



RECENT ADVANCES IN ECONOMICS AND ADMINISTRATION

Sciences Concepts,
Researches and Applications

Editor

Yüksel Akay ÜNVAN



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Recent Advances in Economics and Administration Sciences

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**Recent Advances in Economics and Administration Sciences Concepts,
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PREFACE

This book titled ‘Recent Advances in Economics and Administration Sciences Concepts’. Researches and Applications has included theoretical and applied studies in the fields of Economics, Finance, Banking, Administration Sciences. This book contains many topics under the title of business and consists of 14 chapters. Currently different disciplines are in close contact with each other.

Dear readers, this book also offers you, an interdisciplinary perspective. The book, which consists of the important contributions of academicians and researchers, has an important place in terms of academic contribution values at the international level. We tried to say the unsaid and to express what has been said before in different ways. We wish we were successful. In this respect, we would like to thank the referee committee for their efforts in the publication of the book, all the chapter authors who contributed to the book, the layout editor and the editorial board of Livre de Lyon.

March, 2023
Prof. Dr. Yüksel Akay ÜNVAN

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CHAPTER I

THE PROBLEM OF NEGATIVE EXTERNALITIES IN THE PUBLIC ECONOMY AND PUBLIC DECISION PROCESS APPROACHES

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1. Introduction

Negative and positive externalities, essential structural socio-economic issues in developing economies representing emerging economies, are crucial phenomena in the production and consumption process. Indeed, this phenomenon is also a matter of developed countries' economies worldwide, especially industrial practices requiring critical measures. At the same time, it is seen that this process is a vital issue of the public decision-making process as a socio-economic problem of negative externalities while supporting positive externalities and optimal values for positive externalities are always in a favorable structure under positive externalities.

This approach also means a value distribution in which different values emerge in the public decision-making process on preventing or internalizing negative externalities and can be expressed in different directions. The critical aspect of this value distribution is that it represents a dynamism towards solving the problem of establishing a balance between consumption-based social costs and production costs of public decision-making processes. In other words, negative externalities enter into a meaningful process by controlling the negative impact values they create, and these negative impact values as an additional cost factor that they reflect on the public (Cingano, 2014: 12).

This process is also a process of approaches in which public decision-making processes evaluate the phenomenon of negative externalities at different times and in different ways and transform them into public social benefit impact values with other measures. However, the aim here is not to transform negative externalities into a favorable position and to create a social value with its function.

The public purpose here is to prevent social costs with control mechanisms directly within the public decision-making processes and to create positive effects by controlling the social benefit values of the goods, which we call immortal goods. The critical problem with externalities in the production and consumption process is creating a socio-economic distribution balance with public financial sanctions based on cost-benefit analysis, especially in evaluating a process that turns into social costs. This stage is considered an essential step of the shared decision-making process since it requires a negative externality based on any production-consumption relationship that may arise during the production process, without restricting the production process, and a corresponding financial balance.

In this context, there is no doubt that analytical approaches to monetary values, tax-based policies, and incentive policies can also be expressed with other discounts and public decisions that can affect the decision processes for the maintenance of cost elements in the production process (Alesina and Rodrik, 1994: 471). In this respect, the necessity of balancing economic growth trends with social costs in an economy where negative externalities persists emerges as a position formed by a positive effect level matched with social costs (Bazzi and Clemens, 2013: 161-162). The decision process aims to create an optimal tax trend by reflecting all values directly based on a price index in determining negative externalities in understanding the externalities and by remembering this price index approach forward and backwards with the tax revenue mechanism.

In this respect, it is necessary to deal with all kinds of costs, especially concerning negative externalities, in a process that will not cause a market failure in the production process. In this respect, it is not enough to consider only a marginal cost-oriented marginal social problem and externality costs. This fact should be emphasized that there is a structure in which negative externalities are considered as a marginal cost element based on meaningful cost elements, especially with their negative impact values formed on two bases. It should be noted here that the phenomena expressed as marginal negative values, predominantly negative externalities, constitute a cost element with

some sanctions for internalizing the exact and social costs. For this reason, the external costs become a social phenomenon as socio-economic problems and are accepted.

In this respect, to avoid conceptual confusion, a pro-supply and demand-side approach is expressed as a factual negative externality process of possible socio-economic negatives on the markets. Although this approach creates an important positive phenomenon in the social sharing of negative externalities, they never reveal a phenomenon that causes them to be perceived as positive externalities (Sigali and Balsari, 2018: 869). For example, it is also not much probable to see an objective approach directly related to the quantity restriction of a polluting cement factory or a chemical fertilizer factory, especially in developing countries such as Turkey.

2. The Impact Level of Negative Externalities and The Socio-Economic Resource Allocation Process

In terms of negative externalities, the point that needs to be emphasized here is that there is a whole of commercial relations for the markets related to the production and consumption process based on the emergence of negative externalities as a cost element. Values expressed as commercial relations are an expression of the relations between industrial and commercial applications of externalities (Libecap, 2014): 427-428). These relations shape a price formation that affects the market activities on the markets. It is important to consider negative externalities as a process that can arise in the consumption process and production and that the negative externalities can state directly with external unit costs as a cost element in the economy.

2.1. Supply-Demand Benefit Conflict Process in The Negative Externalities and Deviations in The Benefits

The formations of tax effect values to internalize social costs are reflected in public as public revenues as a cost of the factors that create negative externalities. In the meantime, paying attention to the significant impact levels of the said costs on both bases is necessary. One of these activities is considered a holistic negative externality cost, in which resource allocation costs are considered and social costs.

Besides, it should be emphasized that it turns into a negative impact value as a cost element related to the distribution of social and economic resources, where possible impact values meet. In this respect, it is an essential phenomenon

that negative externalities are not only structural costs and social costs but also have a negative effect on the sectorial resource distribution and consumption-welfare distributions in the country. In this context, a process where marginal social costs have emerged especially means, at the same time, holistic cost values in which all costs, including marginal external costs and marginal costs, are also included in the process.

Certainly, marginal social costs include the fore as total social costs, especially the production process, which is the expression of a structure where all marginal expenses are included in the process as social costs. Especially when the issue is viewed as a supply-side economy, this phenomenon means a structure that creates internality in reducing production quantities (Kudelko and Wejer, 2014: 199). In this context, it should also be questioned whether the price change, despite the activities in a perfectly competitive process in which market prices do not change, will increase prices with the production cut.

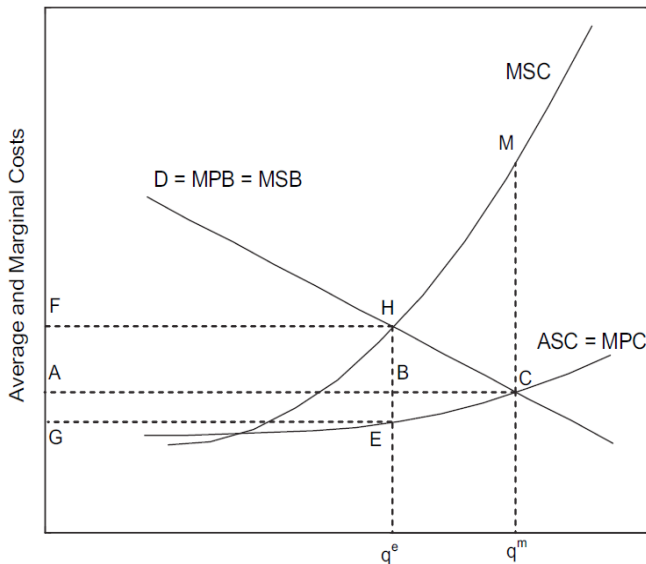
However, in a perfectly competitive market, the reduction in production can be considered an internalization model that increases social costs in terms of production output in a market where prices are fixed. The production cutoff reduces negative externalities regarding social costs, although prices do not change. But, it should not be ignored that this idea, which is valid in theory, is generally not very meaningful in an oligopoly or triple market and reveals a process in which production cost values are reflected in the market with the “Price Cartels” formed for the firms. Firms that form “Price Cartels” among themselves may enter into a firm behavior trend that directly reflects possible marginal social costs with the possible price increase, except in a perfectly competitive market where prices are fixed (Nyborg, 2021: 13).

Controlling the companies’ prices in the market in the public economy makes a public decision process inevitable. It affects the resource allocation based on public revenues and public expenditures, which call these price control mechanisms other financial instruments, in a structure where perfectly competitive markets are not in question as intended to market prices. The fact that externalities are shaped by a mutual supply and demand balance, especially in the production-consumption process, constitutes an essential point of view in understanding and analyzing negative externalities.

In this context, an optimal demand balance where marginal private benefit and social benefit are equal is vital for an absolute and optimal demand in terms of demand, especially in a demand values approach. It should be noted that in a structure where social benefits are higher than marginal private benefits are

lower, a structure in which positive externalities are always below an optimal utility is a crucial structural position in understanding negative externalities. However, in a process where negative externalities are at the forefront, it should be emphasized again that a structure with high private benefits and a negative decrease in social benefits is interpreted as the main reason for negative externalities in the process (Coase, 1960: 18-19).

The critical issue here is that, when viewed from the point of view of demand, it has emerged with a negative effect value beyond the search for an optimal balance regarding the evaluation of the form of benefit that may arise in terms of a social cost of supply. In other words, the situation where average social and marginal private costs are equal to each other causes negative externalities to occur with negative effect values that are too large as a result of an optimal demand balance being blocked or a structural bottleneck in the process (Stiglitz, 2000: 216). In Figure 1 below, it is possible to follow a negative deviation process related to the imbalances in the supply policy, production amount and demand that may arise in the deviations in different utility values in the emergence of negative externalities:



Source: Georgina Santos, Hannah Behrendt, Laura Maconi, Tara Shirvani & Alexander Teytelboym (2010), "Externalities and Economic Policies in Road Transport", *Research in Transportation Economics*, 28, p. 6.

Figure 1. Negative Externalities in Market Failure Process and The Deviations in Benefit-Costs

As seen in Figure 1 above, the situation at point C, which came to equilibrium in a structure where an optimal balance of supply and demand has been formed, then shifted to every point with the shrinkage of quantity and turned into a negative externality. This means that the negative externalities increased with a deviation between the equilibrium point of marginal social costs and private and social benefits.

Negative externalities form, especially after an equilibrium position at the optimal point “H”, as seen in Figure 1 above. It is also necessary to mention the formation of a structure where marginal social costs increase due to the increase in production and a balance coming to the “C” point. The new equilibrium at this point, “C”, is expressed as negative exogenous impact values as a result of increased negative marginal social costs. The issue to be considered here is the position regarding a deviation from the optimum, where the factor that highlights the formation of negative externalities will reveal a negative effect value, especially with increasing different values. In this respect, it should be noted that this phenomenon analytically shifts from where marginal private utility and marginal social benefit are equal to where marginal average social cost and marginal personal cost are equal. This great point creates a structural triangle on the single point from “Q⁰” zero production amount to “Q^m”, and it is seen that the optimal equilibrium point jumps to the “M” point with increasing marginal social costs. The existence of a structure in which the formation in the “HMC” triangle will be subject to the public internalization mechanism in terms of a negative externality is remarkable here.

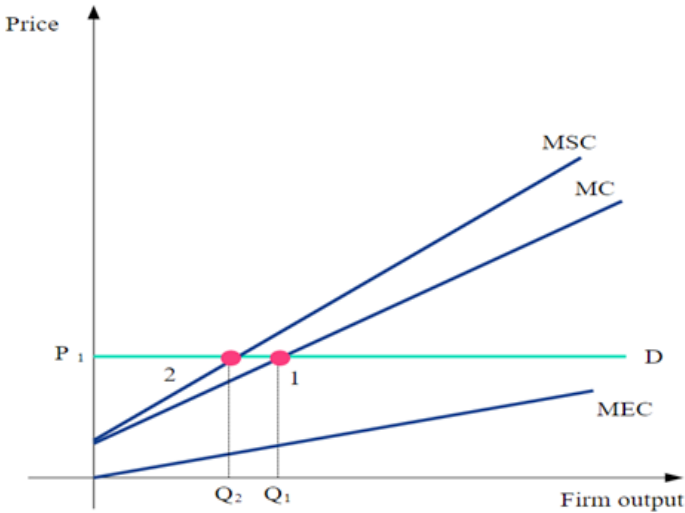
The aforementioned “HMC” triangle is also the result of marginal social activities shifting further to the right on demand, increasing with the continuous increase in marginal social costs and the amount of production after the “C” point. The new balance formed by these deviations will grow after the “C” point. There will be a social structural situation in which negative externalities increase due to increasing social marginal costs. The critical issue we are trying to draw our attention to here is the point where the values that may arise in terms of marginal costs and demand for equality takes place in the process as a phenomenon in terms of structural position. In another word, it means the deviation after an equilibrium point depending on the optimality of supply and demand due to the increasing, not requirement and harmful production levels, versus the increased positive goods. However, the fact that needs to be emphasized here is that increasing possible negative externalities are an ongoing

phenomenon that occurs primarily with producing harmful goods and services (Heeks et al, 2018: 35).

First of all, the external benefit formed as much as the FHBA rectangular area, which expresses the optimum point; that is, the marginal private benefit and the marginal social benefit are equal to each other. The external use gradually increases, and the MPC and MSC costs at the “C” equilibrium point reached by the increase in the production amount are equal to each other, which means that we emphasized that it carries it beyond the optimum. The fact that the rising costs move beyond the optimum “H” point creates a marginal social cost as much as the “B” and “C” points, revealing this structural phenomenon and formation of negative externalities as related directly to the production process. Here, a possible social cost creation (MSC) above a company’s private financial cost element (MPC) during production is also expressed as a negative externality increase process structure that may occur with a social balance (OECD, 2016: 34).

In this context, the point that should be emphasized in particular can be summarized with the two most important factors as the period prices are fixed, the increase in marginal social costs, especially in a structure where there is an increase in the amount of output. The first of these is the marginal cost, which is the return of the production process; another is the exogenous cost of production time (OECD, 2016: 36). The sum of these two costs in the production process is shaped as the total marginal social costs reflected the society as a negative externality phenomenon in a structure where prices do not change, and other economic variables are constant - *ceteris paribus*.

In Figure 2 below, it is possible to see this situation regarding negative externalities related to a firm-based production process:



Source: StudySmarter (2022), Negative Externalities, <https://app.studysmarter.de/studysset/10165136/summary/67728124> (Accessed February, 12.2023).

Figure 2. Supply-side Externalities of the Production Process in an Unchanged Market with Prices

As seen in Figure 2 above, that brings forth to the fore that externalities are always possible, even with a perfectly competitive market approach. In other words, in a market price process, that is, in a perfectly competitive market where the price does not change or there is no chance to be altered by the firms, it is seen that the equilibrium points for the demand price. There is considered a position that even if there is an equal to the sum of the total marginal external and production costs as social costs, as a sum. It is understood that structural differences in the amount of change at two points on two points are significant here.

It is seen that the social costs, which consist of the sum of the marginal cost and the marginal external costs, at the point where the social prices are high, mean an internalization of an externality with quantity restriction or a production reduction to prevent negative externalities. For a supply-side economy, the quantity constraints approach can be considered one of the priority approach measures. However, these attitudes and behaviors of firms should not be considered a property right to reduce marginal social costs. Although this phenomenon, which can be expressed directly as production restriction, occurs with a quantity restriction on the price due to the costs related to the limits on the production quantity, there is no deviation in the price equilibrium points. In

terms of negative externalities, a firm's production process is to be matched with quantity constraint to reduce social costs based on the approach to reduced costs, particularly the total health costs. In this respect, while the said public policies in structural approaches to the emergence of negative externalities primarily create a position to reduce the amounts that create negative externalities, on the other hand, it also reveals the existence of a public decision process approach.

This approach is a situation in which the reduction of external costs associated with costs is balanced with quantity restriction. It has also been revealed that the control of certain limits, called property rights, for example, pollution rights, and the purchase of these negative limits, take place in the process as a public financing policy in cases (Lovei, 1995: 40). This is where there is quantity restriction and the income-production amount restriction in overcoming social costs in public decisions via the process decisions public choices made. This situation of negative externalities should also be prevented by social cost phenomena that can be expressed with different values.

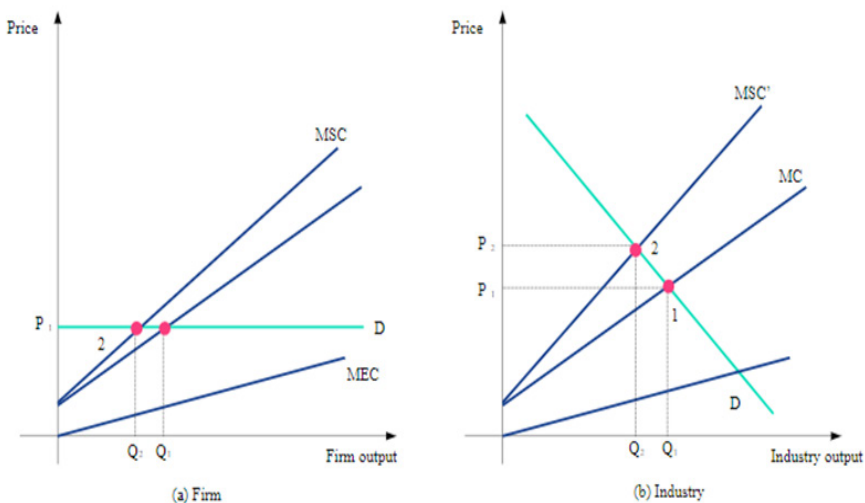
The introduction of health policies in this process regarding the increase of the environmental negative external impact scale of the social cost phenomena in the direction of the firm's supply by the firm again emerges as a fundamental approach in terms of firm balances regarding the undertaking of these costs. It is observed that companies with high-scale effects related to environmental health and external negative impact values they give to the environment adopt a behavior towards reducing marginal external costs, especially by limiting quantity. Unlike the production costs process, one can also choose an application where supply-based health costs are aimed at lowering total social costs directly with reductions in the marginal external cost axis.

2.2. Marginal Social Costs and Formation of Negative Externalities in Demand Changes on Sectoral Production

In the emergence of negative externalities, it is observed that the demand factor creates a significant trend, especially in a sectoral comparison of a firm's position in a perfectly competitive market. As a result of the differentiation of the prices of the goods produced based on sectors, the marginal social costs, external and production costs values particularly enter a different trend with the change in demand values. When the subject is approached as a sector, we should emphasize that it reveals a social cost with price effect values in terms of externalities related to industries. In particular, a situation in which firms cannot affect prices in an approach they are handled alone can reveal a critical marginal

social cost element with price increases based on product differentiation based on sectors. In this situation, where the prices do not change, collecting all kinds of impact values based on marginal costs with different values means that the external costs are internalized by also taking them into account. In addition, the same certainty is seen, especially for sectors to adopt an approach by restricting goods or reducing the production of goods.

This approach of demand, which is sensitive to price variability, prefers goods of different values at different prices, which means a lower but higher degree of demand equilibrium due to rising prices, especially when there is a shortage of goods. In this case, equilibrium means a structure in which marginal social costs are incurred in return for rising prices. As we mentioned before, among the marginal social costs, there are increases in production costs arising from the restriction of production and a total value in terms of external costs related to the production in question. The critical difference between dealing with this phenomenon based on a firm and based on industrial sectors is the possible negative externalities that may arise in price volatility. In Figure 3 below, it is possible to see that the marginal social costs associated with sectoral demand variability in the formation of negative externalities are analyzed by comparing them with a firm approach in the market:



Source: StudySmarter (2022), Negative Externalities, <https://app.studysmarter.de/studysset/10165136/summary/67728124> (Accessed February, 12.2023).

Figure 3. Marginal Social Costs and Formation of Negative Externalities in Sectoral Demand Changes

As seen in Figure 3 above, demand variability in the emergence of negative externalities means significant price category variability, especially at the beginning of the sectors. A structure in which negative externality processes increase with the costs involved in rising prices activates an important public control mechanism, especially in terms of reflecting prices. This control mechanism includes the extent to which the costs within the increasing prices will be reflected in the public decision processes with the quantity restriction. The position of the firms in the trend of internalizing their negative externalities on their behalf due to the process in which they do not affect the prices means that these firms undertake these externalities as costs. This situation reflecting negative externalities caused by production restrictions through price mechanisms can form a negative social position.

When this approach is considered in a sectoral industrial structure formed by groups of companies, this industrial approach reveals itself with some restrictions, especially for reducing external costs; however, the marginal costs corresponding to the prices that may arise can be reflected in the social costs as total costs in an increasing trend in return for the price. In brief, in terms of negative externalities, this position results in the fact that the part of marginal social costs, primarily expressed by sectoral demand variability, is revealed by the price mechanism and is reflected in public as a social cost element through the price mechanism.

The most crucial point that draws attention in this process regarding negative externalities is that the social costs that arise in the case of an unsuitable price constant of firm variability are lower than the social costs that occur at the beginning of the sectors and are reflected. In other words, marginal social costs associated with negative externalities arising from price variability on a sectoral basis are higher than marginal social costs in a structure where the price does not change on a firm foundation.

This can be interpreted in two ways: One is the difference in the emergence of social costs, especially in the emergence of negative externalities, through price. However, it should be emphasized that any reflection that can be handled based on sectors creates a more meaningful and higher social cost through the price mechanism. Secondly, since firms' price adjustment, primarily through quantity restriction, creates an internal structural control over their preferences, firms have entered into approaches to develop a sectoral price cartel by increasing the quantity restriction.

The cause of this approach is the accepted emergence of negative externalities not to give up their possible profits. Accepting this process also means that price increases based on quantity constraints allow a higher degree of reflection on society of negative social values directly as incremental marginal social costs. For this reason, as we mentioned, the primary approach in the emergence of public control mechanisms is focused on controlling the possible unit costs, which may arise from price increases based on sectors in the emergence of negative externalities as a cost element. But this approach is not based on companies but on sectorial.

Of course, this focused approach also means the certainty of a public necessity that can be controlled by all values expressed in public decision-making processes, especially price mechanisms. In this respect, the increase in costs, significantly the increase in external costs, but the increase in cost per unit amount carried out with the restriction of the quantity is a fundamental reason for the reflection and growth of the marginal social costs via increasing prices. In this respect, the industrial trend that emerged with the quantity restriction for the sectors to control the negative reflection of external costs means preventing the export-oriented structures of sectorial outputs and reducing the contribution level of the production amount to economic growth.

Hence, this phenomenon is also possible to control the negative economic downward trend due to is considered a control part of this process. At the same time, this process turns into a phenomenon that means that with increasing amounts, the value created by the contribution value of the industrial-sectorial output values to the economy as added value, possible marginal social costs will be internalized by public means. This formation will become more prominent with economic growth and a public financing source needed. Even though these structural values are handled differently in terms of negative externalities, the control of the volume increases in the sectors in this way has an essential place in the public economy decision process, especially with a possible production restriction, creating a consumption deprivation and social welfare, which may mean a contraction in the market (Ames et al, 2001:5).

3. The Position of Negative Externalities and Fiscal Approaches to These Externalities in Public Decision Processes

After the structural formation of negative externalities, the internalization matter of negative externalities as a negative social cost element, especially in the public decision-making process, emerges and is addressed with different

approaches. In this respect, the attitude in the shared decision-making process regarding negative externalities makes it inevitable that approaches to economic growth-oriented sectors should be handled with an export and economic growth-oriented sectorial development profile, especially in recent years via the public sectorial. Therefore, it is aimed to ensure via a public decision process that the costs arising from negative externalities are reflected in society to the desired extent to deal with the approaches in public decision-making processes from a multi-faceted perspective to understand negative externalities (Coyle & Diepeveen, 2021: 7). This fact is based on a supply-side approach with incentives that can prevent the negative impact of economic growth and production constraints aimed at reducing unit costs.

3.1. Structural Relation of Public Decision-Making Process with Negative Externalities and Intended Expectations

The primary purpose of tax practices regarding the prevention of negative externalities expresses an application structure that can be evaluated within the scope of extra-fiscal purposes. In this sense, the extra-fiscal purpose of taxes finds its place in practices to prevent social and economic phenomena that need to be prevented, especially environmental pollution, environment, health, investments and harmful habits. Apart from the financial function of taxation approaches in the public decision-making process in tax practices, incentives for tax sanctions that may arise in such practices or public interventions to prevent harmful social costs mean an important tax structuring principle.

This approach, which provides essential parallelism and harmony with the taxation principles, also aims to ensure economic stability, as well as creates an impact mechanism on negative externalities in terms of bearing the possible social costs in achieving economic growth or sharing the potential social and economic costs between the consumer and the producer. In this respect, it is seen that taxation aims are understood correctly, especially in approaches to dealing with taxes, creating a meaningful mechanism of influence on undoubtedly, as tax revenues, it is an essential source of sanction on both the producer and consumer basis. It is possible to express the scope of this process as below they are also interventional tools as well as public financial resources in the shared decision-making process, which is the content considering meaning, as below:

- The existence of a public decision-making process that considers the essential process of introducing new taxes is vital in terms of the functional

impact classification of taxes. Markets and sectors where taxes come to the fore primarily as a financial intervention tool have to act with an optimal balance between the production and consumption sectors to prevent cost elements. Determining the level of influence in tax avoid making processes is also necessary to prevent an economic growth loss that may occur with the shrinkage of the supply in the post-tax situation in an environment where the demand does not change. This orientation in public decision-making processes means that the negative external activity is eliminated, or at least not reflected as a cost factor, optimizing the situation. On the other hand, this structural approach draws the framework of a structure where taxes are used for different purposes and balances in the public decision-making process are also on the agenda.

- Regarding public decision processes, the practices in the relevant decision process regarding tax applications must be included essentially in the decision processes for forming balance policies for negative externalities as the requirements. Undoubtedly, it should be emphasized once again that the primary purpose of tax practices is certainly to generate public revenue. However, tax practices are an essential financial tool in intervening in markets and sectors and using taxes regarding different socio-economic effects also constitutes an important criticism ground. On this ground, it is revealed that some measures to be taken in the public decision-making process and approaches to internalizing negative externalities in improving the decisions should be emphasized.

- First, it should be emphasized that some purposes other than public revenue in tax applications have emerged as an important socio-economic effect or incentive position regarding public value increases as a means of intervention in the market. In particular, from a public point of view, supporting a demand-oriented policy with taxes and creating an important mechanism of influence in the amount increase is an essential public approach regarding public welfare functions. Considering that the primary purpose of social welfare policies is an increase in value that may occur with a structural phenomenon based on quantity increase, it is understood that optimal taxation should be balanced in the pre-tax and post-tax situations.

- The aim is to get away from a position that negatively affects social welfare levels. This process is one of the most important current problems of public decision-making approaches. In this context, it is seen that each decision affects value on the increasing demand change is aimed to have a place in the process, especially with a structure that can be expressed with positive effect values, whether there is a decrease in supply or an increase. To Demand change

situation, the primary practical aim is to support consumption limits by reducing additional costs through subsidies.

- In this respect, it is seen that all kinds of approaches to change in demand reveal the necessity of acting with a healthy decision agenda that will not bring the reduction of production to the schedule but significantly increase the production level of the sectors. Tax applications are crucial, as well as subsidies, in this process to form public decisions. It is understood that the aim of increasing the amount of increased production based on sectors, especially according to the export potential, should not be limited by tax policies, but rather financial practices should have a significant positive effect on both the consumer and the producer.

- This issue in the decision process makes it an essential point in the public decision-making process that the necessity of controlling a quantity constraint can bring social service policies to the forefront in the emergence and internalization of negative externalities. The approach that any negative externality that can be expressed as a potential can only be overcome with an absolute quantity constraint has ceased to be the subject of the decision-making process on public economics. In other words, balancing negative externalities with different positive externalities in the production process beyond this classical approach is essential in today's decision processes.

For this reason, balancing marginal private benefits with marginal social benefits is achieved with increasing marginal benefit values. All kinds of phenomena can be expressed regarding negative externalities in public decision-making processes, especially within the framework of social policy values that can be expressed (Tversky & Kahneman 1986: 254). The aim here is to create contemporary public decision integrity with the effect of an increase in the level of welfare towards the formation of social values. This is the meaningful reason for supporting that negative externalities can also be internalized within the scope of public policies, but frequently bringing up contemporary approaches that can only be expressed with increased financial support as a social value, which constitutes an important issue in the public decision-making process as a contemporary approach.

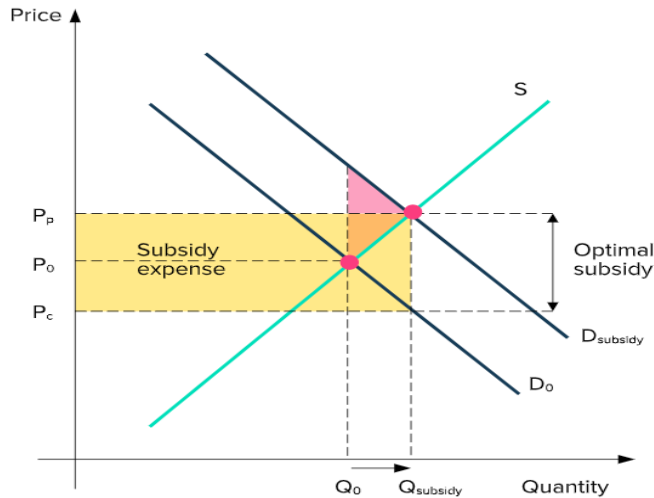
3.2. Supply Side Policies Regarding Negative Externalities and Aims in Decision-Making Process

The priority structure of economic growth-oriented policies in public decision-making processes also causes incentive policies for sectorial initiatives

to take place in the process as a priority. In this respect, it is an important public policy to support supply-side policies with financial incentives with an approach to analyze sectorial negative externalities and internalize their social costs, thus reducing some sectorial costs and preventing external costs from being reflected on social costs. In this respect, the meaning and purpose of these possible policies in the public decision-making process are to increase the impact of economic growth-oriented policies (Rahimi & Weidner, 2004: 118-119).

Therefore, it aims to create an increasing real added value, especially with sectorial initiatives, and to reduce social costs with the positive effect of incentives and subsidies simultaneously with different phenomena. This aim presents an analysis structure on an optimal equilibrium point where the marginal social costs expressed in figure 1 and the marginal total average benefits are equal, aiming at the balance of social costs and social benefits. In this respect, it is essential to support sectorial supply-side policies with sectorial financial incentives and to positively affect cost factors, albeit indirectly, in terms of controlling negative externalities.

This is the main objective in considering this structure of public policies, which may emerge with different effects based on value effects in terms of negative externalities, as the main effect factors are aimed at reducing the difference between marginal benefits and marginal social costs with financial incentives. In brief, this structural change effect, targeted with target scale effect values in decision processes, aims to prevent the factorial input costs by reducing some costs from increasing prices (Hertwich et al, 2000: 16-17). These approaches, which are in question with the said fiscal incentive policies, mean that the target welfare policies, which are reflected to society as real positive scale effects with purely supply-side policies, also play an essential role in the decision processes. In Figure 4 below, the position of cost reduction and negative value distribution in relation to subsidies related to increasing quantity variability and negative externalities related to quantity increases in a process where demand variability changes with subsidies are seen:



Source: StudySmarter, (2022), *Correcting Externalities*, <https://app.studysmarter.de/studysset/9654974/summary/61675928> (Accessed February, 19.2023).

Figure 4. Supply Side Policies Related to Negative Externalities, and Demand Alteration's Effectiveness

As seen in Figure 4 above, the existence of an optimal incentive policy has always been a remarkable position, especially in matching external costs with benefit values. In other words, while approaches aiming to increase the level of social welfare, especially with the increase in demand, create an increasing amount of benefits related to social welfare functions, at the same time, an incentive payment for cost reduction creates an important intervention phenomenon in sectors. This is meaningful, especially in a process where optimal subsidies are discussed. This phenomenon will also provide a sectoral homogenization ground in market prices while providing a specific control order in prices for cost reduction in the values that may arise by giving subsidies, especially to supply-side companies that produce.

This double-sided effect means that in addition to the positive values in the increasing social welfare functions, it also comes to a new equilibrium point with a price increase that may occur in response to the growing demand. This equilibrium point is offset by the scale of increase in the amount of increased demand associated with the increased amount of subsidized output associated with the increased amount. In this context, with the encouragement of cost reduction, it is shaped by the formation of an optimal price balance in which the subsidized values of the costs can only be expressed with the optimal values of the cost-to-benefit values. In other words, this is important in creating an

incentive intended to support demand at a lower price level. For a negative externality revealed by the increasing amounts in terms of negative externalities, the purpose here is to prevent the creation of a significant negative externality with the increase in demand due to the social costs reflected on the society.

In this respect, they must subsidize an optimal subsidy policy and a new externality position in society as much as the area between " P_0 ", which expresses the negative externality that increases with a price formation in which its presence at " P_p " point rises to glance create. We can achieve this subsidy through the market price mechanism in the equivalence of subsidies. Again, another point that should be emphasized in terms of negative externalities is the " P_c " point, which expresses the corresponding price point of production costs. At this point, it should be noted that there is a production trend related to the increase in production costs, especially with the cost increases in the pre-subsidy period. The costs within this production trend create a scale effect that can be reflected in the production process with a cost between " P_c " and " P_0 ". Production costs are a position outside the cost methods between " P_0 " and " P_c ", and only when an ongoing negative external value between " P_0 " and p_p can express negative externality reflected in society.

The area in the red triangle shown in Figure 1 is a production amount that can meet the increasing demand. It refers to the potential demand supported by subsidies, which can be expressed as a demand gap and positively impact society. On the other hand, it is possible to perceive a demand subsidy scale in which demand fluctuates with these subsidies in a period where the supply does not change. This can be explained by the fact that an optimal subsidy phenomenon in expressing a policy in the direction of position supply creates an increase in demand with a supportable approach to consumption, causing a further increase in the supply's production. Indeed, this formation fact makes higher social welfare added value via supporting the actual demand. The continued existence of demand with a lower cost balance, especially by financing the costs at point " P_0 ", which is an optimal price formation from a point " P_c " that can usually be expressed in terms of production prices, a subsidy in the position of maintaining its existence.

This balances in the market, in the market as an optimal price balance, again as a price at point " P_0 " against an increased amount receives the fiscal support. At the same time, this situation is based on reducing indirect taxes based on price formation due to consumption taxes, especially with the position of supply-side policies in a case where demand is supported, and creating a

financial subsidy effect with its positive impact. Here, fiscal subsidies can be expressed as lower sales taxes intended for customers' buying. In both cases, it is seen that the effect of subsidies in the sharing of negative externalities in a producer and consumer or pro-supply-demand position is aimed to be balanced with a positive value increase and social welfare increases. This means that there has been an absolute double effect towards internalizing negative externalities (Lenzen, 2006: 191).

3.3. Position of Tax Practices for Internalization of Negative Externalities and Its Impact Level

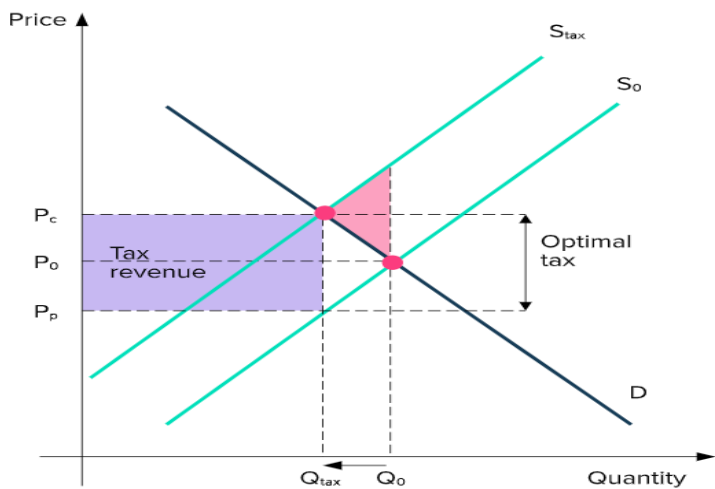
As a financial tool, tax applications are an essential intervention tool of fiscal policies to support macroeconomic policies. Ensuring the target financial balances in the efficiency level of tax policies gains a necessary sanction power with the effect level of taxes in this respect. In internalizing negative externalities, this financial power means internalizing these social costs as a public financing source and an economic sanction process. The value created by each sanction establishes a process in which tax efficiency, especially in financial practices, comes to the fore.

In particular, in the emergence of negative externalities, both the position and variability of demand variability and the implementation of cost policy sanctions on supply-side policies with some structural values are again in question with tax policies. This approach is also meaningful regarding negative externalities, with a strategy that can be expressed by price mechanisms over market prices of tax revenues and can cause quantity variability (Feldstein, 1973: 358-359). In other words, as we mentioned before, in a process where subsidies related to supply-side policies are in question, it is seen that in the same tax applications, it is aimed to internalize negative externalities with an optimal tax approach.

The mutual reflections of a cost increase in tax practices, which may cause a supply reduction, through the price mechanism related to the corresponding prices, besides being a tax element, also mean a meaningful tax reflection phenomenon with the corresponding market price balances (Feldstein, 1995: 554-555). Preventing the P_0 price value, an optimal tax-tax equivalent, from creating an excess supply, primarily due to increasing taxes, and internalizing a cost with a supply-side contraction effect also raises the social welfare balances.

However, this situation can create a position where price optimality also rises. In this context, the fact that tax values and practices are used in terms

of negative externalities can also have meaning on a supply position on the subsidy since they also provide negative internalization. It is seen that the sectors supported by tax versions or financial contributions rather than exceeding the target tax revenues in tax revenues have an essential effect mechanism that can create an inevitable variability in the breakdown. In this respect, there is a situation where the variability in tax revenues, together with the quantity restriction, creates an externality on the supply and leads to quantity restriction. In this case, it is seen that the reflection of a possible excess of production on society as a social cost also expresses a position where it is aimed to reduce social costs through the price mechanism depending on the supply variability (Favero & Missale, 2010: 14-15). In Figure 5 below, it is possible to see the degree of impact and the application trend on the internalization of negative externalities of tax revenues obtained and the constraint created by tax practices on supply during a negative externality process:



Source: StudySmarter, (2022), *Correcting Externalities*,
<https://www.studysmarter.us/explanations/microeconomics/market-efficiency/correcting-externalities/> (Accessed February, 20.2023).

Figure 5. Impact Position of Tax Practices
for Internalization of Negative Externalities

As seen in Figure 5 above, this fact is based on the principle that a value on a supply-side production structure causes a significant reduction in tax expenditures on supply-side sectors, primarily due to a production restriction. In this case, it is seen that there can be a cost element depending on the price mechanism, with the reflection of the possible cost values to the prices together

with a sectoral reduction. However, the approach that should be emphasized here is that the existence of supply-side subsidy policies together with tax policies must act together in a structure that can be effective in this regard within the framework of the correction of negative externalities regarding taxation (Feldstein et al, 1980: 778).

As seen in Figure 5 above, it is seen that the tax revenues are shared as the average financial value, which can be reflected in the taxed prices and can be expressed as the optimal tax revenue representing a position. That corresponds to them in which no put-in tax can reflect an average equal cost in " P_0 ". However, optimal taxation aims not to increase the price with a cost restriction, especially in internalizing negative externalities, but a cost element between " P_0 " and " P_c " with an optimal price application by a supply-side sectoral structure. This situation means restricting the production amount in the post-tax case via new-actual tax practice.

This helpful fact is based on the principle that any value that may arise creates a position that can internalize the negative externality. Namely, it is seen that this phenomenon of quantity restriction, which can be expressed with different values regarding negative externalities, reveals the period of structural change as a result of the fiscal impact values of supply-side policies that may occur without a change in demand (Myers, 1977: 161-162). However, the position in Figure 4, which we mentioned before, reveals a structural mechanism that can be handled at a different level. This structural mechanism creates the effect that, as a result of a cost reduction that may make an increasing impact on demand, it will result in some increase that may generate an increase in demand, together with the cost elements that fall as a result of subsidy.

This situation, which can be interpreted as the different and opposite effect of taxes with subsidies, is two elements that complement each other in practice. It means the ongoing structure of these two elements, especially with subsidies and tax practices. On the other hand, this fact also plays a vital role in internalizing negative externalities at a new optimal equilibrium point with the movements of supply and demand (Sunstein, 2019: 4-5). So, it should also be emphasized that tax practices as a financial instrument and tax practices aimed at increasing the deviations in the target values of public revenues mean the taxed price corresponding to the increased tax burden in response to the reduced amount.

In particular, it should be reflected back by the consumer and interpreted as a contraction in demand and the burden of negative externalities within a

tax control process by increasing taxes on the optimal tax price with increasing subsidy policies on sectorial. In this respect, the sectors are the subject of a public decision process, and a certain amount of restriction is more effective, especially with the burden of tax as a cost element by the sectors, rather than the sharing of the taxes obtained in a tax application (OECD, 1998: 8). Therefore, this phenomenon can be expressed with different shared tax values. The consumer has a positive effect but has a cost component on producers to aim to internalize negative externalities. On the other hand, it is seen that this objective approach aims to set the targets for sectors to create less social negative externality costs by positively affecting the renewing of themselves with an incentive approach. In terms of internalizing negative externalities within the scope of tax practices, it is seen that it brings decision centers with significant financial impact in public decision-making processes to the forefront (Bassasini & Reviglio, 2011: 2).

4. Conclusion

Negative externalities emerge as an important socio-economic cost problem that directly concerns all countries regarding the public economy. Approaching the problem with a two-sided approach to the production and consumption process in the emergence of negative externalities reveals the necessity of public auditing of this process, in which each structure in the production and consumption stages turns into possible social costs. Undoubtedly, this necessity raises the issue that controlling negative externalities is a crucial decision process.

This structural approach is also based on the principle that any decision to be taken can have a significant impact on different economic and fiscal instruments in practice. In addition to the internalization of negative externalities with a tax price in terms of their level, at the same time, some environmental rights, such as polluting rights with a quantity restriction. On the other hand, an optimal approach to evaluate and equate marginal social costs and marginal social benefits in the emergence of negative externalities, together with all kinds of techniques, also expresses an equilibrium tax price point where marginal private benefits and marginal social benefits reach equilibrium. It should also emphasize that the degree of efficiency is a practical fiscal value created on demand and supply via tax applications. This phenomenon is also internalized via added taxation and defined within a specific price procedure, an essential issue in public decision-making. In addition, negative externalities also express a structuralism that needs to be controlled by some investments that may arise

without virtue, faulty goods and that directly need public decisions. This is put in, especially within a production process. It is seen that controlling each approach in the emergence of possible negative externalities in the increasing production process also creates a significant level of economic impact as a result of the reduction of increased production and the reflection of a tax application based on this reduction on the sectors. However, the approaches to the negative effects of some negative sanctions in the economic sense of quantity restrictions on economic growth reveal that today, beyond the limitation of production, a more recent financial internalization phenomenon is aimed at reaching a new equilibrium point. This means the new production process is based on increasing mutual social benefit values. This approach in public decision-making makes it meaningful that facts that can be expressed with financial matters take place as an intervention tool rather than just a public income element. However, in today's world, where the internalization and control of negative externalities and abandoning the consumption margins based on economic growth trends and social welfare are not very current, there is a perception of a negative externality process in which the expectations for a structural change.

Because the public decision-making processes come to the fore in interventions to ensure structural balancing. It is a critical decision process handicap that any sanction that can be put forward with high premiums as one of the main reasons for market failures in a negative externality position towards production activities within the production costs will mean the deterioration of the homogenized production structure. In this regard, it should be emphasized that the emergence of a rational necessary public economy approach with the targeted cost-benefit distribution in public decisions depends on logical balance analysis. In this respect, it is more meaningful than any surplus value based on possible consumption, creates a positive effect on the production process with potential negative externalities and is a result of a tax application based on sectors rather than a production restriction. This means a reduction in social benefit values. Today approaches in controllable decision processes in the emergence of negative externalities are based on the principle of making a more controlled production and solving the social cost elements within the scope of its delicate structure rather than reducing the production cost. This approach to negative externalities reveals that decision process efficiency will be achieved with an optimal marginal personal benefit-marginal social benefit equation based on an equal distribution of consumption-production cost balance based on firms.

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CHAPTER II

THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND BEHAVIORAL FINANCE: A LITERATURE REVIEW AND EVALUATION

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1. Introduction

Today's economic conditions impose the responsibility of making financial decisions on individuals. People need to act consciously both in their daily lives and when making decisions for the future. Due to the increasing diversity of financial products and services in a changing and developing world, people need to be protected from possible risks and turn this diversity into opportunities. Living according to age will benefit countries' economies, especially in a globalizing world. At this point, while financial decisions concern individuals from a micro point of view, they concern the country's economy from a macro point of view. Economic growth and the expansion of financial markets have given consumers access to a wide range of investment opportunities around the world, but to choose the best one, it is not only important but also necessary for them to be financially literate. The concept of financial literacy has been frequently brought up in recent years by

governments, educators, and banks, as well as by many different groups. The subject of financial literacy and financial education has attracted increasing attention from governments and authorities regulating financial systems and has been the subject of various studies. According to the conclusions reached as a result of the research, individuals with higher financial literacy levels will demand better, cheaper, and more appropriate products and services at the micro level; therefore, it is globally recognized that this will contribute to more effective regulation on a macro scale and the creation of more efficient financial markets (Williams and Satchell, 2011). Raising the level of financial literacy helps the individual make better financial decisions by allowing them to learn how financial products and services operate and which ones are more in their interests. Financial literacy is the ability of an individual to correctly assess and manage his or her financial position to make prudent decisions aimed at achieving goals in life and achieving financial well-being. Clark et al. (2017) defined financial literacy as “the public’s understanding and information that covers financial services, the administration of financial investments, and various perspectives that appear to be most crucial for household investors’ cognizance so that there are no asymmetrical information problems associated with the various financial terms, i.e., interest rate risks, inflation.” Financial literacy is now widely recognized as a life skill that is essential to guaranteeing stability and growth on both a financial and economic level for any nation.

Recently, the concept of behavioral economics has been at the center of attention in the world, which enables studies to be carried out in many disciplines. Behavioral finance is basically about the irrational behavior of individuals and their effects on financial markets. Individuals do not exhibit rational behaviors because their decisions are influenced by their feelings and thoughts. With this aspect, behavioral finance examines market outliers that traditional financial theories are difficult and not sufficient to make sense of, using branches of science such as psychology, anthropology, and sociology. In classical finance theories, the individual is an abstract personality who has all the information and works with the principle of profit maximization. Behavioral finance, on the other hand, operates on the assumption that financial market performance may vary according to the educational level, psychological and sociological tendencies, and family and social lives of individuals. Therefore, the performance of the country varies depending on the educational status and psychological and sociological tendencies of the individuals. People’s moods are variable, and at the same time, people may react differently to different

events. These differences also have an impact on the investment decisions of individuals. The main goal of behavioral finance is to examine the mistakes that investors make when making investment decisions, especially emotional and cognitive misconceptions. Emotional, cognitive, and prejudiced behaviors of individuals not only affect their financial structures but also affect the country's capital and money market. Thus, it can be said that human psychology has an important impact on economic science. Behavioral finance is the application of the principles of investor psychology during trading (Peterson, 2012). Behavioral finance, which is a part of behavioral economics, argues that individuals do not always make rational financial decisions by examining how they direct their savings. With behavioral finance revealing that individuals do not always make rational financial decisions, it is observed that psychological factors are effective in individuals' financial decisions. According to some academics, having financial literacy alone does not guarantee that someone can make wise financial decisions (Drew & Cross, 2013; Estelami, 2009; Guest & Brimble, 2018). Estelami (2009), for instance, claimed that cognitive capacity constraints frequently lead to people's inefficient patterns of financial decision-making. Numerous behavioral finance studies that assert that investors are "predictably irrational" in their financial judgments due to various types of behavioral biases support this conclusion. In a similar spirit, Drew and Cross (2013) stated that understanding fraud strategies may be significantly more important to the success of financial literacy initiatives than financial expertise. The idea that "literacy learners should be actors rather than viewers in the world" was supported by this (Lee, 2020). A high level of financial literacy helps to minimize errors caused by behavioral tendencies, thus helping individuals make financial decisions that are most appropriate to their situation. In this context, financial literacy is expected to have an impact on the individual's behavior for the individual to make his or her decisions effectively and accurately as a financial informer.

2. Literature Review

2.1. Financial Literacy

The main thing to understand about economics is undoubtedly the financial factor. The importance of basic financial literacy in our country and the world is increasing day by day. One of the most important current and new financial concepts that are just beginning to gain popularity in the world is the concept of financial literacy. The growth of financial markets faster than the

spread of the concept of financial literacy is one of the biggest factors showing the importance of financial literacy development (Béres & Huzdik, 2012). In addition, Sundarassen et al. (2016) stated that financial literacy accelerates the effectiveness of cash flow management, credit risk management, savings, and investment at a higher rate. In the United States, the Jump\$tart Coalition (2007), which has undertaken the mission of increasing the financial literacy level of individuals, defines financial literacy as “the ability to use the knowledge and skills needed to effectively manage the financial resources that an individual has, for lifelong financial security” (PACFL, 2008).

Financial literacy is the opportunity to understand how money works today, how it is handled by others, how they spend it, and how an individual gives it to someone. While there are quite a variety of definitions of financial literacy, they all cite it as a key element of having a more financially secure future through the collection, understanding, and evaluation of relevant and important information. Remund (2010), who examined more than a hundred sources on financial literacy and found that there was no common ground in these sources on identification and measurement, said that “financial literacy is a measure of the ability of the individual, being aware of the conditions of life and changing economic conditions, to understand the basic financial concepts and to manage the individual finances of individuals with appropriate short- and long-term financial planning methods.” In other words, financial literacy is the degree of financial competence required for individuals to make financial decisions on various issues throughout their lives. An individual investor who wants to get the highest returns from various financial sources is expected to have a high level of financial literacy.

A wide range of financial products, often complex and not comparable, has raised the need to understand financial issues (Mandell & Klein, 2009). On the other hand, the change in social security all over the world has made it necessary for individuals to actively participate in financial management (Aren & Aydemir, 2014). The research examined shows that the issue of financial literacy has been discussed in many different areas in the literature and that the last 10–15 years have been examined comprehensively. With the increasing importance of the concept of financial literacy, it has been observed that it has ceased to be an issue that concerns only individuals and has become an issue that concerns states. In nations like the USA, Canada, Germany, the Netherlands, Switzerland, Sweden, Japan, Italy, France, Australia, and New Zealand, which are generally wealthy nations with well-developed financial markets, a higher degree of education

has always been linked to greater financial literacy. Additionally, there is strong proof that those who are more financially savvy are more likely to plan, save, invest in stocks, and build up their wealth (Lusardi & Mitchell, 2014). Since financial literacy studies conducted both at home and abroad are not carried out on a common financial literacy scale, the financial literacy levels determined as a result of the studies are not comparable to each other. However, the International Network on Financial Education (INFE), established within the Organization for Economic Co-operation and Development (OECD), has developed a survey tool that can be used to determine the financial literacy of people with very different backgrounds from many countries and has applied and analyzed this survey in 14 different countries on 4 continents (Atkinson & Messy, 2012). Remund (2010) examined most of the measures of financial literacy, noted the lack of universal metrics for defining and assessing financial education, and then demonstrated financial literacy as the level of understanding of fundamental and common financial concepts. Reich and Berman (2015) asked several questions about the effectiveness of financial learning on financial literacy and to what extent it is effective. It reveals that individuals do not have the level of financial literacy they need to make the right financial decisions (Hassan Al-Tamimi & Anood Bin Kalli, 2009; Shahrabani, 2012; Ateş et al., 2016; Janor et al., 2016; Lusardi & Mitchell, 2017).

Lusardi and Mitchell's (2011), research shows that although information is spread rapidly in parallel with the rapid developments in information and communication technologies, the financial literacy rate is quite low. In particular, they state that the United States is one of the countries that conducts the most research on financial literacy and that research on this subject is increasing day by day in other countries. In the United States, studies in this area indicate a low level of financial literacy. In addition, countries worldwide have also stated that the financial literacy levels of individuals are low, according to research. When the examples from the studies carried out in different countries other than the USA are examined, it is seen that the low level of financial literacy is again among the main findings (Farrar, Moizer, Lean, & Hyde, 2019 [UK]; Arellano, Camara & Tuesta, 2018 [Spain]; Abreu & Mendes, 2010 [Portugal]; Cull & Whitton, 2011 [Australia]; Van Rooij, Lusardi & Alessie, 2011 [Netherlands]; Almenberg & Gerdes, 2012 [Sweden]). In Turkey, however, there are not many studies on financial literacy, the studies carried out to date show that the low level of financial literacy in foreign literature is also valid for Turkey (Altıntaş, 2011; Kaya, 2019, Erden, 2022). According to Zucchi (2018), not only investors

from developing countries but also those with high levels of financial literacy face challenges. Recent research by Lusardi and Mitchell (2014) highlighted appropriate improvement methods that have been carried out around the world, with a particular focus on access to financial understanding and financial literacy. Due to the recent global financial crisis, policymakers in both developed and developing countries are allocating significant resources to financial education programs.

2.2. Behavioral Finance

Behavioral finance, which began to be discussed in the first half of the 20th century with the work of authors such as Irving Fisher, Vilfredo Pareto, and John Maynard Keynes, was not taken into account and valued until the middle of the 20th century (Cornicello, 2004). In the study in which Park and Sohn (2013) presented a large literature review, they discussed behavioral finance at the macro and micro levels. While behavioral finance tries to explain the anomalies that occur in the capital markets at the macro level, it deals with what affects the investment decisions of the investor at the micro level. According to Russel (2000), behavioral finance is the identification of how investors behave irrationally when making inferences about the expected returns of their financial assets and, as a result, how they make systematic mistakes. Essentially, behavioral finance is an interdisciplinary field that tries to explain the causes of anomalies in financial markets. After investigating the impact of psychology on individual investors who trade in financial markets, Sewell (2007) claims that behavioral finance is the study of psychology's influence on financial markets. The behavioral finance literature shows that behavioral biases influence financial decision-making. Behavioral finance is defined in the literature as "the application of psychology to financial behavior" (Shefrin, 2002); "it argues that some financial phenomena can be better understood using models in which some agents are not fully rational" (Barberis & Thaler, 2003). While blaming external factors for their failures and explaining mistakes with heuristics and behavioral biases, they also believe in their abilities in good times (Chowk et al. 2016; Tversky & Kahneman 1974; Kahneman & Tversky, 1979). Chowk et al. (2016) examined more than 200 publications to determine which biases are more prominent in behavioral finance and came to the conclusion that representation, overconfidence, self-serving bias, and loss aversion are the most prevalent. Mainstream finance has shown growth in recent years based on two fundamental assumptions: "Individuals make rational decisions" and

“individuals are without prejudice in forecasting the future” (Nofsinger et al., 2004). However, the premise of behavioral finance, a branch of finance, is that humans are not totally rational. In order to understand how emotions and cognitive biases affect investors’ decision-making, behavioral finance is a field of research (Suer, 2007). When making financial judgments, people may act irrationally and be influenced by particular behavioral biases, which are known as systematic judgment errors (Kahneman & Riepe, 1998). Menkhoff and Nikiforow (2009) contend that certain behavioral finance models are so firmly ingrained in human behavior that it is challenging to change them by learning, and Shu (2010) contends that investor mood influences stock investments. Through survey studies, the issue of how investors make investment decisions is investigated from many perspectives. Several empirical research in behavioral finance (French & Poterba, 1991; Odean, 1998; Barber & Odean, 2000; Bailey et al., 2011) show that investors are susceptible to several behavioral biases. Using German fund managers, the authors test their arguments by dividing the sample into those who support behavioral finance and those who don’t. They found that supporters viewed markets differently because they were more influenced by behavioral biases. For example, Jacobsen et al. (2014), Halko et al. (2012), and Heimer (2014) investigate gender-based investment behavior. Jacobsen et al. (2014) report that men have more shares than women and are more optimistic. Phan & Zhou (2014) investigated the effect of psychological factors on investor behavior by collecting data from 472 individual investors with a survey technique. In the study, it was concluded that psychological factors (overconfidence, overoptimism, risk psychology, and herd behaviors) affected individuals’ attitudes toward investments. Atik, Yılmaz, & Köse (2018) aimed to identify the mental biases that are effective in financial decision-making advocated by behavioral finance and to examine the cognitive errors that affect decision-making mechanisms. Gümüş, Koç, & Agalarova (2013) examined whether investors in Azerbaijan and Turkey were affected by the psychological biases considered within the scope of behavioral finance. Erbaş & Yıldırım (2021) examined the relationship between financial literacy and behavioral finance in their study and found that there is a significant negative relationship between herd behavior and loss avoidance and financial literacy and that there is a positive and significant relationship between overconfidence and only advanced financial literacy. In their studies with academic personnel, Özdemir et al. (2021) discovered a low level of a significant relationship between financial attitude and financial literacy.

2.3. Literature Review on the Relationship between Financial Literacy and Behavioral Finance

Due to its significance in understanding financial decisions or behaviors, financial literacy has lately become a focus of behavioral finance studies. Thanks to their understanding of fundamental financial concepts, financial products and services, and the appropriate financial attitudes and behaviors, people with financial literacy are better able to make wise financial decisions both now and in the future. The ability to use knowledge and skill in financial decision-making can be called “financial literacy,” and the various emotional biases that affect individuals that are complementary to standard finance can be called “behavioral finance.” Financial behavior and financial literacy play a vital role in the decision-making process of acquiring or disposing of any asset or growing and using financial resources. A striking aspect of the financial literacy literature is its distinct definition of financial literacy as specific knowledge, the ability to apply knowledge, perceived knowledge, and good financial behavior.

Financial literacy is a topic that is addressed nationally or internationally by organizations like the Global Financial Literacy Excellence Centre, the National Endowment for Financial Education, and the Jump\$tart Coalition for Personal Financial Literacy. The majority of studies seek to examine the connection between financial behavior and financial literacy in addition to determining the degree of financial literacy. A large portion of this study tries to raise people’s understanding under the presumption that doing so will influence their financial behavior and practices. The validity of this assumption is a topic of interest to the field of behavioral finance, which aims to shed light on financial behavior by making use of the disciplines of economics and psychology (Hilgert, Hogarth, & Beverly, 2003). It’s essential to help people change their behavior rather than just give them financial education (Mitchell & Lusardi, 2015).

A key factor affecting financial attitudes and actions is financial literacy. The study found that financial literacy has a considerable impact on people’s financial behavior, which was also seen in previous studies (Andarsari & Ningtyas, 2019; De Bassa & Scheresberg, 2013; Ida & Dwinta, 2010; Robb & Woodyard, 2011). Financial literacy studies have shown that early exposure to financial knowledge may have an impact on a person’s financial behavior in the future. According to Chen & Volpe (1998), college students lack adequate personal finance knowledge, which will have a negative impact on their financial decisions. According to a different study, students who

scored highly on financial literacy display more favorable financial attitudes and behaviors (Aydn & Selçuk, 2019). The individual's total financial well-being depends on both their behavior and financial understanding. Financial behavior is influenced by financial attitude, financial knowledge, and digital financial knowledge (Normawati et al., 2021). In order to improve financial literacy among Malaysians of all ages and stages of life, foster responsible financial behavior, and foster positive attitudes toward financial management, the Malaysian government put into effect the National Strategy for Financial Literacy 2019–2023 (Financial Education Network, 2019). Financially literate students have a deeper understanding of pension funds and pension mutual funds and are more positive about investing in retirement funds, according to Cucinelli and Bongini's research of college students in 2019. In their study, Gavurova et al. (2019) investigated whether there is a connection between financial literacy, self-control, and consumer loans. They found that those with low financial literacy levels experienced issues with excessive borrowing and loan default. According to the findings of a recent study, financial knowledge and attitude had a favorable and significant influence on financial management behavior (Agustina & Mardiana, 2020). It demonstrates how effective behavioral interventions can enhance actual financial behavior even when used with financial industry professionals (Garca and Vila, 2020). According to Wang's 2009 research, there is a strong correlation between investors' risk-taking tendencies and their objective and subjective knowledge. A study by Sevim, Temizel, and Sayl (2012) sought to determine how Turkish financial consumers' borrowing habits were influenced by their level of financial literacy. According to the findings, financially literate customers are less likely to engage in excessive borrowing and are more inclined to use credit cards on purpose. Finance professors were more likely to actively manage their retirement portfolios and less likely to employ diversification strategies, according to a survey by Hibbert, Lawrence, and Prakash (2012) that looked into the effect of formal financial education on managing retirement assets. According to Grable et al. (2009) and Perry & Morris (2005), people's financial conduct improves as their level of financial literacy rises. Araz (2012) shows that persons who are harmed by external shocks can overcome financial troubles and avoid default if they are financially educated, have high salaries, and a big household population in his investigation of the impact of financial literacy on credit card debt. Financial literacy research suggest that early financial education may have an impact on subsequent financial behavior. People who go to school in states

that offer personal financial education have better financial habits when they are 35 to 49 years old and making their maximum wages, according to studies (Bernheim et al., 2001). The financial attitudes and behaviors of university students were investigated to determine whether they were connected with sociodemographic characteristics and financial literacy levels. The “Financial Literacy Attitude and Behavior Scale” and its sub-dimensions, as well as the participants’ financial knowledge levels and sociodemographic factors, were found to be significantly correlated. According to the study’s findings, financial interest and spending habits were low, while attitudes and beliefs towards saving and spending were determined to be moderate. Students’ spending habits become more balanced and their interest in money problems rises as their level of financial literacy rises as well (Sargül, 2015). It is evident, particularly from the Sezer and Demir (2015) study, that financial literacy does not affect peoples’ propensity to harbor psychological prejudices. As a result, providing financial literacy training to individuals alone will not suffice; it should be stated that the mistakes and mistakes they fall into are psychological illusions, and it is concluded that these psychological illusions should be given separate information.

3. Conclusion

The choice of financial assets to invest in directly affects the financial markets and the country’s economy. The consideration of psychological factors when making investment decisions has brought behavioral finance to the forefront. In the studies conducted on this subject, it has been determined that they exhibit financial attitudes and behaviors in line with financial literacy in general. Investors who prioritize their emotions in the financial decision phase will suffer in proportion to their financial knowledge. A lack of financial information and making investment decisions influenced by psychological factors can lead to poor investment decisions for investors. In this case, financial failure may be an inevitable end. Financial literacy levels need to be improved to raise awareness about the wrong decisions taken by individuals under the influence of their emotions in financial markets.

According to the results obtained from the literature review, it is argued that individuals should be educated about behavioral finance, investors should have information about investment instruments, and individuals should also have information about behavioral finance trends that affect their decisions. It

has also been argued that financial literacy should be developed to be conscious of financial attitudes and behaviors. Behavioral biases that influence investor behavior also play a critical role in this process. People may suffer from behavioral biases, behave irrationally, and, as a result, make investment mistakes. On the one hand, financial literacy leads to better financial decisions; on the other hand, behavioral biases cause irrational financial behavior. The findings suggest that behavioral psychology, understanding the biases of our behavior, and economics in personal finance research allow us to learn much more about making financial decisions. One goal of financial education is to increase the financial literacy of individuals and households and to guide their financial behavior. Financial literacy is a key point to consider when it comes to the ability to make well-informed financial decisions. However, it is not the only important determinant of sound financial decision-making. Although the high level of financial literacy of individuals naturally makes positive contributions and increases the level of economic welfare, falling into psychological errors can reverse these developments and increase welfare levels. In the studies examined, it was found that financial literacy levels affected behavioral finance tendencies. The problem of financial literacy is not only the problem of individual investors but also of managers, companies, and the economies of countries. Individuals with high financial literacy levels contribute to the strengthening of the country's economy by effectively managing their financial situations. The low level of financial literacy knowledge is shown to be among the most important problems facing countries in the future. Especially in a strong economy, individuals in society need to make the right financial decisions. Thanks to the conscious choices that individuals will make, they will both increase their welfare levels and increase the welfare level of society, ensuring that the financial system works effectively, efficiently, and systematically. When considered as a whole, for investors to make more accurate decisions and for financial markets to work more effectively in the social sense, individuals should be informed and educated about psychological errors that are often made in financial markets, as well as improve their financial literacy levels and cognitive competencies. In this direction, a proposal will be to apply financial literacy in the social sense and raise awareness through policies related to psychological misconceptions and these practical rules that behavioral finance is subject to for individuals. At this point, financial literacy training programs and awareness policies should be implemented throughout the country, and awareness should be raised about this issue at all levels of society. Therefore, states should take measures and develop policies.

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CHAPTER III

A SYSTEMATIC LITERATURE REVIEW ON THE IMPACT OF BLOCKCHAIN AND CRYPTOCURRENCIES ON THE BANKING INDUSTRY

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1. Introduction

In recent years, there have been great developments in technology and global financial systems. The structure of the global economy has changed with the effect of innovations in the digital system and digital transformations. As a result, the importance of virtual currencies is increasing. Cryptocurrencies, which have grown rapidly among virtual currencies, have shown acceptance by financial markets. Cryptocurrencies stand out among other virtual currencies: their low cost, high-speed transferability, and a decentralized monitoring network that provides secure transactions and anonymity.

Blockchain, the underlying technology of cryptocurrencies, is one of the examples of these technological developments (Tapscott and Tapscott, 2016; Tapscott and Tapscott, 2017; Pal et al., 2021). Blockchain and Bitcoin were first proposed in 2008 by someone using the pseudonym Satoshi Nakamoto (Nakamoto 2008). The Blockchain is the underlying technology of cryptocurrencies

(Antonopoulos, 2014; Mahmoud et al., 2019). One of these cryptocurrencies is Bitcoin. Cryptocurrencies are digital currencies that use blockchain technology and cryptography (Chan et al., 2020). The first digital currency, DigiCash, was released in 1990 via cryptographic protocol (Phillip et al., 2018). It is one of the advantages of blockchain technology to provide information transparency and a secure system (Ramchandra, 2022).

Blockchain can offer solutions to problems such as high operating costs, low efficiency and potential security risks that persist in traditional business systems (Yuan and Wang, 2018). “Blockchain is currently delimited to Blockchain 1.0, 2.0, and 3.0, based on their applications” (Xu et al., 2019). Fundamentally, interest in blockchain is its centralized features that provide security, anonymity and data integrity without any third-party organization in control of transactions (Puthal et al. 2018; Lopes and Pereira, 2019; Wang et al., 2019).

Banks which play a significant role in the economy as they operate the payment system, are the important source of credit for large swathes of the economy, and act as a safe haven for depositors’ funds. Traditional financial service providers are no longer sufficient today. The banking sector is undergoing a rapid transformation due to developing economic reforms and rapidly developing technology, like most of business sectors. Information security is particularly important for banks because their business operations are heavily dependent on information processing (Berger, 2003; Beccalli, 2007). Banks should follow the current developments in the financial field.

In recent years, banks have been renewing themselves especially in paperless, branchless and unsigned services. Blockchain technology plays an important role in the transformation of traditional banking services. Easy access to financial transactions is provided with the Blockchain (Daniel and Ifejika, 2020). Blockchain technology offers effective solutions to customers in many aspects in financial services (Beck et al. 2017; Baramova et al., 2021). These may include an updated system for financial payment, operational cost reduction, and prevention of tampering and human error modification (Hughes et al., 2019; Pournader et al. 2020). In addition, Blockchain technology helps banks eliminate intermediates, reduce cost and make transactions in the shortest time (Peters and Panayi, 2016; Laroia et al., 2020).

This study aims to assess the impact of Blockchain technology and Cryptocurrencies in the banking industry. Blockchain technology is a very important technological innovation for banks that provides various benefits to the banking industry. In addition, it is aimed to discuss the main rationales,

technical advantages, existing and potential ecosystems related to Bitcoin and other cryptocurrencies in the study. Although the importance of the impact of Blockchain and cryptocurrencies in the banking sector has been stated in many studies, it is still in its infancy.

In this study, current studies will be examined and gaps in the literature will be determined. Consequently, this study reviews current academic research on the impact of Blockchain and cryptocurrencies on the banking industry. The systematic literature review method will be used in the study. Using the systematic literature review method, it is aimed to examine the content and quality of the studies in the field of Blockchain and cryptocurrency in the banking sector. With the literature retrieved from the Web of Science service, the most cited articles and the most common keywords will be explored. Recommendations on future research directions and practical applications are also provided in this paper. The aim of this study is to provide guidance and reference for future research along this promising and important direction.

2. Research Method

In this study, a systematic literature review was used to investigate the impact of Blockchain and Cryptocurrencies on banks. Systematic literature review is an extra comprehensive and diverse method of analyzing the literature in a particular field (Cronin et al., 2008). Systematic reviews are crucial to form the background for future research. Because the existing studies in the literature can be examined with systematic reviews, and the existing gaps and deficiencies in the literature can be determined. Greenhalgh (1997), described a systematic review as an overview of primary studies that follow a particular methodology and can be replicated. (Greenhalgh, 1997; Rêgo et al., 2021). In summary, the main purpose of a systematic review can be defined as identifying an existing problem or gap in the literature. A successful systematic literature review begins with planning the review, then defining the research, then conducting the review and reporting the review (Kitchenham and Charters 2007; Breretona et al. 2007). It is very important to pay attention to the following criteria to ensure the safety and validity of the systematic review (Trivedi et al., 2021).

- Inclusion and exclusion criteria are determined in the study.
- The literature is identified and reviewed.
- Consideration is given to the reputation of the sources used for the review.

Literature review studies define the content and quality of existing studies. A detailed methodological approach is required for all literature review studies. Although there are different types of literature review studies, the common steps involved in all literature reviews can be summarized as follows: first the research identity is determined and then the research strategy is determined. After the research strategy is determined, studies related to the subject are selected. Selected studies are reviewed and data extracted. Then a quality assessment is made. Finally, the study was completed by making data synthesis and analysis. The steps of the literature review studies are summarized in Figure 1.

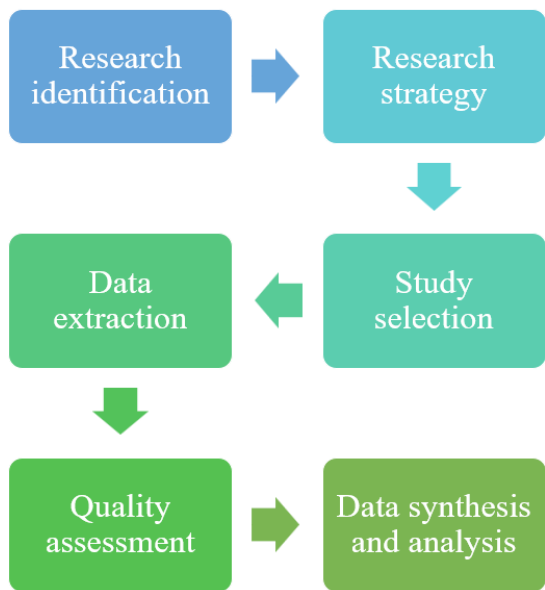


Figure 1. The stages of systematic literature review

This research followed a systematic literature review relating digital transformation in the banking sector.

Step 1: The first literature search started in the Web of Science database. In order to identify the articles about blockchain and cryptocurrency in the Banking Sector, the search terms “blockchain”, “cryptocurrency” and related “bank” are defined in the title.

Step 2: In this step, articles written in English in the fields of Computer Science Information Systems, Business, Business Finance, Management and Economics were included in the search. The first search resulted in 35 relevant articles.

Step 3: The 26 articles selected were reviewed. However, six of them were excluded from the sample because they were not compatible with the subject.

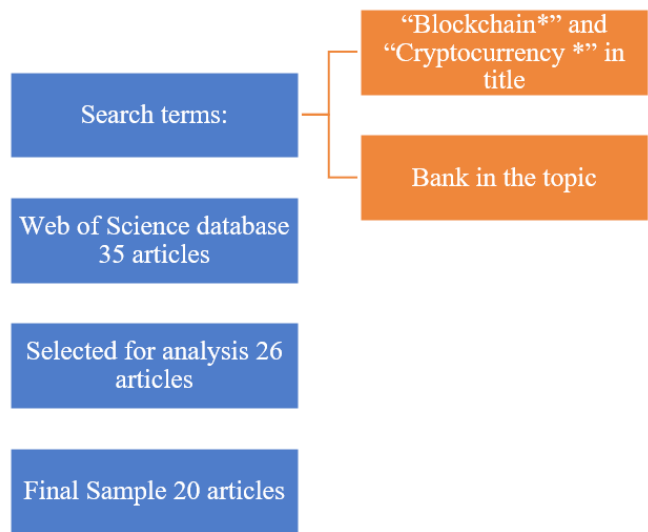


Figure 2. Step of systematic search proces

3. Results

The publications between the years 2018-2022 were examined. Table 1 and Figure 3 show the distribution of selected articles by publication years.

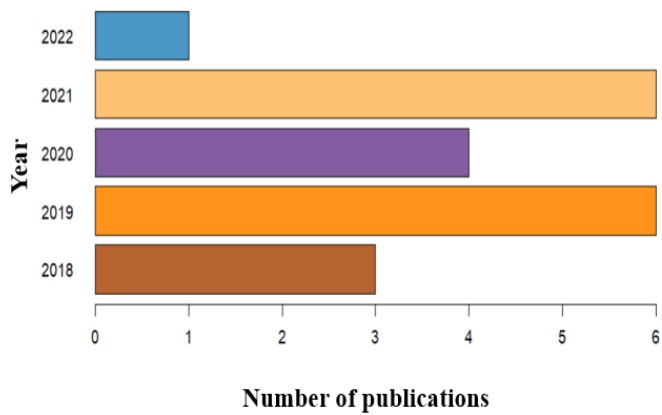


Figure 3. Temporal evolution of publications

Table 1: Distribution of articles by year of publication

Year	Number of articles (%)	References
2018	3 (%15)	Kim et al. (2018); Teresienè (2018); Stefan (2018)
2019	5 (%25)	Bateh (2019) ; Kucheryavenko et al. (2019); Malherbe et al. (2019) ; Barreto et al. (2019) ; Ricci and Mammanco (2019)
2020	4 (%20)	Thakor (2020); Uyduran (2020) ; Arli et al. (2020); Fan et al. (2020)
2021	7 (%35)	Jimenez-Serrania (2021) ; Bezhovski et al. (2021) ; Gan et al. (2021); Asl et al. (2021); Yen and Wang (2021); Sethaput and Innet, (2021); Othman et al. (2021)
2022	1 (%5)	Varma et al. (2022)

When Figure 3 is examined, it is seen that there are more studies in this field in 2019 and 2021. In addition, a total of 1 article was reached in the period until September 2022. Digital currencies are gaining importance day by day for banks and many other sectors. For this reason, the number of publications on blockchain and cryptocurrencies is increasing.

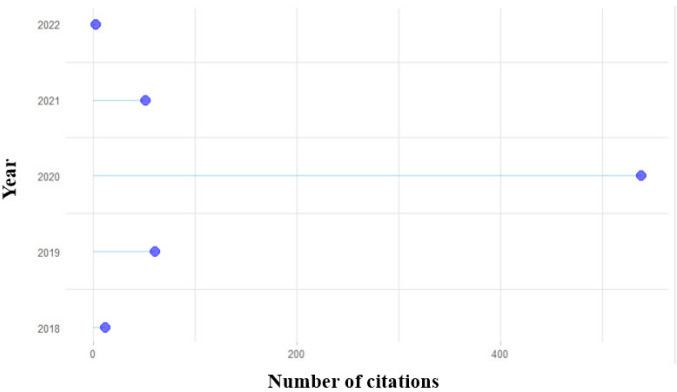


Figure 4. Number of citations

When Table 1 and Figure 3 are examined, it is seen that 4 publications were made in 2020. However, when the number of citations is examined, it is

seen that the papers published in 2020 are most cited. In terms of citation, 2019 and 2021 follow 2020.

Table 2: The distribution of articles by research methodology

Methodology	Number of articles (%)	References
Quantitative research	8 (%40)	Kim et al. (2018); Ricci and Mammanco (2019); Arli et al. (2020); Fan et al. (2020); Othman et al. (2021); Yen and Wang (2021)
Qualitative research	12 (%60)	Teresienè (2018); Stefan (2018); Barreto et al. (2019); Malherbe et al. (2019); Bateh (2019); Kucheryavenko et al. (2019); Thakor (2020); Uyduran (2020); Bezhovski et al. (2021); Jimenez-Serrania (2021); Gan et al. (2021); Varma et al. (2022)

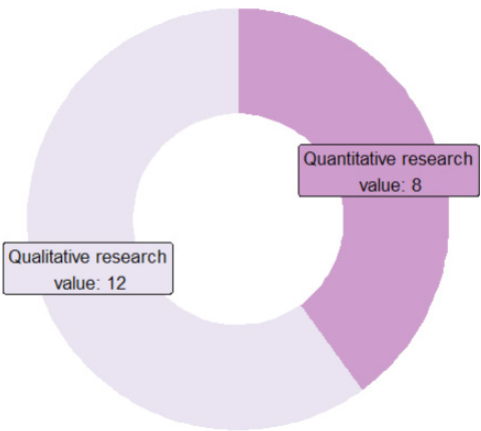


Figure 5. The distribution of articles by research methodology

Most of the articles (60%) use the “Qualitative research” methodology. This methodology is appropriate because the concept of impact of blockchain and cryptocurrencies on banking industry is a current issue and continues to evolve. “Quantitative research” methodology is used in 40% of the articles.

Blockchain and Cryptocurrencies on the Banking Industry: Factors

After examining the articles in the study, 3 factors were determined in the effect of blockchain and cryptocurrency on the banking sector. These factors are:

- (i) *Blockchain Technology Development,*
- (ii) *Adoption and Challenges in Blockchain Technology,*
- (iii) *Blockchain and cryptocurrency related applications.*



Figure 4: Blockchain and Cryptocurrencies on the Banking Industry: Factors

Factor 1: Blockchain Technology Development

The development of blockchain can be defined as 3 phases: Blockchain 1.0, Blockchain 2.0 and Blockchain 3.0 (Chang et al. 2020; Kar and Navin, 2021). Bateh (2019), explained the benefits of blockchain and cryptocurrency and the investments that banks have made in this field. In addition, it has been stated that although it is still not used much due to lack of knowledge about Blockchain technology, its use in the future is inevitable due to the security and privacy it provides. Kucheryavenko et al. (2019) has characterized the development of blockchain technology, and cryptocurrencies were classified according to various criteria (type of issue, network decentralization, issue limitation, controllability of cryptocurrency issue, etc.). Two sets of features typical for all cryptocurrencies or certain variants have been proposed. Stefan (2018) discusses the development of cryptocurrencies and their differences with traditional banking and the position of cryptocurrencies in the banking industry. Jimenez-Serrania (2021) introduced the legal and financial reality that cryptocurrencies could not thrive on, and also noted the implications for traditional cash and bank-based management. Bezhovski et al. (2021) examined the evolution of the cryptocurrency Bitcoin in the market and its place in the financial sector. According to Thakor (2020), Fintech includes innovations in payment systems (including cryptocurrencies), credit markets (including P2P loans), and insurance, where blockchain-powered smart contracts play a role, and within this framework, Fintech has been examined.

Table 3. Blockchain Technology Development

Author	Citations	Type of research	Keywords
Stefan (2018)	1	Qualitative	Cryptocurrencies, alternative currencies, digital currencies, Fintech, Bitcoin, blockchain, coin market cap
Bateh (2019)	0	Qualitative	Bitcoin, disruptive Blockchain, cryptocurrencies, FinTech
Kucheryavenko et al. (2019)	4	Qualitative	Bitcoins, Blockchain, Cryptocurrency Issue, Classification of Cryptocurrencies, Cryptocurrency, Mining, Regulation of Cryptocurrency Circulation
Thakor (2020)	493	Qualitative	Fintech, Cryptocurrencies, P2P lending, Banking, Systemic risk
Bezhovski et al. (2021)	7	Qualitative	Digital Currency, Cryptocurrency, Bitcoin, Blockchain, Electronic Payment
Jimenez-Serrania (2021)	0	Qualitative	Cryptocurrencies, Legal issues, Accounting and finance

Factor 2: Adoption and Challenges in Blockchain Technology

Among the benefits of blockchain can be expressed as the absence of the need for a third party, the ability to make transactions in a short time, and the low transaction cost. The challenges of blockchain can be defined as privacy and security. According to Malherbe et al. (2019) classified the opportunities and limitations of cryptocurrencies and blockchain. In their studies, they stated that institutions such as the central bank increase confidence in the use of cryptocurrencies. Barrutia Barreto et al. (2019) highlighted the importance of cryptocurrencies in poverty reduction in Latin America and the Caribbean. He stated that cryptocurrencies should be properly regulated by governments and cryptocurrencies should be transacted via smartphones. Uyduran (2020), analyzes different aspects of various cryptocurrencies, blockchain technology including the evolution of digital tokens, and how they have broadly impacted financial markets, institutions, banks and governments, along with blockchain technology, the characteristics and current history of cryptocurrencies. Fintech can be defined as a synthesis of technology and finance. Teresiené (2018)

examined the response of central banks to virtual currencies. They concluded that even in the same country, there are no similar opinions about cryptocurrencies among different authorities. According to Varma et al. (2020) examined how Fintech has impacted recent changes and upcoming challenges in the banking industry with an emphasis on blockchain technology. Fintech includes many innovations in blockchain, crypto money, credit and insurance, which are very important for banks. Blockchain technology is a disruptive technology that is causing a major change in traditional business models, traditional business transaction workflows. Blockchain has applications in various fields, but the most widely applied area is its applications in the banking and financial sector. Gan et al. (2021) analyzed the latest blockchain research and technology in the banking and finance industry in their qualitative study.

Table 4. Adoption and Challenges in Blockchain Technology

Author	Citations	Type of research	Keywords
Teresienè (2018)	1	Qualitative	Bitcoin, Central bank, Virtual currency
Barreto et al. (2019)	10	Qualitative	Tourism Economics, Tourism And Development, Economic Growth of Open Economics, Measurement And Analysis of Poverty, Welfare And Poverty
Malherbe et al. (2019)	41	Qualitative	Cryptocurrencies, Blockchain, Money, Trust, Institutionalism
Uyduran (2020)	1	Qualitative	Cryptocurrency, Blockchain, Bitcoin
Gan et al. (2021)	8	Qualitative	Blockchain, thematic analysis, banking and finance
Varma et al. (2022)	2	Qualitative	Fintech, Banking, Blockchain, Cryptocurrency, Emerging Technologies, Thematic Analysis

Factor 3: Blockchain and cryptocurrency related applications

Asl et al. (2021) showed that the return on cryptocurrencies and the price return of indices of blockchain-based companies were positively correlated for most of the sampling period. According to Arli et al. (2020) focused on consumer perceptions of cryptocurrencies. It was concluded that knowledge of cryptocurrencies, trust in government and speed of transactions are the main factors that contribute to consumers' trust in cryptocurrencies. Yen and Wang (2021) examines the value relationship of blockchain and cryptocurrency disclosures in firms. Using text analytics to measure blockchain and cryptocurrency disclosures, the study first shows that these disclosures are about value in general. Danezis and Meiklejohn (2015) have proposed the cryptocurrency framework RSCoin. RSCoin is a cryptocurrency where central banks have full control over the money supply but rely on a distributed set of authorities or mints to avoid double spending. Kim et al. (2018) indicate that world-renowned banks have started to implement blockchain in their financial services, and they proposed an algorithm to record and manage the user's location data of the IoT service provider based on the smart contract and blockchain. Ricci and Mammanco (2019) propose an innovative payment solution that aims to improve remittance flows by leveraging the potential of blockchain technology. They explained the secure management of big data and its architecture that enables different stages of solution design. According to Sethaput et al. (2021) discussed the implementation of blockchain for CBDC by presenting Central Bank Digital Currency (CBDC) projects by central banks. They also analyze issues in the field of CBDC, identify challenges, and discuss future work in this rapidly evolving field. Othman et al. (2019) investigated the long- and short-term effects of the market value development of cryptocurrencies on the deposit volatility of banks in the Gulf Cooperation Council (GCC) region. According to Fan et al. (2020) proposes a blockchain-based distributed banking (BDB) scheme using blockchain technology. Distributed banking platforms and services dispense with central banks to process financial transactions. They further compared their prototype with the Ethereum cryptocurrency to highlight the key differences and demonstrate the superior computational efficiency of BDB. Zhang et al. (2021) proposed a hybrid blockchain system with modularity network for CBDC. In terms of their proposed hybrid blockchain system, network architecture, a modular blockchain architecture

is proposed and a sliced data storage solution is designed to increase the concurrency of this structured network.

Table 5. Blockchain and cryptocurrency related applications

Author	Citations	Type of research	Keywords
Kim et al. (2018)	9	Quantitative	Blockchain, Blockchain messaging, Smart Contract, IoT, RkNN
Ricci and Mammanco (2019)	5	Quantitative	Blockchain, Bitcoin, Cryptocurrencies, Big Data
Arli et al. (2020)	37	Quantitative	Anxiety, Cryptocurrencies, Knowledge, Marketing, Trust, Bitcoin
Fan et al. (2020)	7	Quantitative	Permissioned Blockchain, Distributed Banking, Distributed Ledger Technology, Public Key Infrastructure
Othman et al. (2021)	11	Quantitative	Banks, Central banks and their policies, Monetary systems, Cryptocurrencies, Banking industry, Deposit variability, GCC states, Long- and short-run relationships
Yen and Wang (2021)	17	Quantitative	Blockchain, Cryptocurrency, Value relevance, Topic modeling, Latent Dirichlet allocation
Sethaput and Innet, (2021)	3	Quantitative	Central Bank Digital Currency, CBDC, Digital Currency
Asl et al. (2021)	5	Quantitative	Emerging digital economy companies, Cryptocurrencies, Bayesian asymmetric DCC-MGARCH, Markov chain Monte Carlo

Discussion

In this study, the impact of Blockchain and Cryptocurrency on the banking industry has been examined with the help of a detailed literature review. For this purpose, studies in this field between 2018-2022 were investigated. Within the scope of the research, web of science was used. First of all, “blockchain”, “cryptocurrency” and related “bank” search terms were defined in the title in order to detect articles about blockchain and crypto money in the banking sector. Then, field filtering was performed. Studies written in English in Computer Science Information Systems, Business, Business Finance, Management and Economics are included in the search. The initial search resulted in 35 related articles. Then 26 studies were selected. However, six of them were excluded from the sample because they were not compatible with the subject. Finally, 20 studies published between 2018-2022 were examined. 12 of these studies are qualitative and 8 of them are quantitative studies. Among these studies, it was seen that the most cited study was published in 2020. Blockchain and cryptocurrencies are gaining importance day by day. They attract the attention of many people because they are decentralized and anonymous. However, the lack of a reliable third party such as a bank can create problems. Digital currencies are very important for banks that need to adapt to developing technology and customer expectations.

The systematic review of this study reveals that although their number has increased over the years, blockchain and cryptocurrency studies in banking sector studies are still in their infancy. Factors were identified as three main groups: Blockchain Technology Development, Adoption and Challenges in Blockchain Technology, and Blockchain and cryptocurrency related applications. The factor groups identified in the study allow us to develop a framework for analysis and main research areas in the field of blockchain and cryptocurrency impact in the banking sector. The biggest challenge in this study was the small number of articles in this area, but it also revealed that studies in this area need to be improved. It seems that there is still few research in the field of the impact of blockchain and cryptocurrency in the banking sector and there is a great need for further studies in this area.

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CHAPTER IV

GENERAL APPROACH TO CREDIT RISK STRUCTURING FOR DECISION MAKING & CONTROL PROCESSES AT GLOBAL BANKS

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1. Introduction to the Origination of Credit Risks

1.1. Fundamental Changes in Credit Allocation Environment

As we left the COVID era, the global credit markets and financial institutions confronted a war in the heart of Europe in parallel with an associated energy crisis. The aftershock of the pandemic processes resulted in general in higher inflation rates shaken markets and slowed the global economy. Many economists forecast a recession throughout 2023. As global inflation persists to become sticky, many major central banks start aggressively raise interest rates as depicted in Fig. 1. According to the Economist (3rd March 2023:72), a sample of 58 rich and emerging economies revealed an average policy rate of 7.1%.

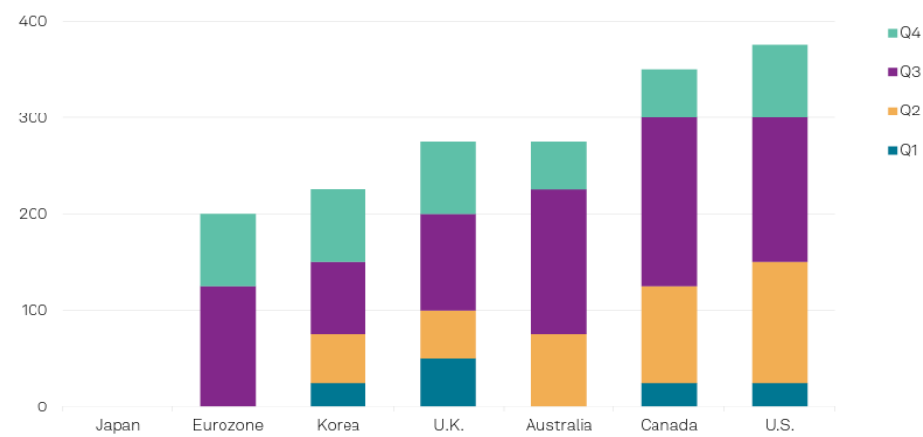


Figure 1: Policy Rate Hikes in 2022 – G20 Advanced Economies (in bps)
Sources: S&P Global Ratings Economics & Central Bank websites

As shown by the development of Fed Funds rate, the FED tried to resolve this challenge by keeping its hawkish tone by calling back the good old monetary policy instruments in four decades lifting the interest rates from ground zero to 4,5%-4.7% level as shown below. FED also relied on to “quantitative tightening” causing higher policy rates by major central banks. The pressure on the strained financial conditions supported by higher debt levels since Covid 19 is alarming the lower-rated borrowers in all over the world.



Figure 2: US Federal Funds Target Rate (%)
Source: BofA Global Investment Strategy

Accordingly, in the meantime, the total debt of the above mentioned group of countries reached a level of USD 298 trillion which stands at 342% of their

combined GDP's. This translates into a growth rate of 6.8% before the pandemic crisis in 2020. The increase in interest rates causing tighter financial conditions and bigger debt burdens on corporates, which is assumed to reach between 20%-16% of global GDP in 2025 according to the Economist, may push for higher default rates. As stated by S&P Global report (2022:38), corporate leverage underwent a structural increase with the credit quality declined consistently. Within the forces of inflationary pressures, risk premiums are heading upwards, elevating the borrowing costs to higher levels of 500–550 bps. Under this circumstances, corporates will be facing cash flow pressures as companies will be trying to deleverage their outstanding debts. Even so, fragile credit markets will be pronouncing considerable pressure for companies with sub-optimal capital structures giving pave to consequent defaults in deeper recessive conditions. As deeper recession would reach new heights, the corporates will suffer from fading earnings momentums as well. The severity of the downturn will shape 2023 credit prospects.

1.2. New Mindset Need for Credit Risk Management

The above mentioned credit risk drivers are based on externalities and very much correlated with macro-financial factors. Under these conditions the existing credit culture, organizational credit risk analysis and management processes in global banks should be restructured under given new post pandemic circumstances as Swiss banks experienced such a similar trend in 90's (Mettler, 1996:136). The structural and processual approaches for redesigning the credit risk management goes back to mid-90's (Beutler, 2001:17). In this sense, the main philosophy in restructuring efforts for credit risk management is based on the functional differentiation of client management and credit processing issues. In this sense, "Risk Management teams, in financial institutions around the world, are classically organized by functional responsibility. This implies distinct credit-risk and market risk departments (Bolder, 2018:1)".

1.2.1. Managing for Value (MFV) as Strategic Direction for Credit Origination

At the zenith of the above mentioned global context, a global bank would start by changing the existing credit risk management organization from the strategic direction point of view. The main idea is creating value for

the shareholders and managing it along the lending and borrowing activities on the front. “Lending” is taking risk and risk taking is decision making “par excellence”. Transforming the existing beliefs and practices on the basis of new mind set means creating a new risk management culture in the bank. The new risk culture enforces transparency and accountability towards the stakeholders of a bank, which is materially far away from the existing “consensus culture” inside the banking industries. “In sum, value creation is beneficial not only for the shareholders, as the value created is transmitted to the customers and the employees through necessary performance contracts, public welfare with less social conflicts is attained throughout the value creation process.

The following high level changes should Managing for Value introduce to the new business model:

Management at all levels and at risk management departments should have a clear understanding of where, how much and how value is being created and destroyed.

Management at all levels share a common language, framework and standards for decision making,

Decision making discussions will be more fact-based, risk focused and efficient in sustaining long-term risk adjusted returns.

Decisions on strategy are consequential (i.e., resource allocation, performance commitments), with respect to dimensioning of the risks on the markets, clients and products.

Value implications and key value drivers of decisions are transparent, and measurable which leads us to the risk adjusted return (raroc or rorac) concepts.

1.2.2. Defining Primary Strategic Client&Risk Functions in Wholesale Banking Environment

The transplantation of the new strategic thinking within the mindset of MFV involves generating mutual strategies based on the organizational structure, competitive strategies and market development and participation strategies to be effective in the global corporate banking business as depicted below (Tangemann, 2003:14).

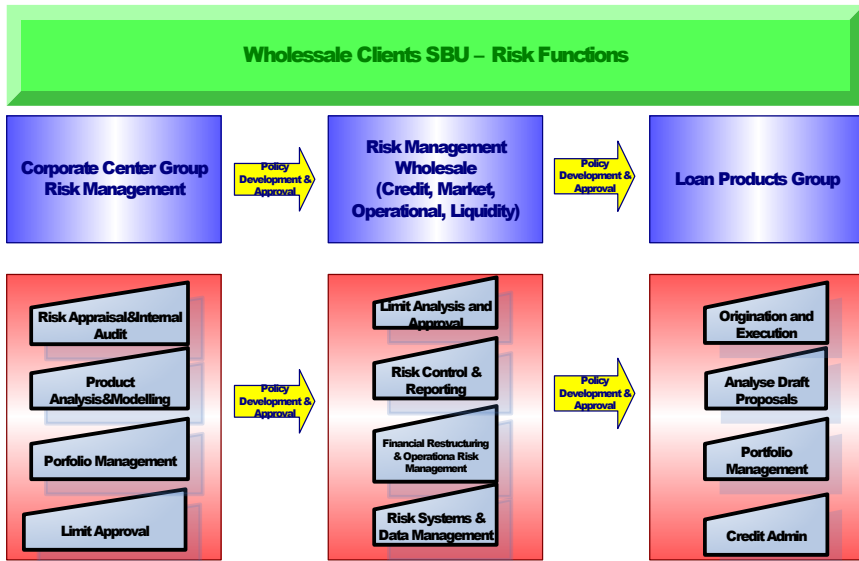


Figure 3: Wholesale Clients – Risk Management Core Functions

Source: AA Annual Reports & Investor Presentations

The strategic emphasis is on the “Wholesale Banking” supported by a separate “Wholesale Clients Risk Management” (WCRM) within a multi discipline banking context (that usually includes retail banking, asset management, commercial banking and private banking). In this sense Credit Risk Origination within the WCRM context is the process of gathering and analyzing the appropriate client data to reach the loan decision on the basis of the ultimate banking strategic targets. Of the stages in the life of a loan, the most important point is the loan origination as this is where lenders acquire the business through the following functions:

- **Marketing & Origination:** The purpose of marketing is to educate the potential borrowers about the institution’s existing loan products so as to generate loans. Collected from the potential borrowers.

- **Credit Structuring & Portfolio Management:** Loan origination is the process of gathering necessary client data from internal and external sources and analyzing the data for loan decision to close the transaction. The credit structuring is the engineering of the all client specific data down to the realization of a facility, which integrates all client- and product related credit risks in form of a “credit line” accustomed to the obligor (s). The expansion of all the facilities who are allocated to industries or to countries or even to rating

categories are management under credit portfolio management principles and procedures.

- **Servicing:** After the loan has been approved and closed, the loan is placed on the bank’s ledger. The servicing department is responsible for handling all account management duties and customer inquiries on existing loans, including setting up and maintaining loan account records, managing cash flows, compliance monitoring, administering escrows, accounting for and reporting to investors, customer service and collections activities.

- **Workout and Delinquency Management:** If an account becomes delinquent, or a customer fails to meet his payment schedule, the account may be turned over to a specialized area of servicing that concentrates on collecting the loan balance. This area is responsible for contacting the customer via mail or phone to attempt to resolve the delinquency. Traditionally, the collections department notified the customer until the account was made up to date or paid in full.

- **Risk Control:** The financial institutions are obliged to establish a consistent and reliable organizational sequence of the Risk Responsibility, Risk Management and Risk Control departments, which are the three pillars of the effective credit risk management undertakings in a global bank and should be integrated directly to the General SBU Management Model of the bank (Eller, 2006:107).



Figure 4: Risk Management Trilogy
Source: Beutler (2021:64)

2.3. Organisational Disposition of the Risk Based Internal Audit and Control (RBIAC) Units

As depicted by the Beutle's organisational Triology, the process of risk assessment is the most important stage of the RBIAC. The point that must be emphasized here is the fact that, it is important to have an effectively functioning risk management system organized behind each SBU and differentiated for specific industries. In this manner the specialization in sector specific risk advancement is attained and the difficulty in combining each obligor risk within the correlation matrix context is also achieved. Each obligor in each SBU, possessing a certain degree of rating is also managed within their correlation capabilities. The RBIAC uses also a specific "risk matrix" to clarify the priority and the seniority of the existing risk constellation within each SBU of a bank as depicted below:

Risk Matrix

Likelihood ↑	Very likely	Acceptable risk Medium 2	Unacceptable risk High 3	Unacceptable risk Extreme 5
	Likely	Acceptable risk Low 1	Acceptable risk Medium 2	Unacceptable risk High 3
	Unlikely	Acceptable risk Low 1	Acceptable risk Low 1	Acceptable risk Medium 2
		Minor	Moderate	Major
		→ Impact		

Figure 5: Risk Likelihood and Impact Matrix

Source: Celayir (2014:13)

Risk Matrix is a tool which reveals the risk status of each SBU level risk status on the basis of aggregated product level risks inherent in each facility provided in a defined client-product dimensions. The tool is also enforced by the regulatory institutions worldwide. The results of the risk assessment stemming from the Matrix results in a detailed and informative risk assessment report. The report gives guidance to the top management of a bank to take the necessary precautions to cure a possible damage and prevent unexpected losses which might end up the business of a bank.

2. Organisational Backbone of the Credit Risk Management

2.1. Risk Governance

The implementation of the above mentioned functions direct us to the establishment of new divisional structures with three fundamental characteristics (De Laurentis, 2005:65).

a) **Organizational Design**, which is layered by means of relative market strength of the SBU's (strategic business units) under the leadership of a single organization wide CEO. The business segments are defined as "cells" which are comprised by arenas (geographical markets, products and clients). In this context we have to refer to Ingo Walter and Roy C. Smith (2003:369) by their suburp work about the global banking strategies and CAP Model thereon.

b) **Operational Autonomy**, where each division in an arena or geographic location carry out under certain level of organizational sovereignty productive and distributional functions for the respective client segments.

c) **Profit responsibility**, where each management layer is responsible to create value over their allocated cost of capital in their respective unit client-arena-product cells.

2.2. Defining the Cap Cell and Divisionalisation Issues

As stated above the divisional macro-structural model is established in the sense to "extract positive returns out of the "C-A-P" cell depending on the size and durability of prospective profits. Each Arena is designated as international and local markets within a specific regulatory and monetary sovereignty. Each Arena is distinct form the geography with different risk/return profiles driven by product need by their respective clients. Within this areal context, the range of financial services ranges from corporate banking and investment banking to risk management services. The starting point to crystalize the CAP is to pronounce more the strategic and autonomous divisionalisation of the CAP unit cells. The purification of the various Divisionalisation may take different forms:

1. Strategic Divisionalisation at Head Office or at Head Corporate Center. The Head Corporate Center may autonomously define the CAP strategy and the managerial principles to govern the linkages within a CAP.

1. The development and approval of the high level risk policy.
2. Management of risks on a high level by individual and portfolio basis.
3. Institutionalization of prudent control mechanisms.
4. Approval of large exposures.
5. Management of intra strategic business unit issues.

The daily management of all risk functions is handled by Wholesale Clients Risk Management Units. The organization of the Group Risk Management, involves the several functions and processes, which will be discussed in the next sub-section.

2.3. Group Level Credit Risk Underwriting Process Design

Having identified the constructive credit organisational setting, we can move ahead with the abstraction of the credit risk design to the level of institutional and managerial processes. The duties of redesigning a credit process due to the German credit risk management process standards involve the following basics (MaRisk, BTO 1.2, Mindestanforderungen an die Prozesse in Kreditgeschaeft, 20.12.2005)

- Revealing the interdependencies and instances of the whole credit process in a financial organisation
 - Illumination of an integral system based on a risk- and return management system
 - The documentation of all actual and relevant processes
 - The documentation of the all credit decision relevant informational flows
- Revealing the interoperability of the corporate level strategies with SBU level strategies.

The credit decision process starts with the preparation of a “proposal” to be written by credit analysts with the help of account- and product officers. For wholesale client proposals, the approval organization can be aligned along the main industry sectors that the bank should strategically choose. This is to ensure maximum efficiency and well informed decision making based on industrial sophistication. Proposals for final approval by a Head Office Credit Risk Committee should be analyzed and advised upon by the respective industry desk of the risk management function at the Strategic Risk Business Units (e.g. Telecom, Technology, Diversified Industries or Energy).

Analysts at Risk Management Wholesale industrial desks complete a comprehensive risk review of each proposal and provide a written analysis and recommendation for submission to the relevant approval authority. Each Strategic Business Unit should be granted a delegated approval authority by the Managing Board, which should be in principle risk-weighted by the amount of the loan to be booked and also be based on the internal rating of the obligor. In terms of risk appraisal, the requests of the credit risk management at the Group Risk Management level will normally follow the following underwriting processes (Eller, 2006: 117):

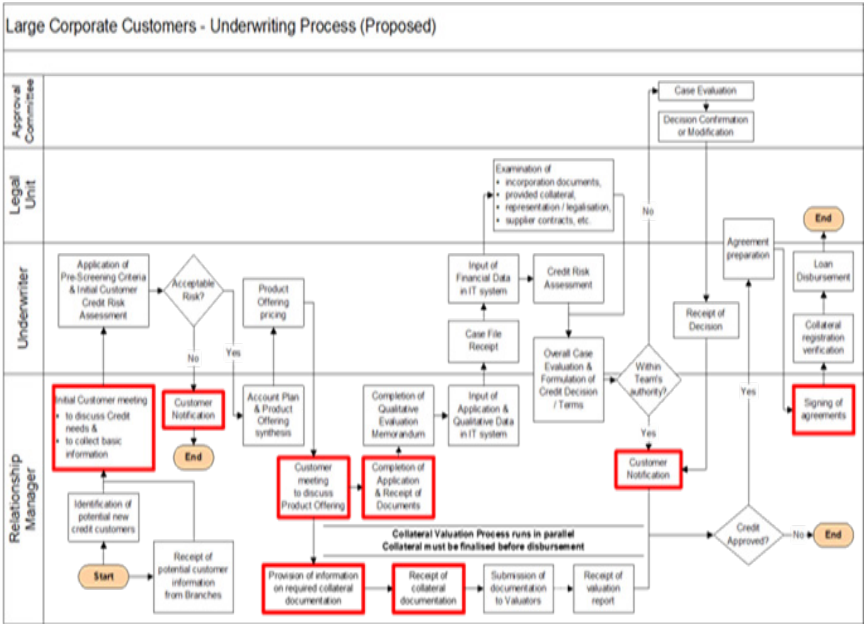


Figure 6: Credit Risk Group Level Underwriting Process

Source: Eller (206: 117)

The process aims to give answers to the followin questions:

- Does the risk profile of the client is analysed in detail with respect to the credit, market, management and contingent risks ?
- Does the facility fit into the credit portfolio practices and match the specific parameters including the policy issues that are approved by the bank?
- Does the bank use the counterparty policies with respect to all existing and new products?
- Are these policies properly implemented and are adequate monitoring systems in place?
- Rating verification, are the correct ratings assigned to the facilities and to clients?
- Is the quality of the risk management process in harmony with the legal and regulatory minimum standards?

As seen from the content of the above questions, the units will operate independently or jointly with the client business units under formal mandates. Higher transactional and policy approval authorities may be exercised via several committees. This will consist of several Group Risk Committees,

which may be established upon needs of policy, provisioning, operational risk and other strategic issues. To give an example, Group Risk Committee (GRC) may decide proposals above the SBU delegated authorities. The Policy-Group Risk Committee (P-GRC) on the other hand may be mandated for the decisions on major credit policy, product programs, rating models, economic capital allocation issues. *The decisions of the GRC should be final and since the delegation is in full, the Managing Board or its individual members should not entertain appeals to GRC's decisions. This is important from the "principle of independence" perspective.*

2. Conclusionary Remarks

This work is motivated by the basic milestones of the recent events that gave pave to the structural changes within the global credit markets and institutions after Covid 19. It is also here to import to emphasise the new Basel III framework which will be more enforcing and challanging for Turkish Banks as well. In this regard new overall credit management practices are on the way trying to meet the new global inflationary era in our country and in the world markets aswell. More specific procedures and guidelines will be established in the next phase of the credit environments where the new deals will be under heavy rating pressures for portfolio managers. New methodologies like artificial intelligence and Fintech systems with sound data foundations for enhancing the credit decision making processes. This fact will be further reinforced with the new generation of Basel III IRB approaches. In addition to organizational changes related to management of all risks, the re-design specifically involves relatively large scale changes to the management of credit risk. The new credit risk structure represents a migration from a decentralized system to one with primarily centralized approval and decentralized monitoring and control. This change is intended to create a more efficient, reliable, and sophisticated credit functions and risk oversight methods. This study recognized the successful transition from the current classical credit risk management clichées of the domestic banks to the alternative new structures used by global banks. The challenge requires an *actively managed change process from every responsible stakeholder inside the new credit environment in Turkey*

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CHAPTER V

COMPANY VALUATION: AN EXAMINATION OF THE RESIDUAL INCOME METHOD AND MARKET-BASED APPROACH IN THE BANKING SECTOR

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1. Introduction

The issue of value, which has increased its importance in the literature since the 1960s, has gained more importance in recent years with the effects of developments in both real and financial markets and globalization. Today, academic studies continue to be carried out on the subject of valuation, which has increased its weight in Turkish literature, especially since the 1990s.

The concept of value is a difficult concept to define, and its meaning can change in different periods and conditions, from different perspectives. So much so that issues such as periodicity, contingency, and subjectivity can also have an impact in company valuation. Especially in crisis periods, there may be situations where the value of the company differs in the short term. Changes in short-term interest rates in our country in recent years can be given as an example to this situation. On the other hand, the COVID-19 epidemic, which started in China in 2019 and spread worldwide, also has effects on company value and company valuation. After a certain period of time after the start of COVID-19, in food, health and pharmaceutical industries there has been an explosion in revenues, so there has been an increase in company value due to the increase in the sales of companies

operating profits. On the other hand, when looking at the company valuation side, it has become more difficult for the valuation expert to predict the profit or loss statement projections of the company and some variables to be taken into account in the calculation of the discount rate. As a matter of fact, the effects of this situation are seen in the predictions made in the application part of the study. The value of the company may also vary depending on the situation of the receiving party company in mergers and acquisitions. If the company to be purchased for the purchasing company is engaged in a key activity in points such as production and supply chain, the company value may be above the value determined for this buyer.

Company valuation techniques can differ in many ways, some methods consider the future of the company, while some methods consider the current situation of the company. In company valuation methods, it can be differentiated within itself according to some sectors. In the literature review, the residual income method, the economic value added method, discounted cash flows and market approaches and bank valuation are widely discussed.

In this study, residual income method and market approach are taken into account and its application in the banking sector is examined. Net operating profit after tax and cost of equity of the company were both used in the calculations of residual income, and some results were reached regarding the methods used in bank valuation and company valuation by examining them together with the methods used within the framework of the market approach. In the study, it is aimed to analyze the applicability of the residual income method in the banking sector, the important points in the market approach and the methods and variables used in company valuation.

2. Literature

The residual income method can be used as a possible measure of a firm's value creation. In this method, in which the present value of the expected residual earnings is taken, the difference between the market and book values becomes the focus. Contrary to its theoretical usefulness, the fact that the book value is of great importance brings with it some problems in practice. For example, the change in value that will occur in the event of the emergence of a new shareholder is one of them (Ohlson, 2000). Considering the situation of the model against inflation, it can be said that inflation no longer affects the structure of the income model, and the use of historical cost data in an inflationary environment causes significant impairment (Wang., Ashton, & Peasnell, 2010). In some cases the RI approach gives more accurate firm value estimates, while

in other cases the DCF approach gives more accurate estimates. Considering the uncertainty surrounding firm valuation in practice, it is acceptable to use simplifying assumptions, but the impact of these simplifying assumptions on firm value estimates can be significant. Therefore, analysts who commit to such simplifying assumptions should be well aware of the impact of these assumptions on firm value (Plenborg, 2002). While the use of RI methods by analysts can lead to more sophisticated estimates of economic fundamentals and stock valuations than those obtained using DCF, the most obvious benefits of RI valuation are ROE-RI (RI models around net income) rather than RNOA-RI (RI models around net operating income) (Hand, Coyne, Green, & Zhang, 2017). The major benefit of the residual income model compared to the DCF method is that it gives a central role to the already known book value rather than simply deriving value from the future, and the future component is determined not by accounting rules but by the profit principle of economics, where profit comes from comparing the cost of capital (Cziglérné Erb, 2008). 2020).

Difficulty in competitive conditions, changing economic conditions with the effect of globalization have brought about a change in performance measurement techniques taken into account in company management, and cost-oriented management approach has come to the forefront. These developments also played an important role in the development of value-based performance measurement methods. Economic Value Added: EVA is one of the most accepted among these value-based performance measurement systems (Köroğlu, 2008). Although EVA has been adopted as a measure of financial performance relatively recently, its conceptual foundations come from a well-established microeconomic literature in relation to the relationship between firm earnings and wealth creation (Worthington and West, 2001). Economic value added is a residual income variable. It is defined as the operating profit remaining after deducting the cost of capital and taxes related to the operations. Standard EVA mathematically corresponds to the standard DCF formula as it is a modified version of DCF. However, in periodic performance measurement, EVA has similar shortcomings with the rate of return on investment (ROI). For example, inflation may distort the results from both measures. Despite its faults, EVA can be said to be a good performance measurement and control tool for companies. First of all, it is a simple metric and measures well the increase and decrease in shareholder wealth. However, maximizing traditional performance measures such as ROI is not theoretically the same as maximizing shareholder wealth (Makelainen, 1998). As a matter of fact, Chen and Dodd (2010) stated in their

study that the improvement of EVA performance does not have a very strong relationship with high stock returns, and in their study, they concluded that EVA could not even explain 26% of the changes in stock returns.

Economic value added is an estimate of economic profit, but also a measure of equity holders' wealth. EVA takes into account the cost of capital and therefore the risk level of the firm. EVA is superior to traditional accounting measurements because there is no such qualification in accounting indicators such as ROE, ROA, ROCE that do not evaluate the economic return of the firm. EVA is the company's strategy, planning and capital allocation etc. Since it covers many managerial variables, the increase in EVA can be determined as a strategic goal that constantly increases the value of the company (Sichigea and Vasilescu, 2015). EVA provides the investor with more information about the company's measure of value than traditional accounting metrics. Thanks to EVA, company employees or managers can better distinguish value-creating activities from activities that decrease firm value (Shah, Halder, & Nageswara, 2015). One of the reasons EVA is an effective metric is that it is linked to MVA, an indicator of wealth creation. Another reason why EVA is preferred is that it is a reliable and continuously improving method (Erce, 2008).

The developer of EVA (Stern Stewart & Co.) has proposed more than 160 fixes to eliminate distortions in accounting profit. These adjustments made the calculation of EVA very complex (Keys, Azamhuzjaev, Mackey, 2001). Although EVA has advantages as a performance measure, it also has some limitations. An example of this is that it is a short-term performance measure and therefore does not give accurate results for companies that expect the return of their investments in the long term (Grand, J.: 2003). Some critics of EVA have argued that EVA should not completely replace accounting earnings as a measure of performance. They found that even when EVA is already in use, accounting profit measures still have significant informational value. Along with EVA, traditional measures such as earnings per share, return on assets, return on equity should continue to be followed (Sabol and Sverer, 2017). In their study "Economic value added (EVA): Its uses and limitations" in 1999, Brewer and Chandra evaluated EVA as a valuable criterion for measuring wealth creation and aligning managerial decisions with firm preferences, but when considered as a whole, EVA alone evaluated the overall performance of the company. indicated that it may not be sufficient to determine For this reason, a set of measurements should be used in conjunction with EVA. EVA should be used in conjunction with traditional accounting measurement techniques. Because these

two methods are not interchangeable. EVA should be seen as an improvement to traditional accounting metrics and when these metrics are used properly, it will be a more powerful tool for evaluating performance (Obaidat, 2019).

When the literature on bank valuation is examined, it can be said that research and evidence on the determination of the equity value of banks are limited (Massari, Difonzo, Gianfrate, & Zanetti, 2018). The valuation of financial institutions remains a complex process, further compounded by the diversification of products and the attempt to avoid risk stemming from the lessons learned in the global financial crisis (Dayag and Trinidad, 2019). The determination of bank valuation is fundamentally important because the focus should be on the growth of stability and therefore the valuation of the bank, not on profit growth. Bank managers should also be rewarded not according to profit, but according to the change in the value they manage (Horvátová, 2010). There are two problems when comparing the valuation of a bank with the valuation of a typical non-financial company. The first of these is the definition of what is considered debt and equity. The second is that the definition of cash flow is difficult for non-financial companies (Nurmi, 2019). Although there is not a valid valuation method for every situation in bank valuation, the valuation methods to be used in measuring the value of banks and financial institutions are open to exploration (Eva, 2010).

In the valuation made with the FCFF and EVA method, the factors affecting the company value are similar. In both methods, return on capital, weighted average cost of capital and tangible net fixed assets / sales ratio can be counted among the important factors affecting the value of the company (Yelgen, 2016). Similarly, Aggelopoulos (2016) examined bank valuation with cash flow to equity and residual income approach methods in his study, and at the end of his valuation studies, it was determined that each method gave the same equity value and concluded that the values found were higher than the current equity value of the company. However, in the evaluation made on a bank-by-bank basis, a strong relationship was found between the market value announced by the financial statements on the relevant dates and the EVA (Birkan, 2015). Saydar (2011), on the other hand, in his study on the factors that determine bank value, found that flow-based models (RI, DDM, FCFE) gave more meaningful and consistent results than multiplier analysis. In another study examining the relationship between the book value and equity value of commercial banks, the discounted cash flow method, the risk-adjusted discounted cash flow method, the discounted dividend method and the residual income method were used and the equity value and these four valuation models were compared. The DCF and

the risk-adjusted DCF method did not yield as accurate results as the dividend discount model and residual income model in determining the equity value of commercial banks (Coit, 2016). On the other hand, in another study examining the explanatory value of the EVA model on the market value of equity, the valuation based on EVA found that only FGV (Future Growth Value) positively and strongly affected the market value of the equity and it was not significantly explanatory beyond that explained by the earnings valuation model. It has been observed that it performs better than the earnings valuation model when it adds/ increases it (Behera, 2021).

In the research conducted on state banks and private banks (non-governmental banks), EVA, NOPAT, EPS and P/E variables were examined in terms of determining the market value of banks and in private banks, EVA was more explanatory in determining the market value of banks compared to the other three variables. concluded. In state banks, on the other hand, it has been determined that EVA and NOPAT have more explanatory power in determining the market value compared to other variables (EPS, P/E) (Aminimehr and Fathee, 2013). On the other hand, K ro lu (2008) stated in his study that in making strategic decisions such as liquidation in banks, in order to evaluate performances more in line with reality, value-based performance criteria should be used as well as traditional performance criteria. It was stated that the application of the economic added value approach in this process and the analysis of the results provided remarkable information about the value creation potential of the banks, and therefore, it was concluded that the analysis of the company with the EVA method before the decision to liquidate would be beneficial for the managers to make a decision.

At the last stage of the literature review, a summary of the factors affecting bank valuation is given below:

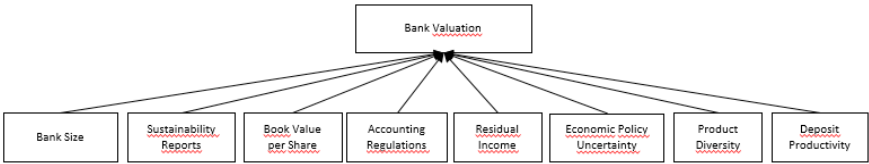


Figure 1: Factors Affecting Bank Valuation
Source: (Dayag ve Trinidad, 2019)

3. Data and Methodology

In the study, a company operating in the banking sector was evaluated using residual income method and market-based methods, and whether these

methods were effective in determining the company value and what should be considered in order to be effective were examined. In the valuation study, publicly available data and various data platforms were used, and no internal data was obtained from the companies evaluated. Therefore, the estimations are generally based on sector data and the results of the analysis. In line with the purpose of the research, an application was made by using residual income method and market-based methods to determine the equity value of Türkiye Garanti Bankası AŞ operating in the banking sector. While conducting Garanti Bank valuation study, audited financial statements in accordance with IFRS published on Public Disclosure Platform were used. While making the horizontal analysis of the financial statements, the data of 2018 and the following period were examined in general.

3.1. Projections

While creating the projections that will be taken as basis in Garanti Bank's economic value approach, summary pro forma financials were created based on net profit and equity value. In terms of comparison with the projection period, the summary financials for the period 2018 – September 2021 are shown in Table 1.

Table 1: Garanti Bank Summary Financial Statements

Profit or Loss Statement (TL Million)	2018	2019	Sep.20	2020	Sep.21
Net Interest Income	20.877	20.673	18.281	25.393	23.863
Operational Expenses	(8.769)	(10.309)	(8.519)	(11.887)	(10.123)
Personnel Expenses	(3.645)	(4.188)	(3.267)	(4.420)	(3.975)
Other Operating Expenses	(5.124)	(6.121)	(5.251)	(7.467)	(6.148)
Net Fees and Commissions	5.103	6.274	4.866	6.588	6.490
Net Profit	6.707	6.241	5.240	6.385	9.072
Balance Sheet (TL Million)	2018	2019	Sep.20	2020	Sep.21
Assets	399.154	428.554	525.909	540.913	630.848
Loans	256.010	277.507	345.972	350.233	413.899
Performing Loan	243.461	259.207	326.302	335.004	398.381
Non-performing Loans	12.549	18.300	19.670	15.229	15.518
Customer Deposits	245.016	274.609	344.495	356.747	423.534
Shareholders' Equity	46.887	54.051	60.725	62.409	71.125

The study published by HSBC Global Research was used to determine the future amount of financial statement items that will form the basis for the preparation of the bank's projections and the determination of the company value. Accordingly, the net profit of the company in 2021 is expected to be 10.96 billion TL, 16.05 billion TL in 2022 and 18.71 billion TL in 2023. The equity value is expected to be 72.72 billion TL in 2021, 88.77 billion TL and 105.07 billion TL in 2022 and 2023, respectively. Net profit is expected to grow by 10% in the final period, and the equity amount is expected to grow by 19%, which is the average of the equity growth in the projection period (2021, 2022 and 2023) (Table 2).

Table 2: Garanti Bank Projections

Profit or Loss Statement (TL Million)	2021 F	2022 F	2023 F	Terminal
Net Interest Income	33,410	49,202	54,412	20,583
Operational Expenses	(11,912)	(15,058)	(17,969)	
Personnel Expenses	(4,558)	(5,762)	(6,876)	
Other Operating Expenses	(7,354)	(9,296)	(11,093)	
Net Fees and Commissions	8,199	9,551	11,089	
Net Profit	10,959	16,045	18,712	
Balance Sheet (TL Million)	2021 F	2022 F	2023 F	Terminal
Assets	698,638	804,276	917,715	125,020
Loans	430,334	493,687	563,925	
Performing Loan	410,563	471,006	538,017	
Non-performing Loans	19,771	22,681	25,908	
Customer Deposits	473,620	539,846	615,531	
Shareholders' Equity	72,722	88,767	105,072	

3.2. Cost of Equity

In the cost-of-equity calculation, the risk-free interest rate for 2021 is the last three-month average of the 10-year Turkish government bonds as of November, while the risk-free interest rate for the ongoing periods is determined based on the risk-free interest rates and inflation assumptions determined

according to the CPI-indexed bonds. Capital risk premium, beta and company risk premium, which are other variables used in the determination of equity, are accepted as the same for all years. However, since the inflation rate projections change over the years, there is also a difference in the cost of equity by periods (Table 3 and Table 4).

Table 3: Cost of Equity in 2021

Variable	2021
Turkey Risk Free Rate of Return	19.03%
Capital Market Risk Premium	5.18%
Beta	0.988
Company Risk Premium	0.50%
Cost of Equity	24.65%

Table 4: Cost of Equity in 2022 and Beyond

Variable	2022	2023	Terminal
Turkey Risk Free Rate of Return	23.60%	23.60%	13.30%
Inflation Expectation	20.00%	20.00%	10.00%
Real Interest	3.00%	3.00%	3.00%
Capital Market Risk Premium	5.18%	5.18%	5.18%
Beta	0.988	0.988	0.988
Company Risk Premium	0.50%	0.50%	0.50%
Özsermayenin Maliyeti	29.22%	29.22%	18.92%

4. Findings

4.1. Equity Value by Return on Equity Method

After the projections of the bank subject to the appraisal were created and the cost to equity was determined, the discounted return on equity capital was calculated. According to the residual return on equity model, the final calculations required to determine the equity value is to deduct the discounted return on equity from the book value of the equity. The book value of equity is TL 71.13 billion, the total discounted returns on equity excluding final value is TL 10.71 billion, and the present value of the final return on equity is TL 26.63 billion. As a result, Garanti Bank's equity value is calculated as TL 33.78 billion according to the residual return on equity model (Table 5).

Table 5: Equity Value by Residual Return on Equity Method

TL Million	Sep.21
Book Value of Equity (30.09.2021)	71,125
Present Value of Residual Return on Equity Excluding the Final Period	(10,711)
Present Value of Residual Return on Equity for the Final Period	(26,634)
Equity Value	33,780

Sensitivity analysis of the company’s equity value was made, taking into account the company’s growth rate in the final period and the +/-0.5% changes in real interest rates. The equity value of the company was determined to be between TL 29.84 billion and TL 38.63 billion (Table 6).

Table 6: Return on Equity Sensitivity Analysis

Real Interest Rate	TL Million	Growth				
	33.780.444	9.00%	9.50%	10.00%	10.50%	11.00%
	4.00%	26,556	25,705	24,771	23,737	22,590
	3.50%	30,575	29,842	29,032	28,132	27,125
	3.00%	35,006	34,426	33,780	33,059	32,246
	2.50%	39,920	39,538	39,111	38,629	38,082
	2.00%	45,407	45,284	45,145	44,988	44,807

4.2. Equity Value by Market Multiplier Method

After determining the ratio to be used in determining the equity with the market multipliers, the book value of the equity is multiplied by this ratio to reach the equity value of the company. As Garanti Bank’s Price/Book Value multiplier is 0.45 and the book value of its equity is TL 71.13 billion, its equity value is calculated as TL 31.92 billion (Table 7).

Table 7: Equity Value by Market Multiplier Method

TL Million	Sep.21
Book Value	71,125
Price/Book Value Multiplier	0.45
Equity Value	31,922

While making the sensitivity analysis of the company’s equity value determined according to the market multiplier, the +/- 5% changes in the Price/Book Value multiplier were examined and the equity value range of the company was calculated as 30.33 billion TL - 33.52 billion TL (Table 8).

Table 8: Sensitivity Analysis with the Market Multiplier Method

TL Million	-5%	0%	5%
Book Value	71,125	71,125	71,125
Price/Book Value Multiplier	0.43	0.45	0.47
Equity Value	30,326	31,922	33,,518

4.3. Equity Value by Market Transactions Method

The Market Value/Book Value of the banks, which have been subject to trading in the last 4 years, has been examined. As a result of the examination of the determined transaction list, the average Market Value/Book Value was calculated as 0.83. When this ratio is multiplied by the company's book value of TL 72.13 billion, Garanti Bank's equity value is calculated as TL 59.28 billion (Table 9).

Table 9: Equity Value by Market Transactions Method

TL Million	Sep.21
Book Value	71,125
Book Value Multiplier	0.83
Equity Value	59,276

While making the sensitivity analysis of the equity value determined according to the market transactions of the company, the +/- 5% changes in the Market Value/Book Value multiplier were examined and the equity value range of the company was found to be 56.31 billion TL – 62.24 billion TL.

Table 10: Sensitivity Analysis by Market Operations Method

TL Million	-5%	0%	5%
Book Value	71,125	71,125	71,125
Book Value Multiplier	0.79	0.83	0.88
Equity Value	56,312	59,276	62,240

4.4. Market Value (Stock Exchange Value)

While determining the stock market value of the company, the average of the share prices of September 2021 was used. The market value of the company was obtained by multiplying the total number of shares of the company with the average share price of the last month as of September 2021. The average share

price of the company for September 2021 is 9.39 and the total number of shares is 4.20 billion. Considering the 20% control premium, Garanti Bank’s equity value is calculated as TL 47.39 billion.

The maximum and minimum share prices in September 2021 were taken into account while conducting the sensitivity analysis regarding the stock market value of the company. Since the share price was minimum 8.82 and maximum 9.91 in the last month as of the end of September 2021, the equity value range of the company was found between TL 44.45 billion and TL 49.95 billion (Table 11).

Table 11: Garanti Bank Istanbul Stock Exchange Value (Market Value)

Date	(01.09.2021-30.09.2021)		
	Average	Min.	Max.
Stock Price	9.39	8.82	9.91
Total Number of Shares	4,200,000,000		
Market Value (TL Million)	39,457	37,044	41,622
Control Premium	20%	20%	20%
Market Value with Premium (TL Million)	47,349	44,453	49,946

4.5. Value Range and Weighted Equity Value

After the company’s equity value was determined according to the discounted cash flows approach, the market-based approach and the stock market price, a weighted equity value range was found by giving 25% weighting to each method used (Figure 2). Accordingly, the equity value range of Garanti Bank has been calculated between TL 40.23 billion and TL 46.08 billion.

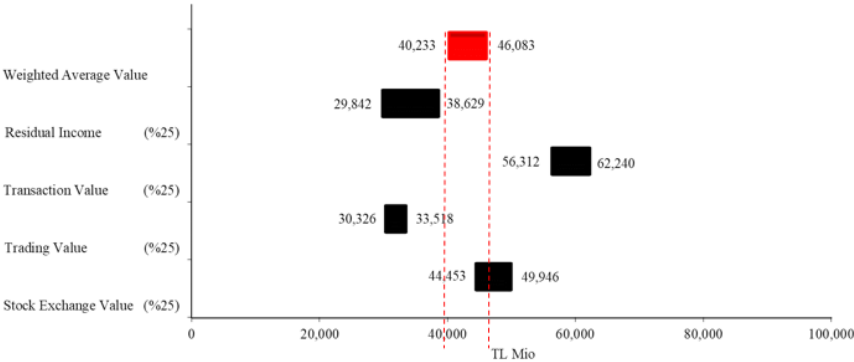


Figure 2: Guarantee Equity Value Range

As can be seen in Figure 2, the residual income method and the market-based approach generally support each other, but at some points (transaction multiplier) the results diverge. In addition to the fact that each method plays an important role in determining the value range, it is observed that the value range of the residual income method is in a wider band than the market approach.

5. Conclusion and Recommendations

While valuation studies are being carried out economic conditions, market values and time perspective are changing instantly. However, the methodology shown in this study do not change. On top of it, bank valuation is quite difficult indeed, both in practice and in theory, compared to manufacturing firm valuation. Although published sector data and macro variables can be used to create projections that will form a basis for the residual equity value to be discounted in bank valuation, it is very difficult to predict the bank's future net profit and equity capital with these data.

Since the company's operating debt and financial debt cannot be differentiated in bank valuation, cost of equity is used. Since financial debt is not taken into account in determining the discount rate, the sensitivity of the bank value to a one-unit change in each variable used in the calculation of the cost of equity is relatively high.

Since the banking sector is a more widespread sector globally, it is easy to find similar companies in the market approach. In fact, since the number of similar companies is high, while the company value is determined with a market-based approach, since the number of companies will be too large in bank valuation, some weighting or elimination can be made and a list of companies with more similar characteristics to the company to be valued can be made. In this study, only banks in the European region have been taken into account, since the number of companies is too large when examining market transactions in bank valuation.

If the average value is to be used in similar company multipliers or variables used to determine the cost of equity, it is another essential issue to determine the outlier values (outlier test) and to determine the correct company value without being affected by the extreme values of the series. If the outlier test is not performed, if there are extreme values in the series in which the relevant variable is located, the average to be used will not reflect the series correctly and will cause deviations from the correct equity value.

One of the most important elements in company valuation is to determine the closest real value. For this, it is essential that the sector and the company are well researched, that the projections are based on reasonable measures and that they are consistent. In addition, the appraiser must use the correct valuation method, anticipate the differences that may occur in practice according to the sector, and make appropriate weighting for each method.

Another subject examined in this study is the analysis of the methods and variables used in the determination of company value through bank valuation with residual income method and market-based approach. As Ohlson (2000) stated, in the residual income method, the difference between the book value of the equity capital and the market value becomes the focus. As a matter of fact, the level of the book value of the equity capital in terms of valuation and its determination for the coming years is one of the most important issues in determining the value to be found using the residual income method. Another issue is the determination of the variables used in determining the cost of equity. As a result of the study, it has been observed that the value found by the residual income method is relatively affected by small changes in the cost of equity. Therefore, the assumptions used in calculating the cost of equity in determining the book value of equity and estimating it for future years should be well analyzed by the appraiser. In addition, the residual income method should not be taken into account as a stand-alone criterion in determining the company value and examining the company's performance, and market-based approach methods should also be used. The results obtained with the market approach should be analyzed and the results obtained from the residual income method should be compared, and it should be known that the distance between the results obtained from each method has a reducing effect on the reliability of the study. In the study, the results obtained from each method were compared, summarized and weighted (Figure 2). As a result, in the study, the bank value range was determined by the residual income method and the market approach, and it was observed that these methods gave consistent results in the valuation of the company in a study where the assumptions were built correctly, the model was well established and the variables were well analyzed.

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CHAPTER VI

A STUDY ON THE IMPORTANCE AND FUNCTIONING OF DERIVATIVE CONTRACTS

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1. Introduction

Finance is the concept that expresses the most effective use of the funds obtained. Finance, which allows financial management by individuals, institutions, and states, is a branch of science that all units benefit from. The financial system has fund supply and demanders, institutions, assets, legal regulations, and the system's efficiency is ensured. Funds supplying units represent savers, and fund demanders refer to units needing funds. Financial institutions undertake functions such as intermediaries for units, portfolio consultancy, and risk management. Financial markets are environments that differentiate according to various criteria and where units exchange assets and funds. Financial assets, on the other hand, are defined as instruments preferred by savers and increase their returns. Financial assets are demanded for purposes such as hedging, speculation, and arbitrage. It is essential for the development of the markets that the financial system has characteristics such as being effective, transparent, reliable, and fair.

The study aims to define derivative contracts and contribute to the literature by showing their functioning. This study consists of three parts. The first part discusses the concept of finance and the financial system. After defining finance, markets, and assets, the functioning of finance theories is also included in the

first chapter. In the second part, the concept of risk is discussed. In addition to the concept of risk, market types are also explained. Financial assets are detailed, and their types are given. In the third part, futures contracts are explained. After the characteristics of the contracts, their types are described in detail. The operation of forward, futures, options, and swaps contracts are also included in the third section.

2. Finance and Financial System

Finance is the science that enables individuals, businesses, and states to manage their financial resources in the best way. Finance, which has taken its current form with models and theories, provides functioning by creating a balance between the revenues obtained and the expenses. It is ensured that the savings created by the incomes meet the expenses and are converted into investment opportunities. The most suitable financing opportunity is evaluated if the revenues cannot cover the expenses. Financial management covers investment and financing as well as dividend decisions. Financial management is valid for individuals, businesses, and governments, and a sustainable structure is created by realizing different strategies. Another element of financial management is the finance manager. The finance manager effectively manages financial assets and resources for businesses to reach their goals and objectives. Managers, who play an active role in the decision-making mechanism of the enterprises, also create various alternatives in the supply of funds that the enterprise needs. At the same time, the finance manager tries to provide the financial goals of the business, which are the market value and the goals of maximizing the wealth of the partners (Pamukçu, 1989, pp. 1-16).

The financial system refers to transferring funds and assets for needs between the units that supply and demand funds. Besides the units that supply and demand funds, the financial system have intermediaries, institutions, assets, and legal regulations. The primary purpose of the financial system is to continue the activities of the units in a sustainable, effective, transparent, and reliable structure. The efforts of all units are essential in achieving the goals and objectives. Financial assets in the financial system are instruments that are traded in exchange for funds. Some of these instruments give partnership rights, while others give credit rights. These assets include investment instruments such as deposits, stocks, bonds, and bills. Another element in the system is financial institutions. In addition to their intermediary role, institutions ensure the system's efficient functioning. When the institutions are examined, it is seen

that there are types such as banks, intermediary institutions, clearing houses, and regulatory institutions. All actors in the financial system are essential for the functioning of the system. The fact that the actors are in synergy increases the system's efficiency (Okka, 2015, pp. 32-41).

The book "The Wealth of Nations," brought to the literature by Adam Smith (1776), is an essential resource for finance and economics. The work, in which the view that individuals are rational is defended, provided the financial foundations to be laid. The great depression that occurred in 1929, the oil crises, the collapse of the Bretton Woods system, and the financial and economic crisis caused changes in the field of finance. In the article titled "Portfolio Selection" by Markowitz (1952), the concepts of risk and expected return were brought to the literature. Markowitz brought a perspective to the portfolio approach with his article. It has been argued that among the securities with the same risk level, the necessity to create an optimum structure by including the high-yielding securities in the portfolios. In addition, systematic and non-systematic risks were defined, and it was stated that diversification could reduce risks (Yiğiter & Akkaynak, 2017, pp. 286-287). Theories for asset prices and portfolio creation are also crucial for optimum choices. The "Effective Market Hypothesis," brought to the literature by Fama (1970), made it possible to measure the efficiency of the markets. The reflection of all information on asset prices determines the efficiency of the markets. The information reflected in the prices is informative about the market efficiency and type (Demireli et al., 2010, pp. 54-55).

According to the efficient market hypothesis, the markets are divided into three: efficient in weak form, efficient in semi-strong form, and efficient in strong form. Looking at the market distinctions, it is stated that the past prices of securities are reflected in the current securities prices in weakly efficient markets. In semi-strong form markets, public information and past prices are reflected in asset prices. In strong-form efficient markets, insider information, public information, and past prices are reflected in asset prices. Strong-form efficient markets include the other two market types, and it is impossible to obtain abnormal returns in strong-form efficient markets (Yücel, 2016, pp. 108-109). Traditional and modern finance theories argue that individuals are rational and act optimally in investment decisions. The idea that all individuals are rational has been modified by the "Expectation Theory" introduced by Kahneman and Tversky (1979). In theory, it means that losses are more meaningful than gains. It is argued that the benefit situations of individuals are different from each other, and subjective decisions are made (Tekin, 2016, pp. 78-79).

Behavioral Finance theory, introduced to the literature after the 1980s, argues that, unlike traditional finance theories, not all individuals are rational and that mistakes are made in investment decisions due to psychological, external, demographic, and biological factors. In Behavioral Finance theories, the factors individuals are influenced by are also defined. These factors are grouped under cognitive biases, demographic characteristics, external factors, and herd behavior. Behavioral Finance theories are among the approaches brought to the literature from traditional finance theories and continue to develop (Kıyılar & Akkaya, 2016).

3. Risk, Financial Markets, and Assets

Risk is a concept that is likely to occur and will cause negative situations. When defined financially, it is expressed as the name given to the probability of not obtaining the expected return. Investors turn their savings into investment opportunities. Each investor has an expected return at this stage, and different instruments are preferred according to their risk levels. The concept of risk emerges as an essential concept in investment decisions as it is the possibility that the expected return may not be realized. The concept of risk is different from uncertainty and can be measured by the probability distribution. Although risk has different classifications, it is divided into systematic and unsystematic risks. Systematic risk is a type of risk that cannot be diversified and affects all units if it occurs. Systematic risk types include interest rate, inflation, and market risk. On the other hand, unsystematic risk refers to the types of risks that can be diversified and avoided. Unsystematic risk types are divided into financial, business, and management risks. It is crucial to analyze the risks well, give weight to them, and evaluate them with the expected return to create an optimum portfolio. In portfolio formation, financial markets and assets should be known (Altay, 2012).

Financial markets are the environments where funds and assets are exchanged with individuals who supply and demand funds. Financial markets are divided into types and classified according to various criteria. Market distinctions are made according to different criteria, such as maturity, asset, level of institutionalism, and issuance. Looking at the financial market distinctions, it is seen that there are types such as money-capital markets, organized-unorganized markets, primary-secondary markets, and spot-futures markets. The distinction between money and capital markets is made according to the maturity of the assets. Assets with a maturity of less than

one year are traded in the money markets, while assets with a maturity of more than one year are traded in the capital markets. Organized markets have standard practices, while non-organized markets have more flexible rules. In unorganized markets, participants have a more significant say. A distinction is made in the primary and secondary markets according to asset issuance. Assets issued for the first time are traded in the primary markets, while previously issued assets are traded in the secondary markets. The payment and delivery method determines the spot and forwards market distinction. In the spot markets, payment and delivery are carried out instantly or in a reasonable time. In futures markets, however, delivery and payment are made with the maturity and amount determined today in the future. Separation of markets is carried out according to various features and continues to operate (Korkmaz & Ceylan, 2017).

Financial assets are instruments that give rights such as borrowing and partnership, represent a certain amount, provide periodic returns, and are used as investment instruments. Financial assets, defined as the tools individuals, institutions, and states use to transform their savings into investment opportunities, offer the opportunity to increase returns. Financial assets are preferred according to their characteristics. While some financial assets have high risk, others have a low-risk level. Investors prefer assets according to their risk levels and aim to provide returns. When we look at the leading financial assets, it is seen that there are instruments such as stocks, bonds, bills, repos, warrants, mutual funds, and derivative contracts. When the characteristics of financial assets are examined, it is seen that the risk level of stocks is higher than that of bonds and bills, and its return is uncertain. While the return investors will obtain in investment instruments such as bills and bonds is certain, the return they will obtain in mutual funds is uncertain. Investors can take more risks to earn more returns. Financial assets preferred by individuals, institutions, and states are among the essential instruments for the development of capital markets of countries (Pamukçu, 1999).

4. Derivative Contracts

Looking at the financial market distinctions, it is seen that there are two types, spot and futures markets. Spot markets are the type of market where payment and delivery occur instantly or in a reasonable time. On the other hand, in futures markets, payment and delivery are not instantly. Derivative contracts, which are products of futures markets, allow for the execution of

risk management, speculation, and arbitrage at a future date with the already determined price and amount. Derivative contracts provide the opportunity to gain income and take precautions against the risks that may arise in the future. Futures contracts are operated with existing products (Akkaynak & Yıldırım, 2019, p.24).

Derivative contracts are products that allow trading in the future with conditions determined today. Derivative contracts are used for various purposes. These purposes are hedging speculation and arbitrage. The purpose of hedging is to act today against the possibility of a price increase of the asset. Speculation aims to profit from the difference between price changes. Arbitrage, conversely, occurs in the form of making a profit with the price difference between the markets (Taştemel, 2020, p. 38). Derivative contracts are among the financial products that provide effective management if their functions are known, the theory is mastered, and they are used correctly. Derivative contracts have features such as facilitating the functioning of the financial system, creating a stable structure, and using them according to needs, in addition to hedging and gaining from risk (Anbar & Alper, 2011, p. 78).

Derivative contracts emerged in line with the needs of the units. The prices of the underlying assets are known today, but the formation of prices in the future is uncertain. To provide risk management, the price is fixed through contracts concluded today, and financial access to the relevant asset becomes easier. In addition to hedging, contracts are also used for speculation purposes. The standardization of the markets also increases the demand for derivative contracts for earning. The units carry out both the producers and the use of derivative contracts for speculation or arbitrage (BIST, 2017).

Derivative contracts have a wide range of uses. These assets, which offer both hedging and speculation opportunities, are preferred and used by many units. This usage area is also expressed as the reason for preferring derivative contracts. The reasons for using derivative contracts are listed below (McDonald, 2013, pp. 11-14).

- ⇒ Risk Management
- ⇒ Speculation
- ⇒ Reduced Transaction Costs
- ⇒ Regulatory Arbitrage

Looking at the classification of derivative contracts, it is seen that they are divided into two commodities and financial. Among these distinctions,

commodity derivatives consist of underlying assets such as wheat, gold, and silver. Financial derivatives consist of simple and complex instruments. When the primary classification is made, derivative contracts are divided into four forward, futures, options, and swaps. The classification of derivative contracts is illustrated with the help of Figure 1 (Vashishtha & Kumar, 2010, p.18).

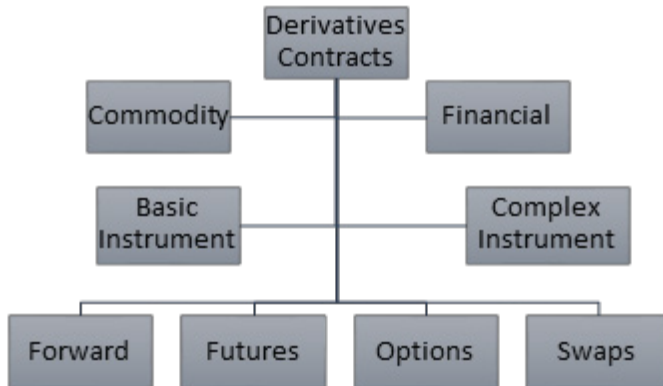


Figure 1. Classification of Derivatives Contracts

Source: (Vashishtha & Kumar, 2010, p.18)

Derivative contracts have Forward, Futures, Options, and Swap types, as shown in Figure 1.

Forward contracts are based on determining the maturity, amount, and price to be delivered at a future date (Çonkar & Ata, 2002, p. 5). Forward contracts are tools used for the management of uncertainties and risks. Forward contracts do not have a centralized marketplace. The contracts executed are not standard and are determined by the parties. There is no need for intermediaries in the execution of contracts. There is no collateral system and counterparty in the contracts, so there is a risk of non-fulfillment of the contract. On the other hand, futures contracts are similar to forward contracts but have significant differences. Futures contracts are traded in organized markets, have standard practices, have a collateral system, and are less likely to default. Futures contracts allow transactions to be made in the future with predetermined conditions. Future contracts are tools where the speculation function is used more (Ceylan & Korkmaz, 2017).

The differences between futures contracts and forward contracts, which have a similar structure, are available in Table 1.

Table 1. Differences Between Forward and Futures Contracts

FUTURES CONTRACTS	FORWARDS CONTRACTS
It is traded in organized markets.	It is traded in unorganized markets.
Standard contracts are available.	Contracts are drawn up according to the needs.
It has a secondary market.	There is no secondary market.
There is a clearinghouse.	There is no clearinghouse.
There is a collateral system.	There is no collateral system.
There is a maximum and minimum price change limit.	There is no maximum and minimum price change limit.
There is daily agreement.	There is no daily reconciliation.
The position can be closed with a reverse trade.	At maturity, the position is closed.
Prices are determined by supply and demand.	Prices are determined freely between the parties.

Source: (Ceylan & Korkmaz, 2017, p. 619).

Options contracts are futures contracts that differ from forward and future contracts. Forward and futures contracts contain obligations for buyers and sellers. In option contracts, on the other hand, the buyer has no obligation other than paying the option premium. Options contracts are instruments in which the option buyer acquires the right to exercise or not exercise the contract, provided that the option buyer pays the option premium. The underlying asset in options contracts is used per the option buyer's decision. The options seller, who receives the options premium, must comply with the options buyer's decision. There are two types of options. The first type is *call options*, and the second is *put options*. Call options are options in which the buyer has the right to buy or not buy the underlying asset from the option seller, provided that the option premium is paid. Put options, on the other hand, are options in which the option buyer has the right to sell or not to sell the underlying asset to the option seller with a premium to be paid. Some factors affect the options premium (Gökbulut, 2020). These elements are listed below.

- ✓ Underlying price
- ✓ Usage price
- ✓ Expiry date
- ✓ Volatility
- ✓ Interest rate
- ✓ Dividend

In call and put options, the loss of the option buyer is equal to the option premium. The option seller's loss varies according to the underlying asset's price. It is seen that there are two types of options in options according to the expiry date. These types are European and American type. European-style options are exercised at expiration, while American-type options are exercised at any time until maturity.

Swap contracts are futures contracts based on exchanging a specific underlying asset between parties. Changes are made according to the subject of the underlying asset, and the parties use these tools for purposes such as hedging, speculation, and arbitrage. There are various types of swap contracts, such as money, interest, and exchange rate. The purposes of making swap contracts can be listed as insufficient local currency investment opportunities, high expected return, fixed-variable interest balance, credibility opportunities, and maturity compatibility. The currency swap, one of the types of swap contracts, refers to the exchange between different currencies. Interest rate swaps are realized in the form of an exchange of fixed and floating interest rates between two parties. Swaps contracts are futures contracts that individuals, institutions, and governments use (Omağ, 2019). In Figure 2, the currency swap principal exchange is an example of a swap contract.

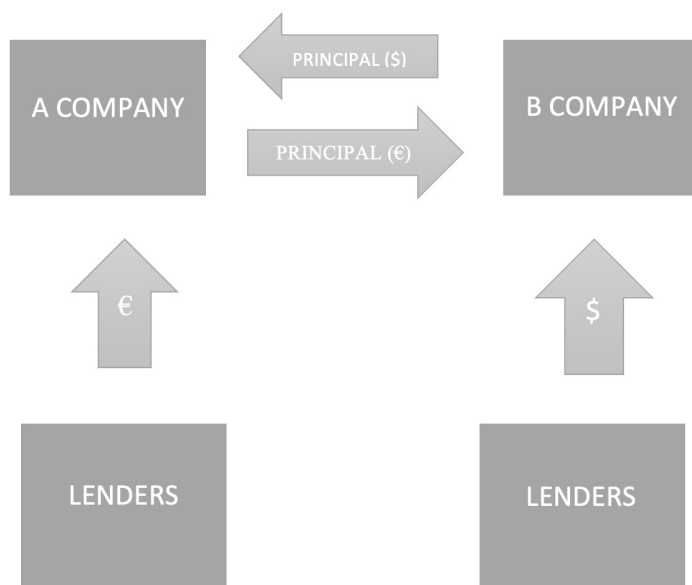


Figure 2. Currency Swaps
Source: (Gökbulut, 2020, p. 363).

Figure 2 shows the currency swap principal change. For example, two companies, A and B., have entered contracts to exchange different currencies. Within the scope of the contract, Company A preferred \$ in return for the € it received, and a swap agreement was concluded between the parties. Thus, the currencies were changed, and the needs were met. This transaction can also be made on interest, exchange rates, and underlying assets.

5. Conclusion And Evaluation

The science of finance guides units with models and theories at the stage of transforming savings into investments, which is the positive difference between income and expenses. Both individuals and countries need to transform the savings obtained into investment opportunities. Investment means carrying today's consumption into the future. For this reason, it is crucial to transform savings into investments for future fund demand.

Since the second half of the twentieth century, changes have occurred in the concepts of risk, expected return, and portfolio. Experienced economic and financial crises, wars, and contraction periods have effectively formed models and theories, and a change from traditional to modern structures has been observed. This change has changed with questioning the rational human concept towards the end of the twentieth century, and further developments have occurred with the advocacy of the behavioral finance theory. The development of financial strategies has become increasingly important for individuals, institutions, and governments.

Financial assets that provide investment opportunities differ in features such as expected return, risk, maturity, and amount. Financial assets vary in terms of risk and expected return. Investors' risk characteristics are one of the determining factors in the preference for financial assets. For this reason, factors such as the development of capital markets, the abundance of assets, and the availability of necessary assets increase the volume of investors.

Derivative contracts are contracts on assets, price, quantity, and quality that have already been determined. Criteria are already set, and transactions are carried out in the future. The reasons for making derivative contracts are hedging, speculation, and arbitrage. Derivative contracts differ from other assets in terms of their structure. Forward, futures, options, and swaps are types of derivative contracts. Among the advantages of derivative contracts is regulation according to needs, providing risk management, fixing the price, and making profits. Individuals, institutions, and governments carry out the use of derivative contracts. Market efficiency and diversification opportunities are offered through contracts.

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CHAPTER VII

THEORETICAL FRAMEWORK OF CLUSTERING CONCEPT IN REGIONAL ECONOMICS¹

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Evolving in the course of time, the concepts of industrial region and concentration economies created the concept of “Clustering”, which developed with the pioneering role of Porter. Nowadays, companies might want to participate in the cluster by gathering in a specific region for various purposes such as accessing the supply chain, easy access to the qualified labor force and raw materials, protection from market risks, and achieving a competitive advantage. Furthermore, they might also want to support the formation of clusters by aiming to turn the advantages, which clusters offer in countries, into a power factor for themselves in the global market. In the present study, by discussing the concept of clustering from a regional perspective, it is aimed to provide the theoretical framework of this concept. For this purpose, reviewing the relevant literature, the introduction of the concept, its definition

¹ This study is derived from the MA thesis titled “Kümelenme ve İhracat Karar süreci: Bursa’da Tekstil Kümesinde Bir Uygulama [Clustering and Export Decision Process: A Survey in Textile Cluster in Bursa]” by the first author.

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and main components, clustering types, the Diamond Model developed by Porter, the advantages and disadvantages of clustering, and the creation process of clustering policies are discussed. A theoretical analysis is provided at the end of this study.

1. Background of the Concept of Clustering

Even though the concept of clustering is related to the studies by Porter in the 1990s in the literature, it would be more accurate to discuss this subject by starting with the studies explaining the geographical concentration. The definitions made before the concept of clustering were generally “industrial district” and “agglomeration economies” (Tutar et al., 2011: 96). Clustering concept was generally used synonymous with the industrial zone, localization, and concentration concepts (Türko, 2013: 5). The theories influencing the concept of clustering seem to be very diverse and heterogeneous. Those theories are the Traditional Location and Agglomeration Theories (Yiğit, 2014: 107-109) based on the studies of Christaller (1933) and Lösch (1939) trying to explain the layout of cities, von Thünen laying the foundation of Agricultural Location Theory (1826), and Alfred Weber introducing the Industrial Location Theory (1909). Then, those theories were given a different perspective by Alfred Marshall (1890) explaining the geographical concentrations through externalities. In his study examining the industrial concentrations, Marshall stated that geographical concentrations offered a significant advantage to the companies, especially in terms of finding workers (Sungur, 2015: 319). Marshall discussed an industrial region or zone, rather than industries defined as technological. The conditions such as population density, availability of infrastructure, and industrial atmosphere are both a source and an outcome (Türko & Ersungur, 2013: 254).

The concept of clustering was introduced to the literature after it was discussed in Michael Porter’s book “Competitive Advantage of Nations” in the year 1990 (Gültekin, 2011: 33). Porter defined the concept of clustering as the concentration of intertwined companies and industries in a specific geographical region. In his study, influenced by the strategic management infrastructure and the idea of innovation, he discussed the concept of clustering from the aspect of geographical factors. Porter examined this subject together with the concept of economic competition in the year 1998, and he discussed it again by examining the main factors regarding the regional economic performance in 2003. Besides Porter, Enright also carried out studies on clustering in the year 2000 and stated that the concept of clustering differed by the characteristics such as geographic

scope, breadth, depth, activity base, growth potential, innovative capacity, competitive structure, and administrative structure (Yiğit, 2014: 49).

1.1. Definition and Basic Concepts

In his study, Porter (1998a) defined the concept of clustering. This definition states that “clustering refers to the geographical concentration of interrelated organizations and institutions in a specific location”. Clusters incorporate interrelated industries and other institutions that are important for the competition. These include the suppliers specialized in offering components, machinery, and services and the specialized infrastructure providers. Moreover, while clusters generally embody supply channels and clients downwardly, they also horizontally embody the transactions in industries related in terms of the use of common input and technology and the complementary product manufacturers. Finally, clusters incorporate specialized institutions offering education, training, research, knowledge, and technical support such as public institutions, universities, consulting agencies, and unions (Porter, 1998a: 4).

United Nations Industrial Development Organization (UNIDO) defines the clustering as “industrial or geographical concentration of organizations producing and selling products, which are related to or complement each other and have common difficulties” (UNIDO, 2013). There are different definitions of the concept of clustering in the literature. In a study, Lublinski (2002) cited some of those definitions. Crouch et al. (2001: 163) stated that clustering refers to tendency of organizations, which conduct similar activities, to be close to each other on a specific location without any difficulty (Lublinski, 2002: 24). Rosenfeld (2005: 2) defines the concept of clustering as the geographical concentration of organizations or related units, which are at a sufficient scale to create externality and not based on membership like associations do, in a specific region (Rosenfeld, 2005: 2). All the previous definitions of clustering emphasized the shared characteristics that clustering should incorporate. Examining previous studies (Alüftekin et al., 2009: 14; Şahin, 2016: 6; Oral, 2014: 18), those characteristics are listed below.

- Having geographical proximity and similar network structure,
- A specific systematic structure and lifecycle,
- Presence of horizontally and vertically related companies, shared suppliers and service providers, transportation and communication infrastructure, and similar training, working plan, and workforce approaches,

- Similar or complementary technological skills and capacities,
- Specialization,
- Ability to turn towards international markets and shared competitive potential, and
- Creativity.

Increasing the competitive power by improving the productivity, efficiency, innovativeness, and commercialization processes in companies, the clustering approach triggers the economic development and, thus, is seen to be one of the most important instruments of development (Türko & Kadiroğlu, 2017: 81-82; İZKA, 2010). One of the benefits of clustering is the achievement of sustainable growth. Survival of SMEs in the global economy is possible with clustering. Gaining competitive power is important for SMEs to adapt to the varying market conditions. While SMEs outside the cluster have low competitive power, those participating in the cluster have increasing competitive power and they create foreign currency inflow (İrhan, 2010: 13).

1.2. Main Characteristics of Clustering

1.2.1. External Economies

External economies are important to understand the agglomeration economies or the concept of clustering. Marshall classified the economies arising from the product diversification and an increase in the scale of production into two groups. The first one is the external economies depending on the development of the industry, whereas the second one is the internal economies depending on the changes in the internal structures of micro companies (Özpençe-İdikut, 2013: 58). Besides their cost-decreasing effects (positive), internal and external economies might also have cost-increasing (negative) effects. The effects arising from the expansion of the production volume of an industry and causing a decrease in the costs of every company in the industry are named “external economies of scale”. Internal economies of scale, however, arise from the activities of a single firm, independently from the production scales of other companies in the industry. Another subject discussed separately from the external and internal economies of scale is the concept of external economies. External economies arise when a behavior of a company or a client benefits parties, which are not related with that behavior, or adds to their costs (Türko, 2017: 46-48; Türko, 2013: 47).

Economies of scale are also stated in the “White Book” prepared in order to develop a clustering policy for Türkiye with the support of the European Commission. Accordingly, clusters might allow companies to reach economies of scale through specialization. In particular, clusters offer SMEs the chance to achieve a critical growth level that they cannot achieve only by themselves. The SMEs within a cluster can access complementary skills and sources and, thus, conduct larger and more complex activities (Beyaz Kitap, 2008).

1.2.2. Labor

Marshall stated that concentration in a specific region would offer various advantages to companies (Belussi & Caldari, 2009: 338; Krugman, 1991: 36). Those advantages include availability of labor force, specialized suppliers, and knowledge spillovers. In the study of Marshall, it was stated that concentration of similar companies in a specific region would attract the labor force, especially those having similar characteristics, into the region and improve them. Workers aim to minimize their personal economic risks by settling in regions that are suitable to their skills and education. Marshall emphasized that this agglomeration creates a good market for suppliers and offer them the scale they need in order to specialize (Yiğit, 2014: 111).

As stated by Porter, labor is a factor that can provide companies with a competitive advantage. The companies in a cluster can improve their productivity by easily accessing the qualified labor force, managers, and trained technical personnel (Porter, 1990). Involvement of specialized and qualified labor force trained within the scope of university-industry cooperation would increase both the employment capacity and the innovation capacity of the cluster (Oral, 2014: 38). Clusters create new business opportunities. For instance, the advantages that SMEs in a cluster gain such as access to knowledge, shared infrastructure, and labor force increase the demand for clusters by drawing the attention of other SMEs (Devrim & Özpençe-İdiküt, 2007: 66). The companies in dynamic clusters are in a pool of specialized and experienced workers. Being in such a pool is a factor that would shorten the hiring process and decrease the costs of searching for qualified employees, as well as transaction costs. Hence, clustering offers various advantages to companies; it also reduces the employment risks in other places and even draws skilled workers from other regions (Gültekin, 2011: 35).

1.2.3. Relationship with Institutions and Network Structure

Purchaser-seller relationships, shared technology, shared marketing and distribution channels, and shared employee pools are the most important factors connecting the cluster members to each other. Companies gain remarkable advantages in points such as achieving input, access to knowledge and technology, and marketing thanks to this communication network established through clustering (Gebeş & Battal, 2014: 275). Informal and formal connections to the production system, shared practices, and established norms allow for the improvement of socio-institutional structure. This doesn't only ensure the improvement and protection of the knowledge, but it also facilitates the participation of research institutions and local authorities in order to make it easier for various actors to settle in the relevant region (Yiğit, 2014: 113). Availability of advanced intermediate goods and machinery suppliers in the country would provide cost and time advantages and leadership opportunities in the supply chain. In the following process, it accelerates innovation through knowledge transfer, sharing, and cooperation via suppliers in the circle. Competition of suppliers in the international market also positively contributes to the competitive power of companies. Presence of relevant and complementary industries and competitive power also have similar effects and offer ease and desire for new ideas and entrance to an industry (Kocaoğlu, 2013: 15).

1.2.4. Cooperation

In a cluster, companies producing the same goods or complementary goods cooperate with each other in fields such as R&D, marketing, and production and a company member to a cluster can develop cooperations with multiple companies on different subjects at the same time (Gebeş & Battal, 2014: 275). Establishment of interdependency and shared-value chain between the companies would reflect any change, which would occur on this value chain, to all other companies (Kaygalak & Karadağ, 2013: 3). Cooperation tradition increases the "normal" trust level. Normal trust level can be considered as the accurate expectations about characteristics and actions of local economic actors conducting business together for the first time. As a collective capital in an industrial district, trust is mainly a byproduct of the shared culture (Türko, 2013: 30). The cooperation can be discussed also from the aspect of social capital. In this case, social capital improves the

connections, competition, communication, and interaction between the actors. Without social connections and a cooperation culture, it would be difficult for clusters to conduct activities that would offer economic value to a region (Alsaç, 2010: 25).

1.2.5. Innovation

In today's rapidly changing the competition environment, companies need to constantly alter their service and business styles and differentiate in order to survive. This change, differentiation, and renovation operations are defined as "innovation" (Devrim & Özpençe-İdikut, 2007: 67). In Oslo Guideline, innovation refers to a new or remarkably improved good or process, a new marketing method, or a new organizational method in in-house practices, business place organization, or external relationships. The minimum condition for innovation is for the product, process, marketing method, or organizational method to be new (or remarkably renewed) for the company. It includes the products, processes, and methods that companies developed first or adapted from other companies or organizations (OECD & Eurostat, 2006: 50).

Local suppliers and stakeholders can participate in the innovation process. It allows the companies in the cluster to notice the innovations and to meet the demands of customers faster and at lower costs in comparison that are not involved in the cluster. Besides that, entrepreneurs easily notice the deficient sides of products and services and can create a new technology or knowledge by providing solutions to the problems more easily. A company that is outside the cluster would face significant difficulties in activities that would be coordinated with distant suppliers and other organizations (Kadiroğlu & Türko, 2021: 236; Türko & Yellice, 2020: 571; Girgin & Değerli, 2006: 482). Clusters play an important role of companies' innovative capacity. For instance, the computer companies in the Silicon Valley meet the needs and demands of customers incomparably faster than the companies in other regions. The ability of companies in Silicon Valley to do it is related to the innovation potential of the advanced cluster structure in the valley (Bulu, 2009: 20).

1.3. Main Components of Clustering

The clustering process begins with the concentration of companies in a specific region and continues with beginning and increase of interactions between

companies, emergence of clusters, and the relationships during the interactions via shared supply and R&D and innovation projects. Clusters create mature clusters by growing and developing. In the course of time, mature clusters start transforming in order to prevent the risk of decline due to changes in technology, industry, or demand. Some clusters can turn from small regional clusters into international clusters through positive transformations (Cansız, 2011: 16).



Figure 1: Life Cycle of Clusters

Source: Andersson et al., 2004, 30.

The intertwined companies specified in the definition of clustering need technical knowledge such that they can use a similar technology, offer shared training to their employees, and bear lower costs. Besides not being able to operate alone, these companies are in a complex relationship with their suppliers, clients, rivals, and public authorities (Yüce, 2012: 17).

Each of the components of clustering separately contribute to the formation and sustainability of clusters and constitute the fundamental characteristics, which a good cluster should have, together. The structure of industry and the sources it uses should be suitable for clustering. The characteristics of an industry constitute competitive and cost advantages. Universities, agencies, and consulting agencies constituting the research institutions can contribute to the cluster through R&D and innovation activities and trainings and seminars for employees of companies, which need qualified personnel, and can thus play a unifying role for the cluster (Alsaç, 2010: 32; Yiğit & Ardiç, 2013: 40; Şahin, 2016: 16).

1.4. Clustering Types

Spatial and industry-specific definitions of clustering vary between the fields of geography, business administration, and economics. These different definitions create different clustering types. Mercan et al. (2004), Markusen (1996), Sungur et al. (2013), and Cansız, (2011) gathered different clustering types, which were presented in the literature, in their studies. In the present study, those clustering types are summarized and presented in Table 1.

Table 1: Cluster Types

Clustering Types	Descriptions
Vertical Clusters	Clusters incorporating continuous and intense relationships between buyers and intermediaries in companies and network structures
Horizontal Clusters	Clusters arising from the connection of companies operating in the same industry and creating network externalities because of the substitute or complementary character of the products in relevant industries
Complex Clusters	Clusters having both horizontal and vertical connections
Inclusive Clusters	Clusters incorporating public institutions and other institutions, together with industry, service, and private sector infrastructures
Local-Centric Clusters	Clusters arising from multiple industries consisting of companies combining in a specific location
Foreign Direct Investment Clusters	Clusters forming in a region, where international companies concentrate on, having high technology and low labor cost in their productions
Governmental Clusters	Clusters formed based on governmental institutions (military, customs, or research centers).
Functioning Clusters	The companies that have reached a critical mass of number compete with the firms outside the cluster by utilizing their local knowledge, expertise, personnel, and resources to their advantage. The clusters formed by these companies are the functioning clusters.
Hidden Clusters	These are the clusters, in which the number of companies reached the critical level but there is no information flow and relationship to benefit from geographical proximity between companies.
Potential Clusters	There is a potential to be a successful cluster but the success is not at the required level to form a cluster.
Constrained Clusters	They have the support of the government but the critical mass and suitable conditions for an organic formation are not met.
Industry Clusters	These are spatial concentrations that bring together similar or related economic activities that form the basis for creating an appropriate work environment that will accelerate learning and adaptation and facilitate the transfer of knowledge.
Innovative Clusters	These are the spatially classified clusters that mainly focus on innovation and technic in comparison to regional industry clusters.
Risk Clusters	It is aimed to establish new companies. It is important for regional revival and growth in innovation and industry clusters. Companies are provided with information sources and financial and non-financial support.

Source: Tabularized from the studies of Mercan et al. (2004), Markusen (1996), Sungur (2013), and Cansız (2011)

1.5. Porter's Diamond Model

In his study “Competitive Advantage of Nations” in year 1990, Porter discussed the competition and regional competitive advantages. In that study, it was stated that the competitive power of a country or a region consists of individual companies at micro level. In other words, it was emphasized that gaining competitive power in international area necessitates for companies, which have been successful in regional markets, to convey that success to national markets and for companies, which have been successful in national markets, to convey that success to international markets (Güneş, 2009: 21). In that study, Porter examined more than 100 countries such as the USA, Germany, Japan, South Korea, and Italy and, given the export data of those countries, he determined the industries, in which these countries have a competitive advantage (Alsaç, 2010: 15). After examining those industries in detail, Porter classified the factors, which allow the companies to improve themselves, under 4 groups and named the study, in which he discussed those 4 factors, as “Diamond Model”. Those factors are;

- Input (Factor) Conditions
- Demand Conditions
- Relevant and Supportive Industries
- Company Structure, Strategy, and Competitive Status

In the Diamond Model, besides the four fundamental determinants, Porter also discussed the roles of government and opportunities, two external variables. External variables affect any of the internal variables and it creates the competitive power of the relevant region or country. In the Diamond Model of Porter, the mutual effects between external and internal factors are named “Mutual Interaction System”. Porter schematized this effect in a study he carried out in the year 1990 (Porter, 1990).

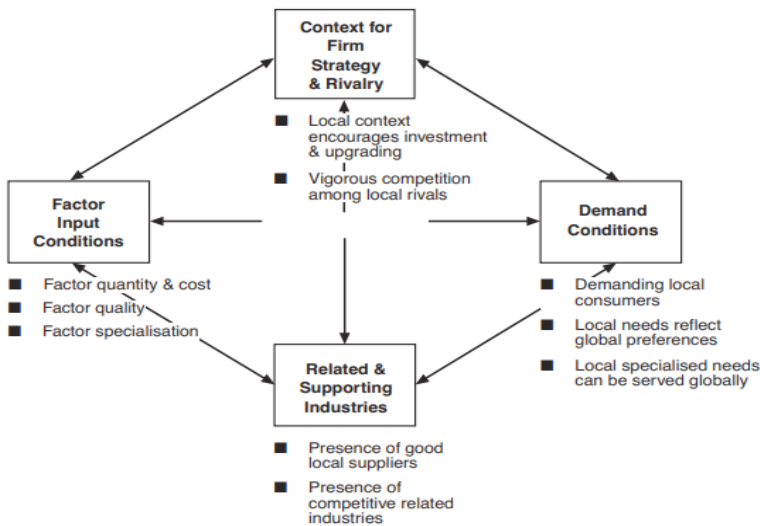


Figure 2: Porter's Diamond Model

Source: Porter, 1990: 127; Yue ve Lim 2003: 265.

Input Conditions: it includes the production factors playing role in the development of industries' competitive power such as qualified labor force, capital, natural resources, and infrastructure (Alsaç, 2010: 17). Classical economic theories state that the factors that countries have such as natural resources, soil, and population offer relative advantage, whereas Porter emphasized that nations can create their own factors such as qualified labor force, technology, and knowledge (Şahin, 2016: 25). Input conditions, the first component in the Diamond Model, consists of "*Human Resources*" including the number and quality of labor force, "*Natural Resources*" including factors such as climatic conditions, proximity to the source (raw material), and energy potential, "*Knowledge Conditions*" including the technical and professional knowledge about the products and services, "*Capital Conditions*" including subjects such as the amounts and costs of capital and investments, and "*Infrastructure Sources*" including subjects such as transportation, healthcare, education, communication, and security (Erkan & Erkan, 2004: 359). Insufficiency of the input conditions might create a driving factor for companies, regions, or countries. Thus, insufficient inputs can be compensated with innovative activities. Regional input disadvantages force the firms to innovation, which might offer a national relative advantage, and developing new methods (Güneş, 2009: 23).

Demand conditions include the size and growth rate of total demand, distribution of demand between different product groups, and number and characteristics of customers (Alsaç: 2010: 18). Demand conditions are closely related with companies' ability to avoid imitation and low-quality products and services and compete with discrimination and they offer them with competitive advantage (Porter, 1998a: 2; Arıç, 2012: 137). Quality of domestic demand is more important than the quantity. Educated and high-expectation domestic demand drives companies into innovation and producing products with higher performance and quality, improves the industry, and increases the competitive power (Kocaoğlu, 2013: 14).

In the Diamond Model, relevant industries refer to the (related) industries using the available opportunities and sources of an industry, whereas supportive industries refer to the supplier industries providing the inputs, which a specific industry would need in order to make production (Alsaç, 2010: 19). Considering the related and supportive industries, if the regional supportive industries are competitive, then the companies would enjoy the cost-effective and innovative inputs. This effect increases in case of global competition (Güneş, 2009: 24). Thanks to the Related and Supportive Industries, there is no need to obtain inputs from global markets due to the proximity to relevant industries and local suppliers specializing in machinery and services. In this case, availability of competent and local suppliers decreases the transactional costs in the region, reduce the need for import and distant sellers, and ease the resolution of problems (Öcal & Uçar, 2011: 301).

In the Diamond Model of Porter, the relationship between strategy and competition has two main dimensions. The first one of them is the investment climate in different forms and the increasing density of competition is necessary in order to support the complex competition styles and high productivity levels. macroeconomic and political stability determine the investment relationship. However, microeconomic policies such as tax system structure, institutional regression, and labor force development incentives are also important. The second factor in the relationship between strategy and competition is the local policies influencing the competition itself. In other words, the factors such as openness to trade and foreign investments, government ownership, and licensing principles have important effects (Porter, 1998b: 12). The competition status in a country affects the international competitive power if the market is fully competitive and open to other countries. The presence of strong companies in a market plays an important role in the development of other companies and

them making innovations (Alsaç, 2010: 21). Regional development encourages companies to gain advanced advantages rather than the basic advantages. However, high level of regional competition might cause a low level of global competition since companies would compete with their regional rivals on a constant basis (Bulu et al., 2004: 5, cited by Şahin, 2016: 28).

In addition to the four factors laying the foundation of the Diamond Model, Porter underlined that government, chance, and global advancements also have contribution to clustering and competitive advantage. The factor “chance” incorporates opportunities, fluctuations in oil raw material market, changes in political decisions, crises, fluctuations in exchange market, and changes in exchange rates. The factor “government” helps with taking measures against new conditions and crises, conducting direct or indirect controls, and increasing competitive power (Alsaç, 2010: 22-24). As stated by Porter, although the government factor is important for national competitiveness, it has a partial effect on competitiveness. Government policies solely are not sufficient for national competitiveness. Government policies might accelerate or improve the competitive advantages of countries. However, in the Diamond Model, while all the factors influence the competitive advantage normally by affecting each other, other factors have no effect on the government factor (Ariç, 2012: 139).

1.6. Advantages of Clustering

Being a member of a cluster offers the advantage of efficiency in obtaining inputs, access to knowledge, technology, and related institutions, coordinating the related companies, and measuring and encouraging the improvement (Gültekin, 2011: 35). Companies in a dynamic cluster have a pool of specialized and experienced employees, reduce searching and operational costs in hiring, and save from time. At the same time, a well-developed cluster would draw the qualified labor force by considering the employment risk in different places. Furthermore, companies in the cluster have a good supplier base and make use of the in-cluster suppliers rather than distant ones. Hence, they reduce the operational costs and eliminate the import costs and the costs of delay (Bulu, 2009: 19). Depending on their depth and characteristics, clusters would contribute to different aspects of competitiveness and increase the productivity and efficiency of companies in the cluster. Productivity and efficiency would allow for the development of new products by directing the companies into innovation (Yüce, 2012: 24)

In his study, Şahin listed the advantages, which clustering offers to companies, by reviewing the studies in the literature (Karataş, 2006: 49; Nasır, 2009: 99; Erkut, 2011: 13; Cansız, 2011: 11-12; Şahin, 2016: 32). Cluster,

- Allows the companies, which operate within a cluster, to achieve new technology,

- Creates an economy that is based on synergy economy and interdependency,

- Spreads risks,

- Allow companies to focus on and specialize in their fields of expertise,

- Facilitates the rapid spread of technology, knowledge, and innovation,

- Allows member companies to benefit expertise of other companies,

- Allows suppliers, manufacturers, and clients to conduct joint R&D activities,

- Provides benefit from sharing complementary assets and knowledge,

- Accelerates learning process and reduces operational costs,

- Offers a high level of efficiency by increasing the sources and competencies,

- Makes the region appealing for new investments and enterprises,

- Offers popularity, an appealing image, and an effective distribution network in local and national markets,

- Increases revenue, service quality, and number of clients by providing the deep market penetration ability,

- Allow for sharing the commercial development strategies,

- Facilitates the resolution of shared problems,

- Offers innovativeness,

- Allow for utilizing scale economies,

- Reduces the costs such as transportation and infrastructure,

- Eliminates obstacles regarding the competitiveness.

1.6.1. Clustering and Competitive Power

As stated by Porter, the economic map of today's world is being reshaped by clusters and those clusters show a remarkable success in competition. Those clusters exhibit superior characteristics of each nation, region, and government. Clusters are local economies incorporating the paradox of sustaining the

competitive advantage in the global economy. Clusters answer the questions of how to establish firms in order to overcome the increasing competition, how governments can regulate economic development and wealth, and how research institutes such as universities can direct the competition (Porter, 1998a: 78, cited by Devrim & Özpençe-İdikut, 2007: 65). Porter divided the competitive advantage into cost and differentiation. Cost advantage is described as offering a benefit at a lower cost in comparison to the rivals, whereas differentiation advantage is defined as offering an additional benefit, which is not offered in other products in the market. The company having a competitive advantage creates a superior value for its customers and a superior profit for itself (Bulu et al., 2004: 2).

The economic structures changing together with globalization removed the clear lines between the strong and weak ones. Locations, regions, and countries holding competitive power through knowledge and innovation can achieve high levels of performance. For instance, a developing country such as India might overperform Japan in the global software market (Keskin, 2009: 19). One of the main points of the competitive power is to structure in a way increasing the competition in those markets. In this case, the policies and social capital factors aiming to increase the competitive power of governments have a significant importance (Oral, 2014: 37). The competitive advantage arising in clusters varies by year depending on the global events. this subject was discussed in a study carried out by Rosenfeld (2005). As seen in Table, the competitive advantages started to show itself through the changes in quality since the year 2000.

Table 2: Change of Competitive Advantage by Periods

Period	Objective	Advantage	Example
1960s and 1970s	Manufacturing products at a lower cost	Cost	Division of labor, Mass production
1980s and 1990s	Manufacturing current products better	Quality and Speed	Flexible specialization, automation, total quality management, just-in-time production
2000 and later	Manufacturing new products that are better	Esthetics and Quality	Design, innovation, differentiation

Source: Rosenfeld, 2005: 18, cited by Alsaç, 2010: 43.

1.6.2. Clustering and Human and Social Capital

The concept of clustering benefits companies not only in finding suppliers, raw materials, or clients but also in finding the labor force they need, in other words human capital. Employees of the companies are trained through training and seminars provided within the cluster and qualified employees are drawn into the cluster too. Shared values, trust, and cooperation are important factors in the improvement and change process of local development. Thus, human and social capital is very important in regional development. If human capital is defined as the value of the characteristics of individuals, then any factor that would contribute to the improvement of human characteristics could be defined as a human capital factor (Devrim & Özpençe-İdikut, 2007: 64-67).

Social capital arises as a result of the mutual trust relationship between the individuals and it creates mutual “cooperation”. In studies examining clustering, it was emphasized that the cooperation arising from clustering would give a competitive advantage to the companies in the cluster and, thus, social capital should be strengthened. Cooperation increases the cluster’s innovation potential and allows it to use its freely given advantages. “Trust” and “Cooperation” are important components of social capital (Oral 2014: 40).

1.7. Disadvantages of Clustering

Different clusters have different structural, organizational, cultural, and social characteristics. For this reason, they differ in terms of the potential to overcome outside shocks and changes. Therefore, besides its advantages, the clustering approach also has disadvantages (Keskin, 2009: 128). There are risks within the cluster such as not establishing a shared strategy for each member, members acting in favor of themselves only, not being able to conduct joint activities, and not being able to achieve goals. Moreover, clusters are also at risk of collapse due to reasons such as missing the opportunities of changing among stakeholders during economic crisis periods and not being able to adapt to the change (Yüce, 2012: 28). A SWOT analysis was performed for clustering in the White Book, which was funded by European Union in order to develop a clustering policy in Türkiye, and the weaknesses of clustering and the threats to clusters were presented. These include (Beyaz Kitap, 2008: 42-43).

Weaknesses

- Lack of coordination between support mechanisms and current institutions

- Ineffective functioning of the “Triple Helix” (companies, public institutions, and universities)
 - Companies’ expectations regarding their direct and individual financial enterprises
 - Lack of business culture of cooperation and partnership
 - Partially insufficient infrastructure and transportation system
 - Insufficient institutionalization in public and private institutions
 - Absence of local practical structures for the basic clustering processes
 - Insufficient utilization of vocational education
 - The fact that R&D capacity is still at the infancy level throughout Türkiye.
 - Rarity and vulnerability of public-private partnerships
 - Different perceptions of clustering (there is a high level of interest in clusters and clustering. However, the concept has not been really understood yet.)

Threats

- Unclear positions of potential local shareholders and uncertainty of their capacities
 - Severe lack of trust in the business circle
 - Lack of awareness in public and private sectors
 - Unwillingness to adapt clustering policies,
 - Strong traditional vertical hierarchical structure in different industries and at different levels of public administration,
 - Rapidly changing conditions of the economic environment,
 - Global crisis in world economies,
 - Absence of a predictable legal and political environment, and
 - Lack of administrative skills in heterogenous groups of different interests, different company cultures, and institutions.

1.8. Clustering Policy

Today, decisionmakers in many countries think that it is necessary to support clustering at national and regional levels in order to be competitive in global competition (Erkut, 2011: 29). The concept of clustering recently started appearing in basic policy documents in Türkiye. From this aspect, the first policy document incorporating the concept of clustering is the

SME Strategy and Action Plan published in the year 2004 (Alsaç, 2010: 118). Clustering policy is based on the thought that clusters would increase productivity, innovativeness, and competitiveness, as well as employment, in companies in the cluster (Beyaz Kitap, 2008: 18). In general, the clustering policy supports and encourages the practices, which incorporate cooperation and competition between companies, by establishing vertical and horizontal relationships among those companies and between them and the outer world (Vardan, 2009: 4). Nowadays, many countries such as the USA, Italy, and India give a remarkable share to the concept of clustering in their economic policies in order to achieve the macroeconomic goals (Gültekin, 2011: 35).

1.8.1. Objectives of Clustering Policies

The objective of supporting clustering is to improve the competitive powers of companies in a specific place, strengthen the relationship between them, and utilize the opportunities for cooperation with relevant institutions to improve them technically. Moreover, it is also aimed to develop sustainable clusters, which are in a more competitive position than their rivals, can manage themselves, and have cluster awareness (Alsaç, 2010: 57). Vast majority of the clustering practices in the world are seen in the manufacturing industries. It is aimed to gather the small- and large-scale companies in those industries with the other actors (suppliers, universities, research institutions, etc.) and enable them to function together. Clustering policies aim to establish a more innovative and more competitive environment, to gather companies in specific regions in order to increase the competitive power of countries, and to develop the culture of business partnership (Cansız, 2011: 21-23).

Clustering policy might have different priorities such as development of entrepreneurship and SMEs, international competitiveness, regional compatibility, export-oriented growth, SMEs' gaining international identity, employment, innovation, drawing foreign direct investments, advancement in science and technology, sustainable development, and rural development (Vardan, 2009: 4).

1.8.2. Common Characteristics of Clustering Policies

Successful clustering policies are defined based on three characteristics of the main philosophy of clustering. The first characteristic is the fundamental

characteristic related to the objective of any clustering policy, whereas the second and third ones are conditional. Those characteristics were discussed in the “White Book” (Beyaz Kitap, 2008: 27).

- **Supporting the Joint Activities of Companies and Relevant Institutions:** They alter the focus point of traditional policies by emphasizing the mutual relationships between companies and between companies and institutions. It creates both cooperation and competition, supports the development of cooperation between actors, encourages the formation of norms and rules through the exchange of informal business practices, focuses on joint activities. Supports shared institutions in the fields of training, knowledge, technology, and research.

- **Focusing on Small- and Medium-Scale Enterprises:** There are one or more large-scale companies in any cluster. However, SMEs are the fundamental components of all clusters. Even though the presence of large-scale companies in a cluster provides trust and reputation and they drive the cluster, SMEs are important for the sustainability of a cluster.

- **Being at the Cross-Point of Different Policies:** Due to the structure of clusters, the policies to encourage clusters cross with various policies such as company and industry policies, regional policies, and science and technology policies and form together. When countries aim to support developing traditional policies, clustering generally participate in company policies and industrial development policies and they establish vertical (with suppliers and clients) and horizontal (other companies in the industry) relationships. Clustering policy is also effective on the regional development policies by encouraging the regional development too. Clustering policy itself is not a policy goal but an instrument allowing to achieve goals. The general objective of this policy is to reduce regional differences within a country and to ensure regional development.

1.8.3. Clustering Policy Instruments

Various instruments are used in implementing the clustering policies. The most important instruments for these policies to succeed can be gathered under three main groups. Those include connecting the actors, collective services, business connections, and joint R&D activities (Beyaz Kitap, 2008: 29).

Table 3: Clustering Policy Objectives and Instruments

Objective of Policy		Instrument
Connecting the Actors	Defining the Cluster	Cluster mapping activities (qualitative and quantitative) Using intermediaries to determine the firms to do business with (for example, companies organizing joint activities) Support to networks and clusters
	Support to Networks and Clusters	Hosting organizations raising awareness (conference and cluster training) Support to companies creating inter-company networks Sponsoring such activities Making use of such activities Mapping the cluster relations
Collective Services and Business Connections	Improving the Capacity, Scale, and Quality of Suppliers (Particularly SMEs)	Business development support to SMEs Intermediary services and platforms between buyers and sellers General market intelligence Coordination of purchases Setting the technical standards
	Increasing Foreign Connections (Direct Foreign Investments and Exports)	Marketing the brands, clusters, and region Support to investors for cluster Global-scale market information Search for business partner Connection support for the supply chain Export networks
	Qualified Labor Force in Strategic Industries	Collecting and distributing information about the labor market Specialized vocational education and university education. Supporting the cooperation between companies and educational institutions Education opportunities to attract successful students to the region

Joint R&D and Commercialization Activities	Improving Inter-Company Relationships through Research	Supporting the relationship between companies, universities, and research institutions Locating different actors to the same place in order to accelerate the interaction (such as techno-parks) University support programs Technical observations
	Commercialization of Research	Providing legal regulations on relevant intellectual and industrial rights Eliminating the obstacles in order to commercialize public incentives. Technology transfer for support services
	Funding the New Companies	Consulting services for various financial transactions Risk capital and government guarantee programs Technology transfer for support services

Source: OECD, 2007: 92, cited by Şahin, 2016: 71.

1.8.4. Steps of Clustering Policy Process

Clustering components are effective at different phases of establishing the clustering policies. In the literature, it was stated that the policy process consists of four steps; analysis, development, implementation, and assessment (Beyaz Kitap, 2008: 29). *In the analysis step, the first step*, necessities are determined and the policies addressing those necessities are set. Strengths and weaknesses are determined by making use of the previous policies set in different countries, opportunities and threats are analyzed, and assessments are performed for the country. *In the development step, the second one*, the main policy and objectives are defined in order to develop suitable policies to address the necessities, natural sources are analyzed, and policy instruments are compared. To develop a policy, in general, the limits of clustering should be set, compatibility should be determined, and innovative potential should be considered. *In the implementation step, the third one*, to develop suitable policies addressing the necessities, the main policy instruments should be defined, national sources should be examined, and instruments should be investigated. *In the fourth step, the final one*, after a suitable activity process, program performance and efficiency are analyzed (Şahin, 2016: 68-69; Beyaz Kitap, 2008: 29; Alsaç, 2010: 76-77).

1.8.5. Initiation and Management of Clustering Enterprise

Declaration of the initiation of clustering enterprise depends on the cluster itself. Cluster activities begin after the declaration. Thus, the advertisement of the cluster should be well-designed, and it should be prevented for cluster participants to lose interest in the cluster (Altay, 2011: 25). To have a successful cluster advertisement, the cluster should be constituted from innovative, self-confident, and successful members and the group should help them with regulating the behaviors within the cluster (Şahin, 2016: 58).

Clustering management is defined as the management and organization of cluster activities within specific strategies in order to achieve the objective that have been set at the beginning of clustering in accordance with the necessities of the cluster (Schretlen et al., 2011: 7). The main reason for cluster management is to put the strategic road map into practice and to “monitor and evaluate” that process. The main intervention fields of the strategic road map can be divided into two groups. The first one is to offer service to cluster members and develop them, while the second one is to strengthen the corporate infrastructure of the cluster management center (AKİP, 2023: 91). Organization and management of the clustering enterprise are very important for the sustainability of the cluster. The main functions of cluster management are shaped in parallel with five main factors.

Table 4: Cluster Management Factors

Management Factor	Significance	Duties to Perform
Knowledge - Communication	It is important for companies inside and outside the cluster to know the goals of the cluster.	Establishing cluster communication platform (3-4 times a month at the beginning, and then once every 3-4 months), Regular company visits (for cluster audit), Organizing activities to increase the sharing (travels, atelier activities, exhibitions), Publishing a bulletin Establishing a cluster database,
Training – Quality	For the success of cluster activity, it is important for the managers and workers of the companies in the cluster to have education and specialize in their fields.	Carrying out analysis activities, Introduction of specialized personnel and obtaining consulting services from them for others, Organizing courses, Increasing the occupational education and specialization,
Development of Cooperation	It is important for the companies in the cluster to gather, create synergy, and gain a competitive advantage.	Benefiting from technological opportunities, Offering training, consulting, and coaching services, Creating social capital, Increasing the debt sources, Reducing the costs, Improving the physical infrastructure, Cooperation between R&D institutions,
Marketing and Public Relations	It is important to strengthen the loyalty to the cluster and encourage the new participants for the cluster.	Creating an identity, Increase in marketing expenses, PR activities at national and international levels, Incentives to strengthen the cluster image (exhibits, training, funding) Company visits and lobbying,
Internationalization	In today's world, the existence of a regional cluster is not sufficient anymore and international networks should develop.	Participation in international conferences and congresses, Network membership, Establishing cluster academies, Joint R&D activities, International contracts,

Source: Tabularized from the studies carried out by Erkut, 2011: 49-52 and Altay, 2011: 25.

These five factors play an important role in clustering management and these factors strengthen the cluster, provide competitive advantage, and ensure success.

1.9. Clustering Examples from the World and Türkiye

In order to overcome the competition from Asia and America, EU pays specific importance to clusters and clustering policy (DG Enterprise & Industry Report, 2007: 7). The idea of supporting the development of clusters by the states instead of self-formation of clusters is generally accepted in the European Union. From this perspective, 26 of 31 EU-member countries implement national cluster-support programs (Europe Innova, 2008; Bacak & Altaş, 2011: 8).

In Italy, the Carpi Cluster established in textile and garment industry is one of the successful cases in this field. The cluster-centric economy and technology-oriented strategy report titled “Strategisches Programm OÖ 2000+” has been implemented in Austria since 1998 in order to increase regional competition. Within this scope, Automobile Cluster was initiated in the year 1998 (Karayel, 2010: 173).

In their study, Alüftekin et al. (2009) presented cluster examples from the world. California wine cluster, Italian leather cluster, and Silicon Valley are among the advanced cluster examples. Moreover, there also are less-known clusters such as Austin, North Sydney, Minneapolis, and Hsinchu. There also are clusters formed on artisanship such as Pakistan pharmaceutical industry, Geneva luxury art industry, and Japan knife industry. There are traditional clusters manufacturing shoes, clothes, and plastic toys in South Korea and China. Fashion clusters in Paris, Milano, and New York and movie clusters in Los Angeles and Hollywood are defined as creative clusters. There also are large-scale industrial clusters such as the aircraft industry in the USA, France, and England, the automobile industry in Japan and Sweden, and the electronic industry in Japan, Korea, and the USA. In addition, there also are clusters in the service industry in New York, Tokyo, and Hong Kong (Yüksel, 2009: 13-14).

There are successful clusters in Türkiye too. The areas with clustering potential include Bursa, which is the center of the silk trade, for floss and synthetic filament thread and fabric, Denizli for towels, bathrobes, and home textiles, Uşak for Strayhgarn thread and blankets, Çorlu and Çerkezköy for finishing and especially circular-knitting product finishing, and Kahramanmaraş for cotton thread (Alüftekin et al., 2009: 14). The successful textile clusters in Türkiye include Bursa Textile Business Cluster, Ankara OSTİM Defense

Subsidiary Industry Business Cluster, Sultanahmet Tourism Cluster, İstanbul and Denizli Textile Cluster, Antalya Yacht Building Cluster, Konya Industrial Cluster, and Adıyaman Textile Cluster (Duman, 2017: 28).

The garment industry in Adıyaman dates back to 1996. Due to the difficulties regarding the qualified labor in the industry, local authorities combined their forces to establish a vocational education center and the center, which was established in the year 2005, then became the center of the Adıyaman cluster. Then, a clustering analysis was performed and a strategic road map was prepared for the industry. In this parallel, local manufacturers founded a clustering association (ATEKS) and contributed to local development through this road map. The success was achieved by improving the communication and cooperation between international, national, and local cluster actors and implementing local governance principles. “Fashion and Textile Clustering Project” (MTK) is a project that was initiated in year 2005 and funded by the EU. The beneficiaries of MTK project were small- and medium-scale enterprises from the fashion and textile industry in İstanbul represented by İstanbul Textile and Garment Exporters Union (İTKİB). The general objective of MTK project is to improve the international competitiveness of fashion and textile industry companies in Türkiye. Within the scope of this project supported by the EU for 34 months, the clustering map was prepared in the beginning and it became one of the successful clustering examples in Türkiye (Beyaz Kitap, 2008: 39-40).

2. Conclusion

The concept of clustering is defined as concentration of organizations, which operate in the same industry and have relationship with each other, in the same geographical region. Although this concept was discussed by Marshall for the first time, it was conceptualized and became popular after the studies carried out by Porter. Marshall stated that companies having common characteristics attracted workers having common characteristics, whereas Porter aimed to establish a relationship between clustering and competitive advantage.

Various factors contribute to the formation of clusters. These factors include government incentives, geographical concentration, industry characteristics, R&D organizations, and competitive power. Complete and effective contributions of all these factors create successful clusters. Although all the clusters have different formations and characteristics, they also have remarkable common properties.

Porter established the Diamond Model on 4 specific components, which include input (factor) conditions, demand conditions, relevant and supporting industries, company structure-strategy and competitive status. He also stated that government and chance were the other effective factors. Besides the rapid distribution of knowledge created within the cluster and easy access to raw materials, also the advantage of intense competition to produce higher-quality products is also a disadvantage since it forces the companies into constant competition and tires them.

Countries recognized the importance of clustering as a result of the globalization. Being in a cluster gives companies an advantage in specialization and competition. For this reason, countries started supporting clustering activities and they offer specific support policies and practices for clustering. Clustering policies might cross or combine with other policies. There are many successful cluster examples in the world and in Türkiye. The success of a cluster strengthens the companies in that cluster and gives them a competitive advantage; thus, they can make export decisions more easily. Consequently, the increasing level of export would increase the foreign currency inflow into the country and contribute to national economy and policy by strengthening the country in international markets. Thus, forming and supporting clustering activity is important for countries and it is a popular topic for scientists and policymakers.

In conclusion, the development of a clustering perspective and the formation of strong clusters might trigger regional development by promoting production increase, R&D and innovation, and competition within countries, as well as generating a positive external effect in the global market by increasing competitiveness. Therefore, cluster formations in strategic fields that are open to improvement are supported.

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CHAPTER VIII

ECONOMETRIC ANALYSIS OF HEALTH TOURISM IN TURKEY

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1. Introduction

Tourism can be defined as the temporary departure of people from the places where they live permanently and going to other countries or regions and meeting their sociocultural and psychological needs such as entertainment, resting, learning and sightseeing (Yıldız, 2011). One of the biggest and most prosperous sectors of the global economy is tourism, which is impacted by other commercial and cultural endeavours (Hadian et al., 2021). Most developed or developing countries have accepted the tourism sector as one of their main economic priorities. Countries that currently want to increase their GDP see the tourism sector as a key sector that provides a great financial service, creates employment and generates high profits (Constantin, 2015). Today, there are different types of tourism, such as recreation and entertainment, culture, faith, health, meeting and hunting (<https://www.ktb.gov.tr>).

While health was previously expressed as the state of “not being sick”, It was not considered from a psychological and sociological perspective. Over time, it has been expressed as a determining phenomenon on all dimensions, such as sociological and psychological (Çadırcı and Güneş, 2022). Until recently, the main purpose of tourism was to see new places, to travel, to swim etc. were such factors. Today, it is aimed to treat diseases and lead a healthy life by utilizing the climate of the countries, underground resources and technologies (Edinsel and Adıgüzel, 2014).

According to the World Tourism Organization (WTO), health tourism includes types of tourism that contribute to mental, physical and spiritual health through health-based activities. Ross (2001) defines health tourism as tourism generated by people travelling to different regions from where they live for health needs. The tourism industry, which has seen tremendous expansion in terms of both investments and visitor numbers every year throughout the world, includes health tourism as one of its important subsectors. Individuals relocate to nations that offer affordable, high-quality healthcare. In addition, affluent individuals from developing nations visit developed nations owing to the lack of accessible healthcare (Korkmaz et al., 2014). Health tourism is a business line that has a historical tradition and provides great profits (Bashina et al., 2016). Globalization has made health tourism the industry with the quickest rate of growth, which has intensified competitiveness between nations (Ari, 2022). The demand for health tourism is increasing day by day due to the increase in the world population, the aging of the population in developed countries, very expensive access to health services in many countries, unhealthy diet, stress, intense work life, weight problems, mental health conditions (Topbaş, 2020). The most important factors leading to the development of health tourism, which was first understood in the 1980s, are shown as the excess of treatment costs and waiting times. Especially people living in countries such as Europe and America, where health insurance is expensive, many health expenses are excluded from the insurance coverage, and long waiting times are required for treatments, go to different parts of the world as health tourists (Gündüz et al., 2019). Also the development of transportation facilities and communication technologies in the world and the developments in health services have increased the mobility and importance of health tourism on a global scale (Bozça et al., 2017). So, health tourism, the fastest-growing sub-branch of the service sector in our time, has developed into a market that enables people to receive high-quality healthcare, boosts employment rates, and supports countries (İştar, 2016).

Health tourism can be categorized as Thermal Tourism, Medical Tourism, SPA-Wellness, Elderly and Disabled Tourism. Thermal tourism refers to people travelling to take advantage of thermal water resources in order to alleviate various ailments. Medical tourism generally refers to travel for surgery or medical interventions that require special expertise. Elderly and disabled tourism refers to travelling to other countries in order to meet their care needs. SPA-Wellness tourism refers to the travelling that people do to make themselves feel better spiritually, physically, and mentally (Özsarı and Karatana, 2013).

2. Economic Dimension of Health Tourism

Health tourism is crucial to the growth of sustainable tourism because it values environmental quality, lessens seasonality, and boosts the financial health of businesses that provide health tourism services (Hodzic and Paleka, 2018). There are both tangible and intangible advantages of health tourism for nations. The contribution of foreign tourist income to the economies of the countries, the expansion of knowledge exchange and the creation of strategic alliances, the transfer of technology and knowledge between nations, the opportunities presented to foreign patients as a result of global competition, and the better care provided to patients in their own countries are just a few of the tangible advantages. Sharing cultural and social experiences, advancing international relations, expanding medical trade and global marketing, establishing a reputation for offering health care services, gaining a competitive edge, bolstering public and private partnerships in the field of health, and raising patient satisfaction are just a few examples of intangible benefits (Özsarı and Karatana, 2013). Tourism mobility in developing economies as a result of globalisation has become a lucrative sector for profit-seeking service providers. In parallel with this, the expansion and popularity of the health tourism industry has been fueled by the diversification of supply and demand (Ağaoğlu et al., 2019). Health tourism increases the sharing of information and technology between countries. And leads to the development of strategic partnerships. It increases the level of welfare with the foreign exchange incomes obtained. It also causes the development of international relations, the development of medical trade and global marketing, providing competitive advantage, strengthening public and private partnerships and increasing patient satisfaction (De Arellano, 2007).

3. Health Tourism Around The World and In Turkey

There are various alternatives for countries to which people can visit for health tourism. The Medical Tourism Index (MTI) is one of the methods that will make it easier to decide in which country to receive healthcare services. Using the medical tourism index, the factors that play a role in the destination preferences of health tourists at the country level and the weights of these factors are analysed. It is also a performance measurement tool that reveals the preferability of a country as a medical tourism destination. There are 4 main dimensions in the index. The main dimensions are country factors dimension, tourism dimension, health costs dimension and health facilities and services dimension (Üstün and Uslu, 2022).

Table 1: Overall MTI Ranking

Countries	Medical Tourism Index
1. Canada	76.47
2. Singapore	76.43
3. Japan	74.23
4. Spain	72.93
5. United Kingdom	71.92
6. Dubai	71.85
7. Costa Rica	71.73
8. Israel	70.78
9. Abu Dhabi	70.26
10. India	69.80
30. Turkey	63.91

Source: www.medicaltourism.com

According to the index values for 2021 in Table 1, the most attractive countries in the world for Medical Tourism are Canada, Singapore, Japan, Spain, and United Kingdom. Turkey ranks 30th with an index value of 63.91. People, especially considering the cost factor, also prefer different countries. Especially considering the cost factor, countries such as Malaysia, Cuba, Costa Rica, Thailand, India, Colombia, and Singapore are the most preferred countries for health tourism. Therefore, the main region for health tourism is Asia (Kılıçarslan, 2019). When we break down health tourism into its various sub-categories, the top destinations include Panama, Brazil, Malaysia, Costa Rica, and India for medical travel; India, Turkey, and Malaysia for thermal travel; and Hungary, the Czech Republic, Austria, Bali, and the Maldives for spa and wellness travel (Özer and Songur, 2012).

Table 2: Number of health tourists and health investments

Years	Number of Tourists (person)	Investment (Million TRY)		
		General Government	Private Sector	Total
2017	433.292	7.958	1.709	9.667
2018	551.748	8.080	2.156	10.236
2019	662.087	10.586	2.207	12.793
2020	388.150	14.304	2.566	16.870
2021	642.444	19.442	3.571	23.013

Source: TUIK

Table 2 presents data on the number of tourists travelling to Turkey for health tourism and health investments made by the state and private sector in the 2017-2021 period. Although there was a decrease in the number of tourists arriving in 2020, when the pandemic was experienced intensely, it showed an increasing trend in general. In addition, it is seen that the increase in investments in the field of health has a positive effect on the number of tourists. In addition to increasing investments, increasing the quality of health services and improving the technological infrastructure will cause Turkey to become a center of attraction in health tourism. Turkey has the potential to rank among the top locations for medical travel worldwide. The recent improvements in health care and investment policies, which are boosting the performance of foreign travel and low-cost services, are largely to blame for this potential. Turkey is a desirable location for medical tourism due to the availability of skilled medical experts, technology infrastructure, a variety of climates, beautiful natural surroundings, and a rich history (Aksu et al., 2016; Sag and Zengul, 2019).

Table 3: Turkey's Health Tourism Revenues

Years	Revenue (Thousand Dollars)
2017	827.331
2018	863.307
2019	1.412.438
2020	1.164.779
2021	1.726.973
2022	1.926.094

Search: TUIK

In 2020, although there was a decrease due to the effects of the pandemic, as seen in the table, Turkey's income from health tourism has increased over the years. The clinical branches most preferred by international patients in Turkey are; gynaecology, internal medicine, ophthalmology, medical biochemistry, orthopaedics and traumatology, infectious diseases general surgery, ear-nose-throat, and dentistry (USHAS).

4. Literature Review

The findings demonstrate a long-term, unidirectional causal relationship between foreign travel and healthcare. Health services have a favourable effect on global tourism. He did add, though, that in the near run there is no

causal relationship between these two factors. It was determined that long-term visitor numbers will increase as a result of the Singapore government's present efforts to position the city-state as a premier medical destination. According to Beladi et al. (2019), the growth of medical tourism has negative impacts on the welfare of host nations, and worker productivity may suffer as a consequence of a reduction in the availability of public health services as a result of the industry's rise. It examines the financial effects of medical travel on the receiving nations, concentrating on the exclusionary impact on labour productivity. The empirical findings indicate that medical tourism, particularly in non-OECD nations, generally has a favourable impact on the production growth of the host economies. Şak (2021) used the hidden cointegration test and time-varying asymmetric causality analysis to study the relationship between health tourism and economic growth. The results show that in both positive and negative shock scenarios, there is a long-term hidden cointegration between the variables. Additionally, time-varying asymmetric causality analysis has been used to examine the causative link between the rise in health tourism and economic growth. She came to the conclusion that there is a causality between the positive and negative shocks of the variables, but the causality changes with time. Exchange rates and private sector health investments have a short- and long-term influence on health tourism income, according to an analysis of the variables by Biri (2021). He discovered that a 1% rise in private health investments and an increase in the exchange rate both boost health tourism income by 0.16% and 0.68%, respectively. Uçak (2016) tested the impact of health and social service industry growth on inbound health tourism flows using the Granger causality and Johansen cointegration approaches. It showed that there is a long-run Granger causality from domestic health and social service expenditures to health tourism revenues. Hadian et al. (2021) conducted a systematic review according to PRISMA guidelines to identify the strengths and challenges of medical tourism development in Iran and stated that the medical tourism industry in Iran has good potential, but in general, there are challenges due to the lack of technology and technical infrastructure, different political and decision-making bodies, as well as cultural and political conditions. Öztürk and Özcan (2022) created a model of the demand for health tourism in Turkey. First, they pointed out that Turkey's available data for health tourism is insufficient and also stated that the impact of the experience of health tourists from past visits on the number of health tourism visitors to Turkey is weak. Gündüz et al. (2019) examined the factors

affecting health tourism in Turkey with the gravity model. They stated that the Gross Domestic Product of their country for health tourists is positively related to Turkey's potential in health tourism and negatively related to their per capita income and their distance from Turkey. Bulgaria, Iraq and Germany are among the nations that send the most health tourists, according to research by Korkmaz et al. (2014), who also examined the role of health tourism in the health sector and its effects on health in Turkey. The study found that foreigners made up 70% of all health tourists in 2013, that the rate of health expenditures in health tourism was 2.3%, and that the health tourism income significantly increased. Toptaş (2020) interviewed tourists coming from 12 different countries for health tourism in three hotel businesses and concluded that Turkey was preferred because of the advanced health services, affordable prices, the capacity of Turkey to treat both people and take vacations, and the favorable climate. Göçer and Aydın (2016) analyzed the effect of the number of doctors and health expenditures on tourism income in Turkey. They found a bidirectional causality relationship between tourism revenues and the number of doctors, and a unidirectional causality from health expenditures to tourism revenues. They stated that 1% increases in the number of doctors and health expenditures in the long run increase tourism income by 2.2% and 0.54%, respectively. Turkey has a significant development potential for health tourism, according to Yılmaz (2022), who employed ARIMA models to forecast the future of the industry. It was noted that Turkey is seeing a rise in the number of international patients it is drawing, taking into account the anticipated growth in demand for health tourism.

5. Data Set and Econometric Methods

5.1. Data Set

In the study, the relationship between the number of tourists coming for health tourism and the investments made in the field of health in Turkey. Variables were analyzed with logarithmic transformations. The definitions of the variables are shown in Table 3.

Table 3: Definition of Variables

Variables	Acronyms	Period	Data Source
Number of Tourists	TOURIST	2003- 2021	TUIK
Health Investments	INVEST	2003- 2021	TUIK

5.2. *Econometric Methods*

The econometric methods used to examine the relationship between TOURIST and INVEST variables are expressed theoretically and mathematically in the following sections.

5.2.1. *Fourier ADF Unit Root Test*

Enders-Lee (2012) improved the Dickey-Fuller (1981) test by adding fourier functions. The Dickey-Fuller test with deterministic terms $\alpha(t)$, which is a time-dependent function, is expressed as follows;

$$y_t = \alpha(t) + \rho y_{t-1} + \gamma t + \varepsilon_t \quad (1)$$

The ε_t , represent the stationary error term. $\alpha(t)$ is a time-dependent deterministic function. They suggested using the Fourier model when the structure of the deterministic term is unknown.

$$\alpha(t) = \alpha_0 + \sum_{k=1}^n \alpha_k \sin(2\pi kt / T) + \sum_{k=1}^n \beta_k \cos(2\pi kt / T) \quad (2)$$

T is the number of observations, n is the number of frequencies, and k is a particular frequency. If $\alpha_1 = \beta_1 = \dots = \alpha_n = \beta_n = 0$ They stated that the process is stationary and it is appropriate to traditional unit root testing methodologies. If there is a break or a nonlinear trend, at least one Fourier frequency must be present in the data generation process. In this direction, Enders and Lee (2012) suggested the use of the following model;

$$\Delta y_t = \rho y_{t-1} + a_1 + a_2 t + a_3 \sin(2\pi kt / T) + a_4 \cos(2\pi kt / T) + e_t \quad (3)$$

They stated that the critical values in their study depend only on the k frequency and the number of T observations, and are not affected by the Fourier terms and other deterministic terms. The null hypothesis claims that the series is a unit root.

5.2.2. *Fourier ADL Cointegration Test*

Banerjee et al. (2017) introduced the Fourier ADL (FADL) cointegration test to the literature by adding trigonometric terms to the autoregressive distribution lags (ADL) cointegration approach. The model used for the test is shown below.

$$\Delta y_{1t} = d(t) + \delta_1 y_{1,t-1} + \gamma' y_{2,t-1} + \varphi' \Delta y_{2t} + e_t \quad (4)$$

y_{1t} is dependent variable, δ , γ and φ are independent variables. Optimal lag lengths are obtained using AIC and BIC information criteria. The deterministic component $d(t)$ of the Fourier method is defined as;

$$d(t) = \gamma_0 + \sum_{k=1}^q \gamma_{1,k} \sin\left(\frac{2\pi kt}{T}\right) + \sum_{k=1}^q \gamma_{2,k} \cos\left(\frac{2\pi kt}{T}\right), \quad q \leq T/2 \quad (5)$$

The hypotheses for the test are established as follows;

$$H_0 : \delta_1 = 0 \quad H_1 : \delta_1 < 0$$

The critical values used for the cointegration relationship between the variables were determined by Banerjee et al. (2017). The test statistic is calculated as shown below.

$$t_{ADL}^F = \frac{\hat{\delta}_1}{se(\hat{\delta}_1)} \quad (6)$$

$\hat{\delta}_1$ is least square estimator of δ_1 . $se(\hat{\delta}_1)$ represents the standard error of $\hat{\delta}_1$ which is obtained from the least square estimation.

6. Research Findings

The results obtained from the econometric methods used to examine the relationship between TOURIST and INVEST variables are expressed in the tables below.

Table 4: Unit Root Test Results

ADF						
Variables		Test Statistic		Probability		
TOURIST		-0.890		0.767		
Δ TOURIST		-5.008		0.001		
INVEST		-1.863		0.341		
Δ INVEST		-4.061		0.007		
FADF						
Variables		Frequency	Test Statistic	Lags	%1	%5
TOURIST		2	-3.281	0	-4.690	-4.050
ΔTOURIST		2	-56.465	5	-4.690	-4.050
INVEST		5	-3.803	6	-4.200	-3.560
ΔINVEST		2	-8.831	5	-4.690	-4.050

The TOURIST and INVEST variables are not stationary at the level, but they do become stationary when they take their first difference, according to the findings of the ADF and Fourier ADF stationarity tests.

Tablo 5: Cointegration Test Results

MODEL	Frequency	Test Statistic
TOURIST = f (INVEST)	1	-5.909 ⁽¹⁾
Critical values for frequency = 1 % 1: -4.73 % 5: -4.09 % 10: -3.76 (Tsong et al. 2016) Note: ⁽¹⁾ denotes significance level at %1		

The results of the Fourier ADL cointegration test show that the variables TOURIST and INVEST have a long-term relationship.

Tablo 6: DOLS Long Run Coefficient Estimator Results

Variable	Coefficients	Standart Error	t - Statistic	Probability
INVEST	0.639	0.092	6.936	0.000
C	7.032	0.793	8.865	0.000

According the dynamic least squares (DOLS) method which is introduced in the literature by Stock-Watson (1993) health Investments have a positive effect on number of tourists. In addition, the coefficient is statistically significant. A 1% increase in health investments increases the number of tourists by 0.64%.

7. Conclusion and Recommendations

Health tourism due to the high added value, it creates, the high expenditure per tourist, and the economic and social contributions it provides to the country, it is one of the areas that Turkey should especially focus on. Health tourism is the type of tourism with the highest added value and the highest amount of accommodation and expenditure per tourist. For this reason, the contribution of investments to be made in the field of health to tourism is of great importance.

The stationarity of the series is examined using ADF and Fourier ADF unit root tests in this study, which examines the relationship between health tourism and health investments in Turkey. The TOURIST and INVEST variables are not stationary at the level, but they do become stationary when they take their first difference, according to the findings of the ADF and Fourier ADF stationarity tests. The Fourier ADL test was used to look at the cointegration relationship

between the variables. The results of the Fourier ADL cointegration test show that the variables TOURIST and INVEST have a long-term relationship. Health Investments have a positive effect on number of tourists. In addition, the coefficient is statistically significant. A 1% increase in health investments increases the number of tourists by 0.64%.

Outside investments, in order to increase the competitiveness of Turkey's health tourism, it is necessary to provide an extensive marketing network, increase quality and promotional advertising, and identify new market opportunities. In addition, international standards, quality, and information sharing are very important for the growth of the health tourism sector. Customer orientation and branding should be given importance. If the necessary importance can be given to health tourism and an effective promotional campaign can be carried out, tourism activities will be spread over the four seasons of the year and a sector with a much higher income than sun and sea tourism will be revitalised.

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CHAPTER IX

EXPLORING THE ICT INDUCING EXPORTS IN EMERGING MARKETS: A TWO STEP SYSTEM GMM APPROACH

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1. Introduction

During the eighteenth and nineteenth centuries of the industrial revolution, increase in economic growth was often linked to manufacturing power and consumption levels of fossil-based energy. Despite the fact that industrialization was based on a Renaissance explosion in science, art, and other fields of knowledge, the basic production factor was always capital (e.g., steam engines and textile machineries) and heavy use of energy (coal, oil). Economists have begun to realize the importance of knowledge during the stages of industrialization. The first stage is known as “*Industry Revolution 1.0*” (the invention of James Watt’s steam power). It came with the advent of mechanization, steam, and water power. Following Henry Ford’s Model T assembly line, we were able to produce a large number of cars at a lower cost and create higher-wage jobs in the labor market. We called this stage “*Industry Revolution 2.0*.” But when we came across the “*Industry Revolution 3.0*” game, the rules had substantially changed. Since the invention of the transistor and throughout the stages of the microelectronic revolution, there has been rapid progress in information processing. In this period, the speed of production increased considerably through computer systems (Koç and Teker, 2019: 305). The third revolution was followed by the fourth one, which revolved around cyber-physical systems. It is about the knowledge and information system with increased computing, transmission, and storage capacity and interconnected

new technological operations, including the Internet of Things (IoT), cloud computing and analytics, artificial intelligence (AI), and machine learning (Umachandran, Jurcic, Corte, and James, 2019: 139–140).

These transformations revealed a new concept “*knowledge economy (KE)*,” which was introduced by Machlup in 1962. This is the third wave of civilization after the agricultural and the industrial society. Specifically, KE is an economic point of view on the key role of knowledge in economic and social development. In another definition, KE is a concept of economic development in which innovation and access to information drive productivity growth. It is characterized by progressive waves of innovation, products, and services that have pronounced externalities (Hearn and Mandeville, 2005: 256). Earlier in the 20th century, researchers attempted to account for knowledge through the unexplained portion of economic growth, which they labeled “technical change”. However, since the 1960s, it has become the central capital, the cost center, and the crucial resource of the economy (Drucker, 1993: 20).

In the new context, Porat defined the concept of knowledge as the data that has been organized and communicated, and that is not homogenous. Previously, labor, capital, materials, and energy were the core traditional production factors. Unlike the previous one, however, knowledge now has a direct impact on production. Investments in design, innovation, and new technologies have improved the efficiency of all production factors and transformed them into new processes (Porat, 1977: 19).

Knowledge makes a difference at the macro level in the economy. According to Drucker (1968), information is more useful and purposeful when it is organized, made available for economic agents. With the help of computer-based technology, the capacity to use knowledge effectively allows enterprises to better utilize resources and factors, improve productivity, and increase product quality; in the end, knowledge has become an indispensable part of the economy. Economies around the world may even leapfrog from agriculture to a high-tech economy during the second half of the 20th century (Zelazny, 2015: 8–10).

After the 1980 period, rapid advances in ICT have accelerated globalization, and knowledge-based economies have gained competitive power. Countries should embrace knowledge and innovation-related policies to spur competitiveness. Today, ICT-based services are closely interested in the production and distribution of knowledge and information. For an economy with very little international trade, competitiveness would simply

turn out to be a productivity matter and would have nothing to do with global competition. However, there is no country in the world that stays isolated from the global economic system. When trade becomes important, the situation certainly could change. The ability to produce high-tech goods is the key to competitiveness in today's international trade (Krugman, 1994: 31-32).

High-tech products are mostly produced by countries with high KE indices. Electronics, information and telecommunications, aerospace, chemical products, and pharmaceuticals are examples of high-tech goods made with cutting-edge technical knowledge and methods. These products are extremely complex, necessitating the use of cutting-edge materials or processes. They contain large amounts of R&D expenditure, and they are associated with innovation. High-tech goods have the most advanced technology available, low elasticity of demand, short development cycles, a need to continuously and quickly update, high complexity, and a few producers all around the world. Due to these features, they are usually equated with a trade surplus. (Steenhuis and Bruijn, 2006: 1080–1081).

As seen from Figure 1, an increase in high-tech exports (vertical axis) leads to an improvement in trade balance (horizontal axis) for selected emerging economies. Countries can be grouped into two categories: Countries with low-tech goods export traditional commodities. This group has many producers, products with a lower added value, and products that use outdated or common technology. As a result, gaining competitiveness and a trade surplus would be difficult for these economies.

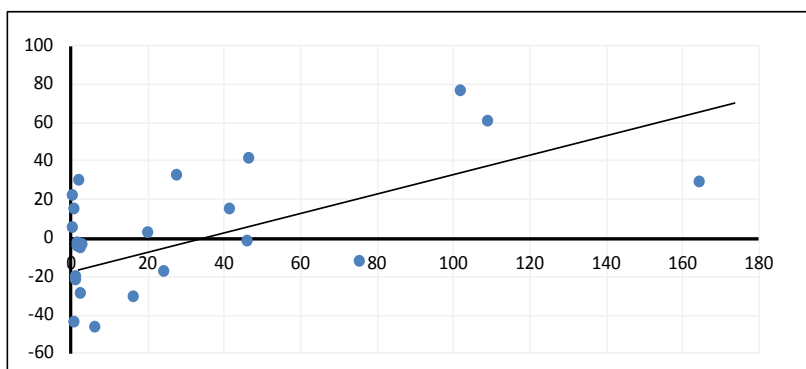


Figure 1. High-Tech. Exports (vertical axis) and Trade Surplus (Billion Usd, 2021)

Source: ITC Trade Map, <https://intracen.org/resources/trade-statistics>

There is a strong relationship between high-tech goods and KE. The World Bank designed a KE index to benchmark a country's position on preparedness and penetration vis-à-vis others in the global economic system using the *Knowledge Assessment Methodology (KAM)*. In this frame, there are four pillars of the KE framework. The key one is ICT infrastructure and its use, as this underpins effective knowledge exchange.

ICT is defined as a bunch of technological devices, networking components, applications, and systems used to transmit, store, create, share, or exchange information. It has become, within a very short time, one of the basic building blocks of modern society. ICT goods increase broadband speed and penetration, and they have a positive impact on growth in the form of productivity gains for firms, which in turn, boost exports power. Technological innovations in the knowledge economy create heterogeneous products, thus enhancing the product range for customers. Third, they have infinite spreading power. It results in the person who buys the ICT goods not excluding others from consumption. So it can be spread to other consumers indefinitely, and there is no decrease in satisfaction. Fourth, ICT goods provide their inventors with monopoly power due to intellectual property rights (e.g., patents, copyrights) that would give a sales advantage to exporting countries (Chen, Castillo, and Ligon, 2015: 28–29).

ICT products may eliminate some steps in the logistic chain and reduce the handling of information. Thus, it makes it easier to find information and speeds up its transfer. These improvements may result in the elimination of labor and its associated costs. A decrease in cost always boosts competition. There are also network externalities for ITC products. These products, for which the utility that a user derives from consumption increases with the number of other customers who are on the same network, give rise to network externalities. The spread of ICT products will reduce transaction costs and stimulate completely new products or services for the enterprise. Lastly, the complexity level of countries (the diversification of a country's export basket in knowledge goods) in commodity production can be determined by the ICT level. The more economic complexity there is, the greater its exports power (Hearn and Mandeville, 2005; 257). The same structural change has been seen in international trade, and it has substantially changed the traditional means of transaction and product range through ICTs. In this frame, the traditional theory of trade has been transformed, and new trade theories have emerged to explain the role of knowledge in international trade.

2. Conceptual Framework

Traditional theories in international trade assume that labor is the only factor of production and ignore capital or technology. They assume constant return and an identical production function, but in practice, technological advances increase productivity, and the production function is not identical among cross sections due to technological differences. Since the 1960s, developed countries have started new R&D and technology policies for different purposes and are increasingly focused on knowledge. Thus, some countries experienced technological advances in electronics, software applications, telecommunications, and transportation infrastructure during the 1960s. In the new economy, knowledge was recognized as an important production factor and was incorporated into the production function in the form of invention, innovation, and human capital (Cader, 2008: 118).

These factors have changed the basic economic functions such as production, consumption, marketing, shopping, transportation, and remittance in trade transactions. As new technologies and organizational methods were introduced and markets were revitalized, higher efficiency and decreasing unit costs followed. Today, it is difficult to envision functional, modern, and progressive business, finance, health, education, or other sectors without a significant ICT component. For instance, computer-based production has overtaken traditional methods. E-retailing, online banking, and new payment methods have become popular among many traders. Business-to-business (B2B) e-commerce has altered input, purchase, and delivery systems. Containerization has gained momentum with the upsizing of ships. Advancements in shipbuilding in the 1950s and 1960s allowed us to transport huge amounts of commodities in shorter times and at lower unit costs (Tenold, 2019:167–170). Many economic activities that were previously located in the urban core began to diffuse to the urban periphery or other non-metro areas as a result of telecommunications and infrastructure development, and a significant percentage of the labor force began to telecommute instead of traditional office workers. The financial benefits of telework exceeded the technology expansion costs of facilitating it. As a result, the neoclassical theory of comparative advantage was unable to provide a satisfactory explanation of the actual patterns of trade, and the predictive power of the conventional theories has been more seriously questioned (Cader, 2008: 119).

After World War II, new theories made it easier to accept the assumptions of traditional theories. They have addressed the trade from a different perspective and reconsidered the role of new factors such as intra-industry trade, government intervention, externalities, economies of scale, product differentiation, and market structure. For instance, “increasing” returns to scale is a characteristic feature of many economic activities. It may come from knowledge creation, productivity, or organizational changes. However, most trade models assume “constant” returns to scale with inputs of capital and labour. Externalities may be pure and stemming. For example, they can stem from technological factors such as knowledge spillover or be pecuniary, stemming from market access effects. There are arguments that monopolistic or oligopolistic firms in imperfect markets can provide more incentives and investment for R&D and innovation than firms in competitive markets. Under imperfect competition in a dynamic framework with variable factors of production, new theories with endogenous knowledge emerge (Zhang, 2008: 8–15).

We can start with Posner (1961). He suggests a “*Technological Gap Model*” of international trade. Posner rejects the classical theory’s assumption of production function homogeneity and technology availability. Under the same factor endowment and similar demand conditions, production techniques are kept as *tech secrets* by innovative countries, leading to a technological gap between partners. So international trade arises from this gap between countries, and trading partners should have a similar income and development level. Much of this trade is often based on innovation by innovative firms from developed countries. The government gives more incentives to innovative firms within the framework of patents and intellectual property rights. Thus, technical change or developments in some industries are supposed to increase trade (Yücel, 2018: 37).

Linder (1961) emphasized on “*Intra-Industry Trade*”. According to the hypothesis, international trade occurs between countries that have a similar level of per capita income and a similar demand structure. New products are generally developed by considering target consumer preferences, which are likely to be similar between countries having similar incomes. High-income economies engage in intra-industry trade due to the division of labor that leads to learning, innovation, and unique skills. Also, specialization leads to corporations splitting up the value chain through different countries (especially developed ones) to more effectively benefit from high-skilled labor and innovative capacity and employ the resources effectively (Çeştepe, Ergün, and Zorlu, 2017; 345). The extent of intra-industry trade is much higher

between manufactured goods and is highest for more sophisticated and differentiated products. These goods have a larger market in countries with higher income (Bergstrand, 1990: 1217).

Kennen (1965) and Keesing (1966) introduced “*Skilled Labor Theory*”. The model argues that labor is not homogeneous between countries, and they have technically or qualitatively different (highly skilled) labor power. Countries that are abundant with educated and highly skilled labor (scientists, engineers, technicians, and managers) tend to produce and export capital-intensive (complicated and high-added value) goods and have a competitive advantage in the relevant products. Countries with an abundance of unskilled and raw labor tend to produce and export labor-intensive primary products with little added value, or raw materials (Findlay and Kierzkowski, 1983: 960). According to the theory, most of the trade between industrialized countries is explained by the difference in skilled labor between countries. Today, employment is being driven by white-collar, high-skilled jobs in many developed countries, and in the era of the knowledge economy, education, training, and the ability to produce and use information effectively are thus a vital source of skills for labor. The theory was tested by Keesing in the US economy, and he concluded that the USA has a comparative advantage in the industries in which it requires skilled labor, and the content of skilled labor is higher than capital in these products (Keesing, 1966: 249; Minford, 1989: 199–200).

Vernon (1966) postulates the “*Product Cycle Theory*” which explains the relationship between innovation and exports within the framework of the technological gap. This approach emphasizes the impact of innovation, economies of scale, lack of information, and uncertainty on foreign trade. So the theory can only be implemented in developed nations. Every product has different life stages. First, developed countries create and market new products. According to Vernon, developed countries have more skilled labor and higher R&D expenditures. So it is more likely to create innovative products. All the raw materials and labor used in making and producing that product belong to this country. It leads to a small market and low sales. To compensate for this, corporations modify the product while it is still in its early stages and begin exporting it to other developed countries. At the second stage, the first manufacturer will need to consider opening up production plants locally in each developed country to meet the demand. Then, unit costs will decrease and revenue will increase. In the end, product development has reached maturity. The final stage of product standardization and manufacture streamlining accelerates technological diffusion to developing

countries, production requirements (production cost, skilled labor, know-how) decrease, and the original purveyor of the product loses its competitive advantage based on innovation. Now, the product will become obsolete, demand for the original product will begin to decline, and the market in the developed nation will be saturated. As a result, the first country assesses a low profit and exits the market, to be replaced by low-income developing countries. Now it's time to develop a new product for the developed nation to start the cycle again (Perçin, Karakaya, and Azade, 2017: 86).

The “*monopolistic competition theory*” is suggested by Krugman (1979) and Helpman (1981). It is distinguished by increasing returns to scale, technology, and product differentiation, and it was first used to explain *intra-industry trade* in international trade theory. This theory tries to explain the two-way trade (intra-industry) of manufactured goods. According to the classical view, international trade has been realized through homogenous products due to the assumption of perfect competition. So the same good is not both exported and imported by a country. However, the same goods can be both exported and imported in practice, and factor endowment theory cannot explain this kind of trade (Hummels and Levinsohn, 1993: 3–4).

The theory assumes that lots of firms are located in capital-rich countries and have some market power under increasing returns to scale, but not enough to create a natural monopoly. Countries and firms trade differentiated products, and their market power is not driven by restrictions on entry but by differentiated goods. In the long run, it's free to enter due to zero profits. Profits in the short run are just as high as with monopolies, but those profits attract entry. This entry shifts the demand curve back until profits have been driven to zero. In a free market, the variety of goods and scale of production are constrained by the size of the market. When these firms start to do intra-industry trade, they will find more competition than in domestic markets. On the other hand, firms realize that they now have access to a much larger market than they did before. Trade increases market size. So they may set a lower price with the help of increasing returns to scale and now sell to a much larger audience than before. Increasing returns to scale can give firms a big advantage, crowding out potential competitors. The international demand curve twists, and it becomes flatter and more elastic. So each firm perceives that by expanding it can increase its profits to the point where the price is greater than the average cost. Firms have started to specialize in using more advanced technologies and exploiting positive returns to scale. The country has become an exporter of these goods and an importer

of others. Helpman noted that factor endowment theory mostly explains trade between less developed countries, but monopolistic theory explains the trade between industrialized countries with similar factor endowments. It means trade offers mutual gain when countries do not differ in resources or technologies (Sheldon, 2005: 10–13).

“*Economic Geography*” is another factor in trade. Krugman (1980) claims that producers generate industrial clusters, positive externalities, and synergies that attract more firms to join the cluster. In this respect, they can find an opportunity to decrease costs (transport and production) and increase profit. For instance, even if the production costs of two competing traders are the same, the country closer to the target market will benefit from favorable externalities and synergies that will attract more firms to join the cluster. In this respect, they can find an opportunity to decrease costs and increase profit. For instance, even if the production costs of two competing traders are the same a country closer to the market (e.g., operating directly in the target country) has a comparative advantage over the rival due to lower transport costs, lower trade barriers, or lower customs duties. Hence, an advantageous country is chosen to locate production, which is named the “*home market effect*” (Vurgun and Metin, 2013: 138).

Between the 1960s and the 1980s, new theories were proposed to address the impact of new factors such as globalization, branding, advancement and expansion in ICT markets, innovation, internet-related items, networks, e-trade, government intervention (to assist domestic firms in gaining market power in foreign trade), dumping, export subsidies, price discrimination, tariff and non-tariff barriers, non-traded goods, market size, and international specialization. These factors are now accepted as the main driving forces of international trade.

2. The Literature Survey and Contributions

As is seen from the theoretical framework, there has been a growing body of literature since the 1960s as they pointing out the importance of knowledge in international trade. Many of the papers based on new trade theories tried to explain the role of various indicators such as R&D, technology, innovation, the knowledge index, high-tech production, and ICTs on economic growth and development, international trade, the environment, or global competitiveness in the context of the knowledge economy.

In the studies of Lichtenberg (1992), Oliner, Sichel, Triplett, and Gordon (1994), Freire-Seren (1999), Hitt, Brynjolfsson, and Yang (2002), Cuaresma

and Wörz (2005), Mccann (2007), Falk (2009), Chandrasekar and Sharma (2010), Özkan and Yılmaz (2017), Mohammed, Liu, and Nie (2022), they have conducted both static panel data models and time series models. They differed according to the study sample, the study period, and the type of indicators used; however, most of them showed the positive role of indicators (R&D expenditures, productivity, innovations, advancement in ITCs, patent applications, internet usage, etc.) on economic growth.

The second group of papers have focused on the effect of the same indicators on exports and trade competitiveness. These papers relate to those neo-technology models that have attempted to endogenize technical progress within equilibrium open-economy development models. According to Freund and Weinhold (2004), Clarke and Wallsten (2006), Lin (2015), and Bilgiç (2019), the rapid increase in internet usage has stimulated the internet service industry. The number of patents in a country or in a firm show its innovative strength and how many inventions are done. Greenhalgh (1990), Belay (2004), Seyoum (2005), Braunerhjelm and Thulin (2008), Özer and Çiftçi (2009), Ünal ve Seçilmiş (2013), Durmaz and Yıldız (2020) all claim that innovative strength is positively correlated with foreign trade in this context. According to the results, R&D and innovation have a positive impact on high-tech exports through capacity for high-tech products, increasing intellectual capital, the number of patent applications, and the rising share of innovative enterprises.

Increase in ICT adoption also has an impact on environmental issues and sustainability. Paille and Morelos (2014), Mohsin, Hesary, Iqbal, and Saydaliev (2022) investigate whether ICTs can help improve environmental quality. According to the results, ICTs may have positive consequences through cutting transaction and travel expenses, reducing information asymmetry related to sustainability, creating improved decision-making, and increasing efficiency.

During the last few decades, scholars have also tried to explain the effect of knowledge diffusion through social networks, shared languages, common borders, cultural factors, or migration. Rauch (2001), Rauch and Trindade (2002), Combes et al. (2005), Hidalgo et al. (2007), Hidalgo and Hausmann (2009), Boschma et al. (2013), Chaney (2014), Morales et al. (2015), Bailey et al. (2017) analyze these factors to explore the effect they have on bilateral trade. They conclude that the knowledge diffusion plays a positive role.

Some papers attempt to analyze the effects of interactions between components of the knowledge economy on each other. The literature within this strand has basically examined the causal relationship between knowledge

economy indicators. Cuneo and Mairesse (1984), Griliches and Mairesse (1984), Coe and Helpman (1995), Verspagen (1995), Nadiri and Kim (1996), Harhoff's (1998), Tsai and Wang's (2004), and Kafourous (2005) indicated that R&D expenditures have a positive and significant impact on total factor productivity in high-tech industries. According to Kapurubandara and Lawson (2006), Maier (2008), and Jehangir, Dominic, and Khan (2011), national economies are becoming increasingly dependent on their ability to produce and use knowledge, and that technological advancements will fuel the rapid growth of global e-commerce.

This study is unique in three ways when compared to previous research. First, the majority of the papers have focused on developed economies. Indeed, these economies have been notoriously fast in this respect. When it comes to technological advancement, R&D, and its effective use, the emerging markets have progressed slower than the developed ones. Driven mostly by cheap labor, they have seen unprecedented growth rates and contributions to the global economy. Their competitiveness has mainly come from their economies' long-held comparative advantage in labour-intensive goods, and they have focused on exporting low-cost goods instead of high-tech ones. As a result, in comparison with developed ones, emerging market economies have not been able to transform the knowledge economy as much as developed countries, and most of them are "late" in this race. In this context, the subject is discussed in terms of emerging market economies.

Second, over the second half of the 20th century, knowledge and information technology replaced capital, and scientific and technological progress have contributed to a major change in the structure of international trade. Also, knowledge-based economies have changed the basic parameters of competitiveness in global markets. Accordingly, it's expected that the more progress in the knowledge economy and the more modernization in the basic sectors (agriculture, industry, and services) will lead to a greater share of international trade. For emerging markets, exports are the only sustainable way to achieve long-term growth and development, and they are the most important channels through which they can link with the world economy. In this manner, unlike the other studies, we focused on the effect of ITCs on exports to emerging markets.

Third, this study differs from the others in terms of methodology. Most of the studies have conducted causality and cointegration analyses using panel data and time series estimation methodologies. Also, previous studies such as

Freunda and Weinhold (2004), Choi (2010), Mattes, Meinen, and Pavel (2012), Özcan (2018), Rodriguez-Crespo and Zarzoso (2019), implemented gravity model analysis to reveal the relationship between ICT and trade. In this paper, we employed the “System GMM” method. Bertrand and Zuniga (2006); Falk (2009); Meschi, Taymaz, and Vivarelli (2011); Zhu and Fu (2013) provide us with an efficient and consistent way of estimating the coefficients of dynamic panel models under endogeneity, autocorrelation, and heteroscedasticity problems by using instrumental variables. The system GMM estimator is designed for panels with short time series, models with dynamic processes, and non-exogenous states of variables. Estimated coefficients and their signs are considered to be the major results of policy recommendations. Also, the GMM method allowed us to control the cross-section and time-fixed effects in the model (Hüsnuoğlu, 2017: 25).

Given the aforementioned concerns, the main questions we addressed in this study are as follows: to what extent does ICT contribute to the exports of the emerging markets chosen for the study, and how would their competitiveness position against their rivals change over the 2011–2021 period? What are the features of emerging market progress that affect export power? What are the relative roles and contributions of knowledge economy variables (e.g., the Global Knowledge Index, R&D expenditures, patent applications, etc.) to export performance? According to the research questions, our purpose is to briefly highlight the components of the knowledge economy, analyse the knowledge economy indicators that influence exports in the context of emerging market economies, and shed light on the estimated coefficients and their signs to make policy implications.

3. The Data and The Research Methodology

Following the theoretical background and literature review, the exports estimation and the variables in the model are presented in functional form as follows;

$$\text{Exp} = f[\text{Rer}, \text{Tpec}, \text{Tariff}, \text{TO}, \text{OPW}, \text{GKI}, \text{R\&D}, \text{Patent}, \text{ICT}]$$

Dependent variable Exp (the current export volume in USD) is a linear function of independent variables. The first independent variable, Rer, represents the real effective exchange rate (2010 = 100). Next, TPEC indicates total primary energy consumption in exajoules. Tariff is the third. It takes into account the applied and weighted mean tariff rate for all products in percentage. The acronym

TO represents trade openness as a percentage of GDP. OPW shows productivity. We added this variable as output per worker in constant USD at PPP (purchasing power parity). We also included control variables in the tests to account for the importance of other export determinants. Our control variables are *Rer*, *Tpec*, *Tariff*, *To*, and *Opw*. When we consider the effect of knowledge economy variables, the GKI indicates the global knowledge index number (2012 = 100). R&D is introduced as “research and development expenditure” as a percentage of GDP. The patent variable defines the patent application of the sum of resident and nonresident numbers. Lastly, ICT stands for the share of ICT goods in total exports. In emerging markets, knowledge economy components lead to a substantial increase in productivity and innovation, and in turn, a higher share in international trade and export volume. So they are considered to positively affect (we expect a positive coefficient in the majority of cases) exports. We compiled the yearly data from The World Bank Data Bank, IMF Direction of Trade Statistics, Global Knowledge Index, and BP Statistical Review (2022) of World Energy. The sample period encompasses 10 years, from 2011 to 2021, for 32 emerging markets.

To investigate the research questions, we employed a dynamic panel data model for this study. This type of model contains lags of the dependent variable as explanatory variables. Second, we are not sure of the distribution of the dependent variable or the likelihood of an ingenuity issue in the model. Third, when the time span is small, the fixed effect estimator is inconsistent. So conventional estimation techniques such as ordinary least square (OLS) may have resulted in biased estimates (Judson and Qwen, 1996: 1). In this regard, to estimate the dynamic export model, we utilized the GMM approach that was proposed by Hansen (1982). GMM is a dynamic panel model estimator in which the lagged value of the dependent variable is added. Also it is used to control omitted variable bias, unobserved panel heterogeneity, and measurement errors. In the GMM method, due to the endogeneity (it means correlation between the explanatory variables and error term) problem, it is better to use instrumental variables (IV). But determining the right IV is an important step. Because it must be purely inventive and relevant enough to significantly influence the regression in question (Ketenci, 2018: 260-261).

We can start with independent random variables X . It is chosen according to the probability density $f_x(x | \theta)$ associated to an unknown parameter value θ . k^{th} moment is defined as $E(X^k)$. It means moment of a random variable X is just the expectation of X to the k^{th} moment of random variable X . In other words,

sample means converge to the distributional mean as the number of observations increase. $E(X)$ is approximated by simple mean $\Sigma X_i/n$. More general if we want to find the estimate of k^{th} moment $E(X^k)$, we will take a random sample of size

n ; $\bar{x}_n = \sum_{i=1}^n \frac{x_i^k}{n}$, as $n \rightarrow \infty$. Thus, if the number of observations n is large, the

distributional mean should be well approximated by the sample mean. This can be turned into an estimator θ by setting $\bar{x} = k(\theta)$ (Watkins, 2011: 163, Abas, Bendory, and Sharon, 2021:2). Similarly, GMM uses moment conditions that are the function of the model parameters and the data such that their expectation is zero at the parameter's true value;

$$g(\theta_0) = E[f(W_t, Z_t, \theta_0)] = 0 \quad [1]$$

We can define the moment condition g of the true parameters θ_0 that is $R \times 1$ population moment conditions. This is equal to a zero unconditional expectation of some function f that depends on the vector of modal variables W_t , $R \times 1$ vector of instruments Z_t and $K \times 1$ vector of true parameters θ_0 . K is the number of parameters and R is the number of moment conditions. The population moment condition identifies the parameters. The function g evaluated in some parameter vector θ_0 is equal to zero if and only if θ_0 is equal to true parameters. That means population moment conditions have unique solution. In order to derive GMM estimator ($\hat{\theta}_{GMM}$) we consider sample moment conditions (Wooldridge, 2001: 88-91).

$$g_t(\theta) = \frac{1}{T} \sum_{t=1}^T f(W_t, Z_t, \theta) \quad [2]$$

Now, we can derive an estimator from the equation 2 depend on the numbers R (number of parameters) and K (number of moment conditions) as if $R < K$, we have under identification and in that case parameters θ_0 are not identified and they cannot consistently estimated. In the second case, if $R = K$, we have just identification. In that case we can derive the estimator. We do that by $g_t(\hat{\theta}) = 0$ (solving the sample moment conditions evaluated in the estimator is equal to zero). In the last case, if $R > K$, we have over identification. It means we have more valid moment conditions than we need. It allows us to derive the estimator. We can find estimator $\hat{\theta}_{GMM}$ by minimizing the distance from the same moment conditions $g_t(\theta)$ to zero. But due to $R > K$, we have to define quadratic form;

$$Q_T(W_r) = g_r(\theta)' W_T g_T(\theta) \geq 0 \quad [3]$$

Where, Q_T as a function of W_T denotes a weight matrix which has a $R \times R$ dimensions with positive definition and allowed us to attached different weights to different moments. In this way, we transformed the sample moment conditions into a scalar term that we can minimize. Lastly we can derive the GMM estimator as follows;

$$\hat{\theta}_{GMM} = \arg \min_{\theta} Q_T(W_T) \rightarrow Q_T(\theta) = T^{-1} \sum_{t=1}^T f(v_t, \theta)' W_T T^{-1} \sum_{t=1}^T f(v_t, \theta)' \quad [4]$$

We solve derivative with respect to parameters θ and set equal to zero; $\partial Q_T(W_T) / \partial \theta = 0$. Under given weight matrix, GMM estimator has minimum variance and it is both consistent ($\text{plim} \hat{\theta}^{GMM} = \theta$) and asymptotically normal ($\sqrt{N}(\hat{\theta}^{GMM} - \theta) \xrightarrow{d} N(0, W)$) (Hall, 2005: 5).

We can design a dynamic model, where the dynamic parameter is presented by lagged investment in the list of explanatory variables under small T and large N panels. We can create a dynamic model in which the dynamic parameter is represented by lagged investment in the list of explanatory variables. This model can be estimated by employing the following linear regression model with endogenous regressors:

$$y = X'\beta + u \quad [5]$$

Where dependent variable y and error term u are $N \times 1$ vectors, β is $K \times 1$ vector of unknown parameters, and X is $N \times K$ vector of explanatory variables. Due to endogeneity assumption, we assume $N \times L$ dimension instrument variable matrix Z , where $Z \leq N$. The matrix Z is assumed to comprise a set of variables that are highly correlated with X but orthogonal and uncorrelated to error term u . GMM specification requires N (number of cross section) $> T$ (time span). Second Z matrix must be exogenous $E(Z' ; u) = 0$ (Ergün, 2007: 14-17).

In the econometric methodology there is two main type of GMM models; difference and system GMM. Arellano-Bond's (1991) offers difference GMM. This model corrects endogeneity by transforming all regressors through differencing and also removed fixed effect in that process.

$$Y_{i,t} = \beta_0 + \phi Y_{i,t-1} + \beta X'_{it} + (\eta_i + \varepsilon_{it}) \quad [6]$$

$$\Delta Y_{i,t} = \phi \Delta Y_{i,t-1} + \beta \Delta X'_{it} + \Delta \varepsilon_{it} \quad [7]$$

Equation (6) is initial model and equation (7) shows transformed model. We transformed the regressors through first differencing. There are two consequences of the first differencing, indicated by the Δ . First, it eliminates the individual-specific effect η_i . Second, first differencing induces correlation (endogeneity) of the first differenced lagged dependent variable $\Delta Y_{i,t-1}$, with the first differenced unobservable composite error term $\Delta \varepsilon_{i,t-1}$. So estimates of ϕ and β based on Equation (7) are inconsistent. This can be resolved by instrumenting the first differenced lagged dependent variable in Equation 7 (Fritschle, 2019: 4-5). From (7), the model becomes; $\Delta u_{it} = \Delta \eta_i + \Delta \varepsilon_{it}$ or $\Delta u_{it} = \Delta \varepsilon_{it}$. Unobserved fixed effect is no longer enter the equation. Also first differenced lagged dependent variable is instrumented with its past level (Fukase, 2010: 201-202).

Arellano and Bover (1995), Blundell and Bond (1998) proposed the *System GMM* approach to avoid these problems. They augmented an additional assumption that the first differences of instrument variables are uncorrelated with the fixed effects. This allows the introduction of more instruments and can dramatically improve efficiency. System GMM supplements *Difference GMM* by estimating both differences and levels at the same time, with the two equations being separately instrumented. It is designed for situations with arbitrarily distributed fixed effects and when we have heteroscedasticity and autocorrelation within a panel group. In the System GMM approach, endogeneity is corrected by introducing more instruments. The system approach uses orthogonal deviations instead of subtracting the previous observation from the contemporaneous one; it subtracts the average of all future available observations of the variable. In the system GMM, we have two equations: the initial model (equation 8), and the transformed model (equation 9), which we get by incorporating the first differencing (Roodman, 2008: 3-4).

$$Y_{i,t} = \beta_0 + \phi Y_{i,t-s} + \beta X'_{it} + (\eta_i + \varepsilon_{it}) \quad [8]$$

$$\Delta Y_{i,t} = \Delta \phi Y_{i,t-s} + \Delta \beta X'_{it} + \Delta \varepsilon_{it} \quad [9]$$

In the system GMM, we assume equation (9) is random walk model and Y is persistent. Thus, the additional moment conditions for the equation in levels are; $E[\Delta Y_{i(t-s)} ; u_{it}] = 0$ where $u_{it} = \eta_i + \varepsilon_{it}$. Than we have $E[\Delta X_{it} ; u_{it}] = 0$ (Fukase, 2010: 203). Also first differences of regressors in equation (8) should

be uncorrelated with individual effects (η_i). In this respect, additional moment conditions are (Çetin and Seker, 2014:137);

$$E[Y_{i,t-s} - Y_{i,t-s-1}](\eta_i - \varepsilon_{it}) = 0 \text{ and } E[X_{i,t-s} - X_{i,t-s-1}](\eta_i - \varepsilon_{it}) = 0.$$

But before regression, we can take a natural log for both sides of the equation (10) to avoid heteroscedasticity, smooth the series (remove the outlier), and stabilize their variance. The logarithmic transformation also allows the coefficients to be interpreted as elasticities in relation to the explanatory variables. Adopting the autoregressive representation on our variables we obtain;

$$\text{Exp}_{i,t} = \beta_{0it} + \beta_1 \text{Exp}_{i,t-1} + \beta_2 \text{Rer} + \beta_3 \text{TPEC} + \beta_4 \text{Tariff} + \beta_5 \text{TO} + \beta_6 \text{OPW} + \beta_7 \text{GKI} + \beta_8 \text{RD} + \beta_9 \text{Patent} + \beta_{11} \text{ICT} + \eta_{it} + \varepsilon_{it} \quad [10]$$

where the dependent variable (exports) is a linear function of one lagged of its value, independent variables, individual effects, and the random error term are all present in Section 4.

4. Discussion Of The Results

In this section, we estimate the equation (10) by employing the system GMM method. But before estimating, we need to indicate the descriptive statistics and check the correlation properties of the variables.

Table 1. Summary Statistics in Level

Description	EXPORT	RER	TPEC	TARIFF	TO	OPW	GKI	RD	PATENT	ICT
Mean	2.53E+11	99.81	342.33	3.86	78.95	51,759.08	47.52	0.96	51,749.98	7.94
Median	1.14E+11	99.48	3.47	3.12	69.03	48,030.37	46.76	0.64	4,142.00	2.11
Maximum	3.55E+12	225.52	12,614.78	15.89	211.00	131,604.50	65.41	5.68	1,608,430.00	51.89
Minimum	3.27E+09	49.99	0.08	0.41	22.49	9,244.09	24.22	0.05	34.00	0.01
Std. Dev.	1.12E+00	0.17	1.93	0.72	0.51	0.63	0.13	0.90	1.92	2.14
Skewness	-0.411	-0.148	0.285	-0.084	0.034	-0.057	-0.210	0.117	0.306	-0.104
Kurtosis	7.332	3.379	4.016	2.674	2.454	3.489	2.887	3.374	6.091	2.437
Jarque-Bera	285.17	3.38	19.73	1.98	4.44	3.70	2.78	2.85	145.66	4.71
Probability	0.00***	0.18	0.00***	0.37	0.11	0.16	0.25	0.24	0.00***	0.09*
Sum	8.90E+13	35132.84	120500.5	1815.08	27789.89	18219195	16728.36	336.2376	18215992	2794.76
S.Sq. Dev.	6.81E+25	100544.6	1.22E+09	210557	574771.9	3.11E+11	14110.7	372.8138	1.57E+13	42807.44
Obs.	352	352	352	352	352	352	352	352	352	352

Note: “***”, “**”, and “*” denotes the reject of the null hypothesis at 1%, 5% and 10% significance level respectively.

The basic nature (mean, median, standart deviations, skeweness and kurtosis values) of the data has been explained through the descriptive analysis in the Table 1. The wide difference in between the mean and maximum of TPEC series shows that some emerging economies at some time experienced a huge growth. Also maximum value for Patent and ICT differ from median value substantially due to high progress in knowledge economy among sample countries like South Korea or China. In addition we report the Jarque-Bera test which is a goodness-of-fit. It determines whether or not sample data have skewness and kurtosis that matches a normal distribution under the null hypothesis of normality. According to the test, except the EXPORT, TPEC and PATENT series, we would fail to reject the null hypothesis that the data is normally distributed (Brys, Hubert and Struyf, 2004: 754-755).

Table 2. Pairwise Correlation Matrix

<i>Variable</i>	EXPORT	RER	TPEC	TARIFF	TO	OPW	GKI	RD	PATENT	ICT
EXPORT	1									
RER	0.46	1								
TPEC	0.34	-0.49	1							
TARIFF	-0.39	0.39	0.35	1						
TO	0.54	0.41	-0.33	-0.40	1					
OPW	0.52	0.52	-0.31	-0.14	0.24	1				
GKI	0.62	0.43	-0.46	-0.27	0.38	0.56	1			
RD	0.57	0.55	0.26	0.50	0.35	0.58	0.62	1		
PATENT	0.61	0.67	0.20	0.35	-0.34	0.47	0.60	0.59	1	
ICT	0.49	0.57	0.31	-0.31	0.48	0.46	0.57	0.48	0.47	1
VIF	-	1.33	1.08	1.37	1.76	1.84	1.87	1.91	1.44	2.03

The next part of the analysis is shown with the correlations between independent variables and dependent variables in Table 2. As is seen from the table, variables are moderately (between 05 and 06) associated. Except for tariff, dependent variables are strongly associated with independent variables. Lastly, multicollinearity problems (correlation between predictors) can be detected by a variance inflation factor (VIF) that ranges from 1 and upwards. A score of 1 indicates that independent variables are not correlated, while a score of more than 5 indicates that they are highly correlated. When VIF is higher than 10, there is significant multicollinearity that needs to be corrected (Yakubu, 2019: 8). In our case, close values of VIF to 1 indicate that there is no multicollinearity problem.

After determining the descriptive properties and correlations between variables, we can go further and estimate the main model. We briefly set out four models to be estimated by the GMM system. Due to the endogeneity problem, the fixed effects model (OLS) yields biased estimates. So it is advised to use instrumental variables in the framework of the dynamic GMM technique. We can employ instrumental variables via difference or system GMM. On the one hand, some studies (Arellano and Bond, 1991) suggested first differentiating the equation as a variable, and on the other, some of them (Arellano and Bover, 1995; Blundell and Bond, 1998) proposed the Sys-GMM technique.

Table 3. Comparison of the Coefficients of Dependent Variable

Dependent Variable (L.InExport)	Coefficients			
	Model 1	Model 2	Model 3	Model 4
LSDV (Fixed Effect) Estimation	0.56 (0.00***)	0.51 (0.00***)	0.65 (0.00***)	0.58 (0.00***)
Pooled (OLS) Estimation	0.94 (0.00***)	0.85 (0.00***)	1.04 (0.00***)	1.25 (0.00***)
Difference GMM Estimation	0.45 (0.00***)	0.48 (0.00***)	0.41 (0.00***)	0.39 (0.00***)

“*”, “**”, and “***” represents the significance at 1%, 5% and 10% respectively.

To decide the appropriate model, we use initial equation (6), which is then estimated by pooled OLS and Least Square Dummy Variable (LSDV) methods, which is a fixed effect approach. The coefficient of the lagged dependent variable in pooled OLS estimation should be considered the “*upper bound*” while the corresponding value in fixed effect estimation should be considered the “*lower bound*”. If the difference GMM estimate is close to or lower than the fixed effect estimate, this indicates that the former estimate is downward biased due to the poor instrument, and a system GMM should be preferred. Lastly, for the special case of spherical disturbances, the two-step estimator is more efficient, and this is always true for the system GMM (Baum, 2013: 24). We reported the estimation results according to the Global Knowledge Index (Model 1), R&D expenditure (Model 2), patent application (Model 3), and ICT goods (Model 4). When we consider the coefficients of lagged dependent variables (lnExport [-1]) in the difference GMM method, they are below the corresponding values in the fixed effect estimation. This suggests that the difference estimation method is downward biased because of weak instrumentation and that a system GMM should be used instead.

Table 4. Two-Step System GMM Estimation Results

Variable	Coefficients			
	Model 1	Model 2	Model 3	Model 4
lnExport (-1)	0.945	0.987	0.923	0.914
	(4.93 / 0.00***)	(13.02 / 0.00***)	(9.48 / 0.00***)	(13.08 / 0.00***)
lnRer	0.112	0.157	0.127	0.105
	(1.86 / 0.07*)	(0.82 / 0.41)	(1.75 / 0.08*)	(0.46 / 0.64)
lnTpec	0.032	0.029	0.014	0.025
	(1.01 / 0.31)	(0.11 / 0.92)	(0.38 / 0.71)	(0.32 / 0.75)
lnTariff	-0.037	-0.035	-0.038	-0.043
	(2.49 / 0.01**)	(2.72 / 0.01**)	(3.52 / 0.00***)	(2.57 / 0.01**)
lnTo	0.171	0.258	0.132	0.097
	(2.39 0.02**)/	(1.08 / 0.28)	(3.27 / 0.00***)	(0.74 / 0.49)
lnOpw	0.067	0.093	0.037	0.012
	(0.38 / 0.71)	(1.56 / 0.12)	(1.25 / 0.21)	(1.72 / 0.09*)
lnGKI	0.269			
	(1.83 / 0.06*)			
lnRD		0.182		
		(1.69 / 0.09*)		
lnPatent			0.059	
			(1.71 / 0.09*)	
lnICT				0.171
				(3.92 / 0.00***)
AR(1)	2.99	1.67	1.69	3.02
	(0.00***)	(0.09*)	(0.09*)	(0.00***)
AR (2)	3.74	3.44	2.93	3.34
	(0.00***)	(0.00***)	(0.00***)	(0.00***)
Sargan Test	198.51	194.42	189.23	202.64
	(0.00***)	(0.00***)	(0.00***)	(0.00***)
Hansen J Test	31.08	31.75	30.91	31.54
	(0.99)	(0.99)	(0.99)	(0.99)

t statistics and probability values are indicated in paranthesis. “*”, “**”, and “***” represents the significance at 1%, 5% and 10% respectively.

Table 3 shows the outcomes from the two-step GMM models proposed by Blundell and Bond (1998). In comparison with the difference method, country-specific effects and possible endogeneity are taken into consideration. Serial correlation and heteroscedasticity problems are also eliminated. Column one reports the effect of the knowledge index (GKI) and other control variables on exports. In this model, the coefficients of the independent variables are statistically significant except for energy. Second, within this group, only the tariff is associated negatively with exports as expected, and so other independent variables have a positive impact. In this manner, it can be claimed that increases in tariff rates decrease export performances in emerging markets through rising prices. Trade openness, productivity, and the knowledge index all pose a positive and significant influence on exports. For example, the value of the coefficient on terms of trade openness indicates that a one percent improvement in terms of trade will increase export performance by 0.17 percent. This result is robust with alternative equation specifications.

Coefficients of productivity and knowledge index can be interpreted similarly. As stated by Grossman and Helpman (1991), Hatemi-J & Irandoust (2001), and Wagner (2005), total factor productivity and firm level productivity affect export growth positively. In today's international markets, exporters can be expected to be more productive than non-exporting firms due to exposure to severe competition, and there is self-selection of the more productive firms into export markets. Being in international markets calls for rising efficiency and providing incentives for more product. The knowledge index is positively associated with exports; a one percent rise in the index will increase export performance by 0.26 percent. Today, as the wealth-creating assets have shifted from physical things to intangible resources, knowledge has come to play the predominant role in the creation of wealth in a knowledge-based economy. Also, knowledge-intensive industries have a higher productivity level, so productivity and knowledge-based activity support each other. In Model 1, it can be pointed out that one lagged value of the dependent variable has the strongest effect on exports due to the dynamic structure of the model, and except for the tariff rate, independent variables have a positive effect on exports. The other columns show the impact of R&D expenditure, patent applications, and the share of ICT goods on exports. They have a statistically significant and positive (sign) effect, similar to the general knowledge index (GKI). According to estimation results, an increase in one percent of knowledge indicators implied that 0.18 percent (Model 2), 0.05 percent (Model 3), and 0.17 percent (Model 4) increased on

exports, respectively. Obviously, the logic is reversed in the case of a negative sign.

After interpreting the coefficient estimates, we have to check the robustness of the models. First, AR (1) and AR (2) are the ways to test to determine whether autocorrelation is present. According to first and second lags, the Arellla-Bond serial correlation test suggests that the estimates are consistent and there is no autocorrelation problem. Second, specifying the instrumental variables in this approach is especially important. The GMM estimator is consistent only if the lagged values of the explanatory variables are valid instruments. For this purpose, we applied the Sargan test of overidentifying restrictions under the assumption of homoskedasticity, and no serial correlation (in levels) of the idiosyncratic error term with the null of restrictions (instrumental variables) is invalid. According to the test statistics, there is evidence of overidentifying restrictions. However, according to Bowsher (2002), Kiviet, and Kripfganz (2021), invalid instruments may already seriously bias instrumental variables-based coefficient estimates when the instruments are weak. Also, when instruments are patently invalid, p-values of Sargan tests can be misleading. So, the Hansen-J method tests whether all instruments are uncorrelated with the disturbance term, and so we can infer that instruments are valid. In table 4, the results of the J test point out that we cannot reject the null hypothesis for all models.

5. Concluding Remarks

This paper is focused on the impact of ICT-related knowledge components on export performance. For this purpose, we have conducted a two-stage system GMM analysis of an extended four models that endogenize the knowledge index components and capture the potential effect of them on exports in 33 emerging economies for the period 2011–2021. To avoid the potential endogeneity problem, the GMM estimation technique has been applied. According to our estimation results, we concluded that GKI, R&D expenditures, patent applications, and the share of ICT goods affect exports positively in emerging markets, which indicates that knowledge economy components in emerging economies have the potential to be stimuli for higher export accumulation. In other words, the positive effect of knowledge economy components seems to dominate in this case. The signs for the coefficients of variables are as expected. Autocorrelation (AR-1 and AR-2) and the Hansen test confirmed that our results are robust with these model specifications.

Beginning in the second half of the twentieth century, both developed and developing countries entered a new phase of development and scientific and technological knowledge. The rate of knowledge creation and dissemination has increased significantly due to the rapid progress of ICT. Knowledge has become the engine of productivity and the source of major economic growth, driving competition and innovation. ICTs, in particular, have become critical in many economic sectors. Within a very short time, it has become one of the basic building blocks of modern society.

As the name suggests, emerging markets have missed the industrial revolution. In comparison with a developed one, their industrial-based economic function had not been strong enough. But since the 1950s, unlike resource-based comparative advantage, knowledge has emerged as a key factor of production. It has no natural home base and can be transferred easily anywhere in comparison to traditional resources. The new paradigm of the global economic system has presented many new opportunities, and there is huge potential to improve ICT diffusion across sectors, firms, and individuals in an inclusive way for emerging markets. Nowadays, in a world that has become more integrated, innovations spread faster and through many channels, eventually boosting this transformation with increased patent applications, rapid progress in R&D expenditure, and knowledge-oriented transformations in education and labor training.

To this end, we need to effectively shift from a traditional heavy industrialized economy to a knowledge-based economy through enhancing innovation to sustain productivity, higher R&D expenditure or subsidies as a percentage of GDP, tax incentives, increasing infrastructure connectivity, and advancement in ITC products. Policymakers should aim at developing educational systems that provide quality education focused on lifelong learning and training activities to build human capital. It should not be forgotten that opportunities do exist to exploit various latecomer advantages, including knowledge spillovers and new disruptive technologies.

In an attempt to achieve these objectives, different political and economic scenarios have been induced by different models of growth. Through this study, we can say that it is time for reforms (e.g. education, labour training, total factor productivity) in developing countries. In intensely competitive markets, emerging markets need to learn how to produce the high-tech products they export and, hence, evolve their productive structures in a knowledge-dependent manner. Countries that are striding toward a knowledge economy should further improve their economic and institutional regimes, foster innovations, strengthen

the ICT infrastructure, and upgrade education. It is possible to improve segments of this regime in a few years, and even in a few months in certain sectors. So policymakers have to adapt KE-oriented strategies and reforms in the long run.

Sample Countries

Argentina, Brazil, Bulgaria, China, Chile, Colombia, Czech Republic, Greece, Hungary, Indonesia, Iran, India, Israel, Korea Republic, Kuwait, Malaysia, Mauritius, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Qatar, Romania, Russian Federation, Saudi Arabia, South Africa, Thailand, Ukraine, Turkey, Vietnam

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CHAPTER X

A STUDY ON THE RELATIONSHIP BETWEEN ORGANIZATIONAL JUSTICE AND ORGANIZATIONAL COMMITMENT*

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1. Introduction

The concept of justice has been among the important subjects of numerous disciplines, such as philosophy, sociology, politics, economy, and management, from past to present with its roles, including the maintenance of social order, protection of rights, prevention of conflicts, etc. Many thinkers or researchers from different disciplines have attempted to find answers to various questions throughout the historical process: “What is justice?, How is justice provided?, What should a just life be like?, What characteristics should a just administrator have?” Justice, one of the very important values for all areas of life, is also of great importance for organizations. Employees increasingly desire to work in more just organizations, and their expectations from organizations in this direction also increase. A just working environment

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also impacts many organizational variables. Organizational commitment is also one of these variables. In a working environment where competition, expectations, and pressures make themselves felt more and more every day, organizations need highly committed human resources to survive successfully. One of the ways to have employees with high organizational commitment is through organizational justice. Hence, there is a significant relationship between the two variables in question.

In this respect, the objective of the study is to reveal the relationship between organizational justice and organizational commitment in ground handling companies operating at Istanbul Airport. The study is important in terms of providing information to ground handling companies in the civil aviation sector about their employees and evaluating their practices with the results revealed. Additionally, it is expected to contribute to other enterprises in the sector, practitioners, and researchers interested in the subject. Furthermore, limited research in the national and international literature addressing the relationship between the relevant variables in the civil aviation sector reveals the study's significance in terms of the literature.

The study was conducted in ground handling companies operating at Istanbul Airport. There are 6 ground handling companies operating at Istanbul Airport and a total of 12614 employees working in these companies. Data were collected from 402 individuals between 26 June and 16 July 2021 by employing the convenience sampling method. The survey method was employed in data collection. The questionnaire consists of three sections. The first section contains questions about the participants' demographic and professional characteristics. The second section contains the "Organizational Justice Scale". Yıldırım (2002) translated the scale developed by Niehoff and Moorman (1993) into Turkish. The third section covers the "Organizational Commitment Scale". Meyer, Allen, and Smith (1993) finalized the scale developed by Allen and Meyer (1990). Wasti (2000) performed the scale's Turkish adaptation. SPSS 21 program was used in the data processing and analysis.

The conceptual section of the study first discussed the concepts of organizational justice and organizational commitment, and detailed explanations about the definition, significance, and dimensions of the concepts were made. Then the findings of some national and international studies demonstrating the relationship between the two variables were presented. In the research section of the study, first, the method of the research was explained, and then the analysis of the data and the findings were included. In the conclusion section,

the findings obtained in the study were evaluated, and recommendations were made to practitioners and researchers.

2. Literature Review

2.1. Organizational Justice

Numerous thinkers and scientists have discussed and defined the concept of justice, which is old as the history of humanity, in various ways. The concept does not have a common definition (Şaklak, 2018: 3). Justice has been a concept that has been attempted to be defined by Ancient Greek philosophers, such as Socrates, Plato, and Aristotle, and today's contemporary philosophers. Plato did numerous studies to explain and develop the concept of justice. It is known that Aristotle made the first conceptual definition of justice (Tokmak, 2018: 3-4). Aristotle thought that the concept of justice was the most complete and perfect virtue that emerged by encompassing all virtues with obedience to laws. Aristotle divided the concept of justice into distributive justice and regulative justice. He mentioned the distribution of resources according to individual effort based on geometric criteria with distributive justice and the fact that what was received and given in the mutual exchange method would be realized equally with the arithmetic equality method with regulative justice (Topakkaya, 2009: 628-629). While the English philosopher Hobbes defined non-compliance with the mutual agreement as injustice, the German philosopher Kant defined justice as living honorably within the philosophy of freedom, not harming anyone and giving everyone their share (*suum cuique*), and the American philosopher Rawls defined it as individuals having equal rights with other individuals (Güriz, 2001: 316-317).

Due to the necessity of living in society, justice is essential in securing the rights, thoughts, and interests of individuals. Furthermore, the concept of justice is closely associated with the structure and characteristics of society. Therefore, the rules considered just in a society can be considered unjust for the members of another society (Şaklak, 2018: 3-4).

Greenberg, who introduced the concept of organizational justice to the literature with his article "A Taxonomy of Organizational Justice Theories" and attracted the attention of researchers, defined organizational justice as the perception of justice in the workplace (Çarıkçı and Küçükeşmen, 2018: 30-31). According to another definition, organizational justice is the perception of employees about how variables such as distribution of tasks, promotion, wages,

bonuses, rewards, and punishments are distributed within the organization and how managers take relevant decisions (İçerli, 2010: 69). Organizational justice is based on Adams' "Equity Theory". This theory is based on the prediction that a person will compare the contributions and achievements of his/her efforts within the organization with the contributions and achievements of people in other organizations. Due to this comparison, the person's contribution to the organization decreases or increases as a result of having a positive or negative opinion (Giderler Atalay, 2015: 42).

Justice is very important for organizations. Many studies have demonstrated the impact of organizational justice on variables, including productivity, efficiency, effectiveness, and sustainability. Additionally, employees' perception of the organization and its practices as just also positively influences important outcomes such as job satisfaction, job performance, motivation, organizational commitment, organizational trust, and organizational citizenship behavior (Yücel and Palabıyık, 2016: 215-216). Whereas the positive perception of organizational justice yields positive results, the negative perception of justice causes many negative behaviors and attitudes, such as theft, aggression, etc., in organizations (Şaklak, 2018: 5).

Many studies revealing the dimensions of organizational justice are available in the literature. Initially, studies have concentrated on the fair distribution of rewards and achievements. In ongoing research, procedural justice in the form of the accuracy of processes in implementing decisions and interactional justice, which focuses on interpersonal interaction, have been included in studies as dimensions of organizational justice. Apart from the specified dimensions, various dimensions of organizational justice have also been indicated in studies. The studies conducted commonly address organizational justice as a three-dimensional structure, including distributive, procedural, and interactional justice. The said approach was also adopted in the study, and the relevant dimensions are explained in the following sections.

Distributive justice, the first dimension discussed in studies on organizational justice, focuses on how just the results of the decision process are. Distributive justice is based on Adams' (1965) Equity Theory (Şahin and Kavas, 2016: 122). Adams argued that a way to determine whether an outcome was just was to compute the ratio of a person's contributions or "inputs" (e.g., intelligence, experience, and education) to the outcome and then compare that ratio with another (Colquitt et al., 2001: 426). In other words, distributive justice is the perception of whether fair distribution is realized by comparing

the contributions and gains of employees with the contributions and gains of employees with a similar status. It is seen that numerous studies on distributive justice basically reach the same conclusions but differ within themselves. There are features that distinguish Equity Theory, Relative Deprivation Theory, and Justice Judgment Theory, which are the basis of distributive justice. Equity Theory focuses on the ratio between the contributions and gains of employees and mentions that the perception of justice is one with the perception of equality. Relative Deprivation Theory concentrates on the feeling of deprivation that emerges as a result of individuals comparing their gains with others. In Justice Judgment Theory, an individual does not create the perception of justice only with his/her contribution ratio; with a more proactive approach, he/she evaluates the fairness of the gains using the rules of equivalence and need together with the rule of equity. In this respect, researchers stated that distributive justice could not be realized according to a single rule, and different rules can be effective when necessary in line with the organization's priorities and objectives (Uçar, 2016: 14-16). Distributive justice, which attracted significant attention when it was first introduced and used instead of organizational justice, has been later subjected to criticism. This criticism includes inadequate determination of employee contributions, neglecting the reactions of employees when they perceive the distribution as fair/unjust while carrying out studies to ensure justice, and the conceptual confusion that emerges due to the fact that the distribution of organizational resources also impacts employee contributions, and the inadequacy in explaining the perception of injustice that arises due to human interactions and experiences, despite providing equality in resource distribution. With the emergence of these inadequacies, researchers have started to concentrate on perceptions of procedural and interactional justice (Yanık, 2014: 79-80).

Procedural justice is associated with a sense of fairness and justice in the organization's processes and procedures to achieve significant results. Most employees want to have consistent, open, and honest procedures in their decisions regarding distribution results, regardless of the outcome. The method may be as important or even greater than the outcome itself (Ahmad and Jameel, 2021: 262). Employees' perception that a process or procedure to reach decisions is not implemented correctly and completely by managers may lead to a perception of unfair treatment (Durrani, Shah and Khan, 2021: 346). Procedural justice is the perception of the fairness of the process employed to determine the distribution of rewards (Robbins and Judge, 2013: 225). In other words, it is the degree to

which policies and procedures used to identify and measure elements, such as wage, promotion, financial opportunities, performance evaluation, etc., are fair. The fact that managers take decisions impartially, ask the opinions of employees in decision-making, collect information completely and accurately before taking a decision, explain their decisions and provide additional information when needed, and apply the decisions in the same way to all employees are examples of procedural justice (Giderler Atalay, 2015: 44-45).

Leventhal et al. (1980) emphasized that employees should concentrate on the following basic criteria in perceiving the decision-making process as fair (Ünler, 2015: 6):

- Consistency: It is the consistency of procedures in distribution decisions according to employees and time. This feature indicates that procedures should be applied indiscriminately among employees and changes to the procedures should not be made easily and frequently.
- Not being prejudiced: It means that managers make independent decisions while taking decisions by being impartial and staying away from individual interests.
- Accuracy: This feature focuses on the accuracy and clarity of the decisions to be implemented and the accuracy of the data that affect the decisions to be taken.
- Correctability: Wrong decisions should be changeable, editable, or revisable.
- Being ethical: Distributive procedures should comply with ethical rules, and decisions taken should comply with the moral values of employees.
- Representability: It is the requirement that employees be given the opportunity to express their opinions in the decisions taken.

Interactional justice is associated with the quality of interpersonal attitudes and behaviors during the implementation of processes. Whereas there are those who think that interactional justice must be studied separately from procedural justice, there are also those who think that it is a type of procedural justice (Uysal Irak, 2015: 202). Bies dealt with the issue of interpersonal behavior. Despite the fact that students in the university complained about the misbehavior of lecturers and experienced these complaints by following the process, Bies saw that the complaints were not related to official procedures. As a result of their study, Bies and Moag (1986) observed that the concept of interpersonal behavior differed

from procedures and introduced the dimension of interactional justice to the literature (Colquitt, Greenberg and Zapata-Phelan, 2005: 39-40). Interactional justice is concerned with the human relations aspect of organizational structures and concentrates on employees' perception of justice in this communication by emphasizing the communication between decision-maker managers and employees. It focuses on the behavior of decision-makers while applying procedures rather than what kind of procedures are applied when decisions are taken and how committed they are to the procedures applied (Tekeli, 2014: 12-13).

Bies and Moag (1986) stated that interactional justice has four important elements. These elements are as follows (Ünler, 2015: 8):

- Respect: Managers should treat employees with courtesy, showing that they value them.
- Propriety: Managers should avoid prejudicial statements/attitudes toward employees and asking inappropriate questions.
- Truthfulness: Managers should communicate with their employees in an open, transparent, and sincere manner without compromising truthfulness and honesty at every stage of taking decisions and executing transactions.
- Justification: Managers should make necessary explanations to employees about the basis of the decisions made.

In his study, Greenberg (1993) divided the principles of truthfulness and justification of these four rules into two groups as informational justice and the principles of respect and propriety as interpersonal justice (Colquitt, Greenberg and Zapata-Phelan, 2005: 40). Interpersonal justice reflects the degree to which individuals are treated with courtesy and respect by authorities or third parties involved in implementing procedures or determining outcomes. Informational justice concentrates on the explanations provided to individuals about why procedures are utilized in a particular way or why outcomes are distributed in a particular way (Colquitt et al., 2001: 427). Studies demonstrate that treating job applicants in a courteous and informative manner and making logical explanations for the decisions made lead to the perception that individuals will be treated fairly. Moreover, it has been observed that when managers treat employees with care, sensitivity, respect, and dignity, employees tend to ignore or tolerate the negativities in wage distribution and operational processes (Uysal Irak, 2015: 203-204).

2.2. Organizational Commitment

Organizational commitment is an essential issue discussed by many disciplines, such as social psychology, organizational psychology, and organizational behavior. For organizations to realize their mission, vision, goals and objectives, provide competitive advantage and sustainability, it is necessary to keep the technical performance indicators of effectiveness, efficiency and productivity at the maximum level. It is the organization's human resources that will fulfill all these criteria (Akkuş, 2020: 37). When very talented employees work without commitment to their organizations to get things done well is similar to an all-star team winning games. Although players are very talented individually, they cannot perform as a team alone. Providing organizational commitment requires attracting the emotional energies and attention of employees. Considering today's competitive conditions, organizations want employees who are more flexible, learning-oriented, more compatible with teamwork, and productive. It is possible to realize this desire with employees who are committed to the organization and offer their physical, emotional, and intellectual energy for the organization's success (Doğan, 2013: 69). Numerous studies have demonstrated that qualified and highly committed employees contribute significantly to the organization's life force and performance. Accordingly, ensuring employees' commitment to the organization is among the important duties of organizations.

The concept of organizational commitment was introduced to the literature with the article "The Organization Man", published by William Whyte (1956). Whyte defined the member of the organization as a person who not only works for the organization but also belongs to the organization and stated that belonging to the organization was the source of group creativity and the individual's ultimate need. The subject of commitment has been extensively investigated since Whyte. Most studies are based on the assumption that a high level of commitment is good. Thus, Paul R. Lawrence (1958) emphasized the importance of organizational commitment by saying, "Ideally, we want a single top-down emotion to be dominant in all employees, namely, full commitment to the organizational purpose." (Randall, 1987: 460).

Since it has been the subject of different disciplines and many studies have been conducted on it, there is no common definition of organizational commitment that researchers agree on (Uludağ, 2018: 174). In his "side-bet theory", Becker (1960) defined commitment in general as "the tendency

to participate in consistent fields of activity as a result of the accumulation of side bets that will be lost if the activity is discontinued". A "consistent field of activity" means the continuation of membership (employment) in the organization. The concept "side bet" has been employed to refer to anything valuable (for example, time, effort, money) in which the person has invested, which would be lost at a perceived cost to the individual if he/she leaves the organization. These investments involve the use of organizational benefits such as retirement plans, development of organization-specific skills or status, low mortgage rates, etc. The perceived cost of separation is regarded as a threat of loss for the person. In this case, the individual becomes dependent on the organization not to lose his/her investment (Meyer and Allen, 1984: 372-373). Etzioni (1961) stated that organizational commitment depended on the power and authority of the organization over its employees and would be formed by the approach of employees and distinguished organizational commitment as moral commitment, calculative commitment, and alienative commitment (Sürücü and Maşlakçı, 2018: 54). As specified by Kanter (1968: 499), organizational commitment represents the willingness of members to give their energy and commitment to the organization. Porter et al. (1974: 604) and Mowday, Steers and Porter (1979: 226) stated that organizational commitment was defined in terms of the individual's identification with a certain organization and the strength of his participation in this organization. They emphasized that this type of commitment could usually be characterized by a minimum of three factors, a strong belief and acceptance of the organization's goals and values, a willingness to make a significant effort for the organization, and a strong desire to maintain membership in the organization. Organizational commitment is described by Buchanan (1974) as "an individual's emotional attachment to the organization's goals and values, his/her role in relation to his/her goals and values, and the organization for the organization's good, apart from its mere instrumental value" (O'Reilly and Chatman, 1986: 492). Meyer and Allen (1991: 63-64) stated that despite numerous definitions of commitment, they reflect a minimum of three general themes, affective commitment to the organization, the perceived costs related to leaving the organization, and the obligation to remain in the organization. In the model of organizational commitment they have developed, the researchers reveal these three elements as affective commitment, continuance commitment, and normative commitment. The study addressed organizational commitment in line with the approach of Allen and Meyer, and the researchers' organizational commitment model is given in detail in the section below.

The organizational commitment model developed by Allen and Meyer (1990) has three components: affective commitment, continuance commitment, and normative commitment. Affective commitment represents an individual's identification with the organization, participation in the organization, and emotional attachment. Continuance commitment is when a person realizes the costs of leaving the organization and decides to remain or leave the organization considering these costs. Normative commitment reflects the person's feeling of obligation to remain in the organization (Yıldız, 2018: 103). The researchers indicate that each of these three components, which show conceptual differences, develops with different antecedents. Accordingly, the antecedents of affective commitment are examined in four categories, which are personal characteristics, job characteristics, work experiences, and structural characteristics. The strongest evidence for developing affective commitment is provided in the category of work experiences, which covers experiences meeting the psychological needs of employees to feel comfortable within the organization and competent in their job role (Allen and Meyer, 1990: 4). Despite the contribution of other factors (e.g., personal or structural characteristics), many studies show that the desire to maintain membership in an organization is the result of work experiences to a considerable extent (Meyer and Allen, 1991: 74). It is indicated that the continuance commitment component develops based on two factors, which are the size and/or number of investments/side bets made by employees and the perceived lack of alternatives. With an increase in the individual's investments in the organization and a decrease in perceived employment opportunities, the cost of leaving the organization is high to the same extent. Therefore, the employee decides to remain in the organization. Finally, it is argued that the normative component of organizational commitment is impacted by the individual's experiences both before (familial/cultural socialization) and after (organizational socialization) entering the organization. For example, if the individual's parents are long-term employees of an organization and/or have emphasized the significance of organizational commitment, the individual may be expected to feel strong normative commitment to the organization. Moreover, it is indicated that employees who are led to believe that the organization expects their loyalty through various organizational practices within the framework of organizational socialization will most likely have strong normative commitment (Allen and Meyer, 1990: 4). Additionally, normative commitment can develop when the organization provides rewards to the employee for improvement (for example, when it pays for university tuition fees) or when it incurs considerable

costs in providing employment (for example, costs associated with job training). These investments made by the organization to the employee create an imbalance in the relationship between the employee and the organization and cause the employee to feel obliged to respond by showing commitment to the organization until the debt is repaid (Meyer and Allen, 1991: 72). While affective commitment, continuance commitment, and normative commitment are seen as different ways of connecting an individual with the organization, research reveals that continuance commitment has distinctive validity compared to other commitment components. Nevertheless, some studies show that there is no clear differentiation between affective commitment and normative commitment; thus, more research is needed to determine whether affective commitment and normative commitment are different structures (Bergman, 2006: 647).

Organizational commitment is accepted as a fundamental element for organizations to achieve high levels of effectiveness, efficiency, and performance. Additionally, it is important for the creation of opportunities and the use of individual and organizational abilities, influencing the pace of responses to the environment/market and the internalization of novel technologies and knowledge (Lizote, Verdinelli and Nascimento, 2017: 948). Organizational commitment ensures significant increases in employees' performance by increasing their motivation. Furthermore, it facilitates coordination by keeping it at the maximum level as a result of creating a positive organizational climate (Salami, 2008: 31). It also increases employees' desire to remain in the organization for a long time (Vecina et al., 2013: 292). A high level of organizational commitment reduces attitudes and behaviors, e.g., workforce turnover, burnout, cynicism, social loafing, absenteeism, etc. (Fettahlioğlu and Tatlı, 2015: 135). Bozlagan, Dogan and Daoudov (2010: 34-35) stated that organizational commitment contributed to job satisfaction, encouraged trust, cooperation, solidarity, and team spirit among employees, reduced job stress, provided flexibility to the organization against environmental changes, and helped organizational change to occur faster and easier.

2.3. The Relationship Between Organizational Justice and Organizational Commitment

Numerous studies in the national literature have investigated the relationship between organizational justice and organizational commitment. In their study on 152 employees in a machinery manufacturing factory operating in Kayseri, Doğan and Oğuzhan (2022) revealed a significant positive relationship between all dimensions of organizational justice and organizational commitment. In their

study involving 108 employees in a private security company operating in Konya, Efeoğlu, Abul and Bedük (2021) determined a significant positive relationship between organizational justice components and organizational commitment components. The results of the study carried out by Özdemir (2020) on 340 healthcare professionals in private healthcare institutions operating in Kayseri show a high-level and significant positive relationship between organizational justice and organizational commitment. The research also stated that organizational justice was a significant predictor of organizational commitment. The study performed by Tokmak (2019) on 157 individuals working in two private businesses operating in Afyonkarahisar province found that while distributive and informational justice components affected organizational commitment positively, interactional and procedural justice components did not have a significant effect on organizational commitment. In their study conducted on 418 teachers working in basic high schools in Istanbul province, Sakal, Kumkale and Esen (2019) detected a significant positive relationship between the dimensions of distributive justice and interactional justice and the affective, continuance, and normative commitment dimensions. There is a significant positive relationship between procedural justice and affective commitment and continuance commitment, whereas there is a significant negative relationship with normative commitment. The findings of the study carried out by Tokmak (2018) on 397 individuals from the public and private sectors reveal a positive, significant and strong relationship between organizational justice and organizational commitment. In their study involving 679 teachers working in public and foundation schools affiliated with the Ministry of National Education in Turkey, Ay and Koç (2014) detected a significant positive and moderately strong relationship between organizational commitment and distributive justice, procedural justice, and interactional justice. In the study on 425 textile workers in Istanbul, Bursa, Izmir, Denizli, and Gaziantep provinces indicated a significant positive relationship between organizational justice sub-dimensions and organizational commitment sub-dimensions (Bağcı, 2013). The findings of the research performed by Arslantürk and Şahan (2012) on 371 individuals working in the Manisa Provincial Police Department demonstrate a positive and significant relationship between organizational justice and organizational commitment. In the research involving 546 doctors working in 39 military hospitals in different regions of Turkey under the Turkish Armed Forces Health Command revealed a significant positive relationship between organizational justice sub-dimensions and organizational commitment sub-dimensions

(Cihangiroğlu, 2011). In his study on 953 teachers working in primary schools in 12 districts of Hatay province, Uğurlu (2009) indicated a positive and significant relationship between organizational justice components and organizational commitment components. Furthermore, the study found that organizational justice was a significant predictor of organizational commitment.

Numerous studies in the foreign literature have investigated the relationship between organizational justice and organizational commitment. The findings of the research carried out by Deressa et al. (2022) on 395 healthcare workers in Ethiopia show a significant and positive relationship between organizational justice dimensions and organizational commitment dimensions. The study stated that there was a strong positive relationship between general organizational justice and organizational commitment and distributive justice and procedural justice impacted organizational commitment positively. In their study on 98 secondary school teachers in Iraq, Jameel, Mahmood and Jwmaa (2020) demonstrated that all dimensions of organizational justice positively affected organizational commitment. In their study involving 124 individuals serving at three public universities in Ghana, Twumasi and Addo (2020) revealed a significant positive relationship between distributive justice, procedural justice and interactional justice and affective commitment. In their study on 322 prison staff in the US, Lambert et al. (2019) determined a significant positive relationship between distributive justice and procedural justice and organizational commitment. The findings of the study performed by Li, Castaño and Li (2018) on 420 faculty members at 5 universities in China reveal that all dimensions of organizational justice positively affect affective commitment. In their study on 467 employees from 13 companies in Ireland, Ramamoorthy and Stringer (2017) stated that the perception of fairness was positively and moderately strongly associated with affective and normative commitment. The study found a positive, significant and low-level relationship between the perception of equality and normative commitment but found no relationship between affective commitment and the perception of equality. In their study, including 399 individuals working in two oil companies operating in Nigeria, Ebeh et al. (2017) stated that employees reporting the existence of organizational justice had higher levels of commitment and were more involved in their work. In their study of 343 individuals working in small and medium-sized enterprises in France, Swalhi, Zgoulli and Hofaidhllaoui (2017) determined that organizational justice and its all sub-dimensions positively affected affective commitment. The study also indicated that overall organizational justice had a grater effect on affective

commitment than the sub-dimensions of justice. In the research carried out on 500 employees in three higher education institutions in Pakistan, Rahman et al. (2016) revealed that distributive justice and procedural justice positively affected organizational commitment. In their study on 827 police officers in India, Qureshi et al. (2016) identified a significant positive relationship between distributive and procedural justice dimensions and affective commitment. In their research involving 706 individuals from 65 universities in China, South Korea, and Australia, Jiang, Gollan and Brooks (2015) determined a significant positive relationship between distributive and procedural justice dimensions and affective commitment in all three countries. In their study on 148 individuals working in the Pakistani Civil Aviation Authority, Karim and Rehman (2012) detected a positive, significant and strong relationship between organizational justice and organizational commitment. Crow, Lee and Joo (2012) identified a positive and significant relationship between organizational justice and organizational commitment in their study on 418 police officers in South Korea. Additionally, the study showed that the dimensions of procedural and interactional justice had an indirect effect on the organizational commitment of employees through distributive justice. In their study on 128 medical faculty members, Bakhshi, Kumar and Rani (2009) indicated a positive, significant and strong relationship between distributive justice and procedural justice and organizational commitment. In their research conducted on 142 individuals working in a pharmaceutical company in the US, Andrews et al. (2008) stated that there was a significant positive relationship between all dimensions of organizational justice and affective commitment.

3. Method

3.1. Ethical Permission

Ethical permission for the research was acquired from Beykent University Scientific Research and Publication Ethics Committee on 26/03/2021. Research and publication ethics rules were followed in all processes related to the study.

3.2. Purpose and Importance of the Study

The purpose of the study is to determine the relationship between organizational justice perceptions and organizational commitment of employees in ground handling companies operating at Istanbul Airport. According to the data for the European Organization for the Safety of Air Navigation

(EUROCONTROL), Istanbul Airport ranked first among European airports in 2021 with 23.4 million passengers in terms of the number of passengers it hosted and ranked fourth in Europe in terms of the number of flights it hosted, including landing and take-off (<https://www.dhmi.gov.tr/Sayfalar/Haber/istanbul-havalimanina-2020-yilinda-hicbir-garanti-odemesi-yapilmamistir.aspx>, Date Accessed: 14/03/2022). Istanbul Airport was selected since it has many ground handling companies and many employees due to the number of services it provides and the service capacity. When the national and international literature is reviewed, it is seen that there are numerous studies researching the correlation between organizational justice and organizational commitment. However, the limited number of studies addressing the related variables in the aviation sector draws attention. The study is important with this aspect; it is thought that it will contribute significantly to the sector enterprises, practitioners outside the sector, researchers interested in the subject, and the literature.

3.3. Population and Sample Selection

The study population consists of employees of ground handling companies at Istanbul Airport. There are 6 ground handling companies operating at Istanbul Airport and a total of 12614 employees at these companies. 402 individuals, who could be reached by the convenience sampling method, participated in the study.

3.4. Data Collection Method and Tool

The survey method was employed as a data collection method in the study. The questionnaire consists of three sections. The first section, which covers information on the participants' demographic characteristics and employment statuses, includes a total of 7 questions about gender, age, marital status, education level, unit, position, and working time in the institution. The second section includes the "Organizational Justice Scale". The scale was developed by Niehoff and Moorman (1993) and translated into Turkish by Yıldırım (2002). The scale is a 5-point Likert scale and contains 20 items and 3 dimensions, such as Distributive Justice (5 items), Procedural Justice (6 items), and Interactional Justice (9 items). Yıldırım (2002: 66) found Cronbach's alpha internal consistency coefficient to be .81 in the "Distributive Justice" dimension, .89 in the "Procedural Justice" dimension, and .95 in the "Interactional Justice" dimension. The third section contains the "Organizational Commitment Scale". The scale was developed by Allen and Meyer (1990), and its original version has 24 items and three dimensions. The scale was finalized by Meyer, Allen, and Smith (1993). Wasti (2000) translated the scale into Turkish. The scale has 18 items and 3 dimensions, including Affective Commitment (6 items),

Continuance Commitment (6 items), and Normative Commitment (6 items). Three items belonging to the Affective Commitment dimension and one item related to the Normative Commitment dimension (items 2, 7, 10, and 13 on the scale) are scored in reverse. It was found that the scale, which had been originally a 7-point Likert scale, was used as a 5-point Likert scale in many studies. Hence, the use of the 5-point Likert scale was deemed appropriate in the study. The study by Wasti (2000) found Cronbach's alpha internal consistency coefficients for the public sample as .79 in the "Affective Commitment" dimension, .58 in the "Continuance Commitment" dimension, and .75 in the "Normative Commitment" dimension and found these coefficients for the private sector sample as .78 in the "Affective Commitment" dimension, .60 in the "Continuance Commitment" dimension, and .80 in the "Normative Commitment" dimension. The questionnaire was sent to the participants via the Google Forms platform.

4. Data Analysis and Results

Questionnaires were sent to as many people as possible out of 12614 employees working in ground handling companies at Istanbul Airport; 402 people answered the questionnaire. Data were collected between 26 June and 16 July 2021. Since none of the questionnaires had missing data, all forms were included in the analysis. SPSS 21 program was used in the data processing and analysis. Frequency and percentage calculations were made to determine the distribution regarding the participants' demographic characteristics and employment statuses. The construct validity of the scales was determined by exploratory factor analysis, and correlation and regression analyses were conducted to reveal the relationship between the variables. The following sections included the findings obtained by the analysis of the data.

4.1. Descriptive Information

Table 1 contains information on the participants' demographic characteristics and employment status. Considering the participants' demographic characteristics, 37.1% were female, 62.9% were male, 88.8% were maximum 40 years old, 51% were single, and 51.3% had at least undergraduate education. Findings regarding their employment status show that 52% of the participants work in the Passenger Services Directorate and 26.2% in the Administrative Directorates, nearly 70% work in officer positions, and 52.7% have at least 6 years of working experience in the institution.

Table 1: Information on the Participants' Demographic Characteristics and Employment Status

Variable		N	%
Gender	Female	149	37.1
	Male	253	62.9
Age Groups	30 years and below	163	40.5
	31-40	194	48.3
	41-50	41	10.2
	Above 50	4	1.0
Marital Status	Single	205	51.0
	Married	197	49.0
Educational Level	Primary education	14	3.5
	High school	85	21.1
	Associate degree	97	24.1
	Undergraduate	173	43.0
	Graduate	33	8.3
Unit	Passenger Services Directorate	209	52.0
	Administrative Directorates	105	26.2
	Ramp Coordination Directorate	29	7.2
	Workshop Directorate	7	1.7
	Operations Directorate	15	3.7
	Cargo Directorate	9	2.2
	Aircraft Cleaning and Coordination Directorate	3	0.7
	Luggage Services Coordination Directorate	25	6.3
Position	Worker	63	15.7
	Officer	280	69.7
	Expert	21	5.2
	Chef	31	7.7
	Manager	7	1.7
Working Time in the Institution	Less than 1 year	3	0.7
	1-5 years	187	46.6
	6-10 years	113	28.1
	11-15 years	93	23.1
	More than 15 years	6	1.5
Total		402	100.0

4.2. Exploratory Factor Analysis and Cronbach's Alpha Values for the Model Variables

The construct validity of the Organizational Justice Scale and Organizational Commitment Scale employed in the study were examined by exploratory factor analysis.

For the exploratory factor analysis of the Organizational Justice Scale, first, the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were analyzed to reveal whether the data were suitable for factor analysis. Whereas the KMO values between 0.5-1.0 are regarded as acceptable values, values below 0.5 indicate that the data set is not suitable for factor analysis. The minimum KMO value considered satisfactory is 0.7. Furthermore, Bartlett's test of sphericity must be significant ($p < .05$) (Altunışık et al., 2007: 225-226). As seen in Table 2, the result of the KMO test is .958, and the result of Bartlett's test of sphericity is significant ($p < 0.01$). Hence, the scale is suitable for exploratory factor analysis.

Exploratory factor analysis was carried out with principal component analysis and direct oblimin rotation. In the performed steps of the analysis, two items (procedural justice items 1 and 6) were removed from the scale because they were overlapping. In accordance with the results of the exploratory factor analysis of the Organizational Justice Scale, which was repeated with the remaining 18 items, the scale was divided into two factors. The factor load of all scale items is above .32, which is considered the minimum value (Tabachnick and Fidell, 2020). The two-factor structure explains 69.02% of the total variance. According to these results, the scale is a valid measurement tool.

In the scale, which exhibits a two-factor structure inconsistent with the original scale, the first factor was renamed as "Procedural Justice" in line with Niehoff and Moorman's (1993: 534) explanations that procedural justice has two dimensions, just formal procedures and interactional justice. As a result, the Organizational Justice Scale is included in the following sections of the study with the Procedural Justice (13 items) and the Distributive Justice (5 items) dimensions.

Table 2 also contains the results of the reliability analysis for the variables. For a scale to be considered reliable, it is desirable that Cronbach's alpha coefficient, which takes values between 0 and 1, is above .7 (Altunışık et al., 2007: 116). Concerning the results, it can be said that the reliability of the scale's components

is high. Furthermore, Cronbach's alpha coefficient of the overall scale, including 18 items together, was determined as .958, indicating that the scale was highly reliable.

Table 2: Factor and Reliability Analysis Results for the Organizational Justice Scale

	Initial Eigenvalue	Explained Variance	C. Alpha (α)	Factor	
				1	2
Interactional Justice6	10.701	59.452	.963	.943	
Interactional Justice4				.935	
Interactional Justice7				.929	
Interactional Justice8				.890	
Interactional Justice9				.873	
Interactional Justice2				.863	
Interactional Justice3				.857	
Interactional Justice1				.840	
Interactional Justice5				.821	
Procedural Justice4				.731	
Procedural Justice3				.631	
Procedural Justice2				.561	
Procedural Justice5				.554	
Distributive Justice3	1.722	9.566	.869		.859
Distributive Justice5					.828
Distributive Justice2					.771
Distributive Justice4					.763
Distributive Justice1					.758
Total Variance Explained: 69.018					
KMO: .958; Approx.Chi-Square: 7024.529; Sig: .000					

Table 3 includes the exploratory factor analysis results for the Organizational Commitment Scale. As seen in the table, the result of the KMO test is .896, and the result of Bartlett's test of sphericity is significant ($p < 0.01$). According to these results, the scale is suitable for exploratory factor analysis.

Exploratory factor analysis was performed with principal component analysis and direct oblimin rotation. In the performed steps of the analysis, a total of four items were excluded from the scale (continuance commitment items 1, 2, and 5 and normative commitment item 4) since they were overlapping. The analysis was repeated with the remaining 14 items. As seen in Table 3, the scale was divided into three factors. The factor load of all scale items is above .32, which is considered the minimum value (Tabachnick and Fidell, 2020). The three-factor structure explains 63.4% of the total variance. According to the said results, the scale is a valid measurement tool.

On the other hand, it was observed that the scale exhibited a three-factor structure in accordance with the original version, but the items under the 1st factor were distributed in a way not suitable for the original scale. Hence, the 1st factor was named “Obligation and Desire to Remain in the Organization”. Furthermore, since the items under the 3rd factor strongly evoke the concept of “identification”, this factor was named “Identification with the Organization”. Hence, the Organizational Commitment Scale is included in the following sections of the study with the Obligation and Desire to Remain in the Organization (8 items), Continuance Commitment (3 items), and Identification with the Organization (3 items) dimensions.

In line with the reliability analysis results in the table, all of Cronbach’s alpha coefficients are above .7, and it can be said that the scale is reliable in terms of its components. Additionally, Cronbach’s alpha coefficient of the overall scale, including 14 items, was determined to be .806. This result indicates that the scale is generally quite reliable.

Table 3: Factor and Reliability Analysis Results for the Organizational Commitment Scale

	Initial Eigenvalue	Explained Variance	C. Alpha (α)	Factor		
				1	2	3
Normative Commitment2	5.425	38.748	.893	.821		
Normative Commitment1				.800		
Normative Commitment5				.775		
Affective Commitment1				.748		
Affective Commitment3				.720		
Normative Commitment6				.715		
Affective Commitment4				.711		
Normative Commitment3				.588		
Continuance Commitment3	2.173	15.525	.711		.883	
Continuance Commitment4					.850	
Continuance Commitment6					.593	
Affective Commitment6	1.278	9.125	.773			.854
Affective Commitment5						.844
Affective Commitment2						.684
Total Variance Explained: 63.398						
KMO: .896; Approx.Chi-Square: 3253.122; Sig: .000						

4.3. Conceptual Model and Hypotheses of the Study

After the exploratory factor analysis, the conceptual model and hypotheses of the study were created in the following way:

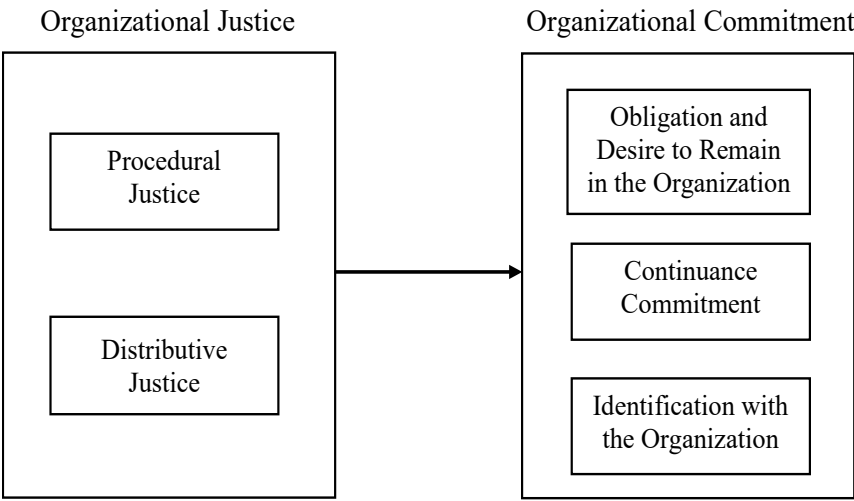


Figure 1: Conceptual Model of the Study

H₁: Organizational justice affects organizational commitment positively and significantly.

H_{1a}: Procedural justice affects the obligation and desire to remain in the organization positively and significantly.

H_{1b}: Distributive justice affects the obligation and desire to remain in the organization positively and significantly.

H_{1c}: Procedural justice affects continuance commitment positively and significantly.

H_{1d}: Distributive justice affects continuance commitment positively and significantly.

H_{1e}: Procedural justice affects identification with the organization positively and significantly.

H_{1f}: Distributive justice affects identification with the organization positively and significantly.

4.4. Central Tendency, Distribution, Skewness and Kurtosis Measures Regarding the Model Variables

Table 4 includes the arithmetic mean, standard deviation, skewness and kurtosis measures of the model variables. Considering the results for organizational justice, it is seen that all variables are above the average and close to each other on the 5-dimensional scale. The overall organizational justice

score is 3.10. Procedural justice is the component with the highest average, and distributive justice is the component with the lowest average. Organizational commitment and all of its components have scores above the average. The overall organizational commitment score is 3.29. All variables had values close to each other, and the highest average value was obtained in the continuance commitment component, while the lowest average value was acquired in the obligation and desire to remain in the organization component.

Moreover, it was examined whether the data were suitable for normal distribution to carry out parametric tests in the study. Skewness and kurtosis values from -1.5 to +1.5 show that the data are suitable for the normal distribution (Tabachnick and Fidell, 2020). Considering the results in Table 4, it is seen that all variables are suitable for the normal distribution.

Table 4: Arithmetic Mean, Standard Deviation, Skewness and Kurtosis Values for the Model Variables

Variable	N	Mean	sd	Skewness	Kurtosis
Procedural Justice	402	3.15	1.00	-.422	-.527
Distributive Justice	402	3.05	0.98	-.253	-.636
Organizational Justice	402	3.10	0.90	-.288	-.414
Obligation and Desire to Remain in the Organization	402	3.21	0.93	-.459	-.012
Continuance Commitment	402	3.33	0.97	-.233	-.482
Identification with the Organization	402	3.32	1.07	-.284	-.595
Organizational Commitment	402	3.29	0.58	-.216	.539

4.5. Correlation Analysis for the Model Variables

Table 5 contains the results of Pearson's correlation analysis performed to reveal the relationship between the model variables. The Pearson product-moment correlation coefficient (r) ranges from +1 to -1. The sign in front of the coefficient value indicates the direction of the relationship; the + sign indicates a positive relationship between the variables, and the - sign indicates a negative relationship (Pallant, 2017: 144). Although there are various opinions in the literature, the correlation coefficient between .10 and .29 is interpreted as a small effect, between .30 and .49 as a medium effect, and between .50 and

1.0 as a large effect, regardless of the sign (Cevahir, 2020: 122; Pallant, 2017: 150).

Upon examining the results in Table 5;

- There is a high and positive significant relationship between procedural justice and obligation and desire to remain in the organization ($r = .630$; $p < 0.01$),
- There is a low and negative significant relationship between procedural justice and continuance commitment ($r = -.144$; $p < 0.01$),
- There is a moderate and positive significant relationship between procedural justice and identification with the organization ($r = .360$; $p < 0.01$),
- There is a high and positive significant relationship between distributive justice and obligation and desire to remain in the organization ($r = .593$; $p < 0.01$),
- There is a low and negative significant relationship between distributive justice and continuance commitment ($r = -.181$; $p < 0.01$),
- There is a low and positive significant relationship between distributive justice and identification with the organization ($r = .270$; $p < 0.01$).

Table 5: Correlation Analysis Results for the Variables

Variable	(1)	(2)	(3)	(4)	(5)
Procedural Justice (1)	1				
Distributive Justice (2)	.646**	1			
Obligation and Desire to Remain in the Organization (3)	.630**	.593**	1		
Continuance Commitment (4)	-.144**	-.181**	-.105*	1	
Identification with the Organization (5)	.360**	.270**	.452**	-.295**	1

** Correlation is significant at the 0.01 level (1-tailed).

* Correlation is significant at the 0.05 level (1-tailed).

4.6. Regression Analysis for the Model Variables

The following sections include the findings of the regression analysis conducted to explain the effect of organizational justice on organizational commitment.

Table 6 contains the results of the multiple regression analysis performed to explain the effect of organizational justice components on the obligation and

desire to remain in the organization. First, pieces of evidence were sought for the absence of multicollinearity among the variables, and the degree of relationship between the variables, tolerance, and variance inflation factor (VIF) values were analyzed. Pallant (2017: 167; 176) indicated that there was no multicollinearity between the variables if the degree of relationship between the variables was not greater than .9, if the tolerance value was not less than .10, and if the VIF value was not greater than 10. Considering the results of the correlation analysis with tolerance and VIF values, it is seen that the relevant values of all variables are between the specified reference values.

The fact that the regression model yielded a significant result with an F-value of 167.223 ($p < 0.05$) indicates that the established model is significant. According to the model, the independent variables explain 45.3% of the change in obligation and desire to remain in the organization. The results demonstrate that procedural justice has a positive and significant effect ($B = .393$; $p < 0.05$) on the obligation and desire to remain in the organization. Distributive justice also has a positive and significant effect on the obligation and desire to remain in the organization ($B = .303$; $p < 0.05$). According to these results, **hypotheses H_{1a} and H_{1b} were supported.**

Table 6: Results of the Multiple Regression Analysis on the Effects of Organizational Justice Components on the Obligation and Desire to Remain in the Organization

	B	Beta	t	p	Tolerance	VIF
Constant	1.050		8.515	.000		
Procedural Justice	.393	.424	8.765	.000	.583	1.716
Distributive Justice	.303	.319	6.588	.000	.583	1.716
R	.675					
Adjusted R²	.453					
F	167.223					
Model (p)	.000					

Table 7 contains the results of the multiple regression analysis conducted to explain the effects of organizational justice components on continuance commitment. The regression model yielded a significant result with an F-value of 7.038. Accordingly, the established model is significant ($p < 0.05$). In accordance with the model, the independent variables explain 2.9% of the change in continuance commitment. The findings indicate that procedural justice has no significant impact on continuance commitment ($B = -.046$; $p > 0.05$) and distributive justice negatively and significantly impacts continuance commitment

($B=-.150$; $p<0.05$). In line with these results, **hypotheses H_{1c} and H_{1d} were not supported.**

Table 7: The Results of the Multiple Regression Analysis on the Effects of Organizational Justice Components on Continuance Commitment

	B	Beta	t	p	Tolerance	VIF
Constant	3.932		22.881	.000		
Procedural Justice	-.046	-.047	-.729	.466	.583	1.716
Distributive Justice	-.150	-.151	-2.338	.020	.583	1.716
R	.185					
Adjusted R²	.029					
F	7.038					
Model (p)	.001					

Table 8 contains the results of the multiple regression analysis carried out to explain the effects of organizational justice components on identification with the organization. The fact that the regression model yielded a significant result with an F-value of 30.361 ($p<0.05$) demonstrates that the established model is significant. According to the model, the independent variables explain 12.8% of the change in identification with the organization. The results indicate that procedural justice positively and significantly impacts identification with the organization ($B=.341$; $p<0.05$), whereas distributive justice has no significant effect on identification with the organization ($B=.071$; $p>0.05$). In line with these results, **hypothesis H_{1c} was supported, while hypothesis H_{1f} was not supported.**

Table 8: Results of the Multiple Regression Analysis on the Effects of Organizational Justice Components on Identification with the Organization

	B	Beta	t	p	Tolerance	VIF
Constant	2.025		11.270	.000		
Procedural Justice	.341	.318	5.209	.000	.583	1.716
Distributive Justice	.071	.065	1.058	.290	.583	1.716
R	.363					
Adjusted R²	.128					
F	30.361					
Model (p)	.000					

5. Conclusion

In today's increasingly complex and uncertain working environment, this expectation increases every day for people with a fair world expectation in every period of their life. Employees expect just processes, practices, decisions, and behaviors from their organizations. The fact that organizations are regarded as just environments by their employees also impacts many organizational outputs. Organizational commitment is one of these organizational outputs. Studies show a significant relationship between organizational justice and organizational commitment and reveal that organizational commitment increases as employees' perception of organizational justice increases. In this respect, it is considered that the present research, which aims to determine the relationship between organizational justice and organizational commitment, will contribute to the relevant sector enterprises, managers, employees, and researchers who are interested in the subject.

Considering the findings related to participants' demographic and professional characteristics together, it can be said that the sample consists of predominantly male, young, and highly educated participants. Furthermore, there is a participant profile in the position of predominantly officer, more than half of whom work in the Passenger Services Directorate and more than half of them have at least 6 years of working experience in the institution. Upon evaluating the findings on organizational justice and organizational commitment scores together, it is possible to say that the participants' organizational justice and organizational commitment scores are above the average but not very high, and the scores of organizational commitment and its components are higher than the scores of organizational justice and its components.

The correlation analysis revealed a positive and significant relationship between organizational justice and organizational commitment, apart from the relationship established with continuance commitment. In the study, there was a high and positive relationship between procedural justice and obligation and desire to remain in the organization, a low and negative relationship between procedural justice and continuance commitment, and a moderate and positive significant relationship between procedural justice and identification with the organization. There was a high and positive relationship between distributive justice and obligation and desire to remain in the organization, a low and negative relationship between distributive justice and continuance commitment, and a low and positive significant relationship between distributive justice and identification with the organization.

The findings of the multiple regression analysis carried out to test the hypotheses demonstrate that the components of procedural justice and distributive justice have a positive and significant effect on the obligation and desire to remain in the organization, procedural justice has no significant effect on continuance commitment, distributive justice negatively and significantly affects continuance commitment, and procedural justice positively and significantly affects identification with the organization, and distributive justice does not have a significant effect on identification with the organization. In line with these results, some sub-hypotheses of the study were supported, while others were not supported. Hence, it would be appropriate to say that the **main hypothesis (hypothesis H₁)**, stating that organizational justice has a significant positive impact on organizational commitment, **is partially supported**.

These results of the study are partially similar to the findings of the studies by Deressa et al. (2022), Twumasi and Addo (2020), Özdemir (2020), Lambert et al. (2019), Sakal, Kumkale and Esen (2019), Li, Castaño and Li (2018), Ramamoorthy and Stringer (2017), Swalhi, Zgoulli and Hofaidhllaoui (2017), Rahman et al. (2016), Qureshi et al. (2016), Jiang, Gollan and Brooks (2015), Ay and Koç (2014), Bağcı (2013), Cihangiroğlu (2011), Uğurlu (2009), Bakhshi, Kumar and Rani (2009), and Andrews et al. (2008).

Similar results were acquired in this study, as it has been demonstrated in many studies that the fair evaluation of employees' wages, work schedule, workloads and responsibilities, the gains they receive from the organization, the processes used by the organization in taking decisions, and the behavior of managers has a positive impact on their organizational commitment.

In this respect, it is thought that sector enterprises should pay attention to the following issues to increase the organizational justice perceptions of employees at ground handling companies:

- Conducting the recruitment and placement process according to a certain standard and procedure
- Recruitment of employees according to their abilities/expertise and distribution of tasks accordingly
- Creating job descriptions and assigning jobs to employees in accordance with the job description
- Establishing a remuneration policy according to the work done

- Making a general statement about the reasons for promotions and demotions or ensuring that the relevant procedures are clear and unambiguous
- Carrying out studies for changing the perception among employees that managers are unaware of the problems experienced
- Conducting performance or productivity studies to change employees' perceptions of each other as incompetent
- Evaluating employees with a certain seniority according to performance statistics in promotion/demotion processes
- Increasing the seniority pay of senior employees

Additionally, it would be beneficial for ground handling companies to concentrate on the following issues to increase the organizational commitment of employees:

- Carrying out in-house training and interaction activities that will make employees feel important and valuable
- Setting targets that will enable employees to progress in career steps by creating intermediate staff
- Providing an environment where employees can express their opinions and receive answers
- Providing social benefits to employees in terms of their gains, not just limited to wages

Concerning the findings of the present work, it is thought that it will contribute especially to the relevant sector enterprises and managers in terms of gaining knowledge and awareness of the concepts of organizational justice and organizational commitment and the relationship between them and focusing on the studies or practices that employees need on these issues. Furthermore, conducting research on organizational justice, organizational commitment, and the factors affecting these concepts in particular periods and evaluating the results of these will also help the relevant enterprises to enhance their working environments.

The research is limited to employees of ground handling companies operating at Istanbul Airport. Due to the sampling method employed, it is impossible to generalize the study's results. Considering the study's limitations, it is recommended that practitioners and researchers conduct studies in a wider scope with sampling methods covering other locations of the sector and other enterprises in the sector and allow for generalization.

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CHAPTER XI

A REVIEW ON THE CAUSALITY RELATIONSHIP BETWEEN STOCK PRICES AND CDS PREMIUM

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1. Introduction

This study aimed to examine the causality relationship between stock prices and credit default (debt) swaps or swap premiums (CDS premium) using the Granger causality analysis method for Türkiye, Brazil, Russia, Mexico, Italy, Australia, and the US. The relationship between stock prices and CDS premiums is a topic of interest in the literature. The CDS contract is a contract in which a country or a company transfers the risk of non-payment or default of an asset or bond to a CDS vendor (Karabiyik and Anbar, 2006: 2). In other words, CDS is an insurance contract that protects against losses caused by a credit event or a decline in bond value. CDS allows investors to invest in a credit for the long or short term without having to find an underlying asset. This made them more accessible than basic reference assets and more easily tradeable (Byström, 2005: 2). Since financial analysts, decision-makers and public institutions base their decisions on CDSs, they are regarded as a successful financial innovation. CDSs are interest rate differences that affect bond returns and can daily fluctuate. CDSs can be affected by many domestic and international factors, and they are regarded as an indicator representing the risk perception that affects the cost of the loans provided by financial markets (Asandului et al., 2015: 151).

An investor considering investing in a different country primarily analyzes that country's CDS. This is because CDSs are an important factor in correct investment decisions and policymakers' analysis of investors' or lenders' behavior. Changes in CDSs can have an impact on both related countries and related companies (Bildirici et al., 2019: 030068-1). CDSs, which take their credit risks off the balance sheet, are among the most liquid products of credit derivatives. CDS premiums are the annual premiums paid to the CDS vendors by those who purchased this asset, in a case where a country or a company exporting security such as a bond is unable to pay its debt (Koy, 2014: 64). The market value of CDS reflects the credit risk that is the subject of the CDS. CDS premium reflects a country's market opinions on the risk of default. Changes in a country's default risk not only affect the CDS premium, but also the stock prices (Chan et al., 2009: 4). According to Chan et al. (2009), the relationship between stock prices and CDS premiums is similar to the relationship between stock prices and bonds, and this can be expressed by the theory stated in Merton's study. Furthermore, Merton (1974) claims that the company's total debt creates a barrier to the value of its assets. Accordingly, if the value of the company's assets falls in value more than its debt, it can be said that the company may be in default. Thus, when the country's CDS premiums are high, the company's stock prices provide information about the country's CDS premium. When CDS premiums are low, stock prices may fail to reflect this fact. Although stock prices are less successful at measuring a country's risk when a country's risk is low, stock prices are affected by other risk factors instead of default risk (Chan et al., 2009: 7).

The efficient-market hypothesis incorporates all data on stock prices in the stock market (Çelik and Taş, 2007: 13). This is because it includes the prices determined by decision-makers based on news and expectations, and the market price that occurred as a result of these prices (Bayraktar, 2012: 37). According to the efficient-market hypothesis, stock prices provide information about a country's default risk. CDSs are a financial instrument that financial institutions have successfully used to diversify and reduce credit risk (Abid and Naifar, 2006: 348). According to the efficient-market hypothesis, the CDS premium of a country that has entered the market is reflected in the security prices of all information, both systematic and non-systematic. This market can be defined as an efficient market (Koy, 2014: 65). In addition, many studies in the literature have examined the theoretical and empirical effects of macroeconomic factors (which are among the systematic risk factors) on stock prices. There are also

models in the literature that investigate the relationship between security prices and systematic risk factors. These include Modern Portfolio Theory, Capital Asset Pricing Model, and Arbitrage Pricing Model (Altın and Şahin, 2011: 71-72).

The causality relationship between stock prices and CDS premiums in Türkiye, Brazil, Russia, Mexico, the United States, Italy, and Australia was examined using the Granger causality test and the VAR method in this study.

The study consisted of four sections. The first section of the study includes the introduction, the second section includes the literature review of the subject, the third section includes the data and methodology, and the fourth section includes the empirical implementation and results. The last section includes the conclusion.

2. Literature Review

Following the information given about CDS, studies on the subject were examined. The relationship between CDS premiums and stocks is an interesting subject. The study in question is expected to contribute to the literature and provide guidance to decision-makers because there is still insufficient information about the CDS premium and its potential effects on stock prices. The studies conducted on the subject were included in this section. For example, the study of Byström (2005) was the first study to examine the relationship between CDS premiums and stock prices in the literature. Daily data from 2004-2005 were used in the study. The relationship between 7 sectoral iTraxx CDS indices and stock indices were examined in the study. According to the results, the iTraxx CDS index and stock prices were found to have a statistically significant relationship.

In their study, Abid and Naifar (2006) investigated the relationship between stock returns and CDS premiums in Japan. Daily data from March 2004 to December 2004 were used in the study, and the data were analyzed using the GARCH model. In conclusion, it was found that the volatility in the stock returns significantly affected the CDS premiums.

Fung et al. (2008) examined the relationship between CDS premiums and stock prices in the US from 2001 to 2007. The VaR method was used in the study. The study discovered a relationship between stock prices and CDS premiums.

In their study, Norden and Weber (2009) examined the relationship between CDS premium, bond, and stock prices in the United States using data from 2000 to 2002. In the study, the causality and cointegration analyses were conducted using the VAR method. In the study, it was found that the CDS premium was

more sensitive to changes in stock prices, and the stock prices were the reason behind the CDS premiums.

In their study, Coronado et al.(2012) examined the relationship between stock prices and CDS premium in eight European countries using 2007-2010 data. According to the panel data analysis, stock prices affect CDS premiums.

In the study by Hancı (2014), it was aimed to examine the relationship between CDS premium and BIST 100 index stock prices for Türkiye using daily data from the years 2008 to 2012. In this respect, there was a negative relationship between CDS premiums and stock prices.

In their study, Çelik and Koç (2016) aimed to examine the causality relationship between CDS premiums and stock prices for Türkiye. The study used data from the period between October 8, 2008 – June 9, 2016. A two-way causality relationship was found in the study.

In their study, Başarır and Ketten (2016) used monthly data from 2010 to 2016 to determine the short-term and long-term relationship between CDS risk premiums, stock indices, and exchange rates in 12 countries using the Granger causality test and the Johansen cointegration test. As a result, a cointegration relationship was found between the variables. As a result of the causality analysis, a two-way causality relationship was discovered between CDS premiums and stocks, while a one-way Granger relationship was discovered between the CDS premium and exchange rates.

In their study, Eren and Başar (2016) used data from 2005 M12 to 2014 M3 to examine the effects of CDS premium, inflation rate, interest rate, exchange rate, money supply, the balance of foreign trade, and real economic activity on stock prices using the ARDL bounds test. The results showed that the CDS premium and the balance of foreign trade had a long-term positive effect on stock prices. This effect was discovered to be negative in the short term. The industrial production index negatively affected stock prices in the long term, and positively in the short term.

In their study, Akyol and Baltacı (2018) aimed to investigate the effect of CDS premium and oil prices on stock prices in Türkiye using the data from 2006 M1 - 2015 M9 and the ARDL bounds test. According to the study's results, the CDS risk premium and oil prices had a statistically significant effect on stock prices in the long term. However, the exchange rate did not affect the stock prices in the long term.

Şahin and Özkan (2018) aimed to investigate the long-term and short-term relationships between CDS, exchange rates, and BIST 100 index in their study.

Monthly data from 2012 to 2017 were used in the study for this purpose. Engle-Granger cointegration and Granger causality analyses were carried out using the panel data method. As a result of the cointegration analysis, a long-term relationship was discovered.

Sarıgül and Haşmet (2020) examined the cointegration and causality relationships between the CDS premium and stock prices in developing countries. Daily data from January 2016 - July 2019 were used in the study. In the study, it was found that CDS premium affected the stock prices in the long term in Argentina, South Africa, and Türkiye. A causality relationship was detected in all countries except Greece and South Korea in the causality test.

In the study by Şahin (2020), it was aimed to investigate the asymmetrical relationship between the BIST Banking Index and USD, EUR, CDS, Inflation, Interest Rate, Total Credits, Total Deposits, VIX, and Gold using the NARDL method with the help of monthly data from the period 2005 M1 - 2019 M12. The study discovered short-term and long-term relationships between the BIST banking index and the USD, EUR, Gold, VIX, and CDS.

Sarıgül and Şengelen (2020) investigated the long-term and short-term relationships between CDS premiums and BIST banks and price index, and the banks' stock prices for Türkiye using the data from 2014 M1-2019 M6 and Johansen cointegration and Granger causality analyses. According to the Johansen cointegration analysis, the CDS premium affected the BIST bank index and some banks' stock prices. According to the Granger causality analysis, there was a one-way relationship between the CDS premium and the BIST bank index.

The causality relationship between the CDS premium and the BIST 100 index in Türkiye was investigated using the Toda-Yamamoto analysis in the study of Bolaman Avcı (2020). The study used data from the 2003 Q1 - 2018 Q4 periods. The BIST 100 index was discovered to be the cause of the CDS premium in the study.

In their study, Vurur and Özen (2020) investigated the relationships between the CDS premium and stock prices in Germany, France, Italy, and Spain in the pre-pandemic and post-pandemic periods. Daily data from 22.02.2018 - 29.08.2020 were used in the study. For the pre-pandemic period, a causality relationship was determined towards stock prices from CDS premiums in two countries (UK and Spain) while no causality relationship was found in three countries. Except for Italy, a two-way causality relationship was discovered between CDS premiums and stock prices during the post-pandemic period.

In their study, Sarıtaş et al. (2021) examined the cointegration relationship between CDS premium and BIST 100 index and stock prices. For that purpose, the ARDL method was used. According to the analysis, there was a cointegration relationship between CDS premiums and stock prices.

The causality relationship between CDS premiums and the BIST whole index, BIST bank index, exchange rate, and government bond yields for Türkiye was examined using the Toda-Yamamoto method in the study by Akgüneş (2021). The study used weekly data from April 2018 to November 2020. In conclusion, it was found that the BIST bank index was the reason for BIST whole index, and bond yields were the reason for CDSs.

In the study by Vurur (2021), the relationship between Türkiye's stock market BIST 100 index and CDS was investigated. The cointegration and Toda-Yamamoto causality relationship were investigated in the study, which used daily data from January 2015 to November 2020. The cointegration test revealed that there was a cointegration relationship between the variables. According to the results of the Toda –Yamamoto causality analysis which was conducted to show the short-term relationship, it was found that the causality relationship was towards CDS premiums from the BIST 100 index.

The study of Gareyev et al. (2021) aimed to investigate the causality relationship between CDS premium, interest rate, and BIST bank index for Türkiye. Monthly data from 2014 to 2019 were used in the study for this purpose. As a result of the study, it was found that the CDS premium and interest rate were the causes of the BIST bank index.

The ARDL bounds test method was used in the study of İlhan and Bayır (2021) to examine CDS premiums, bond yield, exchange rate, total credits, and the pandemic's effect on the BIST Industrial Index and BIST Financial Index in Türkiye. The study used data from the 2010 M1-2021 M6 periods. The study discovered that CDS premiums and bond interests had a negative long-term effect on the BIST Industrial and BIST Financial Indices, whereas exchange rates and loans had a positive effect.

In the study by Bayrakdaroğlu and Mirgen (2021), it was aimed to examine the relationship between CDS premium and stock prices of Brazil, Russia, India, China, and South Africa (BRICS countries) and these countries' interest rates using the panel data analysis. The data from the period 2015Q1-2021Q3 was used. The regression analysis revealed a negative and statistically significant relationship between the stock prices of the BRICS countries and CDS premiums.

Examining the relationship between stock prices and CDS premium helps both investors and lenders to make sound decisions. In this study, it was aimed to examine the relationship between CDS premiums and stock prices for Türkiye.

3. Data & Method

This study aims to examine the Granger causality relationship between credit default risk (CDS) and stock prices for Türkiye, Brazil, Russia, Mexico, the US, Italy, and Australia. For the countries except for Russia, data from the period 2009 M1-2022 M8 were used. For Russia, data from the period 2009 M1-2022 M5 were used. CDS premiums, one of the study's data sources, were obtained from the investing.com website for Türkiye, Brazil, Russia, Mexico, the US, Italy, and Australia.

For Türkiye, the BIST-100 Composite Index was used for stock prices, and the data were obtained from the Central Bank of the Republic of Türkiye (CBRT), Electronic Data Delivery System (EDDS). For Brazil, the BOVESPA index was used for stock prices, the S&P-BMV IMEX index for Mexico's stock prices, the RTSI (IRTS) for Russia's stock prices, the S&P 500 index was used for the US's stock prices, the Dow Jones Italy Titans 30 index for Italy's stock prices, and the Dow Jones Australia index for Australia's stock prices.

In order to examine the relationship between the stock prices and CDS premium, Granger causality analysis was used. According to Çelik and Koç (2016), if and are stationarity time series, then the Granger causality model is as follows (Çelik and Koç, 2016, p. 37):

$$X_t = \sum_{i=1}^k \alpha_i X_{t-i} + \sum_{i=1}^k \beta_i Y_{t-i} + \varepsilon_t$$

$$Y_t = \sum_{i=1}^k \vartheta_i X_{t-i} + \sum_{i=1}^k \theta_i Y_{t-i} + \delta_i$$

Model 1

In the aforementioned Model 1, and are non-correlational white noise series. The Null hypothesis states that the Y variable is not the Granger cause of X and vice versa. If all parameters are equal to zero, the hypothesis stating that Y is not the Granger cause of X cannot be rejected. If all parameters are equal to zero, the hypothesis stating that X is not the Granger cause of Y cannot be rejected (Çelik & Koç, 2016, s. 37).

4. Empirical Implementation And Results

The logarithmic differences between the variables in the study were used. First, it was investigated whether the variables were stationary or not, as it is critical for the series to be stationary. Although the series are stationary over time, their variances are not stable (Altın, 2022, f. 9).

The series' stationarity was examined using Augmented Dickey-Fuller (ADF) Unit Test Results. In the study, only Türkiye's empirical tests were shown. For other countries, only the Granger causality test results were shown.

ADF Unit Root Test Results are given in the Table below. As shown in Table 1, the variables included in the study were discovered to be stationary based on their level values. Since the stock prices and CDS series both were stationary at the level, to investigate the causality relationship the Granger Causality Test was used in conjunction with the VAR method.

Table 1. ADF Unit Root Test Results

Variable	Intercept	Trend and Intercept	None
LHF (Level)	-12.38743 (0.0000)	-12.34981 (0.0000)	-11.87437 (0.0000)
LCDS (Level)	-12.99398 (0.0000)	-13.16384 (0.0000)	-13.03120 (0.0000)

The appropriate lag number was determined after the series' stationarity levels were determined. Information criteria were used when determining the lag number. In Table 2, the results regarding the appropriate lag number determined using the VAR model are given.

Table 2. The Determination of the Lag Number

Lag	LogL	LR	FPE	AIC	SC	HQ
0	306.5294	NA	6.74e-05	-3.929412	-3.890142*	-3.913461
1	313.0924	12.87204*	6.52e-05*	-3.962483*	-3.844673	-3.914631*
2	314.1681	2.081886	6.77e-05	-3.924749	-3.728399	-3.844996
3	315,9329	3.370260	6.97e-05	-3.895909	-3.621019	-3.784254

According to the information criteria of SC, HQ, FPE, AIC, and LR, the appropriate lag length was determined to be 1. The appropriate lag number that satisfies the model's stability condition and does not have an autocorrelation problem was determined to be 1. In the figure below, the VAR model, which is estimated with the lag number 1, the model's stability condition is satisfied

because the AR characteristic polynomial reciprocal roots are located within the unit circle.

Inverse Roots of AR Characteristic Polynomial

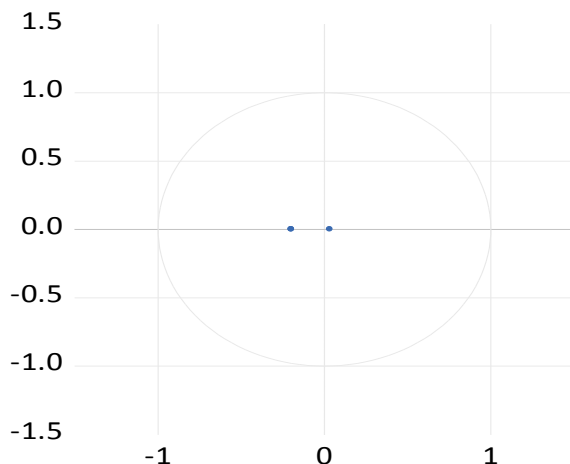


Figure1. AR Characteristic Polynomial Reciprocal Roots

The results of the serial correlation LM test, which was used to investigate if there was any autocorrelation in the lag to be used in the estimated VAR Model, are shown below.

Table 3. Serial Correlation LM Test

Lag Number	LRE* stat	Degrees of Freedom (DoF)	Probability	F-statistic	Degrees of Freedom (DoF)	Probability
1	3.607611	4	0.4617	0.904222	(4,312.0)	0.4617
2	1.444077	4	0.8365	0.360697	(4,312.0)	0.8365
3	1.534944	4	0.8204	0.383450	(4,312.0)	0.8204

According to the results of the serial correlation LM test, since the probability value in the second delay was greater than 0.05, there was no autocorrelation problem in the estimated model, as shown in Table 3.

Since the level values of the variables used in the study, which aimed to investigate the causality relationship between stock prices and CDS premium for Türkiye using the data from the period 2009 M1 - 2022 M8, was stationary, a VAR model-based Granger Causality Test was used to investigate the causality relationship. The estimated Granger Causality Test results using the appropriate lag number are given in Table 4.

Table 4. The Result of the Granger Causality Test Conducted for Stock Prices and CDS Premium for Türkiye

LHF			
	Chi-sq	sd	Probability
LCDS	0.018636	1	0.8914
All	0.018636	1	0.8914
LCDS			
	Chi-sq	sd	Probability
LHF	8.433478	1	0.0037*
All	8.433478	1	0.0037*

Note: *, **, and *** represent 1%, 5%, and 10% significance levels, respectively.

As can be seen in Table 4, the Null Hypothesis which can be expressed as there is no causality towards stock prices from CDS premiums according to the results of the Granger causality test, in other words, the hypothesis is accepted because the probability values are respectively 0.8914. However, when the model in which the CDS premium is the dependent variable is reviewed, the hypothesis which can be expressed as there is no causality towards CDS premium from the stock prices was rejected because the probability value was 0.0037. Therefore, we can conclude that the CDS premium for Türkiye is caused by stock prices. This result is significant because it demonstrates that investors have accepted that the stock market reflects the health status of the economy of the country in which it operates.

Table 5. The Result of the Granger Causality Test Conducted for Stock Prices and CDS Premium for Brazil

LHF			
	Chi-sq	sd	Probability
LCDS	2.086769	2	0.3523
All	2.086769	2	0.3523
LCDS			
	Chi-sq	sd	Probability
LHF	3.577698	2	0.1672
All	3.577698	2	0.1672

The estimated Granger Causality Test results using the appropriate lag number are given in Table 5. The causality relationship between Brazil's stock prices and CDS premium was examined using the Granger Causality test.

According to the Granger Causality Test results demonstrated in Table 5, the Null Hypothesis which can be expressed as there is no causality towards stock prices from CDS premiums, in other words, the hypothesis is accepted because the probability value is 0.3523. When the model in which the CDS premium is the dependent variable is reviewed, the hypothesis which can be expressed as there is no causality towards CDS premium from the stock prices was accepted because the probability value was 0.1672. Therefore, no causality relationship was found between stock prices and CDS premiums during the study period.

Table 6. The Result of the Granger Causality Test
Conducted for Stock Prices and CDS Premium for Mexico

LHF			
	Chi-sq	sd	Probability
LCDS	1.670760	1	0.1962
All	1.670760	1	0.1962
LCDS			
	Chi-sq	sd	Probability
LHF	0.066774	1	0.7961
All	0.066774	1	0.7961

The estimated Granger Causality Test results for Mexico using the appropriate lag number are given in Table 6. According to the causality test results given in Table 6, no relationship between the stock prices and CDS premium was found for Mexico.

Table 7. The Result of the Granger Causality Test
Conducted for Stock Prices and CDS Premium for US

LHF			
	Chi-sq	sd	Probability
LCDS	4.234451	1	0.0396
All	4.234451	1	0.0396
LCDS			
	Chi-sq	sd	Probability
LHF	1.241359	1	0.2652
All	1.241359	1	0.2652

Table 7 shows the estimated Granger Causality Test Results for the United States by calculating the appropriate lag length. According to the Granger Causality Test results demonstrated in Table 7, the Null Hypothesis which can be expressed as there is no causality towards stock prices from CDS premiums,

in other words, the hypothesis is rejected because the probability value is 0.0396. When the model in which the CDS premium is the dependent variable is reviewed, the hypothesis which can be expressed as there is no causality towards CDS premium from the stock prices was accepted because the probability value was 0.2652. Therefore, a causality relationship was found towards stock prices from CDS premiums.

Table 8. The Result of the Granger Causality Test
Conducted for Stock Prices and CDS Premium for Italy

LHF			
	Chi-sq	sd	Probability
LCDS	0.683197	1	0.4085
All	0.683197	1	0.4085
LCDS			
	Chi-sq	sd	Probability
LHF	3.310086	1	0.0689
All	3.310086	1	0.0689

Table 8 shows the estimated Granger Causality Test Results for Italy by calculating the appropriate lag length. According to the Granger Causality Test results, the Null Hypothesis which can be expressed as there is no causality towards stock prices from CDS premiums, in other words, the hypothesis is accepted because the probability value is 0.4085. When the model in which the CDS premium is the dependent variable is reviewed, the hypothesis which can be expressed as there is no causality towards CDS premium from the stock prices is rejected because the probability value is 0.2652. Therefore, during the study period, a causality relationship was found towards CDS premiums from stock prices for the US.

Table 9. The Result of the Granger Causality Test
Conducted for Stock Prices and CDS Premium for Australia

LHF			
	Chi-sq	sd	Probability
LCDS	0.510599	1	0.4749
All	0.510599	1	0.4749
LCDS			
	Chi-sq	sd	Probability
LHF	2.499532	1	0.1139
All	2.499532	1	0.1139

Table 9 shows the estimated Granger Causality Test Results for Australia by calculating the appropriate lag length. According to the Granger Causality Test results, the Null Hypothesis which can be expressed as there is no causality towards stock prices from CDS premiums, in other words, the hypothesis is accepted because the probability value is 0.4749. When the model in which the CDS premium is the dependent variable is reviewed, the hypothesis which can be expressed as there is no causality towards CDS premium from the stock prices was accepted because the probability value was 0.1139. Therefore, no causality relationship was detected between stock prices and CDS premiums for Australia during the study period.

Table 10. The Result of the Granger Causality Test
Conducted for Stock Prices and CDS Premium for Russia

LCDS			
	Chi-sq	sd	Probability
LHF	107.1136	3	0.0000
All	107.1136	3	0.0000
LHF			
	Chi-sq	sd	Probability
LCDS	1.574874	3	0.6651
All	1.574874	3	0.6651

Table 10 shows the estimated Granger Causality Test Results for Russia by calculating the appropriate lag length. The Granger Causality Test results revealed a causality relationship between CDS premiums and stock prices in Russia. However, no causality relationship was detected towards CDS premiums from stock prices.

5. Conclusion

The causality relationship between stock prices and CDS premiums in Türkiye, Brazil, Russia, Mexico, the United States, Italy, and Australia was examined using the Granger causality test and the VAR method in this study. The study period for Russia was 2009 M1-2022 M5 and 2009 M1-2022 M8 for other countries included in the study. Monthly data were used in the study. The results obtained will be given based on the countries. Accordingly, a one-way causality relationship was detected between Türkiye's stock prices and CDS premiums. This causality was directed towards the CDS premium from stock prices. A

similar result was observed in the Granger causality test results from Italy and Russia. These results are important in terms of demonstrating and suggesting that the stock indices, which are regarded as a barometer of a country's economy, can affect the CDS premiums. In other words, stock exchange indices provide investors and lenders with information about a country's economic situation, and investors and lenders shape their expectations about the said country's CDS premium in accordance with this signal. It was found that the results were compatible with the results obtained by Altuntaş and Ersoy (2020), Çelik and Koç (2016), Abid and Naifar (2006), Coronado et al. (2012), and Norden and Weber (2009).

When the Granger causality relationship between the US stock prices and CDS premium was examined, it was found that the relationship was towards stock prices from CDS premium. This result suggests that changes in CDS premiums in the US are reflected in stock prices in the US. This situation demonstrates that the information on CDS premiums for the US that enters the market is priced by the US stock market. This result shows that the US stock market is an efficient market according to the efficient-market hypothesis. In other words, it suggests that the country's CDS premiums should be monitored to estimate stock prices. The results are compatible with those of Bektur and Malcıoğlu (2017), Altuntaş and Ersoy (2020), and Çelik and Koç (2016).

These results can be interpreted as the stock markets of Türkiye, Italy, and Russia reflecting the information received, with changes in stock prices in the aforementioned countries expected to cause changes in CDS premiums. However, no causality relationship was detected between Brazil's, Australia's, and Mexico's stock prices and CDS premiums. This situation is consistent with some studies in the literature. For example, it was found that the results were compatible with the studies of Hancı (2014) and Fung et al. (2008).

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CHAPTER XII

COMPLAINTS ABOUT LOGISTICS SERVICES OF ONLINE MARKET FACILITIES: A CONTENT ANALYSIS

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1. Introduction

The competition between the sectors operating in road transport, which is one of the logistics modes, is increasing day by day. The main process subject to this competition is directly related to the increase in service diversity. Online market facilities, which have been on the rise in terms of service density all over the world, especially during the pandemic period, continue their activities at the same pace. On the other hand, it has been a matter of curiosity to what extent consumers can meet their expectations with service quality. At this point, it is possible to say that online market facilities perform both product supply and logistics activities as their main service. In terms of logistics activities, flexibility in road transport operations, just-in-time delivery and increasing e-commerce applications are changing customer expectations. In order to stay ahead of their competitors, logistics businesses need to continue to develop their road transport activities. However, online grocery stores have simplified their service tools considerably. The clearest example of this is the fact that they fulfill their obligations with digital software on invoices and waybills. This study has been tried to be analyzed with a survey conducted on 300 people who use GETİR(A), TRENDYOL(B), YEMEKSEPETİ(C) and market facilities, which are the online market facilities with the most intense service potential in Turkey over a 20-day period. Descriptive analysis technique

was used in the analysis of the data. Transparency was used during the analysis. The findings obtained in the study were analyzed according to the dimensions of the SERVQUAL scale (physical characteristics, reliability, responsiveness, trust, empathy), frequency value and percentage, and finally they were listed in two ways. It was observed that the most striking process in the study was in the sub-parameters of “readiness to help”, “on time delivery” and “sincere solution to the problem”.

2. Literature Review

2.1. Logistics Scope, Customer Satisfaction and Consumer Complaints

The logistics processes and the customer satisfaction process are a process that requires a lot of harmony (Dinçel, 2019). Logistics is to make a promise and keep one's word (Tek, 2012). Logistics processes are operational processes and include a series of processes (Çancı and Erdal, 2003; Dinçel, 2016). It is essential that these processes always cover customer satisfaction and respond to consumer expectations and requests (Küçük, 2011). At this point, logistics principles come into play and it is possible to explain that these principles require understanding the wishes and needs of customers (Dinçel, 2019). At the same time, logistics has recently started to cover small-volume and frequent services as well as large-volume and wide-ranging services (Buurman, 2002; Christopher, 2016). This situation creates a situation where customer complaints are frequent.

State of dissatisfaction that occurs as a result of not meeting the customer's expectation in the face of the purchased product or service. In other words, it is the negative feedback of customers regarding their dissatisfaction. Customer complaints provide many strategic opportunities and are beneficial for companies in improving customer relations (Zairi, 2000; Ferguson and Johnston, 2011). Losing customers is more than just a loss in future cash flows for businesses. These dissatisfied former customers can explain their feelings to their environment – sometimes exaggerating the situation in order to create individuals who think and feel like themselves – which may serve to damage the reputation of the business and to keep potential customers away from the business. It is known that unsatisfied customers are much more active and express their dissatisfaction to more people than satisfied customers report their satisfaction to the environment (Richins, 1983; Sheth, Mittal, & Bruce, 1999). It is also necessary to mention the importance of the concept of adrocracy in

customer complaints. The concept of adhocracy should also be included in the reverse logistics process. Adhocracy is a concept that supports individual initiative (Erdil Polat, 2017). In other words, it adopts a leadership model in which risk taking, personal progress is at the forefront and hierarchy is kept at a minimum level (Polat, 2017). Consumers are often disturbed by the adhocratic processes of companies.

Summarizes the main situations that have a significant impact on the emergence and formation of consumer complaints under the following headings:

Difficulty, cost or effectiveness of making a complaint,

Presence of alternative products,

Social values of the consumer,

How the consumer's response to the relevant situation is interpreted by the business,

The extent of the situation causing dissatisfaction, the degree of importance perceived by the consumer.

3. Research Methodology

3.1. Purpose and Method of Research

When the literature is searched for this research, it is seen that there are similar studies. Accordingly, examining customer complaints about logistics services (Bottani and Rizzi, 2006; Kayabaşı, 2010; Faed, 2013; Çağlar, 2014; Karadeniz and Işık, 2014; Karadeniz and Çuhadaroglu, 2016; Rajendran, 208; Kerse, 2019; Erdem and Akolaş, 2020; Vasic et al., 2021; Çetinkaya, 2022; Gamze and Peker, 2022) drew attention to this issue. It was observed that the companies GETİR, TRENDYOL and YEMEKSEPETİ examined the studies (Çakarız and Civek, 2021; Kıran et al., 2021; Demirtaş, 2022; Güven, 2022; Erdoğan, 2022; Ata et al., 2022) after the market facilities started.

This research aims to reveal the problems and find solutions by analyzing the consumer complaints about the online market facilities GETİR, TRENDYOL and YEMEKSEPETİ in Turkey.

this research, while coding the complaints arising from the logistics service, the dimensions in the SERVQUAL scale developed by "Parasuraman et al." in 1988 were taken as a basis for the measurement of service quality. Complaints in the study; physical characteristics, reliability, responsiveness, trust and empathy dimensions were taken into consideration, categorized and made suitable for content analysis. The analysis was carried out in a very transparent way.

Survey technique was used as a data collection tool in the research conducted on 300 people, and it was made among people living in Istanbul and having experience of using these services more than once. The companies examined in the research were carried out through the 3 most widely used online market facilities in Turkey. In the research conducted for the analysis, the number of scales consisting of 100 people for each company is the number of scales observed in similar studies, and it was seen that it gave significant results in similar studies. This study can also be considered as a preliminary study form for a detailed statistical analysis. The analysis of the study was analyzed with the SPSS 25.0 program.

3.2. Importance of Research

The importance of this research is to understand and categorize the online market facilities GETİR, TRENDYOL and YEMEKSEPETİ the market, and to provide results that increase the satisfaction of the parties in all aspects.

3.3. Scope and Limitations of the Research

The scope of this research consists of 3 companies that come to mind first when it comes to online market service in Turkey. The limitation of the research is the complaints that were answered in the survey conducted in January 2023.

3.4. Findings of the Research

In the analysis of the data, descriptive analysis techniques were used in general and the frequencies and percentage distributions of the data were examined in the tables. According to this; The findings obtained from the research are as follows according to the dimensions of the SERVQUAL measure scale.

3.4.1. Physical Properties

Physical properties in the study; clothing, equipment, forms and documents were examined with their sub-dimensions. The results obtained will first be shown in the company breakdown, then the total frequency distribution of the three companies will be included. For this purpose, GETİR has been designated as “A” company, TRENDYOL as “B” and YEMEKSEPETİ as “C”.

Accordingly, the results obtained are as follows;

Table 1: Physical Characteristics (Clothes)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	3	96	100%
<i>B</i>	5	98	100%
<i>C</i>	2	97	100%
<i>Total</i>	10	290	300
<i>Percentage (%)</i>	3.33%	96.67%	100%

Considering the physical characteristics of the clothing sub-dimension; c It is seen that only 3.33% of the employees complain about their clothes.

Table 2: Physical Properties (Equipment)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	3	97	100%
<i>B</i>	5	95	100%
<i>C</i>	2	98	100%
<i>Total</i>	10	290	300
<i>Percentage (%)</i>	3.33%	96.67%	100%

Considering the equipment sub-dimension from physical properties; It is observed that 3.33% of complaints are made regarding the equipment used in online market service companies.

Table 3: Physical Properties (Digital Forms and Documents)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	1	99	100%
<i>B</i>	7	93	100%
<i>C</i>	2	98	100%
<i>Total</i>	10	290	100%
<i>Percentage (%)</i>	3.33%	96.67%	300

Considering the sub-dimension of digital forms and documents from physical properties; A 3.33% complaint was seen regarding the forms and documents used in all three companies.

3.4.2. Reliability

Reliability in the study; The sub-dimensions of providing the service as promised on time, seeking sincere solutions to the problems encountered, and error-free company information were examined. Accordingly, the results obtained are as follows;

Table 4: Reliability (Timely Delivery, Keeping Promise)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	19	81	100%
<i>B</i>	24	76	100%
<i>C</i>	39	61	100%
<i>Total</i>	82	218	300
<i>Percentage (%)</i>	27.33%	72.67%	100%

Considering the comments regarding the delivery of the service, which is one of the sub-dimensions of reliability, on time as promised, it is seen that this point was mentioned in 27.33 % of the complaints.

Table 5: Reliability (Intimate Solution to the Problem)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	46	54	100%
<i>B</i>	41	59	100%
<i>C</i>	52	48	100%
<i>Total</i>	139	161	300
<i>Percentage (%)</i>	46.33%	53.67%	100%

sincere solutions of the employees to the problems they encounter, which is one of the sub-dimensions of reliability, are examined, it is seen that 46.33 % of them have complaints and 53.67% of them have no complaints about this issue.

Table 6: Reliability (Accuracy of Company Information)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	17	83	100%
<i>B</i>	16	84	100%
<i>C</i>	17	83	100%
<i>Total</i>	50	250	300
<i>Percentage (%)</i>	16.67%	83.33%	100%

According to the comments received from the customers, which is one of the sub-dimensions of reliability, regarding the error-free company information in the services they receive, it is seen that there are complaints at the rate of 16.67%, while there are no complaints at the rate of 83.33%.

3.4.3. Responsiveness

In the study, responsiveness was examined with the sub-dimensions of employees' readiness to help, timely delivery of services and good service provision. Accordingly, the results obtained are as follows;

Table 7: Responsiveness (Readiness to Help)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	64	36	100%
<i>B</i>	62	38	100%
<i>C</i>	68	32	100%
<i>Total</i>	194	106	300
<i>Percentage (%)</i>	64.67%	35.33%	100%

Regarding the willingness of employees, one of the sub-dimensions of responsiveness, 64.67% had customer complaints, while 35.33% did not have any complaints. It is observed that there is a balanced distribution.

Table 8: Responsiveness (Timely Delivery)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	43	57	100%
<i>B</i>	39	61	100%
<i>C</i>	67	33	100%
<i>Total</i>	149	151	300
<i>Percentage (%)</i>	49.67%	50.33%	100%

Regarding the timely delivery of services, which is one of the sub-dimensions of responsiveness, 49.67% of customer complaints are seen, while 50.33% of them are not. It is noteworthy that the complaints for company C are quite high compared to companies A and B.

Table 9: Reliability (Providing Good Service)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	15	85	100%
<i>B</i>	18	82	100%
<i>C</i>	17	83	100%
<i>Total</i>	50	250	300
<i>Percentage (%)</i>	16.67%	83.33%	100%

While it was observed that 16.67% of customers made complaints about the provision of good service by employees, which is one of the sub-dimensions of responsiveness, no complaints were found at the rate of 83.33%.

3.4.4. Trust

In the study, the sub-dimensions of trust, c trust in the employees, c courtesy of the employees, knowledge of the employees and feeling of confidence of the customers in their relations with the company were discussed. According to this; The results obtained are as follows.

Table 10: Trust (Trust in Employees)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	23	77	100%
<i>B</i>	45	55	100%
<i>C</i>	28	72	100%
<i>Total</i>	96	204	300
<i>Percentage (%)</i>	32.0%	68.0%	100%

Considering the trust in company employees, which is one of the sub-dimensions of trust, it is observed that 32% of the customers complain about this issue, while 68% do not have any complaints.

Table 11: Confidence (Courtesy)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	21	79	100%
<i>B</i>	20	80	100%
<i>C</i>	16	84	100%
<i>Total</i>	57	243	300
<i>Percentage (%)</i>	19.00%	81.00%	100%

It is observed that 19% of the customers complain about whether the company employees show courtesy to the customers, which is one of the sub-dimensions of trust, while 81% of them do not complain.

Table 12: Confidence (Employee Knowledge)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	16	84	100%
<i>B</i>	15	85	100%
<i>C</i>	13	87	100%
<i>Total</i>	44	256	300
<i>Percentage (%)</i>	14.67%	85.33%	100%

% Of the customers complained about the sub-dimensions of trust, that the company employees have sufficient information about the work they do, 85.33% of them did not complain.

Table 13: Trust (Customers Feeling Safe)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	20	76	100%
<i>B</i>	11th	88	100%
<i>C</i>	41	64	100%
<i>Total</i>	72	228	300
<i>Percentage (%)</i>	24.00%	76.00%	100%

Regarding the sub-dimensions of the trust dimension, about the customers feeling safe while receiving service from the company, it is seen that 76% of the customers feel safe, while 24% do not feel safe and complain about it. At the same time, it was seen that while company B received 11 complaints on this issue, company C received 41 complaints.

3.4.5. Empathy

In the study, as a sub-dimension of empathy, the findings regarding customer complaints about the service hours of online market facilities are as follows.

Table 14: Empathy (Hours of Service)

Company	Have Complaint (f)	No complaints (f)	Total (f)
<i>A</i>	13	87	100%
<i>B</i>	14	86	100%
<i>C</i>	27	73	100%
<i>Total</i>	54	246	300
<i>Percentage (%)</i>	18.00%	82.00%	100%

When the complaints about the service hours in the comments made by the customers are examined, it is seen that 18% of the complaints about the service hours are mentioned. At a rate of 82%, it is seen that there are no complaints about service hours.

3.4.6. Summary Table of Customer Complaints

According to the findings obtained from the study, the complaints rates of the customers are summarized in the table below.

Table 15: Ranking of Customer Complaints by Frequency

<i>Subject of the Complaint</i>	Number of Complaints (f)	Percentage (%)
Being Ready to Help	194	64.67%
On Time Delivery	149	49.67%
Sincere Solution to the Problem	139	46.33%
Trust in Employees	96	32%
On Time Delivery, Keeping Your Promise	82	27.33%
Customers Feeling Confident	72	24%
Kindness	57	19%
Providing Good Service	50	16.67%
Error - Free Company Information	50	16.67%
Knowledge of Employees	44	14.67%
Service Hours	54	18%
Equipment	10	3.33%
Clothes	10	3.33%
Forms and Documents	10	3.33%

3.4.6. Summary Table of Customer Complaints Regarding A,B,C Companies

According to the findings obtained from the study, the number of complaints and rates of customers are summarized in the table below according to the companies.

Table 16: Summary Table of Customer Complaints Regarding A,B,C Companies

Subject of the Complaint	Number of Complaints(f)	Percentage (%)
Company A	304	29.9%
Company B	322	31.7%
Company C	391	38.4%
Total	<i>1017</i>	100%

4. Conclusion and Evaluation

They are organizations that serve very frequently in terms of timing of online market facilities. Therefore, the fact that they provide too many services causes them to receive too many comments about these services. In this respect, it is very important that consumer complaints are resolved quickly and clearly for

the continuity of sales service. Especially after online market facilities became popular, door-to-door logistics service has become a service that requires more attention than a cargo logistics service in terms of quality. For this, evaluating customer expectations and requests within the framework of a service quality was deemed necessary in terms of contributing to the academic literature.

Online grocery services also provide logistics services. At this point, encouraging academic studies to evaluate the logistics service quality in a separate category from the point of view of the customer constituted the starting point of this study. In the survey study conducted with only consumers, it was seen that “customers have difficulty in evaluating logistics services separately”. Because customers stated that it would be correct to evaluate the service quality of online market service services as a whole.

Empathy from the SERVQUAL scale dimensions, which were made on 300 people. With this study, which is carried out with survey questions, suggestions are made for online market service companies to provide more effective and efficient logistics services to their customers. In this direction, according to the results obtained from the research;

About the clothing of the company personnel, which is one of the sub-dimensions of physical characteristics, about the suitability of the equipment used by the service provider companies during the service, and about the forms and documents used by the company during the service. In this respect, it can be said that a very low-level complaint of 3.33% was observed in the environment related to Physical Characteristics.

%27.33 complaint rate is observe regarding the fulfillment of the services, which is one of the sub-dimensions of trust, as promised, rather the company C's employees approach in a sincere and helpful manner or not, in order to find a solution to any problem that the customers encounter while obtaining service. Complaint behavior was observed at a rate of 46.33% regarding their complaints. In the comments made, it was observed that the customers complained at a rate of 16.67% regarding the fact that the company information they received service from was error-free. Accordingly, an average of 30.11% complaints about reliability were observed.

Regarding whether the company personnel, which is one of the responsiveness sub-dimensions, are ready to help, 64.67% of the customers stated that the company's employees are not ready to help in case of any problem. It was stated that 49.67 % of the customers complained about the products not being delivered on time. On the subject of whether the company

provides good service or not, the customers stated that 16.67 % did not provide good service and they complained about this issue. Accordingly, an average of 43.67% complaints about responsiveness were observed.

Regarding the trust in the employees of the company, which is one of the sub-dimensions of the assurance, 32% of the customers stated that they did not trust the employees and complained about it. 19% of customers also stated that employees of C do not treat them kindly. 14.67% of the customers stated that the employees of the company they receive service from are not knowledgeable about the subject they serve. 24% of the customers stated that they do not feel safe with the company they receive service from. Accordingly, an average of 21.89% complaints was observed in the assurance dimension.

It has been observed that 18% of the customers are not satisfied with the hours of service of the firm, which is one of the sub-dimensions of empathy, and complain about it. Accordingly, 18% complaints were observed in the empathy dimension.

In this respect, it was stated that the most complaints were in the stages of “ready to help” 64.67%, “on time delivery” 49.67%, and “sincere solution to the problem” 49.33%. In addition, the most complaints were observed in the YEMEKSEPETİ(C) Online Market with a rate of 38.4%. Afterwards, it was observed in TRENDYOL(B) Online Market with 31.7% and GETİR(A) Online Market with 29.9%. Finally, this study can be applied in new studies by expanding the statistical model, increasing the constraint level and updating it in terms of time.

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CHAPTER XIII

PHH (POLLUTION HAVEN HYPOTHESIS): AN ANALYSIS FOR SELECTED EURASIAN COUNTRIES

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Global trade has expanded rapidly over the past few decades. This increased trade has had an increasing effect on resource flows and pollutant transfers among countries. Environmental problems caused by pollutant transfers make people worry about increased trade (Zhang & Wang, 2021). The continuous increase in the trade volume has brought the phenomenon of trade liberalization. In addition to the liberalization of trade, the free movement of capital has revealed the necessity of re-discussing environmental problems. Some argued that free trade and economic growth would increase the quality of the environment after a certain period of time. This argument has its origin in EKC (Environmental Kuznets Curve) (Aliyu, 2005), which is based on the study of Kuznets (1955). EKC expresses the relationship between environmental pollution and per capita income. There is an inverted U-shaped relationship between these two variables. That is, as income increases, environmental pollution increases up to a certain point and then decreases (Dinda, 2004).

In recent years, the competition caused by globalization has brought about sustainable growth discussions for countries. The concept of sustainable growth represents a dilemma for developing economies. This dilemma covers the choice between environmental quality and economic growth. In other

words, developing economies will either emphasize environmental standards and give up on economic growth, or they will turn a blind eye to the pollution of the environment for economic growth. As a result of the discussions on environmental problems coming to the agenda on a global scale, it was emphasized that environmental problems cannot be handled independently from economic development and social factors, and the dimensions and direction of the interrelationships of these factors should be examined as a whole (Arslan Gürdal, 2022).

In addition to EKC, PHH is also discussed in the literature on economics.. PHH refers to the transfer of polluted industries from developed to developing economies through international trade and FDI (foreign direct investment). This phenomenon results from the comparative cost advantage that developing economies have due to their lower pollution controls. In short, while developing economies tend to specialize and export dirty goods, developed economies tend to specialize and export clean goods. As a result, developing economies become pollution havens for the dirty industries of developed economies (Gill et al., 2018). It is possible to list the factors that cause developing economies to turn into pollution haven as follows: First, although the awareness of clean air and water is high in developed economies, the sensitivity of this issue is less in developing economies, and the production that contributes to income increase in these countries is more important than environmental pollution. Secondly, the high relative cost of monitoring and implementing the pollution standard in developing economies causes the restrictions on this issue to be ignored. The size of the informal sector is another factor that leads to an increase in industrial production that causes pollution in developing economies (Dietzenbacher & Mukhopadhyay, 2007).

In this study, the theoretical background and literature on PHH was discussed. In addition, the validity of PHH for 5 Eurasian countries was analyzed using panel data analysis.

2. Theoretical Background

It is important to establish effective environmental policies in order to reveal environmental problems in the world and to eliminate these problems. In this context, international collaborations have been established. One of these collaborations is the United Nations Framework Convention on Climate

Change, which was signed in June 1992 at the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil. In 1997, the Kyoto Protocol was signed by 192 countries (Pehlivanoglu ve Solmaz, 2021).

Globalization movements have led to an increase in foreign trade among countries, which has also started the industrialization process necessary for economic growth. Infrastructure and technology are important elements in the industrialization process. The establishment of these elements in the country depends on FDI. Especially developing economies have made some of their environmental regulations flexible in order to attract FDI, which has an important place in the industrialization process. These flexible regulations cause environmental pollution. When this situation is evaluated, industries that cause environmental pollution move from countries with strict environmental standards to countries with flexible environmental standards. Countries where industries that cause pollution move due to flexible environmental standards are called pollution havens (Karluk, 2009).

FDI has had an important place in the global economy since the early 1990s. In general, although the positive effect of FDI on economic growth is at the forefront, it is seen that it has a controversial research area on environmental quality. Discussions on this subject are shaped on two opposing theories, namely PHH and the Pollution Halo Hypothesis (Mike & Kardaşlar, 2018). FDI has positive contributions to the development processes of developing economies. However, in recent years, besides this positive opinion, the opinion that the basis of environmental degradation in developing economies is constituted by FDI has come to the fore. This view is called PHH in the literature. According to this view, developing economies are seen as countries where investment should be directed not only in terms of cheap labor and cheap raw material opportunities, but also in terms of more flexible environmental policies for multinational companies engaged in production activities in developed economies. Because the intense environmental regulation policies in developed economies reduce the commercial competitive advantage of these companies. Therefore, especially polluting industries are transferred from developed to developing economies, increasing environmental degradation in developing economies. On the other hand, it is known that there are opinions suggesting that FDI provides environmentally friendly technologies to developing economies and reduce environmental pollution. This view stating that FDI reduces environmental degradation in developing economies is called the Pollution Halo Hypothesis (Yıldırım et al., 2017).

The three dimensions of PHH are as follows: (Aliyu, 2005);

- Highly polluted industries are moving from developed economies with strict environmental regulations to developing economies with flexible environmental regulations.
- Bringing hazardous wastes from industrial and nuclear energy production from developed economies to developing economies.
- The extraction of non-renewable resources such as oil, petroleum derivatives and forest resources in developing economies without any restrictions by international companies.

In general, when foreign direct capital investments and the environment are evaluated together, it is seen that two opposite hypotheses emerge for developing countries in the literature. The first of these hypotheses is PHH. This hypothesis reveals that foreign direct capital investments will increase environmental deterioration in developing economies. Because foreign direct capital investments will enable dirty industries or dirty technologies to transfer from developed economies to developing economies. The reason for this is that environmental regulations of developing economies are flexible in order not to give up economic growth. The second hypothesis is the Pollution Halo Hypothesis. This hypothesis also advocates the opposite of PHH. The Pollution Halo Hypothesis emphasizes that foreign capital investments will bring environmentally friendly technologies to developing economies. In other words, while in PHH, direct foreign capital increase causes environmental degradation in developing economies, it is revealed that foreign capital investments will encourage environmental improvement in the Pollution Halo Hypothesis.

3. Literature

In Table 1, some studies related to PHH are given. Among the studies reviewed, Firoj et al. (2022), Shao et al. (2019) and Rasit & Aralas (2017)'s studies provided findings accepting PHH.

Table 1: Summary of Literature

Author	Period	Country	Method	Result
Firoj et al. (2022)	1986-2018	Bangladesh	The autoregressive distributed lag (ARDL) approach	PHH isn't valid.
Tayyar (2022)	1990-2019	Turkey	The Johansen-Juselius test Toda-Yamamoto tests The ector error correction model	PHH is valid.
Temurlenk & Lögün (2022)	1974-2017	Turkey	The nonlinear autoregressive distributed lag	PHH is valid.
Wen et al. (2022)	2000-2020	BRICS Countries	PMG/PARDL Model	PHH is valid.
Yakubu & Musah (2022)	2000Q1-2017Q4	Ghana	The fully modified least squares	PHH is valid.
Benli & Acar (2021)	1992-2017	Middle income countries OECD countries	A two-step system GMM dynamic panel data estimator	PHH is valid in middle income countries.
Benzerrouk et al. (2021)	1980-2016	31 developed economies 100 developing economies	The system Generalized Moments Method	PHH is valid in developing economies.
Pehlivanoğlu & Solmaz (2021)	1990-2015	BRIC Countries MIST Countries	The generalized method of moments System generalized method of moments	PHH is valid.
Singhannia & Saini (2021)	1990-2016	21 developed and developing economies	The generalized method of moments System generalized method of moments	PHH is valid, especially in developing economies.

Guzel & Okumus (2020)	1981-2014	ASEAN-5 countries	The panel data analysis	PHH is valid,
Terzi & Pata (2020)	1974-2011	Turkey	Toda-yamamoto causality test Augmented Granger causality method	PHH is valid.
Rahman et al. (2019)	1975-2016	Pakistan	A non-linear autoregressive distribution lag approach	PHH is valid.
Shao et al. (2019)	1982-2014	BRICS countries MINT countries	A panel vector error correction model Panel co-integration test	PHH isn't valid.
Rasit & Aralas (2017)	2000-2010	ASEAN Countries OECD Countries	The panel data analysis	PHH isn't valid.
Solarin et al. (2017)	1980-2012	Ghana	The autoregressive distributed lag method	PHH is valid.
Sun et al. (2017)	1980-2012	China	The Autoregressive Distributed Lag Cointegration approach	PHH is valid.
MacDermott (2009)	1982-1997	26 OECD countries from	The panel data analysis	PHH is valid.
Akbostancı et al. (2007)	1994-1997	Turkey	The panel data approach	PHH is valid.

4. Method, Model & Dataset, Empirical Findings

4.1. Method

PHH depends on the differences in the environmental regulation policies of developed and developing economies. According to this hypothesis, while the production of the polluting sector is abandoned in developed economies, developing economies specialize in the manufacturing sectors with the highest

pollution intensity. In other words, due to restrictions on environmental regulations, pollution-intensive industries are shifted to countries with less power in international competition where these restrictions are minimal. In short, these countries are turning into pollution havens (Wagner & Timmins, 2009; Cole, 2004). Due to globalization, foreign trade barriers among countries are eliminated. In addition, the formation of environmental awareness in developed economies has caused the production in dirty industries to shift to developing economies.

In this study, PHH was tested for 5 Eurasian countries (Russia, Kazakhstan, Belarus, Uzbekistan, Azerbaijan). The reason for choosing these countries is that they receive the most FDI among the Eurasian countries. In addition, another reason for the selection of these countries is that the data received from the World Bank and BP database is not missing. In the study, panel data analysis method was used by creating a panel data set and annual data for the period 1992-2021 were used. In the analysis, *CO2* emission was included as dependent variable, while real income per capita, square of real income per capita, energy consumption, FDI and population were included as explanatory variables. In the study investigating the effect of the change in these explanatory variables on the dependent variable, firstly, the stationarity of the series was tested with panel unit root tests. The stationarity of the series was tested with the horizontal section extended Dickey Fuller (CADF) test. Then, the Westerlund (2008) Durbin Hausman method was used to determine whether there is cointegration among the series. After applying the cointegration test, the PDOLS method was used to estimate the final and unbiased coefficients of this relationship.

Panel data refers to bringing together the cross-sectional observations of units such as individuals, countries, companies, households in a certain time period (Baltagi, 2005). In statistical analyzes, the data are examined in three different groups, consisting of time, cross-section and a combination of these two data sets. Panel data analysis is called mixed data consisting of monitoring the same cross-section unit over time (Gujarati, 2004). There are two different panel data sets, balanced and unbalanced, resulting from the differences in the time series in these cross-sectional units. Panel data sets containing equal length time series for each section are called balanced panels, and if they contain time series with different lengths, they are called unbalanced panels.

There are differences between cross-sectional data, time series data and panel data sets. Cross-sectional data consists of observations made on many units, observing variables such as each individual, company and country once.

The data set that includes daily, weekly, monthly, quarterly or annual time periods is called time series data. Panel data is defined as the pooling of observations in vertical (time) and horizontal sections of data belonging to individuals, firms, countries, institutions or companies. In other words, panel data set, also called mixed data, consists of a combination of cross-section and time series data

4.2. Model & Dataset

In the study, the effect of income, energy consumption, FDI and population growth on CO2 emissions between 1992 and 2021 for 5 Eurasian countries (Belarus, Kazakhstan, Uzbekistan, Russia, Azerbaijan) and the validity of PHH were examined. For this purpose, the regression equation, in which CO2 emission was taken as the dependent variable, was formed as follows:

$$\ln CO2_{it} = \alpha_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{it}^2 + \beta_3 EC_{it} + \beta_4 \ln FDI_{it} + \beta_5 \ln URBAN_{it} + \varepsilon_{it}$$

Information about the variables used in the equation is given in Table 2. α_0 and ε_{it} represent the constant term and the error term, respectively. The coefficients $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ express the CO2 emissions elasticity according to per capita real income, per capita real income squared, energy consumption, foreign direct (FDI) investments and urbanization. The β_3 coefficient is expected to be positive, as it is theoretically expected that an increase in energy consumption will increase CO2 emissions. The coefficient of β_4 can be positive or negative, as there are two opposing hypotheses related to FDI, the pollution haven and the pollution halo hypothesis. The natural logarithms of all variables used were taken.

Table 2: Abbreviations of Variables

Variables	Definition	Source
LCO2	Carbon emission per capita	BP, 2023
LGDP	Real GDP per capita (in 2010 \$ prices)	WB, 2023
LGDP2	Real GDP per capita (in 2010 \$ prices)	WB, 2023
LEC	Energy use per capita (kg oil equivalent)	WB, 2023
LFDI	FDI per capita (in 2010 \$ prices)	WB, 2023
LURBAN	Urbanization (Urban population/total population)	WB, 2023

4.3. Empirical Findings

The empirical analysis was completed in two stages. In the first stage, the stationarity of the series was examined by unit root analysis and in the second stage, the long-term relationship was tested with cointegration analysis. In order to determine the appropriate unit root analysis in panel data analysis, first of all, cross-sectional dependence and homogeneity tests should be performed. Because if there is a cross-sectional dependence in the series, first generation unit root tests do not take this into account. Therefore, second-generation tests should be used. Homogeneity tests, on the other hand, were used in the selection of cointegration tests and estimation methods according to whether the constant or slope parameters are homogeneous/heterogeneous.

The stationarity of the series was determined by unit root tests. The unit root tests were divided into two groups as first generation unit root tests and second generation unit root tests. The cross-sectional dependence was taken into account in determining which of these tests to use. Different tests were performed to determine the cross-sectional dependence. While selecting these tests, the time and unit size of the panel data were taken into account. In the literature, “LM test, Pesaran CD test, NLM tests” are frequently used in the detection of the cross-sectional dependence. In this study, CD Test developed by Pesaran was used because the time dimension is larger than the unit size ($T > N$) (Yerdelen Tatoğlu, 2020). The cross-sectional dependence results are given in Table 3.

Table 3: Cross-Sectional Dependence CD Test Results

Variables	CD	p-value
LCO2	15.553	0.000
LGDP	16.787	0.000
LGDP2	15.747	0.000
LFDI	7.173	0.000
LEC	4.863	0.000
LURBAN	2.780	0.005

Table 3 shows the “Pesaran CD Test” results for the cross-sectional dependence. According to the results, the basic hypothesis expressing inter-unit cross-sectional dependence was rejected. There was an inter-unit cross-sectional dependence among the variables. The results obtained were statistically significant at the 1% and 5% level. The unit root test to be used in cases where

the cross-sectional dependence is present are the second generation unit root tests, which include “MADF, SURADF, CADF and CIPS” unit root tests.

The situation in which the mean, variance and covariance of a time series do not change in a certain time indicates stationarity. In other words, stationarity shows the situation where the statistical properties of the series do not change over time. The stationarity test of the series is tested with unit root tests. It shows that the variables are not stationary if the series contain a unit root. Doing econometric analysis with a non-stationary series will cause misleading results and spurious regression problem in the model (Engle & Granger, 1987). Therefore, at this stage of the study, stationarity tests will be carried out with panel unit root tests and the results obtained will be included. In this study, CADF Panel Unit Root Test was used to test the stationarity of the series, and the CADF values are given in Table 4.

Table 4: Pesaran (2007) CADF Unit Root Test Results

Variables	Level		First difference		
	Z (t-bar)	p-value	Variables	Z (t-bar)	p-value
LCO2	0.448	0.673	Δ LCO2	-2.731	0.003
LGDP	-1.147	0.126	Δ LGDP	-4.071	0.000
LGDP2	-1.147	0.126	Δ LGDP2	-2.108	0.001
LFDI	-0.474	0.318	Δ LFDI	-8.417	0.001
LEC	1.356	0.912	Δ LEC	-4.307	0.000
LURBAN	-0.245	0.403	Δ LURBAN	-4.065	0.000

According to the results of the Pesaran (2007) CADF unit root test in Table 4, when the variables of 5 Eurasian countries are examined, it is concluded that the level is not stationary because the probability values are greater than 0.05. All variables greater than 5% indicate that the series has a unit root. After taking the first difference of the non-stationary variables, it was determined that the probability values were less than 0.05, that is, they were stationary. Since the unit root test results presented in Table 4 showed that the variables in the model are I(1), the panel data analysis was continued with cointegration tests to test whether there is a cointegration relationship among these variables.

In order to determine the cointegration test, it is necessary to determine whether there is a cross-section dependence in the model and whether the model is homogeneous or not. For this, Breusch & Pagan LM tests were applied to the model first. Breusch & Pagan LM test results are given in Table 5.

Table 5: Breusch & Pagan LM test

	statistics	p-value
LM	197.5	0.000
LM_{ajd}	108.7	0.000
LM_{CD}	14.03	0.000

According to the results of the Breusch & Pagan LM test in Table 5, when the time dimension is greater than the unit size in the panel ($T > N$), it is appropriate to use the Breusch & Pagan (1980) LM test. “H0 hypothesis: no cross-sectional dependence” was strongly rejected for both variables and panel model at 1% significance level, while “H1 hypothesis: there is a cross-sectional dependence” could not be rejected. There is a cross-sectional dependence in the model, so the cointegration test should be continued with second generation tests that take into account the cross-sectional dependence. For the selection of the second generation cointegration tests to be preferred, it is necessary to determine whether the slope parameters (β_1 , β_2 and β_3) are homogeneous according to the units (Doğanay & Değer, 2017). The first studies to determine whether the slope parameters in the panel cointegration equation are homogeneous or not were carried out by Swamy (1970) (Koçbulut & Altıntaş, 2016). Swamy S homogeneity test results are given in Table 6 to determine the homogeneity of the model.

Table 6: Swamy S Homogeneity Test

Swamy S	
chi2(24) = 14.84	Prob < chi2 = 0.9253

According to the results of the homogeneity test, the probability values were greater than 5% for all country groups. Accordingly, it was decided that the slope coefficients were homogeneous for each country group. Since all models were homogeneous and there was a correlation, the analysis continued with the Westerlund (2008) Durbin-Hausman cointegration test, which can be applied to both homogeneous and heterogeneous panels as a cointegration test. Durbin-Hausman panel statistics are based on homogeneity in the panel. In calculating the test statistics, the following hypotheses are tested for the units that make up the panel:

H0: There is no cointegration relationship in the whole panel.

H1: There is a cointegration relationship for the panel.

Westerlund cointegration test, which includes 4 cointegration tests (Ga, Gt, Pa, Pt) and is based on the error correction model, uses the bootstrap version to

test the existence of a long-term relationship among the variables. Pa and Pt tests, which are considered more reliable, are used when the panel is homogeneous. These tests are based on error corrections in the horizontal section of the panel (Tatoğlu, 2020). Westerlund (2008) Durbin Hausman panel cointegration test, one of the second generation panel cointegration tests, was preferred for panel cointegration because homogeneity was determined by the Swamy S test and cross-sectional dependence was determined as a result of the Breusch &Pagan LM test. The H0 hypothesis states that there is no cointegration and the H1 hypothesis states that there is cointegration. In the study, it is necessary to interpret the resistive probability values, taking into account the cross-sectional dependence and homogeneity. For this reason, the results of the Westerlund (2008) panel cointegration test were determined by calculating the bootstrap critical values, and the analysis results for 5 Eurasian countries are given in Table 7 in the form of “Robust P-value”.

Table 7: Cointegration Analysis Results of Homogeneous Models

Model-1	p-değer	Rob P-değeri
pt	-0.352	0.000
pa	-0.999	0.000

Table 7 Durbin-H cointegration test results are given as robust p-value (robust value) by calculating the valid bootstrap critical values in the presence of cross section inter-units. According to the results, the H0 hypothesis for Model-1 was rejected, and it was determined that there was a cointegration relationship. In other words, as a result of the cointegration analysis, it was observed that CO2 and real income per capita, the square of real income per capita, energy consumption, FDI and urbanization rate move together in the long run. Table 8 shows the long-term PDOLS estimation results of the cointegration relationship for homogeneous models of 5 Eurasian countries.

Table 8: PDOLS Estimator Results

Model-1	Coefficient	P value
Δ LGDP	4635.172	0.155
Δ LGDP2	-2318.115	0.155
Δ LFDI	0.0771	0.022
Δ LEC	0.55624	0.000
Δ LURBAN	0.11187	0.000

Table 8 shows the estimation of the long-term relationship between ΔLCO2 and ΔLGDP , ΔLGDP2 , ΔLFDI , ΔLEC , ΔLURBAN variables using PDOLS. ΔLCO2 and ΔLGDP do not affect the ΔLCO2 variable since the estimated long-term P-value of ΔLGDP2 is greater than 0.05. However, ΔLFDI , ΔLEC and ΔLURBAN affect the ΔLCO2 variable in the long run because the predicted p value is less than 0.05. According to the results of the PDOLS estimator, it was observed that the long-term coefficients of the ΔLFDI , ΔLEC , ΔLURBAN variables were statistically significant and had a positive effect on the dependent variable, LCO2. Accordingly, it was determined that the coefficients of the explanatory variables show parallel results with the theoretical expectation. According to the PDOLS results, the long-term parameter of energy consumption and carbon emission was calculated as 0.55. Accordingly, 1 unit increase in energy consumption causes an increase of 0.55 units in carbon emissions, 1 unit increase in urbanization rate causes an increase of 0.11 units in carbon emissions, and 1 unit increase in FDI causes an increase of 0.07 units on carbon emissions. As seen in Table 8, the impact power of energy consumption on carbon emissions is higher than other variables.

In the studies, it is stated that the possible effects of FDI, which are frequently used as international trade parameters, on environmental pollution occur through two different channels, positive and negative. In this study, it was concluded that FDI has a significant and positive effect on carbon emissions for 5 Eurasian countries, while FDI, energy consumption and urbanization have a detrimental effect on environmental quality.

The fact that energy consumption, FDI and urbanization increase environmental degradation shows that developing economies do not use environmentally friendly advanced technologies and environmental awareness cannot be adequately provided in the social sense. As a matter of fact, in developing economies where environmental regulations are loose, the disturbing level of environmental degradation in recent years supports the results obtained.

5. Conclusion

Human beings, who have adopted a common life with the natural environment, have caused the deterioration of peaceful life as a result of developments in economic activities. The deterioration process, which started with the agricultural and industrial revolution, reached dangerous dimensions in the following centuries. Especially in the 20th century, the natural environment has been seriously neglected and there has been a significant

increase in environmental problems. Developed economies, which experienced industrialization in the early period and completed their industrialization, developed their environmental policies over time in the face of environmental problems they faced. In this direction, developed economies that have adopted strict environmental policies have attributed responsibility to economic activities against the natural environment. The environmental policies implemented in developed economies have been realized for reducing dirty industrialization and fossil fuel-based energy, which are among the important causes of environmental problems. Developing economies, which set their priority targets as development and economic growth, act by keeping environmental values in the background and show a lax attitude towards environmental policies restricting their economic activities. Developed economies have shifted their investments to developing economies based on reasons such as providing cost advantage, benefiting from market opportunities and increasing competitiveness. Developing economies with capital constraints, on the other hand, have acted by considering the positive effect of foreign investment inflows in the country and tried to attract these investments to their own countries for their economic growth and development. Developing economies have tried to ignore some problems while supporting FDI inflows. At the forefront of these is undoubtedly the environmental effects of FDI. Developing economies that do not have sufficient environmental regulations have directed foreign investments and pollution-intensive activities to these countries, which want to take advantage of the cost advantage they offer in terms of environment. This situation has made the developing economies with lax environmental policies almost pollution havens, and adversely affected the environmental quality.

In this study, the effect of FDI on the environment was investigated within the framework of PHH. Panel data method was used in the study. In the study using annual data for the period 1992-2021, carbon emission per capita (CO₂) was the dependent variable and income per capita, FDI, energy use and urbanization were determined as independent variables. In the analysis, firstly, the stationarity of the variables was examined and it was determined that they were stationary at the first level. In this direction, panel cointegration tests were used to investigate the long-term relationship. The existence of a long-term cointegration relationship between the variables allowed estimation with the PDOLS test. As a result of the analysis, it was observed that FDI had a positive and significant effect on carbon emissions. This result provides support for PHH. The fact that FDI entries have a detrimental effect on environmental quality

indicates that these investments are from sectors with high pollution intensity, rather than environmentally friendly technologies. It has been determined that energy consumption and urbanization variables also increase carbon emissions. Again, in parallel with the increase in energy consumption, the deterioration of environmental quality shows that countries have not made progress on renewable energy. When the analysis is evaluated in general, developing economies make concessions on environmental values for the sake of economic growth, remain indifferent to the increase in traditional and pollution-intensive activities and avoid environmental policies that slow growth. The rapid increase in the demand for clean environment in a country on the path of economic growth and development can pose a problem for individuals, companies and policy makers, making it difficult to achieve some economic targets. However, neglecting the environment completely can cause irreversible problems in terms of human life. For this reason, it is important to establish a bridge between economic activities and the environment and to reduce environmental pollution to an optimal level. Accordingly, green technology investments should be paved, policies that increase energy efficiency should be developed, regulations should be made for individuals and companies to use energy more effectively, environmental awareness of individuals and companies should be tried to be improved in both consumption and production activities, meetings, symposiums and conferences should be organized to enlighten the public.

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CHAPTER XIV

RACISM, DISCRIMINATION AND ISLAMOPHOBIA IN THE WEST IN THE CONTEXT OF THE DENMARK CARTOON CRISIS AND NORWAY 2011 MASSACRE

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1. Introduction

This study will focus on the issue of racism, discrimination and Islamophobia, which constitute crucial problems in Europe in the twenty-first century. It mainly consists of three important parts. In the first part, the story of Muslim immigrants to Europe and the main problems they encounter today will be analyzed briefly. Most of European countries signed employment contracts with many Muslim countries, especially Turkey, to construct the infrastructure that was destructed after the Second World War. Until the economic crisis of the 1970s broke out, millions of Muslims went to Europe as workers. When it was understood that immigrants, who were initially seen as guest workers, were permanent, a constant pressure of exclusion and discrimination was made by far-right parties and organizations keeping radical thoughts against immigrants having different languages, religions and cultures. In the first part, the main factors that provide, provoke and lead racism, discrimination and Islamophobia in Europe will be discussed.

In the second part, the Danish cartoon crisis and the Norwegian massacre, which concern almost the whole world, will be analyzed through these two case studies in the context of Islamophobia and discrimination in Europe. Considering these Islamophobic facts, the relationship between Muslims living

in Europe and European society will be examined. The cartoon crisis is a crucial crossroads in understanding the values and perception of Muslims in the West. On the other hand, I will try to examine the approach of the European public opinion towards the Norway massacre that took place very recently in 2011 on the context of Christianity and Islam.

In the last part of the study, it's paid attention to the main documents and institutions of the Council of Europe and the European Union for the challenge against racism, discrimination and Islamophobia. In this context, Charter of Fundamental Rights of the European Union, Fundamental Rights Agency (FRA), The Convention for the Protection of Human Rights and Fundamental Freedoms, European Commission against Racism and Intolerance (ECRI) and European Network Against Racism (ENAR) will be discussed respectively. Those western documents and institutions really are appreciated for efforts to construct peace and relief in multicultural, multilingual, multireligious community which is not easy to place it in the modern world considering Islamophobic cases such as the Danish cartoon crisis, the Norwegian massacre and Charlie Hebdo shooting.

2. Islamophobia and West

This section will focus on racism, discrimination, and Islamophobia in Europe in general. In addition, the factors that provoke and encourage Islamophobia in Europe will be elaborated. The term Islamophobia derives from the xenophobia extension. Actually xenos means stranger in Greek. On the other hand, phobos means fear. Xenophobia means fear of strangers (Canatan, 2007:26). This phrase, which is actually a compound, diagnoses and determines a psychologically important fact. Human beings react with fears toward unfamiliar things whenever they do not know, meet, and see.

It takes time for new and different things to be accepted, even if they are good, which is also an indication of the truth expressed succinctly by this motto. It is neither reasonable nor possible to claim that such a degree of hesitation and delusion is beneficial to societies, as far as marginalizing and targeting every different thing and approaching it with fear, or even considering it as an enemy or even taking it to a point that needs to be destroyed (Goody, 2005:15-24). Everything has a measure. Sometimes, just as if a medicine is too much or lacking, it brings trouble. The reflex of fear in humans is given to preserve life. Human beings are cautious about what is different and feel the need to be vigilant as much as possible. However, if this caution and vigilance do not have

a measure and limit, it can lead to great disasters and calamities. The feeling of fear is as closely related to the perception of the person who experiences as well as the feared objects. The European public has a great responsibility to break the perception of those who experience this extra-ordinary sense of fear.

It will not be easy for a society to attain peace and security when it's deprived of values such as respect, tolerance and trust providing multiculturalism. The art of living together requires a tolerance and an institutional order that treats all kinds of differences respectfully. Otherwise, in the age of freedom, we should not expect people to remain silent against domination and privilege of marginal extreme provocations.

Islam did not actually enter Europe in the twentieth century. Just a century after the birth of Islam, Muslims came into contact with the West. They entered Spain and Portugal under the command of Tariq Bin Ziyad and conquered the Iberian peninsula. In this process, mostly Berbers and Arabs from Africa and Middle East entered and settled in Europe. The Islamic flag has been flown in Europe for eight centuries under the rule of the Islamic State of Andalusia (Lewis, 1993:3-15). During this long period, Muslims influenced the West in every way. It is useful to remember the contribution of the Islamic state of Andalusia in regarding West's renaissance and reformations from the Medieval Ages (Goody, 2005:73-76).

After the Second World War, there was a great need for labor in Europe. Millions of people died in the two world wars. Countries were devastated as a result of two wars that surrounded the European continent. Europe received a great immigration, especially from the Islamic world, to construct this great destruction. More African Arabs and Berbers went to France, Muslims from Pakistan and Bangladesh, which was also a former British Colony, to England, and mostly Turks and Kurds from Turkey to Germany (Kaya, 2009:2-4).

It could be seen that there is a successful cultural, political and economic integration in Germany today. Originally immigrated Turks are actively participating in politics. It broadcasts in Turkish with many TV channels in the media, publishes magazines and newspapers in Turkish. According to Ayhan Kaya, Turks lead the integration process in Europe more successfully than other Muslims (Kaya, 2009:39-61). Especially after Arab Spring millions of migrants came to Turkey from Iraq and Syria. Turkey is a kind of bridge to run European countries. In modern world Turkey is very important actor to keep stability, security and peace of Europe due to of her strategic geography as well as historical identity connotating with Islam. That's why Turkey as a candidate

of EU may play crucial role of check and balance of Muslim immigrants to live in the West (Akbaş, 2016:841-49).

France has been receiving Muslim immigrants since the 19th century. Initially It took immigrants from its colonies before the First World War. First, Algerians successfully arrived as an industrial employees. Later Moroccans, Tunisians and Turks came. In France, there are no official Muslim population records today. We do not know the exact number of the Muslim population since it has been banned by third republic to register the religious status of citizens. It is estimated that there are six million Muslims living there.

The economic crisis in Europe has increased anti-immigrant sentiment. (Minkenberg, 2013:9-35) The first immigrants were seen as temporary guests. But over time, it was clear that these immigrants were not so temporary. When they started to compete for employment in the economic sector, they were not accepted by some of inhabitants. This mass, which was a strong alternative to autochthonous Europeans, caused a great discomfort as the economic crisis increased and the economic opportunities of the Muslims, who were in a permanent position, increased and the European-Muslims behind them and their competitive power in the free market (Vural, 2005:90).

Radical right-wing parties and movements growing in Europe have a great role in the escalation of Islamophobia with a simple method in the form of populism, which arouses the people and fills the masses with hatred (Macciocchi, 1979:69-84). Each party constantly wants to keep its base strong and develop it. Each party has a different constituency. Between the two world wars, fascist parties left their mark on this period in European political history. Fascist parties are based on a racist philosophy. The National Socialist German Worker's party and Mussolini in Italy managed to hold the flag of the fascist regime in their hands for a long time. Radical right-wing movements do everything they can to keep the electorate they address with the populist policy they pursue.

Today, the European Union countries are fighting a great struggle against the parties that are the pioneers of the radical right movement, which has become the center of anti-immigrant, xenophobia and Islamophobia. It is worth to remind that parties with a fascist tradition break and damage structure of a multicultural society and the hope of coexistence of different beliefs. These parties usually receive great support from the lower and middle base. The economic crisis and terrorist acts in the name of so-called Islam around the world cause to increase supporters of these parties.

Radical right parties can grow much faster around strong and charismatic leaders. They generally have the ability of rhetoric, and propaganda and manipulation to influence, guide and lead mass. They claim that it is impossible for Muslims to live together in harmony with European societies by paying attention to all kinds of defects that derive among the Muslim population living in the Islamic world as well as in Europe. In this way, they constantly inculcate Islamophobia in the bases they address. Predictability is difficult for radical parties, as they can shine quickly depending on the conjuncture. It should also be noted that after these parties have shown success for a certain period of time, they generally experience sharp declines (Bora, 2007:149-150).

Some of the media and church organizations in Europe show Muslims as targets against Christian and European culture. This widens the gap between Muslims and Europeans. The media has always been the most important tool in guiding the society. Mass media have a very important function in terms of keeping social perception and reaction under control, influencing, changing and provoking. While the radical and marginal media approach the same issue in a way that based on incitement and hatred, the moderate and prudent media approaches the events more cautiously and carefully. Although there is a large media network that approaches immigrants and Muslims with a multicultural fact within the framework of Europe's democratic values, the influence of those who broadcast negative continues.

The orientalist perspective and approach in the academic community cause prejudices against Islam. We can partially understand the prejudices of the common people stemming from ignorance and being far away to Muslims. However unfortunately it's because of intellectuals manipulating society by blaming Muslims and corrupting history and facts. Those intellectuals, who accept and denote Islam as terrorism, violence and bondage to women, make European nations hate Islam and Muslims. The negative works of orientalist intellectuals play the most fundamental role in the prejudices and hatreds of European nations on Islam and Muslims. Of course, on the other hand, it should be stated that a significant part of the European democratic intellectuals approached the differences of Muslim nations positively from the point of view of universal values.

Anti-Semitism was once very common in Europe. After the Second World War, anti-Semitism gave way to anti-communism. We observe that with the end of the Cold War, especially with September 11 attacks, Islamophobia came to the fore in Europe. Today, we can say that anti-Islamism rather than anti-Semitism dominates the European public opinion (Hıdır, 2007:91-92).

The majority of those who are exposed to racism and discrimination in Europe are undoubtedly Muslims. Today, with its population of nearly forty million, in every country in Europe, Muslim nations can be exposed to racism, discrimination and violence in all areas of life, such as education, economy, housing, media, health, due to their religion, language, race, culture and lifestyle. In order to eliminate this, both non-governmental organizations, EU countries and Council of Europe countries are struggling with all their institutions and organizations, declarations, conventions and laws.

3. Denmark Cartoon Crisis

The subject of the cartoon of the Prophet, which is sensitive for Muslims, soon swept and shook not only Europe, but the whole world. The growth of very crucial events in the Europe took place within the framework of action and reaction between Muslims and non-Muslim Europeans. These groups sometimes act with a sense of revenge and retaliate against events that manifest as negative. Here, it causes great persecution because it is often acted with a sense of revenge. In particular, civilians and innocents suffer. No justification for any attack against civilians can be approved. In this section, I will focus on the Danish Cartoon Crisis, which has been keeping the European public busy for a long time and is followed with great interest and attention all over the world. I would like to draw attention to the religious sensitivities and approaches of Muslims for a multicultural Europe in the Danish Cartoon Crisis. The subject of the picture of the Prophet, which is sensitive for Muslims, soon swept and shook not only Europe, but the whole world.

A newspaper called *Jyllands Posten* published cartoons of the Islamic Prophet Muhammad on September 30, 2005. Among the Muslim scholars, painting the image of Muhammad was not accepted. Despite the fact that most Muslims are against depicting the image of the Prophet, the publication of cartoons of the Prophet of Islam by a newspaper in Denmark was met with a reaction from Muslims all over the world.

In the face of the reaction of Muslims when the cartoons were published in Denmark, Muslim country consulates and embassies in Denmark asked Danish Prime Minister Anders Fogh Rasmussen for an appointment to overcome the emerging crisis. Muslim public opinion became more tense when Rasmussen refused to accept his request for an appointment (Christine, 2013:241–58). It's expected that government may act with responsibility and sensitivity towards subjects of Muslims. Although all Muslim diplomats asked for an appointment,

not accepting it undermined the efforts of different cultures and beliefs to live together in peace and love. A mass who considers that they are insulted because of their beliefs will not be able to get rid of the Prime Minister's refusal of the appointment easily from their memories. However, the tension that emerged with the appointment could have been detente and the spread of the problem to the whole world and turning into violence could have been prevented, albeit relatively. In any case, meeting with the Prime Minister could have contributed to the de-escalation.

In one of these cartoons, the Prophet Muhammad is depicted as a terrorist. The depiction of a religion's Prophet as a terrorist caused great sadness and reaction both by Muslims in Europe and by Muslims around the world. These cartoons caused great tension between Muslims and Christians living in Europe in particular, and between the Islamic world and the West in general. The portrayal of a religion's Prophet as a terrorist, whether under the guise of freedom of expression or freedom of the press, is very provocative and sows the seed of hostility. That's why unfortunately Charlie Hebdo shooting occurred and innocent people became victims. This network and reaction of hostility led blood and deaths to humankind. It reminds us how it's significant to determine the limit of free press and to respect beliefs (Brian, 2016:183–91).

According to the European Convention on Human Rights and the Charter of Fundamental Rights of The European Union, especially the Universal Declaration of Human Rights¹, individuals have freedom of religion and conscience. No one should be attacked, insulted or discriminated due to of their belief or religion. Respecting the religious beliefs of all people living on earth is a necessity of civil sensitivity and virtue. In the information age, where all kinds of borders and barriers have disappeared in the global world, insulting religious sensitivities can cause a great conflict among the masses. It is necessary to respect all kinds of religious, linguistic and cultural differences for the peace and relief of societies. Otherwise, we will lose the ground for plurality.

After Denmark, the same insensitive responsibility continued in the press of Norway, Germany, France, the Netherlands, Italy and Spain. Cartoons were published in these countries. The reaction of the Muslims grew more in this context. Reactions to the Cartoon Crisis should also have a measure. Every Muslim individual can express his reaction democratically, either with the embargo or with the marches. When acting within the framework of legitimate rights, demands and reactions are taken into account. Unfortunately, Danish

¹ <https://www.un.org/sites/un2.un.org/files/2021/03/udhr.pdf>

Embassies and Consulates in most Muslim countries were raided, and some were burned or significantly destroyed. Illegal, disproportionate responses cloud your righteousness. With these disproportionate and illegitimate reactions, some Muslims are supporting the claim of barbaric and terrorist Muslims by the radicals in Europe. Unfortunately, it can be easy for angry masses to override their reaction. Of course, this ideas can never justify and legitimize what the angry masses are doing.

In my opinion, the relevant newspapers and media organs that cause a great tension in Europe and the world have great responsibilities. Freedom of expression and freedom of the press can be mentioned among the greatest civilizational accumulations of humanity, but it is unacceptable to abuse it and to use it to insult and provoke communities with different beliefs and cultures. The principles of freedom of religion and conscience and prohibition of all kinds of discrimination do not allow this. Our rights end where the rights of others begin. Freedom of expression and the press do not give anyone the right to defame or insult other people's religion, culture, language, race and color. Sociologically, while Muslims are so sensitive to the depiction of the image of the Prophet, publishing the cartoon series has not brought anyone any benefit and utility.

Of course, on the other hand, the reactions of Muslims in Europe and the world after the cartoon crisis deepened the Islamophobic phenomenon in Europe. It overshadowed the efforts made to preserve and maintain a multicultural structure between Europeans and Muslims. The cartoon crisis further deepened the feeling and conviction that Muslims are excluded and discriminated against, and greatly damaged the plurality between communities belonging to two different religions.

4. Norway Massacre

The Norway massacre is one of the biggest Islamophobic terrorist acts in Europe after the Danish cartoon crisis (Önal, 2018:373-403). Anders Behring Breivik killed eight people in a car bomb attack on the government building in Oslo, Norway on July 22, 2011. Then he raided the youth camp of the Labor party on the island of Utoeya and murdered 69 people.² European and world public opinion was shocked by this massacre. Breivik has become the greatest known serial killer in the twenty-first century. Europe and the world were shocked second time when Breveik said that he committed the massacre to awaken Christians against Islam. Breveik claimed that his targets in the Oslo

2 <http://www.bbc.co.uk/news/world-europe-17789206>

attack were not civilians, but the government and civil servants. He also stated that he was aware that it would not be possible to distinguish between civilians and civil servants.

When the government building was not destroyed in this attack, he admitted that he had set his mind to slaughter all the innocent civilians present in the Labor Party Youth camp, which was his second target. According to Breveik, those who participated in the camp are political activists and not innocent because they advocate multiculturalism. Breveik expressed his hostility and hatred enough to say that he would do the same massacre again today.³ He says he does not want to kill civilians in the government building in Oslo, but on the other hand admits that he intends to kill over five hundred innocent youth and all children if I had not been caught.⁴ If we cite some excerpts from the horrifying defense, everything becomes tawdry. Calmly recounts his encounter with the victims on the island and his brutal slaughter:

“Some of them are completely paralysed. They cannot run,” he said. “Two people were curled up.” He said he reloaded after running out of ammunition. “People were begging for their lives. I just shot them in the head.” Others pretended to be dead, he added, but he knew they had not been wounded and shot them too. Breivik continued his rampage around the island, luring youths from hiding places by telling them he was a police officer who was there to protect them. When they came out, he said, “I shot towards many of them aiming at their heads.”⁵

As a matter of fact, it is not possible for a creature to have a reason and logic as the actions that is far from all aspects of humanity. Breveik said that he has been comparing and researching the weaknesses and strengths of various terrorist organizations, from the IRA to Al-Qaeda, for actions since 2006. He stated that he took Al-Qaeda as an example because of the martyrdom purpose. On the one hand, it tries to seduce Europe and Christians to fight Islam, but on the other hand, taking the Al-Qaeda organization, which carries out terrorist activities in the name of so-called Islam, as an example, is another contradiction.

Breveik explains that he takes South Korea and Japan as an example for challenging against multiculturalism and Marxism. He emphasized in his defense that it is not possible for cultural conservatives like himself to listen to the indoctrination of the press and media in order to protect the so-called liberal

3 <http://www.guardian.co.uk/world/2012/apr/17/anders-behring-breivik-live-updates>

4 <http://www.independent.ie/world-news/europe/breivik-tells-court-he-wanted-to-leave-all-500-on-island-dead-3086993.html>

5 <http://www.bbc.co.uk/news/world-europe-17789206>

values, and that he will never give up on his own cultural conservative values. Breveik showed the whole world that he has such a broken conscience that he can proudly say that he does not regret his modern barbaric attack.⁶

Breveik goes so far as to say that this massacre is necessary for Europe to pay attention to the danger of Islam. How did it get into a position in Europe that would take hostility towards Islam to such a drastic level in a place like Norway? In order to ensure the awakening and unity of Christianity against Islam, it not only commits atrocities that will massacre its coreligionists and innocent children in front of the whole world, but also sends a message to the European and world public opinion with the courage and effort to prove that it is legitimately right (Aktürk, 2012:1–11).

We saw in the Breveik case that the West does not call those who defend such an extreme radical ideology in the name of Christianity and commit terrorist acts in the name of Christianity as Christian terrorists or Christian terrorism. He treats this attack as the murder and barbarism of a person and as an act of terrorism. On the other hand, actions carried out by Al-Qaeda or the Taliban in the name of so-called Islam can easily be presented as Islamic terrorism in Europe and the West.

Accepting these acts as Islamic terrorism means that mostly Muslims are favor of the brutal attacks of a radical and marginal organization (Cooley, 2006:1-40). Indeed ninety percent of the world's Muslims will never accept and approve these attacks. Despite of this fact it's a false accusation to call Islamic terrorism. It is an unacceptable insult and slander to see the overwhelming majority of Muslims who never accept such activities and inculcate them with all their might as supporters and supporters of these attacks. It is most reasonable and accurate to consider the crime to be limited to the perpetrator and the organization concerned. Otherwise, it would be a double standard of the media and European public opinion to say that it is Islamic terror when it is done by Muslims, but only massacre when it is done by Christians. Calling those who commit these acts in the name of Christianity as Christian terrorists is beyond the explanation that it is also a great murder and slander.

5. European Challenge For Fundamental Rights And Freedoms

In this section, institutions, charters and conventions carried out by the Council of Europe and the European Union in the fight against racism, discrimination, xenophobia and islamophobia will be discussed. In this

6 <http://www.cnnturk.com/2012/dunya/04/17/breivik.yine.saldirirdim/657512.0/index.html>

context, the Convention for the Protection of Human Rights and Fundamental Freedoms, signed by the Council of Europe in 1950, will be primarily discussed. Subsequently, the European Commission against Racism and Intolerance (ECRI), which was established by the Council of Europe in 1993, will be included. Then, the Charter of Fundamental Rights of the European Union, signed in 2000, and the work of ENAR, Europe's largest umbrella NGO, will be discussed. Finally, the Fundamental Rights Agency (FRA) established in 2007 will be investigated.

5.1. Convention for the Protection of Human Rights and Fundamental Freedoms

The Convention for the Protection of Human Rights and Fundamental Freedoms was prepared and submitted for signature by the Council of Europe on 4 November 1950. Although the Council of Europe was founded on May 5, 1949 with ten member states, today it has 46 member states with more than 800 million.⁷ The Convention for the Protection of Human Rights and Fundamental Freedoms document of the Council of Europe, which includes almost all states in the European geography, was drawn up with inspiration from the UN Universal Declaration of Human Rights.⁸ It can be said that the Council of Europe, with its other documents and institutions, especially the Convention of human rights, has shown a successful performance in the entire European continent in order to protect and develop fundamental rights and freedoms of mankind.

The Council of Europe has taken important decisions with additional protocols, especially on the situation of foreigners and to combat discrimination (Pescatore, 1970: 343-351). It has tried to take precautions with additional protocols, albeit limited, against the increasing discrimination in parallel with the increasing immigrant population in Europe.

The nine articles in the convention ensure freedom of thought, conscience and religion. The fourteenth article regulates the prohibition of discrimination. Freedom is meaningful and successful only to the extent that it can remove discrimination.⁹ Freedom for only one class, group, religion, ethnic group is a great domination and pressure for the rest of society. In order to meet the labor needs that emerged in Europe after the Second World War, most of the regulations that encouraged foreign labor were made by the states. Additional protocols were accepted on a regular basis to address the fundamental problems

7 <http://www.coe.int/aboutCoe/index.asp?page=quisommesnous&l=en>

8 http://www.media.ba/mcsonline/files/shared/eng_36_ldok.pdf

9 <http://www.echr.coe.int/nr/rdonlyres/d5cc24a7-dc13-4318-b457-5c9014916d7a/0/englishanglais.pdf>

posed by the increasing number of immigrants. Parallel to this, it should not be a coincidence that we saw the prohibition of mass displacement of foreigners in Strasbourg in 1963 with the Protocols No. 4. Thus, the legal ground for the foreigner to come was tried to be strengthened.

Nearly 20 years later, procedural guarantees regarding the deportation of foreigners were discussed with the Additional Protocol No. 7 in Strasbourg. It's a fact that law is constantly revised and issued in order to respond to social needs. It decreases worthy and prestige of legal norms in case of not caring social transformations. With the understanding that foreigners, who were initially seen as temporary guest workers in Europe, will now be permanent, it has become mandatory in legal regulations. With the increase in the cases of deportation of foreigners, this issue has now been taken into the framework of assurance with the protocol.¹⁰

When we come to the year 2000, we see that all kinds of discrimination about fundamental rights that are legally guaranteed are prohibited by Protocol No. 12 in Rome. The general prohibition of discrimination in 2000 was a good development to better ensure freedom and justice and to enable different cultures and beliefs to coexist. A general prohibition of discrimination has been essential for the integration of Muslims, who numbered an estimated forty million in the twentieth century. Otherwise, it is obvious that a mass exposed to exclusion and discrimination will not bring much good in the European geography. Europe can live in harmonious coexistence only by seeing Muslims as having a different identity but equal dignity and law.

5.2. European Commission against Racism and Intolerance (ECRI)

It is a very important body established by the Council of Europe against racism and intolerance. Every 46 member states of the Council of Europe appoints an expert for ECRI. The Council of Europe established ECRI on 9 October 1993 in Vienna in the face of rising racism and intolerance.¹¹ ECRI has been publishing a regular report on racism and discrimination every year since 1997.

It works nationally and locally throughout Europe. It is influential in the decision-making of both the Council of Europe and the member states of the Council of Europe in the fight against racism. It shares information and

¹⁰ <http://www.echr.coe.int/nr/rdonlyres/d5cc24a7-dc13-4318-b457-5c9014916d7a/0/englishanglais.pdf>

¹¹ http://www.coe.int/t/dghl/monitoring/ecri/about/ECRI_statute_en.asp

documents with non-governmental organizations and the UN in the fight against racism and discrimination. It encourages the public and the member states of the Council of Europe so that all differences in language, religion, race, culture and so on take place equally and respectfully in social life (Jordan, 2003:660-88). ECRI takes into account international researches on discrimination, racism, xenophobia, anti-Semitism and accordingly guides the CE member states to promote human rights. Since 1993, it has been carrying out important activities for the acceptance of differences in an equal and respectable position in Europe. It organizes its work activities within the framework of the Convention for the Protection of Human Rights and Fundamental Freedoms.

Every 5 years, ECRI holds meetings with each member country on discrimination, racism, Islamophobia and anti-Semitism in that country. Every year, it regularly discusses all kinds of activities and developments that can be done to better fight discrimination and racism with the relevant authorities between 9 and 20 countries on average. It follows the racism and discrimination files in every member state of the Council of Europe. It notes what countries make for discrimination and racism, and announces them to the public.

5.3. Charter of Fundamental Rights of The European Union

One of the most important resources to be used to prevent the spread of Islamophobia in the European geography like a ghost cloud is the Charter of Fundamental Rights of The European Union. The EU had a charter of fundamental rights, albeit very late. The fate of this charter, that is, whether and how it will be included in an agreement, remains unclear. Despite everything, this charter, which was not easily obtained in a continent that is the architecture of the nation-state tradition, is a very important resource in order to prevent all kinds of discrimination.

When the European Community was established, it was discussed that a section on fundamental rights should be included in the contract, but it did not yield any results. The recognition of fundamental rights in the European Union was formed for the first time with the case law that *the Court of Justice of the European Communities (CJEC)* started to develop at the end of the 1960s. With a joint declaration adopted by the European Parliament, the Council and the Commission on 5 April 1977, fundamental rights were recognized at the level of the political institutions of the Community.

The entry of the fundamental rights issue into the text of the charter started with the Treaty on European Union signed in 1992. In Article F(2) of the

Treaty, it is stipulated that the fundamental rights guaranteed by the *European Convention on the protection of human rights and fundamental freedoms* and arising from the common constitutional practices of the member states will be respected within the scope of the general principles of law, but there is no set of rights in the treaty.

In the final declaration of the Cologne Summit on 3-4 June 1999, it was emphasized that a charter on fundamental rights applied at the Union level should be compiled. A determination to achieve a common standard of fundamental rights for the EU has now been louder. The work carried out in line with this directive of the Cologne Summit resulted in the signing of the Charter of Fundamental Rights of The European Union on 7 December 2000 in Nice.¹² A decision will be made at a later date as to whether and how this condition will be included in the treaties.

Half a century after the establishment of the Union, a charter on fundamental rights could only be prepared. For the Union, which has adopted the motto of holding the torch of freedom and justice on all grounds, it has not been very accurate that the declaration emerged in such a long period of time. It should be reminded that it will not be easy to create a joint declaration of fundamental rights in the European geography, which is the heart of the nation-state understanding. Considering that each member state of the European Union has a different political and social background that affects the perception of fundamental rights, it is better understood that it will not be easy to reach an agreement for a common declaration of fundamental rights.

In 2010, the Charter of Fundamental Rights of the EU entered into force in the member states of the Union in accordance with the Lisbon Convention in 2009. This declaration will be effective both in the process of making laws and in making court decisions. On October 15, 2010, the European Parliament emphasized that the *Charter of Fundamental Rights of the EU* should be implemented and taken into account in court decisions, especially with the decision numbered 1915. Thus, it is predicted that there will be a great progress on human rights among EU members.

The Charter of Fundamental Rights of the EU consists of seven parts. In the first part titled Honor, human dignity, the right to life, the prohibition of torture and slavery are emphasized. In the second part under the name of freedoms, there are six main headings: refugees, immigrants and integration, border control, visa policy, information society and information preservation. In the third part

12 http://www.europarl.europa.eu/summits/nice1_en.htm

under the name of equality, we see three titles: children's rights and protection of children, equality and non-discrimination, racism and ethnic discrimination. Under title of solidarity in the fourth chapter, it's focused on workers' rights, social security and assistance, health care, family and environmental protection.

In the fifth chapter, under the title of citizens' rights, a system that will enable the citizens of the European Union to take an active part in the democratic political system under titles such as rights of voting, petition, good administration, ombudsman, freedom of movements is included. In the sixth chapter, under the title of justice it pays attention to right to an effective remedy and to a fair trial, presumption of innocence and right of defense, principles of legality and proportionality of criminal offences and penalties.

Now, after summarizing the process of the EU charter of fundamental rights, I would like to summarize the two articles of the charter about discrimination. In the third part of the EU Charter of Fundamental Rights, under the title of equality, in article 21, race, language, culture, color, gender, ethnic and social origin, genetic characteristics, religion, belief, political or any opinion, membership of a national minority, property, birth, disability discriminations arising from all kinds of reasons such as age and sexual orientation are prohibited.¹³ Even if Islamophobia is not mentioned here, the prohibition of all kinds of discrimination, of course, includes the prohibition of all kinds of discrimination arising from religion, language, culture, ethnicity and other similar issues in terms of the Muslim immigrant population.

Again, according to Article 22, the Union respects cultural, religious and linguistic diversity.¹⁴ In fact, the spirit and purpose of the Union is to keep different cultural, religious and linguistic differences together in a respectful manner. The problem here stems from the different values such as culture, language and religion carried by the non-autochthonous masses who came to the European geography later on. It has been easier to preserve all kinds of differences such as religion, language, culture, race and color among the members of the union without being subject to discrimination. The Union has covered a great distance in this goal. On the other hand, although he makes a great effort to accept and respect the differences of the communities that came through immigration and to keep them free and safe with autochthonous values, his success is not easy yet (Teltumbde, 2009:16–18).

13 http://www.europarl.europa.eu/charter/pdf/text_en.pdf

14 <http://ekutup.dpt.gov.tr/ab/hukuk/temelhak.pdf>

5.4. European Network Against Racism (ENAR)

The EU declared year of 1997 as the European Year Against Racism to combat growing racism, discrimination and xenophobia.¹⁵ The EU invited and brought together all the NGOs that fight against racism and discrimination across Europe in all areas of social life (Lenaghan & Wanselben, 2004:7-8). ENAR is a fruit of the 1997 European Year Against Racism. In 1998, 600 different non-governmental organizations came together against racism and discrimination and ENAR (European Network Against Racism) was established as an umbrella network. Today, approximately 700 NGOs from EU member states, such as Croatia and Iceland, are fighting against discrimination and racism.¹⁶

ENAR closely follows the policies of EU institutions and European States. It has a very effective power in the public opinion by raising awareness and directing all kinds of discrimination against race, language, religion, culture, color, gender, disability etc. At the same time, it strives to develop the sensitivity of equality and solidarity between European citizens and third country citizens against immigration, integration, minorities, and all kinds of discrimination and racism, at the forefront.¹⁷

According to the results of the Eurobarometer opinion poll in 1997, 33% of the public consider themselves highly racist or very racist.¹⁸ Here, we can better understand how vital the mission of ENAR, which acts with more than 700 NGOs under the umbrella of the EU, against this racist, discriminatory and hate-smelling social perception. Problems and conflicts arise with the permanent immigrants in Europe and the advancement of new generations in all areas of social and economic life. It is not easy for communities with very different cultures, beliefs and lifestyles to live together. Especially since those who carry these differences come and settle later by immigration, the digestion of these differences by autochthonous societies and the effort to live together in harmony cause frictions and tensions at regular intervals (Tekin, 2015:145-62).

Although the EU took decisions against racism and discrimination in many different areas until 1996, when it realized that it could not overcome this problem by fighting alone, it understood the importance of acting and supporting non-governmental organizations. The EU Parliament passed resolutions on racism,

15 <http://www.europolitics.info/social-policy-1997-declared-european-year-against-racism-artr169726-25.html>

16 http://www.enareu.org/Page_Generale.asp?DocID=15278&langue=EN

17 http://www.enareu.org/Page_Generale.asp?DocID=15278&langue=EN

18 http://europa.eu/legislation_summaries/justice_freedom_security/combating_discrimination/c10417_en.htm

xenophobia, and anti-semitism on April 27, 1995. Again, the EU Parliament took important decisions on social affairs and employment on 5 October 1995 and on the education system on 23 October 1995 to combat racism and xenophobia.¹⁹ Finally, when it was understood that only the decisions taken in the EU Parliament would be insufficient to fight, it became clear that it was necessary to act together with Non-Governmental Organizations.

According to the ENAR 2010 Report, discrimination, racism and Islamophobia continue in the European Union countries in all areas of economy, education, health, housing, media, and society.²⁰ If Europe is not successful in the fight against racism, Islamophobia and discrimination, there is a possibility of huge genocidal. The ENAR Report draws attention to the fact that everyone has great responsibilities in order not to encounter similar the witch hunt case appeared in the Medieval Ages. To this end, it works to ensure that every race is perceived positively in EU countries. It prepares important reports to break down the taboos and prejudices against any race among the people and plays an important role by emphasizing that the collective memory should be purified from these dirt and prejudices.

According to ENAR, a hate crime should be punished more than any other crime. It is stated that victims who are exposed to violence by racists due to any difference should be protected and supported by the state.²¹ ENAR initiated a three-year 'migration, rights and integration' project in 2009. ENAR believes that discrimination and racism cannot be ended without successful integration. That's why he puts immigration and integration policies first on the agenda. Thus, it follows an important strategy for the elimination of discrimination and racism. It keeps its ties with the media very strong and raises public awareness against racism and discrimination through the media. It tries to strengthen the culture of peace and coexistence by giving enlightening information and messages to the public through the press against the increasing Islamophobia in the recent period.

5.5. Fundamental Rights Agency

Fundamental Rights Agency (FRA) was established in 2007 as an autonomous body of the European Union. It is composed of one independent person appointed by each of the 27 Member States of the EU and by each of

19 http://europa.eu/legislation_summaries/justice_freedom_security/combating_discrimination/c10417_en.htm

20 ENAR 2010 Report, pp.5.

21 ENAR 2010 Report, pp.9.

the States holding observer status and one independent person appointed by the Council of Europe and two representatives of the Commission. It prepares regular reports in order to protect and improve the rights of the individual and to eliminate all kinds of causes that may harm the honor of human beings.²²

The FRA works closely with the European Commission, the European Parliament and the Council of the European Union. It not only receives necessary information and documents from these institutions, but also provides significant support and guidance to these institutions on fundamental rights. FRA maintains links with the international organizations The Council of Europe, the UN and OSCE in the form of a very close exchange of information and support. FRA always keeps its contacts with governments, non-governmental organizations, academic institutions, equality bodies, National Human Rights Institutions on fundamental rights at an advanced level. With the Fundamental Rights Platform (FRP), the FRA comes together with approximately 300 civil societies in Europe who are fighting for fundamental rights in different fields every year. Considering the recommendations and opinions made on this platform, both the FRA Annual Report and the FRA Annual work program are determined.²³

Member states of the European Union are controlled and monitored by both European (Council of Europe) and international (UN) conventions. EU member states in 2010 were subject to surveillance with at least 50 reports. The European Court of Human Rights in 2010 examined the problems faced by immigrants, refugees living under harsh conditions like racism and discrimination, ethnic discrimination, insufficient independent justice, failure to protect victims in 27 EU member states and in Croatia, which is a candidate country. It decided against 657 out of 795 applications stating that at least one of these topics was neglected. According to this, they take the lead in the ranking as the countries with the highest number of negligence, by making decisions against Romania 135, Poland 87, Bulgaria 69, Italy 61, Greece 53 and Slovakia 40 times. On the other hand, Denmark 0, Estonia 1, Netherlands 2, Malta 3, Slovenia 3, Cyprus 3, Belgium 4 are the countries with the least negligence in the list.

With the above-mentioned decisions, it does not seem easy to understand how countries comply with the convention of fundamental rights. As we have stated above, if each country applies EU law, then applications can be made for its negligence. Otherwise, complaints are not considered. It would not be healthy to evaluate only the above-mentioned unfavorable decisions without knowing

22 http://fra.europa.eu/fraWebsite/attachments/FRA-2012_Booklet_EN.pdf

23 http://fra.europa.eu/fraWebsite/attachments/FRA-2012_Booklet_EN.pdf

which EU laws each country has accepted and implemented. Since 2009, there has been an organization within the Council of the European Union working only on fundamental rights, the rights of citizens and the free movement of people. The role of this group consists of the fundamental rights of citizens regarding free movement, ensuring the access of contracts that can be entered into the Convention for the Protection of Human Rights and Fundamental Freedoms to the EU and following the reports of the Fundamental Rights Agency. This group is always working to improve the scope of the EU Human Rights convention, to include and harmonize different conventions.

FRA also works closely with the UN Committee on the Elimination of Racial Discrimination (CERD). There are researches to change the hierarchical structure based on ethnic and racial traces in EU member states. Despite this, there are still 9 countries in 2010 surviving the hierarchical order that protects ethnic and racial discrimination.²⁴ Since there are no records of ethnic population in some EU member countries, it is difficult to evaluate ethnic discrimination. We know that this sensitivity has increased with the encouragement of both CERD and FRA. I think that such initiatives are significant in order to prevent discrimination due to ethnic-religious-language-cultural reasons in EU countries that have received a great deal of immigration from the Muslim world.

In 2008-2009, discrimination and violence was conducted by the FRA in 3 major EU member states, England, Spain, and France, with a comparison between two groups, Muslim and non-Muslim, among 3000 people in total, 1000 people from each country, between the ages of 12 and 18. I would like to briefly summarize the results of the survey conducted. According to the study, one-fifth of participating youth in all three countries state that they have been discriminated against. Those who experience discrimination and violence feel less happy in their daily life. While Muslim youth in France and Spain were more discriminated against, the rates of discrimination of Muslim and non-Muslim youth in England remained at the same level. Young people who are discriminated against and insulted in the study see violence as a legitimate tool for self-defense.²⁵

Young people who are discriminated against, excluded from society and subjected to violence are more prone to violence and use more verbal swearing in their daily life. Thus, the research reveals that there is a cause-effect relationship between those who are victims of violence and those who are prone

²⁴ FRA Annual Reports, 2010, pp.17

²⁵ http://fra.europa.eu/fraWebsite/attachments/Infosheet-racism-marginalisation_EN.pdf

to violence. Those who are subjected to violence and those who are exposed to discrimination do not forget this, and the situations and risks of showing their reactions in daily life are high. Among the participants in the study, it is determined that Muslim youth tend to react more when their religions are insulted and harassed. It is emphasized that those who are exposed to discrimination are alienated and marginalized from the society and pose a great danger and threat to society. It emphasizes that because the young people who shape the future of the society, being exposed to discrimination due to language, religion, race, culture and similar reasons in the prime of their lives may cause great pessimism and that this group may seriously harm the harmony and unity of the society in the long run (Corlett, 2003:62-93). Peace and love can be possible in social life in proportion to the opportunity of differences to live together in society in an equal and respectable way. For this reason, it is very important to provide this awareness and the necessary infrastructure.

6. Conclusion and Evaluation

One of the crucial issue of the European geography and nations in the twenty-first century is to fight against thoughts and movements that strike multicultural values of coexistence such as racism, discrimination, anti-Semitism and Islamophobia. In order not to encounter an internal conflict and war like the witch hunt in the Medieval Ages, all European institutions and organizations and non-governmental organizations make a great effort in this regard.

It's obvious that the fascist parties and racist media and organizations that remain in the minority do not want a multicultural Europe. They act with the philosophy that Europe belongs to Europeans. They are using all kinds of provocation and harassment to destroy the power to live together in peace and love. In particular, radical parties are constantly tense the atmosphere and preparing the environment for conflict by making heavy provocation and insulting on immigrants and Muslims in order to get more votes with populism.

The first workers who went to Europe after the Second World War were hosted as guests. Until the crisis in the 1970s, European countries signed employment contracts with both Turkey and many Muslim countries in North Africa. France and England gave priority to the Islamic countries under their former colonies. For this, Muslims from Algeria, Morocco and Tunisia went to France. Muslims from Pakistan and Bangladesh went to England. People went to Germany, the Netherlands and France more than Turkey. After all, nearly forty million Muslims live in Europe today. Third generations now seem to live

with a European society forever. Since there will be no such thing as deporting millions of Muslims from now on, the West needs to guide the process well with a democratic approach that is open to different cultures and nations.

In the cartoon crisis, both European Muslims and the Islamic world reacted strongly to the portrayal of the Prophet depicted as a terrorist. Danish consulates and embassies in most Muslim countries were raided, destroyed, and burned. When people are attacked, abused and insulted against their religion, language, race and beliefs, they have the right to legitimately express their democratic reactions. But the rate of this reaction is very important. Harming innocent people and using violence is unacceptable. While Muslims are in a rightful position while being victimized and harassed, they do not display a good image with unfair disproportionate reactions. Although the negative damages and actions by a minority group do not represent all Muslims in Europe, the image of Muslims in the eyes of the public is damaged.

The Danish government and the media had a major role to play in the cartoon crisis. The Danish Prime Minister Rasmussen, who did not accept the interview of the diplomats of the Muslim country, caused the events to escalate. After Denmark, the media of Germany, the Netherlands, France and Spain, which published the cartoons, also contributed to the growth of the wave of cartoon crisis. While the strong reactions and sensitivities of Muslims to a broadcast campaign that portrays, exposes and describes the Prophet of a religion as a terrorist were evident, this cartoon campaign dealt a heavy blow to the multicultural ground in Europe.

After the cartoon crisis, one of the most important actions in Europe is undoubtedly the Norwegian massacre. Western media and public opinion were shocked by the Norwegian massacre. Breveik stated that he did the Oslo attack and the massacre on the island of Utoeya to wake up the Christians. After the September 11 attack, the concept of Islamic terrorism developed and was used frequently. But despite his attempt to portray the Breveik attack as legitimate and innocent in the name of Christianity, he was not mentioned as a Christian terrorist by the Western media. In fact, the Western media should give up the label of a terrorist with religious references. There may be radical and marginal movements in every religion and nation, but the overwhelming majority of that religion and nation cannot be held responsible or guilty for their actions. This negative attack and violence should be limited to the relevant organizations and activists. Otherwise, it would be a great cruelty to accuse the vast majority of people who do not approve of this attack and terrorism in any way.

Although the overwhelming majority of Muslims have the desire to live together in a multicultural Europe, depending on democratic values, the media mentioning their religion and terrorism together offends them. The media has a great responsibility in promoting and understanding a religion of Islam that literally means peace. With the portrayal of Islam as a boogeyman, Islamophobia spreads much faster. Man is afraid of what he does not know, runs away and is afraid. Muslim organizations also have a great responsibility to convey the brotherhood and peace side of Islam to the public.

In fact, Muslims have lived together with both Christians and Jews for centuries in peace and respect since accepting them as people of the book,. There is a great affinity between the message of the holy books of the three religions and the beliefs of their followers. Religious leaders, politicians, academics, media, in short, everyone has a great responsibility so that people can live together in love and peace around the common ground, both in Europe and all over the world. Who benefits from being afraid of each other and being hostile to each other and narrowing the world against each other? Therefore, we can have the opportunity to lead a multicultural and religious life by treating all values and beliefs equally and respectfully without discrimination and exclusion.

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