et al (2020) as the systematic nurturing of useful crops and livestock under the administration of man. Agricultural sciences, therefore, combine science, technology, arts, education, and entrepreneurship and gear them towards the fulfillment of agricultural purposes and needs. From these definitions of agriculture, one can draw an inference that agriculture, which is now modern, is the rearing of animals and the production of crops for the purpose of producing food for man and raw materials for industries.

The importance of agriculture and agricultural science to individuals and national development at large cannot be over-emphasized, to Nigeria, Agriculture gives major employment to its citizenry. It has between sixty and seventy percent (60% & 70%) of the Nigerian labor force (Yushau, Arhyel and Danjuma, 2021). Agriculture provides food for the teeming population of Nigeria. Most of the raw materials used in agro-based industries come from agriculture. It is also an important source of income for most Nigerian farmers especially those from rural areas. Agriculture creates a foreign exchange earnings for the country through the export of agricultural local and finished raw goods. Agriculture gives the enabling environment as market for some industrial products such as fertilizers, tractors, insecticides and pesticides, and so on. Summarily, engagement of agriculture is a means for reducing poverty and attaining the development goals which include a reduction of the percentage of people in extreme poverty by 2055 (Yashau, Arhyel, and Danjuma, 2021; Fabamise and Ogunjobi, 2022).

Despite the importance of agricultural science and the overall economic development of the country, students' academic achievements in agricultural science have been very unsatisfactory. The trend of poor achievement in Agricultural Science Education has been confirmed by the recent analysis of some external examination bodies like West African Examination Council's (WAEC) results from 2017 to 2021 for instance, only 31.11%, 35.17%, 32.58%, 36.33% and 34.63% of the candidates in Ekiti State obtained pass and credit pass in the year 2017, 2018, 2018, 2019, 2020, 2021 respectively. These uninspiring achievements in Senior Secondary Certificate Examination (SSCE) and other internal measure of evaluation are causes of great worries & concern.

The government and researchers in education tried in recent years to devise means to change the attitude and in repositioning and improve the learning outcome in the teaching and learning of agricultural science in secondary school in Ekiti State through the use of Technology Enhanced Instruction in the class (Uduak et al, 2020; Ogunjobi et al, 2021). For instance, Agricultural science has been inducted as one of the vocational curricular subjects in secondary schools which is a compulsory subject in junior secondary schools and an elective subject in Senior Secondary Schools in Nigeria as indicated by National Policy on Education (FRN, 2013), The Agricultural science curriculum emphasizes on learner-centered (student-centered) method of teaching to facilitate students' mastery of the subject and to enable students to utilize learned skills in solving their everyday problem using their own initiatives. Despite these measures, agricultural science taught at the secondary school level has not been able to successfully improve students' academic achievement.

Literature from Western Europe tends to suggest that perceived precariousness in the school surrounding has the potential of predicting students' achievements (Islam and Khan, 2017; Amaechina and Ezech, 2019). One of the most important pressing needs for every human being is the need for biological and physical survival (Onah and Amamezie, 2022). These needs are primary for dependency, security stability, freedom, and protection of any man.

Innocent, Musa and Jacob, (2021) posited that security is a changing condition that engages the relative ability of a category to counter threats to its core values and interests, for which its primary beneficiaries are the citizens. On the other hand, insecurity is the counter of security. It connotes trouble, instability, inability to provide relative peace, uncertainty, and a signal for danger (Obiechina, Abraham and Nworgu, (2018); Awodun, (2019); Agbongiasede and Ololube, (2021). Agbongiasede and Ololube, (2021) further cited Abraham Maslow by stating that an insecure individual feels that the world is a deadly jungle, dangerous, not safe, sad, jilted, hated, depressed, discouraged, shows signs of unsettled, and misunderstanding, and tends toward crisis. It is on this basis that when a student is being taught in a surrounding characterized by being not safe, she pretends to be disturbed socially, mentally and emotionally. The features of school insecurity by Onah and Amamezie (2022) posited include; dilapidated conditions of physical structures (classrooms, hostels, laboratories, refectories and libraries), poor negative attitude of teachers to condone emotional challenges, undue influences and crisis of host communities, unattained psychological needs of the learner, unnecessary classification in the school along religious, ethnicity and political affiliations, rampant deviant nature of students' behavior so teachers instructions, deliberate damaging of school properties, incessant bullying of students, over-crowded, poorly ventilated and arranged classrooms, students -staff unrests over unmet needs by management, cases of terrorism and insurgencies and poor handling of lesson delivery using outdated methods and instructional materials.

Giving reactions to these situations in a school, Agbaje, and Alake, (2014); Ayala, Samaila, and Aliyu, (2022) stated that insecurity is a factor that threatens the attachment of a student to any teaming environment. According to Agbaje and Alake (2014), attachment is that deep and enduring affectionate bond that connects a child to a specific interest (subject matter .and teacher) in exploring a given world of knowledge. Through the attachment principle in a school, a student feels secure, and motivated socializes harmoniously in the learning environment, develops the skill of coping with academic stress, and enables the student to improve academic performance through personal reading habits. Job and Pantah, (2018) and Igboeli et al (2021) made it clear that when insecurity as a variable sets in at any school environment, it seems to affect the attachment or school bonding of students in the school; the child gets disorganized, disoriented and loses interest about anything concerning the school; becomes deviant and resistant to constituted school authorities/parents and experiences low academic achievement in classroom activities. One wonders the extent perceived precariousness as a variable in school environment can determine academic achievement of students in agricultural science.

Considering perceived insecurity as a forecast of students' learning outcome in Agricultural Science, one other observed factor that is suspected to influence the students' participation in the subject is gender. Gender has been described as the expectation a society has formed about someone simply because the person is a male or female (Awodun, 2019; Agbongiadesade and Ololube, 2021). Some studies tend to indicate that precariousness of the school surrounding influences male students' achievements more than the female because male are mostly kidnaped than their female counterparts (Islam and Khan, 2017; Amaechina and Emeh, 2019), while some other studies show that females are more vulnerable to insecure school environment than their male counterparts (Yushau, Aryel, and Danjuma, 2021). It is hoped that this study will help in resolving the argument on the influence of gender as a factor on perceived precariousness of school surrounding as a predictor to the achievement of students in agricultural science.

The purpose of this study was to ascertain how perceived precariousness in the school surrounding to predicts the achievement of students in agricultural science in Ekiti State.

Specifically, the study sought to:

- Determine the predictive power of perceived precariousness of school surrounding on achievement of students in agricultural science.
- Determine the effect of gender on perceived precariousness of school surrounding as a determinant of achievement of students in agricultural science.

1.1. Research Questions

The study sought answers to the following questions:

- What percentage of the variance in the senior secondary school students' achievement score in agricultural science is accounted for by the perceived precariousness of school surroundings?
- What is the relationship between gender and the perceived precariousness of school surroundings as a determinant of achievement of students in agricultural science?

1.2. Hypotheses

These hypotheses were tested at 0.05 levels of significance:

H₁: Perceived insecurity of school environment does not significantly determine senior secondary school students' achievement score in agricultural science.

H₂: Gender does not significantly influence perceived precariousness of school surrounding as a determinant of achievement of students in agricultural science.

2. Method

The study adopted correlational research design. The sample for the study comprised 2630 (1200 males and 1430 females) drawn through proportionate sampling technique from a total population of 26,303 senior secondary class two students in Ekiti State, (according to Ministry of Education, Science and Technology, Ado Ekiti) A validated instrument titled Perceived Precariousness of School Surrounding and Academic Achievement Questionnaire (PPSSAAQ) was used by the researcher. Cronbach Alpha method was employed to calculate the reliability of the instrument and 0.79 was gotten. Data that was used for this study was collected from respondents face to face and on the spot, after the administration of the questionnaire by the assistance of six instructed research workers. The two research questions were analyzed and answered using Pearson's r , R^2 (coefficient of determination) while inferential statistics of multiple regressions and ANOVA were used to test the null hypotheses at 0.05 levels of significance.

3. Results

The results of the study are presented below:

3.1. Research Question One

What percentage of the variance in the senior secondary school students' achievement score in agricultural science is accounted for by the perceived precariousness of school surroundings?

Table 1

Relationship between Perceived Precariousness of School Surroundings and Achievement of Senior Secondary School Students In Agricultural Science Education

R	R Squared	Adjusted R-squared
642	412	410

Note. Calculated by the author.

Data in Table 1 indicated a positive relationship between the perceived precariousness of school' surroundings and the senior secondary school students' achievement score in agricultural science. This is shown by the calculated Adjusted R of .412 which indicates that 41.2% of the variance observed in the senior secondary school students' achievement score in agricultural science education was accounted for by the perceived precariousness of the school surroundings This further indicates that perceived precariousness of school surroundings to a high extent determines senior secondary school students' achievement score in agricultural science.

- To determine the significance of the contribution of perceived precariousness of school surroundings in predicting senior secondary school students' achievement score in agricultural science, the predictive index is presented as shown on Table 2.

Table 2

Contribution of Perceived Precariousness of School Surrounding in Predicting Senior Secondary School Students' Achievement Score in Agricultural Science

Model	Unstandardized Standardized Coefficients				
	B	Std. Error	Beta	T	Sig.
Constant	1.293	.081	.642	16.023	.000
Perceived Precariousness of School Surrounding	.511	.030		16.995	.000

Note. Calculated by the author.

Table 2 showed that the predictive index of perceived Precariousness of school surrounding on senior secondary school students' achievement score in agricultural science is .64. The data suggest that for every 1 SD (standard deviation) increase in perceived insecurity of school environment, there is 0.64 SD increase in senior-secondary school students' achievement score in agricultural science.

Data in Table 2 also revealed that perceived precariousness of the school surrounding is a significant predictor of senior secondary school students' achievement scores in agricultural science education. This is revealed by the *t*-test value of 16.995 which has a P value of .000.

Therefore, the null hypothesis which stated that perceived precariousness in school surroundings does not significantly determine senior secondary school students' achievement score in agricultural science is rejected *at .05* alpha levels.

3.2. Research Question Two

What is the relationship between gender and the perceived precariousness of school surrounding as a determinant of achievement of students in agricultural science?

Table 3

Relationship between Gender and Perceived insecurity of school Environment as a predictor of Achievement of students in Agricultural science

R	R ²	Adjusted R ²
.074	.006	.004

Note. Calculated by the author.

Data in Table 3 indicated a minimal relationship between gender and the perceived precariousness of school surrounding as a determinant of achievement of students in agricultural science. This is shown by the calculated Adjusted R² of .006 which indicates that gender contributed only one percent to the perceived precariousness of school surroundings as a determinant of achievement of students in agricultural science. This further indicates that gender predicted very little on the perceived precariousness of the school surrounding as a determinant of achievement of students in agricultural science.

- To determine the significance of the contribution of the gender to perceived precariousness surroundings as a determinant of achievement of students in agricultural science, the predictive index of the gender the students is presented *as* shown on the beta column of the Table 4,

Table 4

Contribution of Gender on Perceived Precariousness of School Surrounding as a predictor of Achievement of Students In Agricultural Science

Model	unstandardized Coefficients		standardized coefficient		
	B	Std. Error	Beta	T	Sig
Constant	2.871	.63		45.472.000	
Gender of Respondents	-.070	.039	-.074	-1.807	.071

Note. Calculated by the author.

Data Table 4 showed that the predictive index of gender on the perceived precariousness of school surroundings as a determinant of achievement of students in agricultural science is *- .074*. The data suggest that gender had no contribution in predicting the perceived precariousness of school surrounding as a predictor of achievement of students in agricultural science.

Data in Table 4 also showed that gender is not a significant predictor of the perceived precariousness of the school environment as a determinant of achievement of students in agricultural science. The result is shown by the *t*-test value of *-1.807* which has a probability

value of .071. Therefore, the null hypothesis which states that gender does not significantly influence the perceived precariousness of the school surroundings as a determinant of achievement of students in agricultural science is upheld at 0.05 alpha levels.

3.3. Summary of Findings

The major findings of the study were that:

- Perceived precariousness of the school surroundings significantly determines senior secondary school students' achievement in agricultural science. It rather contributed 41.2% of the variation in senior secondary school students' achievement scores in agricultural science.
- Gender does not significantly influence the perceived precariousness of the school surroundings as a determinant of achievement of students in agricultural science. Gender of students had only one percent contribution in determining the extent perceived insecurity of school environment predicts their achievement in agricultural science.

4. Discussion

The discussion section is one of the final parts of a research paper, in which the researcher describes, analyzes, and interprets her findings. The significance of those results as it affects the research question(s) are presented here.

The finding of the study in table 1 showed that the perceived precariousness of school surroundings significantly determines senior secondary school students' academic achievement in agricultural science. It rather contributed 41.2% of the variation in senior secondary school students' achievement scores in agricultural science.

The result of the study as presented in table 2 agrees with the study conducted by Obiechina, Abraham and Nwogu, (2018); Awodun, (2019); Uduak, Aniefiok and Nse, (2020) on Factors that Influence the Interest of Youths in Agricultural Entrepreneurship. The study indicated that attitude and acceptance significantly influence the interest of youths in agriculture entrepreneurship.

Table 2, though its finding also agrees with the finding of the study of Faloye and Adeoluwa, (2020) which was on the correlation between students' academic performance and entrepreneurial ability when taught saponification reaction using kitchen resources. The study showed a positive correlation of $r = 0.81$ and a significant relationship between academic performance and entrepreneurial ability. There are however many issues that can affect student's poor performance. Regardless of the existing security of the school, all stakeholders should be involved actively in the education of their wards at all levels of education to help them maximize their academic potentials.

The finding of this study in table 3 showed that gender does not significantly influence the perceived precariousness of the school surroundings as a determinant of achievement of students in agricultural science. Gender had only one percent contribution in determining the extent perceived precariousness of the school surroundings predicts their achievement in agricultural science.

In table 4, the findings do disagree with Job and Pantah, (2018); Igboeli et al (2021) on the study of the influence of age and gender on students' achievement in mathematics which indicated a significant difference between gender and students' achievement in mathematics. Though ex-post-facto studies, their study nonetheless disagrees with the findings of this work.

Still on table 4, the findings did not agree with the findings of the research conducted by Yashau, Arhyel and Danjuma, (2021); Fabamise and Ogunjobi, (2022) on the correlation between the professional interests and the gender of the young person. The study found a significant correlation between gender and professional interests. Their study concluded that professional interests and the selection of this future job (work) of the eight-graders depend on their gender,

5. Conclusion

The study concluded that the secondary school students may model their parents and teachers which may help to shape the secondary school students' social character and therefore help in their learning outcome.

Gender does not significantly influence the perceived precariousness of the school surroundings as a determinant of achievement of students in agricultural science. Gender of students had only one percent contribution in determining the extent of the perceived precariousness of the school surroundings predicts their achievement in agricultural science. Therefore, knowing that the student is a male or female will not tell us the extent of the student's perception of the precariousness of school surroundings could affect the student's achievement in agricultural science.

6. Recommendations

- The paper recommended that strong awareness should be given to secondary school students on the importance of the perceived precariousness of the school surroundings as a predictor of their academic achievement in agricultural science.
- The study also called for a need to change the narratives in handling gender issues. The issue of institutionalized dichotomies on gender should be avoided.
- All school stakeholders (Ministry of Education and other relevant Government agencies, School Principals, Counsellors, Teachers, Parents, and the community at large) must be involved in giving counseling to the students.

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Research Article

UK-China Relations: Global Britain in a Competitive Age and China as the Systemic Competitor

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Abstract

The Integrated Review of Security, Defence, Development and Foreign Policy: *Global Britain in a Competitive Age* has been published in March 2021. It sets out the United Kingdom's foreign and security policy approach for the next decade. In the Integrated Review, the international system is described as more competitive, more fragmented, and multipolar. It introduces a new policy approach based on new trends namely geopolitical and geoeconomic shifts; systemic competition; rapid technological change; and transnational challenges in the world post-Covid-19 and post-Brexit. The Global Britain vision labels China as a challenging "systemic competitor" in this new world order. The United Kingdom-China relations have a long history, with a complex nature and include both cooperation and confrontation. This article focuses on the United Kingdom's China strategy which, according to the Integrated Review, requires a shift in policy making. This article claims that the United Kingdom lacks a clear China strategy although it describes it as the main systemic competitor. It elaborates on the historical developments of bilateral relations and questions the challenges that China pose to security, prosperity, and values from the British perspective.

Keywords: UK's Foreign Policy, Global Britain, UK's China Policy, Integrated Review, UK-China Relations

JEL Codes: F50, F52, N44, N45

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Araştırma Makalesi

Birleşik Krallık-Çin İlişkileri: Rekabet Çağında Küresel Britanya ve Sistemik Rakip Olarak Çin

Ayşe Gülce Uygun¹ & Cemre Pekcan²

Öz

Güvenlik, Savunma, Kalkınma ve Dış Politika Entegre İncelemesi: *Rekabet Çağında Küresel Britanya* Mart 2021'de yayınlanmıştır ve Birleşik Krallık'ın önümüzdeki on yıl için dış politika ve güvenlik politikası yaklaşımını ortaya koymaktadır. Entegre İncelemede, uluslararası sistem daha rekabetçi, daha parçalı ve çok kutuplu olarak tanımlanmaktadır. Jeopolitik ve jeoekonomik değişimler, sistemik rekabet, hızlı teknolojik değişim ile Covid-19 sonrası ve Brexit sonrası dünyadaki ulusötesi zorluklar gibi yeni trendlere dayalı yeni bir politika yaklaşımı sunan Küresel Britanya vizyonu, Çin'i bu yeni dünya düzeninde zorlu bir "sistemik rakip" olarak nitelendirmektedir. Birleşik Krallık-Çin ilişkileri karmaşık bir yapıya ve uzun bir geçmişe sahiptir ve hem işbirliğini hem de sorunları içerir. Bu makale, Entegre İncelemeye göre politika yapımında bir değişim gerektiren Birleşik Krallık'ın Çin stratejisine odaklanmaktadır. Bu makale, Birleşik Krallık'ın Çin'i ana sistemik rakip olarak tanımlamasına rağmen, net bir Çin stratejisinden yoksun olduğunu iddia etmektedir. Ayrıca ikili ilişkilerin tarihsel gelişmeleri üzerinde durmakta ve Çin'in güvenlik, değerler ve refaha getirdiği zorlukları İngiliz perspektifinden sorgulamaktadır.

Anahtar Kelimeler: Birleşik Krallık Dış Politikası, Küresel Britanya, Birleşik Krallık Çin Politikası, Entegre İnceleme, Birleşik Krallık-Çin ilişkileri

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1. Introduction

The United Kingdom (UK) government has been conducting a five-year strategic review since 2010. Following this, at least formal, pattern, in February 2020, Boris Johnson, the Prime Minister, announced the new one which would go “beyond the parameters of a traditional review” (Strachan, 2021, p. 161). The outbreak of coronavirus has postponed the process and the “Integrated Review of Security, Defence, Development and Foreign Policy: *Global Britain in a Competitive Age*” has been published in March 2021.

Leaving the European Union (EU) following an uneasy process of Brexit and the outbreak of the coronavirus have been two challenging issues, among others, for UK’s foreign policy during the last decade. To respond to these challenges the Integrated Review (IR) 2021 sets “a high level of ambition” for the UK (Lylla Grant, 2021, p. 20). The Integrated Review focuses on a new foreign policy approach based on new trends in the world post-Covid-19 and post-Brexit. The 2025 vision for Global Britain emphasizes four trends namely geopolitical and geoeconomic shifts; systemic competition; rapid technological change; and transnational challenges.

The *Global Britain* strategy describes the post-Covid international order as more competitive, multipolar, increasingly contested, and fragmented; and it affirms the UK as the “global leader” in many areas. Therefore, the UK’s foreign policy should adopt a “new approach” since preserving the status quo is not sufficient anymore, in this fragmented and multipolar international order (Cabinet Office, 2021, p. 11). The Integrated Review claims that the UK needs this shift in thinking because the current international system is more characterized by increasing competition among states over interests, norms, and values than by the “rules-based international system” that the UK has greatly benefited from since the end of the Cold War (Cabinet Office, 2021, p. 11).

According to the Global Britain approach, the threats to the UK’s security are in diverse forms in today’s global settings. The largest defence investment program since the Cold War’s end has been launched (Cabinet Office, 2021, p. 4) to respond to the different forms of threats and to become more “powerful” in many senses. The 2025 vision of the UK employs many forms of British “power” considering the material and non-material capacities of the UK. It, therefore, includes an ambition of becoming “soft power superpower”, “responsible cyber power”, “global leader in diplomacy”, and “science and technology superpower”.

Besides, the Integrated Review underlines the principal continuities and changes in the UK’s foreign policy approach. The United States of America (USA) as the key partner; commitment to NATO; respect for human rights; and promoting international development remain the elements of continuity in the UK’s approach. On the other hand, the Integrated Review focuses on the challenges and changes which require shifts in policymaking. These changes include the post-Covid international order; European Union following Brexit; climate change and biodiversity; science and technology; cyber power; space policy; Indo-Pacific; China; global health issues; armed forces; state threats; and domestic and international resilience.

This article focuses on the UK’s approach towards China which, according to the *Global Britain* vision, requires a shift in the UK’s policymaking since it’s described as the “systemic competitor” in the Integrated Review. The first part of the article is devoted to the main lines of the UK’s foreign policy vision for 2025, as it appears in the Integrated Review. The second part strives to provide historical context for the two countries’ current bilateral relations. The third part elaborates on China as the “systemic competitor” for the UK. It also analyses the

challenges that China poses to the UK, with a special focus on Hong Kong. It concludes with an assessment of the UK's China strategy.

2. The Integrated Review and the Global Britain Strategy

“The Integrated Review of Security, Defence, Development and Foreign Policy: *Global Britain in a Competitive Age*” has been published in March 2021 and sets out the UK's new foreign policy approach, in a competitive age. The UK will be stronger, safer, wealthier, and more resilient in 2030, according to Prime Minister Boris Johnson, who also sees the country as a problem-solving, burden-sharing society with a global outlook (Cabinet Office, 2021, p. 6).

As security concerns and tests of national resilience can take many different forms, security-related concerns are stressed in a variety of ways, and the Integrated Review (IR)'s central theme is a stronger commitment to security and resilience so that the British people are safeguarded against dangers (Cabinet Office, 2021, p. 4,11). Boris Johnson has launched the largest defense investment program since the Cold War's end to respond to various types of threats (Cabinet Office, 2021, p. 4). To be more “powerful” then becomes a priority in many senses. Alongside the future vision of the UK, the Integrated Review describes the UK's material and non-material capacities from different perspectives and employs many forms of British “power”. These power definitions include: “soft power superpower”, “responsible cyber power”, “global leader in diplomacy”, and “science and technology superpower”.

The IR 2021 states that the UK's advantages in terms of defence and security include having top-tier security and intelligence services supported by annual investments of over £3 billion and ranking as the second-highest NATO and European spender on defence. The UK is said to as a superpower in terms of science and technology since it is home to world-class medical research, like the Oxford University/AstraZeneca vaccine, and it is placed fourth in the Global Innovation Index (Cabinet Office, 2021, p. 8). The UK is considered a global leader in terms of diplomacy and development due to its fourth-largest diplomatic network, which has 281 posts in 178 nations and territories; it is one of the main donors and a founding member of COVAX and, funding the WHO at a rate of 30% over the past four years (Cabinet Office, 2021, p. 8).

Another strength is the UK's membership to major multilateral organisations (NATO, World Bank and IMF, UN Human Rights Council 2021-22, G7 (President 2021), Commonwealth, Founding member of the UN, P5 member of the UN Security Council, Council of Europe and G20) (Cabinet Office, 2021, p. 8,9). The UK has the third-ranked soft power in the world, according to the Integrated Review, the BBC is the most dependable broadcaster globally, reaching 468 million viewers each week in 42 languages, and the British Council has operations in more than 100 nations. Therefore, it's described as a “soft power superpower” (Cabinet Office, 2021, p. 9).

The UK's economy is also the fifth largest in the globe. It ranks first in defense, intelligence, norms, and offensive capabilities, and the UK's cyber network spans 122 countries on six continents, making it the third-most powerful cybernation in the world. Furthermore, the IR 2021 stresses that the UK successfully decreased its emissions by over 40% between 1990-2018. These strengths are described to justify being a “responsible cyber power” and a “world leader in climate action” (Cabinet Office, 2021, p. 9).

On the other hand, leaving the European Union (EU) following an uneasy process of Brexit and the outbreak of the coronavirus have been two challenging issues, among others, for UK's foreign policy over the last decade. According to the Integrated Review, British foreign

policy during the most recent ten years has been focused on maintaining the "rules-based international system. The battle between states for interests, rules, and values, however, is becoming more intense in the current international system, which is more fractured. Therefore, maintaining the status quo is insufficient for the upcoming decade, which also denotes a change in strategy (Cabinet Office, 2021, p. 11).

The UK is bound together by common interests and values, and the government's fundamental goal is to further these values through domestic and international actions. The most important interests are presented as sovereignty, security, and prosperity. Shared values, fundamental to British national identity, on the other hand, consist of a "commitment to universal human rights, the rule of law, free speech and fairness and equality" (Cabinet Office, 2021, p. 13).

Although "Global Britain" remains a vague concept hard to define, its context is "much more explicit about strategy" compared to its predecessors in 2010 and 2015 (Strachan, 2021, p. 166). According to Integrated Review 2021, actions rather than words are the greatest way to clarify what something means in practice (Cabinet Office, 2021, p. 14-16). Integrated Review underlines that, since the 2019 general election, the UK's defence and security were strengthened by the government's greater commitment to finding multilateral solutions to problems like the global health crisis and climate change, while also increasing burden-sharing with allies and protecting the rights of the weak and vulnerable (Cabinet Office, 2021, p. 14-16).

The strategic framework for 2025 (in some parts of the document such as Johnson's foreword, for 2030 though), sets a baseline for a more flexible new foreign policy approach, and sets out further required policies and sub-strategies (Cabinet Office, 2021, p. 18). Although it lacks the priority-setting seen in the risk-based approach of previous Reviews (Neville-Jones, 2021), to identify priority actions, the present Review focuses on the continuities and changes to get prepared for the opportunities and challenges of the new World order (Cabinet Office, 2021, p. 20).

In terms of continuities, the United States of America (USA) remains the most important key partner. As Dame Karen Pierce (2021), the UK's ambassador to the USA, emphasizes:

During his first overseas visit in June, President Joe Biden affirmed with Prime Minister Boris Johnson a relationship without equal anywhere in the world. The closest of partners and the greatest of allies, the United Kingdom and the United States are unparalleled in their shared commitment to defend the rule of law and sustain cooperation that is critical for global stability and prosperity.

Besides, to ensure collective security through NATO, as "the leading European Ally", the UK abides by its promise to collaborate with partners to thwart nuclear, conventional, and hybrid threats to their security, including those from Russia. Some of the other continuities are described as: acting to uphold universal human rights, fighting against poverty, as "a world-leading international development donor" and promoting girls' education (Cabinet Office, 2021, p. 20).

When it comes to the challenges, the Integrated Review focuses on the changes which require shifts in policymaking. These are the post-covid international order; Europe and European Union following Brexit; climate change and biodiversity; science and technology; cyber power, space policy, Indo-Pacific, China, global health issues, armed forces, state threats; and domestic and international resilience. To overcome these challenges the UK "will need friends and partners more than ever" in the post-Brexit era (Sawers, 2021).

The focus of this research is on China because, as China becomes more dominant in the globe, the Global Britain plan must take additional steps to adjust to China's rising influence on many parts of (their) life. (Cabinet Office, 2021, p. 22). According to the Strategic Framework:

We will invest in enhanced China-facing capabilities, through which we will develop a better understanding of China and its people, while improving our ability to respond to the systemic challenge that it poses to our security, prosperity, and values – and those of our allies and partners. We will continue to pursue a positive trade and investment relationship with China, while ensuring our national security and values are protected. We will also cooperate with China in tackling transnational challenges such as climate change. (Cabinet Office, 2021, p. 22)

China is described as a “systemic competitor” to Global Britain’s vision as well as to UK’s security, prosperity, and values. Before a detailed evaluation of China’s growing threat to the UK, the next part looks at the historical background of bilateral relations.

3. Historical Background of UK-China Relations

China, being a deep-rooted culture, was one of the richest countries in the world until the 18th century. Due to its wealth and size as a market, China, which accounts for nearly one-third of global production, began to draw Western nations’ interest. As Westerners moved into the area, China's influence and wealth gradually declined. China's remoteness from industrialization and growth rate in the West is the main cause of this.

Although there is evidence of commerce in the 1600s, the most notable event that comes to mind when we look at the history of connections between China and the UK is the Opium wars. Western nations, which mostly purchased tea, silk, and porcelain from China, began to sell opium to China in exchange. Although the use of opium for non-medical purposes was outlawed in China in 1729, the illegal smuggling of the drug persisted, and when China launched a significant campaign against opium smuggling in 1839, the British declared war on China. (Holcombe, 2016, pp. 233-236). China was defeated in the First Opium War between England and China in the years 1839 to 1842. The Nanjing Agreement was signed at the end of the war, and five ports were opened to trade. China was forced to pay a high compensation and Hong Kong was transferred to England (Mishra, 2013, p. 42). In 1898, the UK leased additional territory known as the New Territories with the intent to return it to China after 99 years.

As the Western nations requested greater concessions and China resisted, the Second Opium War broke out in 1856, including France and the UK. China was once more beaten, and the Tianjin Agreement, which ended the war, gave foreigners increased privileges in several areas (Mishra, 2013, p. 45). The burning of the Emperor's summer house and the destruction of numerous works of art inside it during this conflict earned a place in history as an occasion that the Chinese still find difficult to forget.

The largest industrial power in the globe by the late 1800s was the UK. China, on the other hand, was battling successive losses and opium, to which the majority of the nation had become addicted. With the 1895 Shimonoseki Agreement, the Chinese, who had been defeated by the Japanese in the 1894–1895 Sino–Japanese War in Korea, was forced to cede Taiwan to Japan (Gelber, 2007, p. 219).

China was freed from being a colony of any nation thanks to the USA's "Open Door" policy, and the Republic was founded on January 1, 1912, under the direction of a pro-revolutionary organization. However, domestic control was not entirely attained. In the First

and Second World Wars, the authorities of the created republic allied with the UK, but confrontations erupted between the Nationalist Party in power and the Communist Party, which was founded in China in 1921.

The People's Republic of China was formally established on October 1, 1949, following the Communist Party's triumph in the civil war that raged in China from 1945 and 1949. On the other hand, supporters of the Nationalist Party fled to the island of Taiwan, where they proclaimed the Republic of China.

On January 6, 1950, the PRC was recognized by the UK as the rightful leader of all of China. It was the first significant Western nation to recognize China. However, the two nations were on opposing sides when the Korean War started, and their relations were strained. When the US embargo against China came up for discussion, the UK prioritized its alliance with the US and postponed the opening of full diplomatic ties. Following the war, diplomatic ties developed gradually while commercial volume grew quickly. The Joint Communiqué on the Agreement on an Exchange of Ambassadors was signed on March 13, 1972, and thus marked the official start of diplomatic relations between the two nations (Xinhua, 2003).

The adoption of UN resolution 2758 in 1971, which designated the People's Republic of China as the UN's representative for all of China instead of the Republic of China, was the single most crucial step in the establishment of diplomatic ties (Restoration of the lawful rights of the People's Republic of China in the United Nations, 1971).

In the 1980s, negotiations began between the two countries regarding Hong Kong's reversal. Hong Kong swiftly became one of the PRC's most significant trading partners with the establishment of the Shenzhen Special Economic Zone in 1979 (Garver, 2016, p. 583). In 1984, the Sino-British Joint Declaration was signed. In the PRC, the parties agreed that Hong Kong would be granted special administrative status and have a great degree of autonomy, with the exception of foreign and security issues, which would be handled by Beijing (Garver, 2016, p. 590). In other words, China consented to rule Hong Kong for the next 50 years by "one nation, two systems", granting the city "a considerable degree of autonomy, save in foreign and defense issues" (BBC News, 2022).

The 1989 Tiananmen Square Incident damaged China's relationships with the UK and all other nations. Of course, for the UK, these events also caused concern for the future of Hong Kong in terms of freedom and human rights of people living in Hong Kong. In Hong Kong, the proverb "The Beijing of today is the Hong Kong of tomorrow" has gained popularity (Garver, 2016, p. 597). Therefore, these events also transformed the UK's foreign policy towards China. Human rights had not been a major concern up until that point, but it was now on the agenda. However, Hong Kong, whose 99-year liaison ended as a result of long negotiations, returned to China on July 1, 1997. Although Hong Kong is now a part of China, the Hong Kong issue still continues to be an important issue in the relations between the two countries. After Hong Kong's return, human rights issues became more prominent on the UK agenda.

It may be claimed that the two nations' ties improved in the early 2000s, although it goes without saying that one of the key reasons for this is China's 2001 entry into the World Trade Organization (WTO). Total exports and imports have increased five-fold as a result of China's WTO participation. Between 2000 and 2010, the UK's imports from China rose from £5 billion to £30.6 billion (Fry, 2019, p. 81). Despite this, we still can't conclude that China places a lot of economic weight on England. China was the UK's 26th-largest export market in 1999, although commerce between the two countries is undoubtedly growing. In 2020, China became the UK's 6th export partner (BBC News, 2020).

Gordon Brown, who took over as prime minister from Tony Blair in 2007, was actually in favour of improving trade ties with China, but on the other hand, this was a time when the Tibet issue was brought to the attention of the international community and human rights abuses became more blatant. Before the 2008 Beijing Olympics, there were increasing protest demonstrations by Tibetans in China, and these demonstrations were on the agenda of the whole world. As a result of the Chinese invasion of Tibet and his worries regarding the nation's human rights record, Prince Charles decided not to attend the Olympic Games in Beijing (Hough, 2008). China reacted strongly to the Dalai Lama's visit to Gordon Brown that same year. Tibetans objected to Brown's decision to host the Dalai Lama somewhere other than Downing Street (Reuters, 2008; France 24, 2008).

Gordon Brown was replaced by David Cameron in 2010. The period of 2010-2016 is often referred to as the golden age of relationships. This is because in 2015, Chancellor of the Exchequer, George Osborne, said "Let's stick together and create a golden decade for both of our countries" in a speech to the Shanghai Stock Exchange in China (Osborne, 2015).

Mutual visits marked the start of the Cameron era in UK-China ties. Even as a goodwill gesture, China gifted two pandas to the Edinburgh Zoo. However, this positive period of relations lasted until 2012. The Dalai Lama and the UK's David Cameron and Nick Clegg had a private meeting in St. Paul's Cathedral on May 14, 2012. The Dalai Lama has already visited the UK; for instance, in 1999, when he met with Tony Blair, China was displeased, but the visit did not harm relations (Fry, 2019, p. 78). China, who had previously been content with denunciation or criticism during meetings of the previous presidents, responded this time in a far harsher manner and cut off high-level relations with England for a whole year (Winnett and Moore, 2013). Of course, it is true to say that China's development into a far more powerful and self-assured nation has had a significant influence on the hardness of its response.

With Xi Jinping, who was elected Chinese Communist Party (CCP) leader in 2012 and became President in 2013, Chinese foreign policy has also changed direction. Xi Jinping is referred as the strongest leader after Mao Zedong and China started to make more significant moves once Xi Jinping adopted an active foreign policy, such as the Belt-Road Initiative. Chinese officials had previously referred to China as a developing power, but under Xi Jinping, they now refer to it as a great power that is prepared to carry out its obligations (Thomas, 2020).

According to Garcia Herrero and Jianwei (2016), China undoubtedly saw the UK as a key entry point for expanding its commercial ties with the EU. Therefore, in 2015, following visits by David Cameron and Xi Jinping, the two sides released a joint statement on "Building a Global Comprehensive Strategic Partnership for the 21st Century." However, the relations were slightly hampered by the Brexit process.

In the UK, a referendum on EU membership was held on June 23, 2016. The question of whether the United Kingdom should leave the European Union was presented in the referendum. Around 33,5 million people voted for the referendum and 51,9 % voted to leave the EU (BBC News, 2016). The Conservative Party leader David Cameron, who was in favour of remaining in the EU, resigned due to the results and Theresa May was chosen to lead the Conservative Party in July 2016, following David Cameron's resignation. The UK left the EU on January 31, 2020, following negotiations with the EU and a transition period.

Theresa May's administration saw a favourable improvement in ties with China. Of course, a key element in the beneficial continuance of relations is the UK's need for Chinese investment after it decided to leave the EU. In this context, the parties signed a nuclear power station agreement in September 2016. A new nuclear power station worth £18 billion (about

\$24 billion) will be constructed at Hinkley Point, a town in the country's southwest, according to a contract signed by the UK government. Two-thirds of the Hinkley Point C nuclear power plant project will be funded by the French state energy company EDF, with the remaining £6 billion coming from the Chinese government. The nuclear power station will subsequently be run by these two, who will also hold an equal part of the stock. However, the agreement was criticized by many people, especially the main opposition Labor Party, for the cost of energy, national security, environmental pollution, and foreign control of critical infrastructure facilities (BBC News, 2016).

Theresa May visited China in January 2018. Her visit, according to the UK prime minister, "will strengthen the golden age in UK-China ties." They signed an education agreement worth more than £550 million during her visit, which is supposed to result in the creation of 800 jobs in the UK (BBC News, 2018). Despite the improvement in ties, May chose not to support the BRI because of certain worries about its lack of openness and conformity to international standards (Huileng, 2018). According to Mitter (2021), although there was increased security-related concern under the May government, such as with a long-term plan to construct a new nuclear power station at Bradwell in Essex, the general outlook of China-UK relations did not change dramatically. However, this positive trend in relations was interrupted by the protests that started in Hong Kong in 2019. With the Hong Kong protests, Osborne's golden decade came to an end.

The post-Brexit foreign policy of the UK, overall, has closer attention on China. British Foreign Secretary Dominic Raab emphasizes that for a "new Britain" the UK seeks to establish a unique identity (Wemer, 2020). He also emphasizes the significance of a strengthening democratic coalition, emphasizing the UK's essential role in forging international alliances with the primary goal of containing China's growth (Wemer, 2020). To respond to China's aggression, he also adds that, "the most important thing is to be able to act in concert with our closest friends and also then broaden out, if you like, the coalition or consensus of like-minded countries that share the values." (Wemer, 2020).

4. China as the systemic competitor for the UK

The UK Government's assessment of the strategic setting until 2030 is based on four interrelated and overlapping trends namely geopolitical and geoeconomic shifts; systemic competition; rapid technological change; transnational challenges. For all these trends, China's rising power and foreign assertiveness are expected to be the most important geopolitical theme of the 2020s (Cabinet Office, 2021, p. 26).

As mentioned earlier, there are significant areas of geopolitical continuity for the UK. The US will continue to be the UK's most crucial strategic ally and a global economic, military, and diplomatic superpower, according to the Integrated Review. Additionally, while the Euro-Atlantic zone will continue to be important for the UK's security and economy, Russia will still pose the greatest direct threat to the country (Cabinet Office, 2021, p. 26).

The geopolitical and economic centre of gravity would likely have shifted eastward toward the Indo-Pacific, according to the UK, as the world will have moved toward multipolarity. China's rising power which translates into a "struggle for global economy" (Akdağ & Aktükün, 2021, p.2) is viewed as both a chance for trade and investment and a threat from which the UK will need to defend itself as the distribution of political and economic power in the world will continue to alter (Cabinet Office, 2021, p. 26).

The Integrated Review describes China as a "systemic competitor". Systemic competition is central for the new approach of the UK since it "will determine the shape of the

future international order” (Cabinet Office, 2021, p. 26). For the UK the rivalry is systemic in several ways: between political systems; able to influence the international order; spanning multiple domains, such as traditional military domains of land, sea, and air; and other domains, including technology, cyberspace, and space, further influencing the broader geopolitical environment, as well as with increasing conflict and instability throughout the World (Cabinet Office, 2021, p. 26).

Security concerns and trade relations have been central in the UK- China bilateral relations for decades and so will be the next decade. Integrated Review points out that:

China’s growing international stature is by far the most significant geopolitical factor in the world today, with major implications for British values and interests and for the structure and shape of the international order. The fact that China is an authoritarian state, with different values to ours, presents challenges for the UK and our allies. China will contribute more to global growth than any other country in the next decade with benefits to the global economy. China and the UK both benefit from bilateral trade and investment, but China also presents the biggest state-based threat to the UK’s economic security. (Cabinet Office, 2021, p. 62)

Referring China as a “systemic competitor” has diverse implications and not many details are given in the Integrated Review. The Foreign Secretary claims that China is breaking more than simply the occasional law. Quite plainly, it aims to plunder the global system (House of Lords, 2021:53). He also adds that the challenge posed by China is systemic in that it acts continuously and resolutely, citing its activities in the South China Sea, the Belt and Road Initiative, and its general attitude toward the current global system (House of Lords, 2021:53).

According to the Minister for Asia, there are a variety of reasons why the UK views China as a systemic rival, including;

its attempts to shape the international order in line with its own values and world view, its attempt to undermine open societies and democracies, its aggressive approach to cyberspace and its approach to economic statecraft” alongside “China’s military modernisation” which poses an increasing challenge. (House of Lords, 2021, p. 53,54)

The amount to which China poses a threat to the UK, however, is disputed, and there are nuances that may make it more of a security threat in some sectors than others, according to a House of Lords assessment. However, the Integrated Review uses the imprecise term "systemic competitor" without clarifying these nuanced points, which increases uncertainty over the Government's approach to China (House of Lords, 2021, p. 53,54).

Hong Kong is one of the controversial issues between the UK and China and it has a long historical background. In 1997, Hong Kong returned to China, and it was decided that it would maintain its status for 50 years, therefore it is governed under a one country two-system model. In other words, it is autonomous in its internal affairs. However, there have long been worries about China interfering with Hong Kong's government.

As previously mentioned, the 1984 agreement between the UK and China declared that Hong Kong would be an area of self-government with a high degree of autonomy, subject to the one nation, two systems principle, except in foreign affairs and defence. In a White Paper on Hong Kong issued in 2014, China explained that the elections in Hong Kong would be held indirectly, rather than directly, through the Electoral Committee, and that the candidates would

need to receive approval from the Chinese government. Following this, protests grew steadily, and because people used umbrellas to block the police from using tear gas, they came to be known as the "Umbrella Movement." (Ergenç, 2015, p. 298).

After the "Umbrella Movement", there were occasional rallies against the Chinese government, but the biggest one was in 2019. Protests broke out in Hong Kong in April as a result of a bill (Extradition Bill) that China approved in 2019 making it simpler to extradite criminals to the country. The number of protestors reached around 2 million in June. The protests continued until their demands—for the government to stop labelling the demonstrations "riots," for a fully independent investigation into the conduct of the police, for the unconditional release of everyone detained during the demonstrations, the full withdrawal of the extradition measure that had been introduced and, the establishment of true universal suffrage—were met, despite the fact that the bill had been completely withdrawn (Martin, 2019). The protesters were concerned about the Chinese government's growing influence over Hong Kong.

In 2020, China passed a new security law for Hong Kong. The National Security Law prohibits acts and activities that endanger national security, however, what will endanger this national security is determined by the Chinese government more than the law. For example, some articles of the law are as follows: The maximum sentence for crimes like secession, subversion, terrorism, and cooperation with foreign forces is life in jail; inflicting damage on public transportation facilities is terrorism; some cases may be sent to the mainland China for trial by this Office; Beijing, not any Hong Kong court or policy body, will have authority over how the law should be construed. Beijing legislation is given precedence over any Hong Kong laws if they conflict with the law and; non-permanent residents and anyone "from outside [Hong Kong]... who are not permanent residents of Hong Kong" will also be subject to the law (Tsoi and Wai, 2022). Since the law went into effect, hundreds of activists and protestors have been detained.

The Integrated Review stresses British determination to defend their interests and principles when they are threatened or when China violates existing agreements (Cabinet Office, 2021, p. 63). Considering the situation over Hong Kong and related to the values:

The UK has responded to China's actions in Hong Kong by creating a new immigration route for British Nationals (Overseas) and their eligible family members and dependents, and to China's human rights violations in Xinjiang through measures to ensure that British organisations are neither complicit in nor profiting from them. (Cabinet Office, 2021, p. 26)

From the British perspective, "the ongoing destruction of Two Systems in One Country" in Hong Kong, had a destructive effect on UK-China relations, as well as profound negative influence on British public opinion. The Hong Kong, as an "emotional issue" to the UK (Macleod, 2021) seems to continue to impact adversely the bilateral relations in the future (Rifkind, 2021). On the other hand, as Brown (2021) argues, "China has more options than the UK" and it has more ability to control the bilateral relations "on its own terms as never before". Finally, although the Integrated Review tries to offer a pragmatic and, in a sense, balanced approach to the challenges posed by China, the course of action and implementation of the strategy will determine the future of bilateral relations (Brown, 2021).

5. Conclusion

The UK's foreign and security policy for the next decade has been introduced by the "Integrated Review of Security, Defence, Development and Foreign Policy: Global Britain in a

Competitive Age”, in March 2021. The Global Britain strategy describes the post-Covid and post-Brexit international order as more competitive, multipolar, increasingly contested, and fragmented. In this new order it affirms the UK as the “global leader” in many areas. According to the Integrated Review, a new approach should be adopted since preserving the status quo does not help to achieve Global Britain vision. The UK’s policy towards China is described as one of the corner stones that need a new approach in the competitive age. In this new order China is labelled as the main “systemic competitor”.

Alongside the global challenges, after the Integrated Review's publication in March 2021, both political and economic instability dominated the UK’s domestic sphere. First, Boris Johnson resigned in July 2022. Then, Rishi Sunak succeeded Liz Truss who was forced to resign just after just 45 days as Prime Minister. Furthermore, Sunak has been the fifth Prime Minister since the Brexit Referendum in 2016. From the economic perspective, some bankers have labelled the UK as “the sick man of Europe”, even though it has long been one of the “most boringly stable countries” in the region (“UK: What Does Rishi Sunak Spell for ‘Global Britain’?” 2022).

As Devanny and Gearson (2021) argue, the UK will not be able to realise its 'Global Britain' ambitions unless it first addresses domestic issues as well as those linked to its current and potential relations with Europe. The UK's domestic, social, and political issues will surely continue to be a target for hostile states looking to undercut the UK's capacity to act, as the Review's reference to a competitive era shows. A fragmented domestic agenda won't produce the strength and cohesion of thought needed to play an active role in the world (Devanny & Gearson, 2021).

However, Sunak’s perspective on domestic and world affairs does not seem to concentrate on advancing any kind of vision of Global Britain; yet his vision is labelled as “empty”. (Gibson, 2022). On UK-China relations, his approach seems uncertain. He defended a “mature and balanced relationship” back in 2021 (Gibson, 2022). Recently, he said that he was very clear that “China poses a systemic challenge” to both UK’s values and interests. For Sunak, China “represents the single biggest state threat” to British economic security and necessary steps should be taken to protect themselves (BBC News, 2022). On the other hand, he also believes that the UK should have dialogue with China over global challenges such as war in Ukraine and issues such as climate change (Reuters, 2022). Sunak and Chinese President Xi Jinping were to meet for the first time in person at the G20 Summit in Indonesia. However, this planned meeting was cancelled (BBC News, 2022).

To sum up, the UK-China relations have been in a complex nature with ups and downs, in between trade cooperation and confrontation over security issues and conflicting values. The Golden era of bilateral relations during Cameron government has been replaced by an uncertain era with increased concerns about security challenges. The Global Britain vision identifies China as the systemic competitor, in the new international system more competitive, multipolar, and fragmented. It also underlines the necessity for a new policy towards China, however, it does not elaborate on how, when, and by which means. The UK lacks a clear and long-term strategy towards China. Consequently, the UK needs a more concrete and steady policy to cope with the challenges, that it claims China poses to its security, prosperity, and values.

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