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Doç. Dr. Ayşe Çatalcalı CEYLAN

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CONTENTS

CHAPTER 16

EXAMINING CONSUMER-BASED BRAND EQUITY DIMENSIONS: A STUDY ON FIXED INTERNET SUBSCRIBERS IN TURKEY

Muhammed Talha NARCI, Mehmet KARABULUT 1

CHAPTER 17

EDUCATION OF SYRIAN REFUGEE CHILDREN IN TURKEY: POLICIES, IMPLEMENTATIONS, CHALLENGES, SOLUTIONS

Hatice KOÇ 23

CHAPTER 18

THE EFFECTS OF PROTECTION PRACTICES ON LOCAL PEOPLE: THE SAMPLE OF THE KIZILIRMAK DELTA (SAMSUN)

Harun Reşit BAĞCI, Mutlu KAYA..... 45

CHAPTER 19

INTERNATIONALISATION IN THE OTTOMAN HIGHER EDUCATION: MULTIETHNIC, MULTICULTURAL AND CROSS-NATIONAL PRACTICES

İbrahim Hakan GÖVER..... 73

CHAPTER 20

ELDERLY CONSUMERS AND TECHNOLOGY

M. Serhat ÖZTÜRK..... 95

CHAPTER 21

**PERIODIC FUNCTIONS AND FEATURES FOR
ECONOMETRIC APPLICATIONS**

Mesut BALIBEY111

CHAPTER 22

**EXPECTATIONS OF PHYSICAL EDUCATION TEACHER
CANDIDATES FROM THE TEACHING PROFESSION**

Ahmet YIKILMAZ 125

CHAPTER 23

**AN EXAMINATION OF THE
US-CHINA TRADE WAR WITHIN THE FRAMEWORK OF
GAME THEORY**

Mehmet POLAT, Yusuf AKAN..... 137

CHAPTER 24

**THE USE OF FEAR ELEMENTS IN THE NEWS OF
THE COVID- 19 OUTBREAK: FEAR APPEAL OR
PERSUASION?**

Feridun NİZAM, Ömer GÜNDÜZ 165

CHAPTER 25

**THE RELATIONSHIP BETWEEN CORPORATE SOCIAL
RESPONSIBILITY AND FINANCIAL PERFORMANCE IN
PUBLIC LISTED COMPANIES: EMPIRICAL EVIDENCE
FROM TURKEY**

Shakhida ZAITOVA, Cüneyd Ebrar LEVENT 187

CHAPTER 26

GREEN SUPPLY CHAIN MANAGEMENT AND ITS IMPORTANCE

Ayşenur ERDİL 213

CHAPTER 27

CABIN SERVICES IN CIVIL AVIATION SECTOR IN TURKEY

Yalçın KAYALAR, Ahmet Koray KAYALAR 241

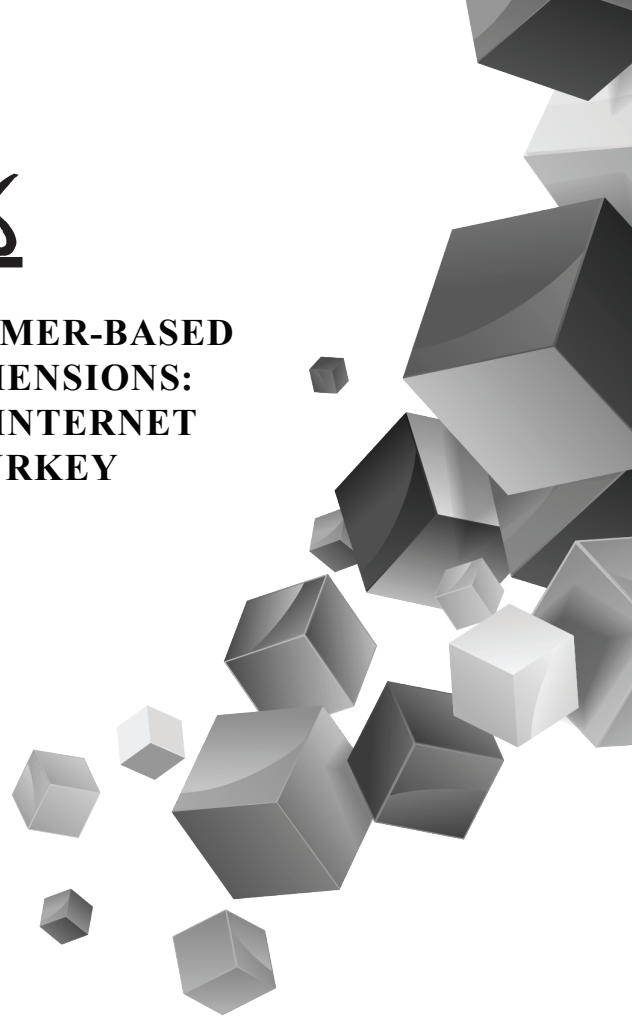
CHAPTER 28

INTEREST POLICY OF THE TCMB IN COVID-19 PROCESS: REFLECTIONS OF INTEREST POLICY ON INFLATION AND CONSUMER LOANS

Dilek USANMAZ..... 253

Chapter 16

EXAMINING CONSUMER-BASED BRAND EQUITY DIMENSIONS: A STUDY ON FIXED INTERNET SUBSCRIBERS IN TURKEY



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1. Introduction

Businesses attach importance to consumer-oriented marketing activities in order to increase their profitability and the sustainability of their brands. Consumers; performs purchasing behavior with many cultural, social, economic, personal and psychological expectations. For this reason, the concept of brand, especially the concept of consumer-based brand equity, points out.

The brand is based on the differences that set one brand apart from others. Brand equity is the value of brand activities over time and has a different meaning for consumers and businesses. This value is determined by financial, consumer, or the methods in which the two are considered together. Consumer-based brand equity; all elements of the brand such as name, sign, symbol or design mean the value created by the consumer. Businesses with high brand equity gain competitive advantage, provide loyalty to existing consumers, leave a positive brand image on potential customers, and increase the level of quality perceived by consumers. In terms of consumers, high brand equity offers many advantages such as reducing money, time and effort costs, providing status and prestige. Businesses carry out a series of activities on brands, products and services, from the brand awareness stage to the brand loyalty stage in order to increase the consumer-based brand equity. The focus of these activities is on consumers and their benefit expectations.

Consumers expect not only functional benefits but also symbolic benefits from a product or service. Even today, symbolic utility is increasingly beyond functional utility. This situation necessitates the multi-dimensional approach of the consumers.

Fixed internet service grew up rapidly after the internet was opened to commercial use. Fixed internet service providers have opted for branding to differentiate themselves from their competitors, as they operate commercially in the market. In this context, it has tried to increase its brand equities by carrying out consumer-oriented marketing activities related to its brands. In order to examine the perspective of fixed internet subscribers through consumer based brand equity elements, in this study brand of internet service providers in Turkey will be discussed.

2. Literature Review

The brands provide superiority in competition, difference in products and services and ease in consumer decision-making processes. Thus, businesses achieve their goals more effectively thanks to the brand. The concept of brand equity emerged in the 1980s (Kapferer, 2008: 4). In 1991, it was claimed by members of the Marketing Science Institute that it was

the most important problem for marketing management (Cobb-Walgren et al., 1995: 26).

2.1. Brand Equity and Importance

A brand is a name, term, sign, symbol or design, or a mixture of them, indicating the manufacturer and seller, distinguishing it from competitors (Tek and Ozgul, 2013: 283); to create an image in the consumer mind with concrete and abstract elements (Lee et al., 2017: 40). Value is the ratio of benefits to price used to perceive products and services (Keegan and Green, 2015: 528) or are individuals' judgments about a product or service (Erdogan et al., 2014: 213).

Brand equity, on the other hand, is a set of assets and responsibilities of the business. Features are created by marketing activities, are not material, reduce or increase the value of products or services, and are different features of the brand, such as names and symbols (Aaker, 1991: 27); is the factor that affects the consumer's response to brand marketing (Keller, 1993: 1); are the positive or negative results that a company gets from a product (Steenkamp, 2017: 243); is the value that a brand gives to a product in terms of preference and benefit (Lassar et al., 1995: 13); is the total financial value of the brand (Kotler and Armstrong, 2018: 670); is the added value that a brand bestows on a product (Farquhar, 1989: 24); is the consumer's perception value a product in monetary, social and security dimensions (Kim et al., 2008:75); is an increase in cash rates on branded products, rather than non-branded products (Simon and Sullivan, 1993: 29); is a significant marketing asset which can engender a exclusive and welcomed relationship differentiating the relationships between the firm and its stakeholders and providing longtime buying behaviour (Christodoulides and Chernatony, 2010: 44). Depending on these definitions, the brand shows more abstract, distinctive and symbolic features of utility. Value is the significance that consumers ascribe to the brand, depending on the level of solving needs. Brand equity, on the other hand, is the judgment that is formed in the minds of consumers as a result of product and marketing activities.

The concept of brand equity is discussed in a combined framework where finance-based, consumer-based and both are considered together (Kim and Kim, 2005: 550; Kim et al., 2003: 336). According to brand equity definitions, finance-based brand equity has monetary, tangible and cash value characteristics. Consumer-based brand equity demonstrates characteristics beyond functional utility such as psycho-social utility, abstraction, variability, relative perception, and generalization of perception.

The Financial-based brand equity method is insufficient to fully calculate brand equity. This is due to the fact that accounting standards,

brands, companies and sectors are different between countries (Farquhar, 1989: 25). The consumer-based brand equity method, on the other hand, has a strategic importance on the sustainability of brand equity. However, in order to calculate a brand equity correctly, all brand equity methods must be considered in combination (Akgun, 2014: 6).

2.2. Consumer-Based Brand Equity

Consumer-based brand equity has been the subject of this study due to its significant impact on companies and consumers. Brand effects for companies; increasing brand loyalty, leveraging the distribution channel, and developing programs to attract new customers or recapture old customers (Aaker, 1991: 29); increasing consumer brand perception, competitive advantage, business performance, customer demand rate and brand expansion (Guzman, 2005: 43); ability to adjust prices and margins comfortably (Alkibay, 2005: 87); increasing profit margin, sales price and sales volume (Baldauf et al., 2003: 220); determination of comparative position with competing enterprises (Akgun, 2014: 4); as a firm, gaining the advantage of opportunity power over intermediaries (Aaker, 1995: 211); have an effect on obtaining more convenient and spacious space on shelves and increasing license revenue (Carpenter, 2007: 88).

The importance of consumer-based brand equity for consumers is as follows: Brand equity provides emotional satisfaction by reducing search costs, time and effort spent, and the risk of uncertainty (Steenkamp, 2017: 9); helps interpret, process and store a large amount of information about products and brands, ensuring consumers ' satisfaction during use and confidence in making purchasing decisions (Aaker, 1991:27); allows consumers to develop status, social prestige, and positive attitudes among people using the same brand (Makri et al., 2018: 704-716); represents the promise of benefit to customers or users (Raggio and Leone, 2007: 384); is the carriers of cultural meaning and symbolism and the indicators of identity and community (Karababa and Kjeldgaard, 2015: 2).

For the above-mentioned results, firms must fulfill some responsibilities. Brands should have qualities that are easy to understand, attractive, unique, law-abiding, reminding and differentiating the product. It should also produce both functional benefits and symbolic benefits (Torlak, 2013: 103). Brands that are famous, standard, strong, cosmopolitan and have a sense of social responsibility are more valuable on a consumer basis (Dimofte, 2010: 85).

2.3. Consumer-Based Brand Equity Dimensions

In the literature, there are many models for consumer-based brand equity. But the most common are the Aaker and Keller models (Kim and Hyun, 2010: 1). In this study, the Aaker model will be described in detail later.

According to Lassar et al. (1995), the five dimensions of brand equity are: performance, value, social image, reliability and commitment (Lassar et al., 1995: 11-12). According to Berry, the main components of brand equity are brand awareness and brand meaning (Berry, 2000: 136). According to Steenkamp (2017), these dimensions consist of awareness, attitudes, and actions. If consumers who remember the brand have a positive attitude to the brand, they behave in the form of buying the brand, showing loyalty to the brand, and then announcing it to other consumers (Steenkamp, 2017: 243-255). According to Kamakura and Russell, the three components of brand equity; perceived value, brand dominance, and abstract value (Kamakura and Russell, 1993: 9-12).

According to Keller, brand knowledge arises from sources of brand awareness and brand image. Brand awareness is when consumers recognize and remember the brand when they see the brand. Brand image, on the other hand, varies according to marketing strategies, identification with the customer, and strong, positive and unique associations. Creating a strong brand requires four consecutive steps: defining a brand by a product category or need, linking brand meaning with specific features, identifying customer notifications about brand identity and meaning, and finally, increasing the relationship between customer and brand to a level of loyalty. In order to ensure consumer brand loyalty, there are six stages: brand attention, brand performance, brand image, consumer emotions, consumer judgments and consumer brand resonance (harmony-loyalty). When companies consider these stages, they provide brand loyalty to their customers (Keller, 2003: 59-75).

In our research, the Aaker model was preferred. Because this model combines perceptual and behavioral dimensions, better analyzes attitudes, and factor measurements are more applicable (Ural and Perk, 2012: 13). According to this model, consumer-based brand equity dimensions consist of brand awareness, perceived quality, brand image and brand loyalty (Aaker, 1996: 103; Aaker and Joachimsthaler, 2000: 17). These dimensions will be explained in detail as follows.

2.3.1. Brand Awareness

According to Aaker (1991), brand awareness is an important and sometimes less important component of brand equity. Brand awareness reflects the brand's prominence in customers' minds. Awareness can affect perceptions and attitudes and, in some contexts, can be the driving force of brand choice and even loyalty. Brand awareness levels consist of recognition, remembering, staying in mind, brand dominance (being the only brand remembered), and brand knowledge and brand opinion (having an opinion about the brand). When determining the level of awareness,

elements such as differences between brands and categories, the level of recognition of brands, not focusing only on the name of the brand (increasing awareness with images and symbols) should be taken into account. Awareness is based on psychological elements, product features, advertising elements, and observing brands that provide awareness (Aaker, 1996: 114-115).

In addition, brand awareness according to its level serves brand equity in terms of providing connections to other associations, bringing a brand to mind first compared to others, providing familiarity with a brand, and making a commitment (Aaker, 1991: 62-72).

Some of the findings in the literature on brand awareness include: Brand awareness is often associated with elements such as high quality, trust, reliability, proximity to people, a good quality / price ratio, and accessibility, including cognitive elements (Kapferer, 2008: 20-21); is the ability to remember a product category based on brand images and high brand quality perception. Brand awareness refers to the current power of a brand in the minds of consumers (Pappu et al., 2005: 145-146); shows brand knowledge along with brand image and is related to the performance of consumers to remember and recognize the brand under different circumstances (Keller, 1993: 3); refers to accurate recall of brands and their characteristics (Muller and Chandon, 2003: 211); is not only about seeing a brand many times, it's also about mentally associating the brand with certain characteristics. Brand awareness has two basic dimensions, depth and width. The depth of brand awareness means how easily you can remember a brand; the width of brand awareness refers to the situations of buying and consumption. Ideally, a brand would have both depth and width (Hoeffler and Keller, 2002: 79); is an important asset that is a reflection of marketing communication activities and market share (Sharp, 1995: 9).

Therefore, brand awareness, which is the first step in creating brand equity and an important condition of brand image, consists of recognition/ knowledge, memory and first coming to mind, depending on psychological elements, product characteristics and advertising tools.

2.3.2. Brand Image

Brand image is the connection between information in memory related to a brand and information. Experience and communication influence the brand connection power of consumers. As experience and communication increase, the power of connection to the brand increases. Associations represent key traits for purchasing decisions and brand loyalty. How does brand image provide value? To do this, it must help process information, differentiate the brand, create a reason to buy, create positive attitudes / emotions, and provide a basis for expansion (Aaker, 1991: 101-103):

Brand image activities of companies vary according to association types. Image types; the attributes of the product, the price level of the product, the characteristics of customers who use the product, that carries the abstract values of the product, rational and psychological properties of the product, use of the product by a celebrity, suitability of products and brands to the lifestyle and personality of individuals, the product class, the status of competing products and in which countries the products are produced (Aaker, 1991: 103-104).

Some definitions made in the field of brand image in the literature: Brand image is the sum of customers' perceptions about the brand (information about their own observations and experiences, sales staff, packaging, after-sales service, price and distribution) (Keegan and Green, 2015: 289); include information about the brand and are an important determinant of brand awareness. Brand images play a critical role in creating brand equity if they have strong, preferred, unique and positive qualities (Keller, 2013: 72-79); is the fact that brand-related features form some basic associations in consumers' memory (Alkibay, 2005: 86). Brand image consists of information. This information consists of direct and indirect sources. Direct sources are the consumer's own experiences resulting from use. Indirect sources, on the other hand, consist of external environmental sources such as communications, comments, or advertising (Brady et al., 2008: 152). As a result, brand connotation, if strong, meets expectations and is unique, has positive consequences on brand equity.

2.3.3. Perceived Quality

Perceived quality is the customer's perception of an abstract and general feeling about the overall quality or superiority of a product or service. Perceived quality cannot be objectively determined because customers' personalities, needs and preferences differ. Perceived quality differs from satisfaction. A customer may be satisfied because their expectations about the level of performance are low. High perceived quality is not consistent with low expectations. At the same time, perceived quality differs from attitude. For example, a low-quality product can create a positive attitude because it is so cheap. Conversely, a person may have a negative attitude towards an overpriced high-quality product. Perceived quality, although abstract and general emotion, is usually based on basic dimensions that include the characteristics of the products to which the brand depends, such as reliability and performance. To understand perceived quality, it is useful to define and measure the underlying dimensions, but perceived quality itself is a summary of all dimensions (Aaker, 1991: 80-81).

We can express the value-generating results of perceived quality as follows. Perceived quality; creates the reason for purchase, provides

the ability to position the brand at levels such as ‘premium, economical and good’, provides the option to demand a high price, can help to gain distribution elements (such as retailers, distributors), allows to enter new product categories using a brand name, has an impact on ‘market share, price and profitability’. In addition, perceived quality does not adversely affect cost and improves business performance (Aaker, 1991: 81-84).

The dimensions of perceived quality, product and service dimensions (Aaker, 1991: 85): Dimensions of product quality; product performance, product features, product compliance with specifications (incidence of defects), product reliability, product durability, product serviceability, and product appearance quality. The dimensions of service quality; does the physical capabilities, equipment and appearance of the personnel mean quality? Will the payment work be done reliably and accurately? Does staff have the knowledge and skills to do the job right? Is staff willing to help customers and provide quick service? Does staff show attentive and individual attention to customers?

Some studies of perceived quality in the literature include: perceived quality differs from purposeful or actual quality and varies according to the rate at which a product meets physical and psychological expectations (Zeithamel, 1988: 3). Perceived quality is a perception that reveals the relationship between price-value, satisfaction, and behavioral intentions (Rani, 2019: 52). Perceived quality gives consumers reason to buy and differentiates the brand from competing brands (Pappu et al., 2005: 145).

Therefore, the concept of perceived quality refers to a situation, abstraction and superiority that can change over time depending on the subjective, part of the image, experience and comparison with other products

2.3.4. Brand Loyalty

Brand loyalty is the essence of brand equity. There is probably little value if customers remain indifferent to the brand and buy the brand with little concern in terms of ‘features, price and convenience’. As brand loyalty increases, customer advocacy increases, the likelihood of switching to another brand decreases. Brand loyalty is a very important value, especially when competing brands change in price and Product Characteristics. In addition, as brand loyalty translates directly into future sales, this is an indicator of brand equity at the point of profitability (Aaker, 1991: 43-44).

Brand loyalty levels consist of five levels. But each level is not separated by precise boundaries; it can also contain combinations with others. Brand liking rate, meeting functional and identity expectations, and replacement costs rates affect brand loyalty levels. These levels are (Aaker, 1991: 45-47);

- ✓ The lowest level of loyalty is the level where there are disloyal buyers who are completely indifferent to the brand. Consumers at this level perceive each brand as adequate and do not pay attention to the brand name in the purchase decision, preferring anything that is discounted or appropriate.
- ✓ The second level includes buyers who are satisfied with the product, or at least dissatisfied with it. The characteristics of customers at this level are that they are not too dissatisfied if change requires effort, they are habitual buyers and are vulnerable to competing threats.
- ✓ Third level, customers at this level are customers who are satisfied with the existing brand due to the cost of time, cost of money and risk of brand performance. Competing brands attract this group of buyers with their practices that encourage and reduce transition costs.
- ✓ The fourth level is the level where there are buyers who like the brand, are seen as friends of the brand, but do not follow the brand closely, have a general feeling and are in an emotional commitment. The reasons why buyers prefer this brand can be the symbol that the brand carries, the time of experience of the brand, and a high perceived quality.
- ✓ The highest level is the level where there are customers who depend on the brand, who are proud to be its user, who find the brand suitable for it as a function and identity, and who recommend the brand to others.

The value-generating results of brand loyalty reduce the marketing costs of doing business, provide commercial leverage, attract new customers, and respond to competitive threats. But to achieve these results, it is necessary to focus on customer rights, stay close to the customer, measure and manage customer satisfaction, create replacement costs, and provide additional services, as well as practice for maintaining and improving loyalty (Aaker, 1991: 50-54)

Brand loyalty is qualitatively different from other major dimensions of brand equity in that it depends more closely on the experience of use. For brand loyalty, the experience of buying and using the brand is essential. But this does not apply to awareness, associations, and perceived dimensions of quality.

However, loyalty is partly influenced by brand equity, awareness, associations and perceived dimensions of quality. In some cases, loyalty can be largely due to perceived quality or quality relationships of a brand. All brand equity dimensions have causal mutual relationships. Perceived quality, for example, will be based in part on associations and

even awareness, or may affect association and awareness with a symbol. But brand loyalty cannot always be explained by these three dimensions. Sometimes this occurs independently of the dimensions. For example, it is very possible to like something perceived as low quality (such as McDonald's) and be loyal to it, or not like something perceived as high quality (such as a Japanese car). Therefore, there is no claim that the four main dimensions of brand equity are independent. If there was a loyalty to the product rather than the brand, there would be no value. Buying a commodity, such as oil or wheat, rarely involves loyalty to the product itself, but the surrounding service can be linked to a brand and create significant loyalty (Aaker, 1991:46-47).

As a result, brand equity has some basic characteristics such as difference, abstraction, superiority, awareness, togetherness, subjectivity, commitment, changeability, comparison, symbolism and historicity. The difference is that one product, service, brand and consumer is different from others. Abstraction is an abstract perception of consumer-based brand equity. Superiority is the state of one brand being superior to others in one product group. Awareness is that the consumer is familiar with brand-related activities. Togetherness-intimacy is the harmony between consumers and the brand. Subjectivity is the individual perspective of the consumer towards a brand. Commitment is the pinnacle of brand equity. Changeability is the change of factors affecting brand equity by time and situation. Comparison is the comparison of a brand with other brands. Being symbolic is the presence of some code within the brand. Historicity is the formation of brand equity over time.

The 'features, benefits and values' of the brand are effective in attitudes and images towards the brand. The brand equity created by the brand image brings satisfaction and loyalty (Na et al., 1999: 171). Brand loyalty adds value to the brand and the company, and creates long-term loyalty; therefore it is an achievement desired by companies (Baalbaki and Guzman, 2016: 33). Brand loyalty depends on the intention to be loyal to the brand, attitudes and perceptions. In this respect, it is assumed that the higher the brand loyalty of a consumer, quality is same important as well (Pappu et al., 2005: 145-146). Brand loyalty can result in less exposure to the promotions of rival brands and to pay more for the preferred brand (Hakala et al, 2012: 450); to buy continuously in the future despite external factors and alternatives (Chaudhuri and Halbrook, 2001: 82); tendency to become repeat customers based on experiences, comparison with other brands and expectations (Alkibay, 2005: 86); showing strong belief and attitude towards the brand (Quester and Lim, 2003: 23). For these reasons, brand loyalty reduces the costs of firms to maintain their market share and ensures that a particular brand is chosen consistently (Wood,

2004:9); It reduces the research efforts of consumers to purchase, reduces the complexity of the purchasing decision and makes purchasing habits (Thiele and Mackay, 2001: 529). Based on the literature, the following hypotheses are derived:

H₁: There is a positive relationship between brand awareness and perceived quality.

H₂: There is a positive relationship between perceived quality and brand loyalty.

H₃: Brand awareness has positive effect on brand loyalty.

H₄: Brand image has positive effect on brand loyalty.

H₅: Perceived quality has positive effect on brand loyalty.

3. Methodology

The primary objective of this study is to examine the brand equity dimensions according to customer's perspective of the brands which offer fixed internet services in Turkey. Our research contains some limitations. The first of these is to subscribe to fixed internet service. Another limitation of our research is that customer perception, which can change over time, cannot be fully measured, as the participants only answered the online survey once.

Target population of this study is fixed internet service subscribers in Turkey. At the end of third quarter of 2020 in Turkey, the number of fixed internet subscribers reached 15.6 million (Market Data, Q3 2020, <http://www.btk.gov.tr> [01.10.2021]). Since the number in the universe is known, the minimum sample size with a sample error of 0.05 was calculated as 384.

In our study, we used brand equity scale which includes four dimensions (23 items), namely Brand Awareness (BA), Brand Image (BI), Perceived Quality (PQ) and Brand Loyalty (BL). The items on the brand equity scale were taken from the study of Ercis et al. (2013), who used it by adapting it to Turkish from Aaker's (1996) study, and it was transformed in a 5-point Likert form. The questionnaire consisting of items in the brand equity scale and demographic questions to be used in the study was applied online for the study in Turkish and 403 people were reached. Based on the obtained surveys, exploratory factor analysis was applied for the brand equity scale. In order to check the suitability of the brand equity scale in making exploratory factor analysis, KMO and Bartlett test values were examined and these values are given in Table 1 below.

Table 1: Results of the KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.965
Bartlett's Test of Sphericity	Approx. Chi-Square	11314.957
	df	253
	Sig.	.000

According to the KMO and Bartlett test results, it was understood that the brand equity scale was suitable for factor analysis, as the KMO value was .887 and the significance value of the Bartlett test was $.000 < .05$. As a result of the exploratory factor analysis, all of the items on the scale were distributed as in the original scale. The distribution of the items is shown in Table 2.

Table 2: Results of the Rotated Factor Matrix

	Factor			
	1	2	3	4
BA_1		.540		
BA_2		.794		
BA_3		.782		
BA_4		.812		
BA_5		.745		
BI_1			.610	
BI_2			.753	
BI_3			.534	
BI_4			.666	
BI_5			.739	
BI_6			.637	
BI_7			.689	
BI_8			.635	
PQ_1				.552
PQ_2				.624
PQ_3				.593
PQ_4				.562
BL_1	.777			
BL_2	.814			
BL_3	.763			
BL_4	.783			
BL_5	.816			
BL_6	.773			

According to the exploratory factor analysis, it was understood that the factors of the brand equity scale were distributed as same as original scale. Then the reliability analysis was applied for the scale and the result is shown in Table 3. Cronbach's Alpha value, which expresses the reliability results, is not expected to be below .70 in social sciences. According to the Table 3, it was understood that brand awareness dimension had .899,

brand Image dimension had .950, perceived quality dimension had .963 and brand loyalty dimension had .963 Cronbach's Alpha values.

Table 3: Reliability Analysis

Variable	N of Items	Cronbach's Alpha
Brand Awareness	5	.899
Brand Image	8	.950
Perceived Quality	4	.963
Brand Loyalty	6	.963

The demographic frequencies and the analysis performed for the testing of the hypotheses are shown in this section.

Table 4: Demographic Variables of Respondents

Gender			Marital Status		
Female	197	48.9	Married	247	61.3
Male	206	51.1	Single	156	38.7
Total	403	100.0	Total	403	100.0

Age			Education		
Under 18	19	4.7	Elementary School	30	7.4
18 – 23	72	17.9	High School	109	27.0
24 – 29	69	17.1	Pre-Graduate	67	16.6
30 – 35	88	21.8	Graduate	146	36.2
36 – 41	76	18.9	Postgraduate	51	12.7
Over 41	79	19.6			
Total	403	100.0	Total	403	100.0

Average Internet Usage			Household Income (Turkish Lira)		
0 – 2 Hours	39	9.7	0 - 3000	85	21.1
2 – 4 Hours	95	23.6	3001 – 4000	79	19.6
4 – 6 Hours	108	26.8	4001 – 5000	79	19.6
6 – 8 Hours	75	18.6	5001 – 6000	40	9.9
8 Hours and More	86	21.3	6001 and More	120	29.8
Total	403	100.0	Total	403	100.0

Subscribers of the Internet Brands		
“Vodafone”	47	11.7
“Türk Telekom”	206	51.1
“TURKCELL SUPERONLINE”	70	17.4
“turk net”	15	3.7
“D-SMART”	16	4.0
“Kablo TURKSAT”	22	5.5
“UyduNet”	4	1.0
“Millenicom Doping”	7	1.7
Others	16	4
Total	403	100.0

First of all demographic profiles of the respondents are shown in Table 4. According to Table 4 showing the demographic variables of the respondents, 206 of them are male, 247 of them are single, 88 of them are between the ages of 30 and 35, 146 of them are graduate, 108 of them use the internet for 4 - 6 hours, 120 of them are 6001 TL and more, 206 of them are subscribers of the “Türk Telekom” brand.

Table 5: Descriptive Statistics of Factors

Factors	Items	Mean	Std. Deviation	Cronbach's Alpha
Brand Awareness	1	2.9553	1.33196	.899
	2	3.4690	1.22815	
	3	3.5037	1.26249	
	4	3.4392	1.23914	
	5	3.3772	1.24256	
Brand Image	1	3.1787	1.16236	.950
	2	3.6253	1.17649	
	3	3.2754	1.22619	
	4	3.0744	1.22146	
	5	2.8859	1.21019	
	6	3.0372	1.25429	
	7	2.9752	1.25360	
	8	3.0323	1.26627	
Perceived Quality	1	2.8387	1.26030	.963
	2	2.8958	1.25744	
	3	2.8933	1.23427	
	4	3.0521	1.29090	
Brand Loyalty	1	2.6452	1.26398	.963
	2	2.7395	1.24753	
	3	2.9578	1.26204	
	4	2.8834	1.26915	
	5	2.4491	1.25950	
	6	2.8337	1.30619	

The means and standard deviation values of the respondents to the expressions in the brand equity scale are given in Table 5 above. According to Table 5, in the brand equity scale, the highest mean values are gathered the items of the brand image factor, and the lowest values are understood to be gathered the items of the brand loyalty factor.

Table 6: Correlation Analysis

		Brand_ Awareness	Brand_ Image	Perceived_ Quality	Brand_ Loyalty
Brand Awareness	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	403			
Brand Image	Pearson Correlation	.734**	1		
	Sig. (2-tailed)	.000			
	N	403	403		
Perceived Quality	Pearson Correlation	.657**	.836**	1	
	Sig. (2-tailed)	.000	.000		
	N	403	403	403	
Brand Loyalty	Pearson Correlation	.553**	.774**	.832**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	403	403	403	403
** . Correlation is significant at the 0.01 level (2-tailed).					

In Table 6, correlation analyses among all factors of the brand equity scale are shown. According to the results, there are statistically significant relationships among the factors. So H_1 (There is a positive relationship between brand awareness and perceived quality) and H_2 (There is a positive relationship between perceived quality and brand loyalty) hypotheses are cannot be rejected.

Regression analysis is to explain the relationship between the dependent variable and the independent variable(s) that are thought to have an effect on the dependent variable with a model. Multiple regression analysis was applied to examine the effect of brand awareness, brand image and perceived quality, which are the brand equity dimensions we used in our study, on the brand loyalty. In the multiple regression analysis with more than one independent variable, the significance level is expected to be less than .05 in order to establish the regression model properly in statistical terms (Gurbuz and Sahin, 2014: 271). In the regression analysis, it should be checked whether there is multicollinearity and the VIF (variance inflation factor) values in the analysis should be checked for this. If there is a correlation between independent variables, multicollinearity exists. In other words, if the VIF value is above 10, it indicates multicollinearity (Tascioglu and Yener, 2019: 364). According to the ANOVA test result in Table 7, it is seen that the significance level is less than 5% (sig. = .000 < .05) and according to the regression analysis result in Table 8, VIF values are not above 10. Therefore, it is understood that statistically there is no problem to apply regression analysis.

Table 7: ANOVA Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	389.812	3	129.937	336.324	.000 ^b
	Residual	154.152	399	.386		
	Total	543.964	402			
a. Dependent Variable: Brand_Loyalty						
b. Predictors: (Constant), Perceived_Quality, Brand_Awareness, Brand_Image						

Table 8: Regression Analysis

Dependent Variable	Brand Loyalty						
Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Brand_Image	.347	.060	.314	5.780	.000	.240	4.159
Perceived_Quality	.613	.048	.630	12.869	.000	.297	3.370
R=.847 - R ² =.717							

According to the regression analysis results, R² value that expresses as explanatory power of the model is .717, so independent variables in the model explain 71.7% of the variance of the dependent variable and this ratio can be accepted as high. In regression analysis, Beta values show the contribution of independent variables to explain the dependent variable. Brand image and perceived quality have positive contribution to brand loyalty; contribution of brand image to brand loyalty is 31.4% and contribution of perceived quality to brand loyalty is 63.0%. Therefore if brand image and perceived quality values increase, then brand loyalty will increase as well. On the other hand, since brand awareness did not contribute to brand loyalty, it is removed from the table. So, H₃ (Brand awareness has positive effect on brand loyalty) hypothesis is rejected, but H₄ (Brand image has positive effect on brand loyalty) and H₅ (Perceived quality has positive effect on brand loyalty) hypotheses cannot be rejected.

Conclusion and Discussion

In today's world, where there is intense competition in every field, brands are in an effort to create loyal customers. Brands with loyal customer portfolios gain an advantage over competitors in ensuring their sustainability. It has been demonstrated by previous studies in the literature that brands attach importance to brand equity dimensions in order to create loyal customers. Consumer based brand equity dimensions are examined

according to fixed internet subscribers in Turkey. Brand awareness, brand image, perceived quality and brand loyalty are discussed as dimensions of brand equity. Correlation and regression analysis were used to test the research hypotheses based on the literature. As a result of correlation analysis, it was understood brand equity dimensions have high relationship with each other. Based on this result, it is recommended that fixed internet brands act with a holistic approach, considering that the brand equity dimensions we use in our study are highly correlated with each other. On the other hand, it was understood according to the regression analysis perceived quality and brand image have a positive effect on brand loyalty. Based on this result, it is understood that fixed internet brands who want to get brand loyalty should consider these dimensions, especially the perceived quality dimension.

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Chapter 17

EDUCATION OF SYRIAN REFUGEE CHILDREN IN TURKEY: POLICIES, IMPLEMENTATIONS, CHALLENGES, SOLUTIONS¹



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Introduction

According to UN data, more than half of the refugee population around the world are children. As in all societies, the most vulnerable groups of the refugee community are children. Children are more affected by the devastating effects of emergencies than adults. Especially in cases of complex disasters such as war or internal turmoil, children become refugees by having to migrate from where they live.

Disasters like war destroy the normal flow of children's lives in a very short time and eliminate families who care about the child's daycare and education, their teachers, and schools. It prevents, delays, and sometimes stops the realization of the rights of the children. Despite these adverse conditions, the states have to ensure that child is given appropriate education according to the normal standards (Sinclair, 2007, p. 52).

Refugees face many challenges related to changes in their daily life, in their new community and struggle to adapt to these challenges. This struggle is relatively easy for adult refugees; because adults can live together with individuals who have the same origin as themselves in their new society and create a safe and familiar environment for themselves. However, the difficulties for the children of these families are more complex.

As the UN frequently emphasizes, the education of refugee children is one of the most fundamental human rights and states must provide basic education to all children. Refugee children's right to education is protected by International Law with Convention on the Rights of the Child, Geneva Convention on the Status of Refugees, the International Covenant on Economic, Social, Cultural Rights, and the European Convention on Human Rights, to which Turkey is also the signatory country.

The rights of the child to education guaranteed by law should not be interrupted due to disasters. On the contrary, children's right to education becomes even more important because of the growing needs and vulnerabilities of children after the disaster. Education is a tool to help refugee children overcome these challenges due to the new living conditions (Nicolai, 2003, p. 10). Through education, children can make sense of the difficult conditions they are in and learn to deal with these difficulties. Education can strengthen also the tie between family and society by reducing the stress of children and their families.

However, refugees often do not have the opportunity to continue their education. In case these people continue education, several difficulties arise both for themselves and for the education system. These children have to make additional efforts to adapt to the school due to their sudden and difficult migration processes, different historical and cultural characteristics, and

not sharing a common language. The education system has to respond to the educational needs of people of different ethnic backgrounds (Beste, 2015, p. 3 Sinclair, 2007, p. 52).

Traditionally, managers and decision-makers focus on vital assistance, such as food, water, shelter, and medical care, in any emergency. At this stage, the assistance required to ensure the sustainability of education is not perceived as a part of the emergency assistance for emergency response and is considered to be negligible (Andina, 2007, p.7).

The events that started in Syria in 2011 were gradually transformed into an environment of war and violence and nearly 5 million people had to take shelter in neighboring countries for their safety. Thanks to Turkey's "open door" policy, more than 2.5 million Syrians have fled to Turkey as well. Due to the destruction of habitats and the continuation of the war in Syria, Syrian refugees in Turkey have been staying in refugee much longer than predicted at the beginning. It is known that more than half of the Syrian refugees are in the education age. For this reason, besides the primary needs such as life security, sheltering, food, dressing, education needs and problems arise.

This article is built on a literature study that is based on the Syrian issue in public policy processes related to children's education and their solutions in Turkey. It also aims to identify problems in the functioning of the Syrian children's education process and to contribute to the literature in the field of education and public policies by introducing suggestions to support the functioning of the system, national legislation and central and local practices will be examined. Besides, as the active institutions in the field, legal process and implementation documents of the General Directorate of Migration Management (DGMM), Disaster and Emergency Management Presidency (AFAD), and the Ministry of National Education (MEB) will be examined and the main framework of educational policies for Syrian children will be drawn. The evaluation of the national and international reports and articles for the education of refugees will be accomplished and the data and academic recommendations for the determination of the current situation will be analyzed.

Policies

The need to give special attention to the child is specified in the 1924 Declaration of the Rights of the Child and the Declaration of the Rights of the Child, adopted by the General Assembly of the United Nations on 20 November 1959 (UNICEF, 2018, p. 4).

According to the second article of the Convention on the Rights of the Child, "States Parties shall ensure that any child, whose parents, or their legal guardians have the rights, color, gender, language, political or

other opinions, national, ethnic and social origin, property, disability, birth or other status, regardless of any distinction recognizes another undertake due.” in 1995, Turkey became a party to this agreement.

Furthermore, according to Article 42 of the 1982 Constitution, “No one shall be deprived of the right to education and education.”

The 13th article of the United Nations International Covenant on Economic, Social and Cultural Rights, which regulates the right to education, states that all countries within the jurisdiction of the Parties to the Convention recognize the right to education.

Due to the crisis in Syria which began in the year 2011 the number of Syrians who fled to Turkey in 2012 was around 14,000 (www.goc.gov.tr). This year, the refugee problem was not considered yet very seriously and the priority was given to basic needs. The legal basis of the training given in this period is the 2006 Asylum Practice Directive and the Ministry of National Education August 16, 2010 circular.

Under the Turkish Constitution, some procedural requirements have been put in place in practice in the 2006 Asylum Implementation Directive, which emphasizes the importance of access to basic rights, which constitutes the right for refugee and asylum-seeker children (UNHCR, 2011p. 28).

According to the Ministry of National Education’s circular (2010) dated August 16, 2010, a legal residence permit was a requirement for the children of refugees and asylum seekers to be enrolled in schools (Kıvılcım, 2014, p. 157-58). Therefore, children with no residence permit and unregistered children couldn’t enroll in schools.

By the year 2013, the civil war in Syria has continued intensely, the number of Syrians in Turkey has increased from 14.000 to 224.000 (www.goc.gov.tr). Therefore, it focused on the provision of urgent needs.

It was understood in 2013 that the war would not end soon. Therefore, the short-term policies and discourses made with the assumption that the refugees in the early years of the crisis would return soon after were replaced by a longer-term, lasting and sustainable solution (Seydi, 2014, p.274). Education problems that could not come to the fore in the first stage started to come to the forefront as time progressed. In this context, the Ministry of National Education has tried to find solutions to the education problem of Syrians through circulars and various activities published on 26 April 2013 and 26 September 2013 (2013a; 213b).

While the first circular was aimed at identifying the problems, the second circular was a circular that included education outside the camps. Article 9 and 10 of the Circular refer to the education of Syrian children, regardless of whether they have a residence permit, and to cooperation with

local governments, national and international organizations. In this way, the obstacle to the access of unregistered children to the education right has been removed (Seydi,2014, p.274). Following the Syrian National Coalition High Education Commission, a program and curriculum in Arabic, which is compatible with the Syrian curriculum, has been established under the control of the Ministry of National Education.

In 2014, when the Syrian population came close to 2 million, the first comprehensive legislation for refugees, asylum seekers, and foreigners living in Turkey has been prepared and entered into force in April 2014, 6458 No. Foreigners and International Protection Act (GİGM,2013). Thanks to the Temporary Protection Regulation (GİGM, 2014a), which entered into force in October 2014, Syrians had access to health, education, and social welfare services. Also, on 23 September 2014, with the circular titled Education Services for Foreigners No: 2014/21 (MEB, 2014), the education services to be provided to Syrian children have been established and secured to a certain standard. Furthermore, it is seen that the plans for the education of refugees for the first time are included in the 2015-2019 Strategic Plan (MEB, 2015) published by the Ministry of National Education (MoNE).

With these regulations, Syrian children attained the right to legal registration for public schools affiliated to MoNE and accredited Temporary Training Centers; and important steps were taken in their school access. In the 2015/16 education year, the enrollment rate increased by 50% compared to the previous year, and 325.000 children started school (www.hurriyet.com.tr).

As of October 2015, according to the predictions of the United Nations High Commissioner for Refugees (UNCHR), Syrian refugees in Turkey in line with the population of children between 5-17 years of age estimates about 708 thousand. (UNHCR, 2018). It is seen that approximately 90 percent of school-age children living in 25 camps established by AFAD in the 2014-2015 academic year continue their education but the number of children in the camps constitutes only 13 percent of school-age Syrian children. It can be said that the education level of the Syrian refugee children living outside the camps is far behind than in the camps. The enrollment rate for temporary education centers and public schools is estimated to be approximately 26 percent in the 2014-2015 school year.

The number of Syrian children in the basic education age in Turkey in the years 2015-2016 according to Directorate General Management of Migration's (DGMM) figures reached about 625 thousand. 10 percent of them are pre-school, 35 percent are a primary school, 27 percent are middle school and 28 percent are high school age (www.goc.gov.tr).

As to the Syrian children's access to education in the basic education age in Turkey since the year 2011, their enrolment rate has increased exponentially with the increasing number of Syrians in Turkey. While 34,000 Syrian children were able to benefit from education services in and out of the camps in 2011 when the Syrians first migrated, this number increased to 290 thousand in 2016 (www.goc.gov.tr).

The number of Syrians registered in Turkey according to DGMM's November 2018 data has reached 3 million 594 thousand 232 people. 1 million 950 thousand 182 of these people are men, and 1 million 644 thousand and 50 women (<http://www.goc.gov.tr/>). Table 1 presents Syrian Refugees in Turkey.

*Table 1:
Syrian Refugees in Turkey*

Age	Male	Female	Total
Total	1.950.182	1.644.050	3.594.232
0-4	293.953	274.574	568.527
5-9	246.538	231.422	477.960
10-18	352.652	304.526	657.178
19-24	318.787	224.461	543.248
25-29	196.836	141.323	338.159
30-34	162.645	120.834	283.479
35-44	189.836	159.109	348.945
45-59	134.925	129.748	264.673
60-90+	54.010	58.053	112.063

Source: Derived From www.goc.gov.tr (November 2018 data)

According to the table, 1 million 703 thousand 665 Syrians are in the 0-18 age range which consists of 47.39% of registered Syrians in Turkey. It is very important to educate these people in the education age.

According to UNICEF November 2018 data, there are approximately 616.000 enrolled children in Turkey. Table 2 presents Syrian Children and Education.

Table 2
Syrian Children and Education

	Registered Syrians		Registered Non-Syrians		Total
Total Affected Population	1.946.384	1.631.368	231.569	136.660	3.945.981
Children Affected (under 18)	830.038	762.061	63.771	55.895	1.711.766
Children Under Five	287.351	268.089	15.718	14.903	586.061
Children Enrolled In Formal Education	565.907		50.082		615.989
Children Out-of-School (Est.)	N/A	N/A	N/A	N/A	430.000+

Source: www.unicef.org

Turkish and refugee children across the country returned to school on 17 September for the 2018/2019 academic year. Nearly 616,000 Syrian and other refugee children have registered for the new school year. However, due to the growing school-age refugee population in Turkey, the estimated number of children who remain out of school stands at 430,000 (UNICEF, 2018, 1).

As of the end of September, Turkey remained home to nearly 4 million refugees and asylum seekers, including over 1.7 million children – the largest refugee population in the world. Nearly 3.6 million Syrians – of whom 1.6 million are children – live in Turkey alongside more than 360,000 nationals primarily from Afghanistan, Iraq, and Iran, of whom almost 120,000 are children.

Implementation

For the implementation of educational policies, there are four institutions. While two of them specialized for the Syrian refugee children, the other two institutions serve the general public.

a. Temporary Training Centers

Temporary education centers (TECs) are primary and secondary education centers covering Syrian children and young people who live in camps both in the camps established by the Disaster and Emergency Management Presidency of Turkey (AFAD) and in 25 provinces and adhering to the Syrian curricula. (MEB, 2014).

In all of the camps, centers for the education of Syrian children have been established. However, temporary education centers outside the camps are not available in all provinces. These centers were opened in 19 provinces where only the Syrian population is densely populated. In the 2017-2018 school year, many associations in Turkey, foundations, charities, and NGOs in cooperation with the Syrians in the camps were operated 370 temporary training center (www.hurriyet.com.tr). In these centers, together with the Syrian teachers who voluntarily work, education services are provided from pre-school to the last grade.

The applications of the students who want to study in these centers and their placement tests are carried out by the provincial national education directorates, teachers, and the commissions formed by the administrators. The Syrian Ministry of Education in the selection of volunteer teachers collaborates with the Religious Foundation of Turkey (MEB, 2014).

The aim of the educational activities carried out in TTCs is to make the refugee students continue their education that was broken in their country, to stop their loss of years when they return to their country, or continue their education in Turkey. Course hours, written, oral evaluations,

grades, and scoring, etc. transactions are carried out under the MoNE system. Similar to the e-school data system of the Ministry of National Education, transactions and transcripts of foreign students can be taken in Arabic and Turkish. Also, the High School Proficiency and Equivalence Exam (YÖLYDS) is conducted by the Ministry as a center for the students who have completed their education in these schools, and High School Equivalence Certificate is given to those who pass the exam. Refugees with secondary education equivalence certificates can obtain the right to study in higher education institutions by YÖK and universities, in case they fulfil the conditions (Erdönmez, 2016, p. 29).

TTCs are preferred by Syrian families and students for different reasons. The attempt to keep the children in the Syrian education system, the language and adaptation problems that their children will face in public schools, the lack of information about the registration process, and the efforts of those who wish to apply for refugees in other countries are among the factors influencing this preference (Özer, Ateşok & Komşuoğlu, 2016, p.206).

However, Deputy Undersecretary of the Ministry of National Education, Ercan Demirci, announced that although the training in TTC seemed to be a good sample compared to the examples in the world, it is likely that this certificate would eventually lead to some accreditation problem in later life. Adding to accreditation problems, Syrian children in the long term are likely to remain in Turkey, which has led to the integration of educational policies stand out. Therefore, in 2016, the Ministry of National Education aims to include the concept of the Temporary Training Center in the Turkish education system. It is planned to establish the required Turkish grammar and academic qualifications within 3 years before the incorporation of GEMs into the education system. In this integration, extra lessons related to the Arabic language, Syrian Culture and History, and similar identities will be taught (MEB, 2016).

With an order dated 29.06.2018, the MoNE stated that GEMs will be closed gradually (www.meb.gov.tr). A temporary education center will not be opened during the new education year. According to September 2017 data, the number of temporary education centers, which are 370, has been reduced to 282. Students in GEMs who are in the intermediate class were decided to enroll in a higher class after intensive Turkish language teaching. In this context, 100.678 students in 282 temporary education centers in 21 provinces receive an education based on intensive Turkish education (www.hurriyet.com.tr).

b. Public Schools

Another important alternative is access to education for Syrian children living outside the camps. As a matter of fact, according to the 2014/21 circular of the Ministry of National Education, Syrian children

can register with any public school with a foreign accreditation document (MEB, 2014). Thus Syrian students wishing to study in public schools can benefit from all kinds of educational services offered to children and can be trained in Turkey with Turkish peers.

As part of the policy of integrating Syrians living in Turkey into the Turkish education system, Syrian children have been directed to public schools as of the 2016-2017 academic year. In this context, it was obligatory to enroll 1, 5, and 9th-grade students in official schools. The students coming from education centers and are in the intermediary classes are undergoing intensive training in a higher class to be enrolled in official schools (MEB, 2018).

According to the data of the Directorate General of Migration Management in September 2018, the number of school-aged Syrians is 1 million and 47 thousand who are tried to be enrolled in public schools is continuing gradually. In this context, as of June 8, 2018, 610.278 pupils coming to Turkey due to massive immigration obtained access to education. More than 600 thousand Syrian students were taught at the beginning of the academic year. This year, according to September 2018 data, official enrollment in schools increased by 100 percent. A total of 498.316 students are educated in official schools by the Turkish curriculum (www.goc.gov.tr).

c. Special Schools Opened By Syrians

Syrians have the option to provide teaching services according to the Syrian curriculum either in the buildings consigned to them by the government or in their private buildings.

The schools providing education for foreign students are opened under the name of “international school” according to the requirements of law no 5580 and the regulations of private education institutions. However, schools for Syrian refugees do not have international school status. It is opened with the status of the temporary training center. They are established per the Circular No. 2014/21 (MEB, 2014) issued by the General Directorate of Basic Education in October 2014. The aim of the circular section, “related to the application in joint action to meet the educational needs of foreigners in Turkey and establish a standard” Ranks expressions. In the circular of the governorates, if the appropriate building can not be found in the governorship of land allocation is envisaged. It is estimated that there are about 60 schools in Istanbul (www.dunya.com).

There are also schools or courses that are not in the MEB records. Schools opened by Syrians are usually supported by local authorities and/or NGOs. It is known that volunteer Syrian teachers work in these schools.

Since the beginning of the crisis, the number of NGOs opened by the Syrians is quite high. It is emphasized that the “Syrian Education Commission” has a special place in this regard. In particular, the Commission has taken important roles in the organization of the curriculum and teacher provision. It is estimated that between 50 and 100 thousand Syrian children are educated in schools supervised by the Commission. It is reported that the number of schools opened for Syrian children in Hatay Reyhanlı is 32 (Erdoğan, 2015, p.93).

d. Non-Formal Education

In addition to the academic education of Syrian children, many vocational courses for adults, such as foreign language, sewing embroidery, fine arts as well as courses like Quran and memory education have been opened. 61.749 Syrian citizens participated in these activities. In 2016, more than 10 thousand Syrian citizens have been continuing in the camps (Emin, 2016, p.20).

Syrian students in Turkey have been taught Turkish language so that by learning the language they may get rid of their psychosocial problems through public education centers by the General Directorate of Teaching Turkish for Syrians and Adaptation Lifelong Learning. According to the *e-yaygın* database, in 2016 total of 80.124, in 2017 55.719, as of August 2018, 30.366 Syrians attended the courses (www.hurriyet.com.tr).

Furthermore in non-formal education, UNICEF and the Ministry of Youth and Sports expanded their Turkish Language Programme to nine new provinces, reaching 24 provinces to date. Over 100 Syrian and Turkish youth volunteers were trained and conducted a non-formal education outreach campaign to increase awareness about the opportunities available to refugee children in the nine provinces, reaching more than 8,600 Syrian refugee children. Among those, around 3,000 children were identified as out of school and referred to relevant educational opportunities (UNICEF, 2018, p.3).

Challenges

Many factors prevent refugee children’s access to education. These are poverty, trauma, violence, threat, interruption of education, and language problems (Stevenson & Willot, 2007: 672). Education services offered by Turkey for the Syrian children in the basic education age are extremely important. Although if steps became a little bit late on this issue, it is also quite substantial that training continues for 600.000 Syrian children whose education stopped in the middle both in terms of their future and in terms of their possible contributions to the reconstruction of Syria and Turkey. However, considering that there are approximately 450.000 children who are still out of education, there is still much work to be done in this area.

Therefore, recognizing the main problem areas related to the subject is important in terms of directing future studies. As a result of the studies and observations and interviews carried out in this field, the following conclusions can be summarized as follows:

a. Access to Education and Participation Problem

The vast majority of refugees in the world are unable to access education. One aspect to access to education is the distinction between male and female students. Both in and outside the camps, Syrian families who live under difficult conditions, especially in the absence of socio-economic status, marry their daughters at an early age (Şenol & Dinç, 2017). This leads to the deprivation of girls' right to education.

Access to the data of children is another side of the accession problem (Emin, 2016, p.21). There is a serious lack of data, especially regarding Syrians outside the camps. For this reason, it is not known to what extent Syrian children have access to education or to what degree they lack education. This lack of basic data makes it difficult to coordinate and plan the training services for Syrian children.

Another obstacle to access to education is the lack of transport services in the vast majority of temporary training centers outside the camps. Temporary education centers outside the camps have been established in certain regions and their numbers are few (HRW, 2015). For this reason, Syrian children living in places far from the education center have difficulty in accessing the school and this affects the access rates negatively.

b. Instructor Problem

The quantity and quality of the teachers are the decisive factors for the fulfillment of the expected rehabilitation mission. The teachers involved in the education of refugee children should be aware of the trauma. The number of students per teacher should be at most 40 in terms of the quality of education. Training of refugees on the date of commencement of the refugee crisis in Turkey was carried out by volunteer teachers among refugees. Then, with the growth of the crisis, Turkish and Syrian teachers were included in the education system with various projects (Yavuz & Mızrak, 2016, p.195). However, in the efforts related to the education of Syrian refugees, issues related to access to school are usually prioritized and two issues mentioned above related to the quality of education are not considered sufficiently.

In a recent study (Balkar, Şahin&Babahan, 2016, p.1306), Syrian teachers stated that they did not have the appropriate environment to cooperate with Turkish teachers and that they could not come together at all. They think that they need to cooperate with guidance counselors

in particular. In this way, they thought that their students could help the psychological challenges they face more professionally. Furthermore, in the context of professional development needs, Syrian teachers stated that they need support in class management.

The presence of refugee teachers in the field of education enables schools to approach differences more positively and to enrich the life in schools. However, since curriculum, pedagogy, and assessment are culture-specific and content-dependent factors, many refugee teachers have difficulty in teaching (Kum, Menter, and Smyth, 2010). In this sense, rather than finding a Syrian volunteer to work in TTCs, there is a need for professional instructors who know Arabic.

Besides, the lack of data on what skills and qualifications of Syrians in Turkey possess is a major problem. Therefore, people from many different professional fields are teaching. For example, in the temporary education center, doctors, engineers, and lawyers can enter the courses of Syrian primary school students (Emin, 2016, p.21). This leads to the inability of the Syrian teachers to benefit from their skills.

In research on Syrian teachers and coordinators; the low wages of Syrian teachers were expressed by the teachers and coordinators as one of the most important challenges faced by teachers regarding the functioning of the TTCs. These teachers cannot be paid directly by MEB. Various institutions and organizations (IHH, Turkey Religious Foundation, municipalities, UNICEF, i.e.) are paying lower wages to the Syrian teachers. According to the participants' statements; low wages cause many volunteer teachers to quit teaching or do a second job. Access to GEMs, especially away from the city center, leads many Syrian teachers to quit their jobs (Balkar, Şahin&Babahan, 2016, p.1306).

c. Language Barriers and Cultural Adjustment Problem

Studies on refugee children show a direct link between alienation and not understanding the language of the host society. Language education is the most important subject for these children in terms of success in education and self-confidence and social cohesion (Candappa & Egharevba, 2000, p.3). Knowing the host country's language facilitates access to the services and basic needs offered by that country, however, in case the language is not known, problems arise regarding the awareness of the rights granted to the asylum seekers.

Syrians take the situation as if they would have stayed for a short period and therefore they thought that they did not need language learning. However, the prolongation of the duration of the stay and the fact that the crisis did not seem to be over has revealed the necessity of learning Turkish (İstanbul Bilgi Üniversitesi, 2015, p.4).

The most important problem facing the Syrian refugees in Turkey is the language problem (Levent and Çayak, 2017, p.31). Turkish belongs to a different language family than the mother tongue of Syrian students, and the grammar structure and alphabet are different (Akkaya, 2013, p.180). Also due to the concern of losing Arabic, Syrians approach psychological distances in Turkish. However, the lack of Turkish language skills negatively affects the attendance and academic achievement of refugee children (Uzun and Bütün, 2016).

There is a problem with teachers and teaching materials to teach Turkish for Syrian children and adults both inside and outside the camps. The circular states that Turkish, Turkish language and literature teachers, classroom teachers, and foreign language teachers should be assigned to teach Turkish. However, teachers do not demand to teach Turkish to Syrians because they do not know Arabic and they are not experts in teaching Turkish to foreigners. The lack of educational material and teaching material in Turkish education negatively affects both access to education and quality. More importantly, the adoption of the society is delaying due to the slowness in language acquisition among Syrians (Emin, 2016, p.21).

d. Integration Problem

Refugees and asylum-seekers may experience traumatic events in their home countries, such as violent conflict, persecution, civil war, forced separation from family members, rape, torture. The difficulties faced by refugees include not being able to reach basic needs, leaving or losing friends or families, being subjected to violence, being threatened, and not being able to continue with daily living activities such as education and training. In the post-migration period, refugees face challenges such as environmental competence, lack of sufficient funds for basic needs, social isolation and lack of social support, racism, and maltreatment, although they have overcome life-threatening situations (Khawaja, White, Schweitzer and Greenslade, 2008).

For children who are at a critical time in their psychological and social development, the experience of a refugee is even more challenging. Most refugee children are faced with a state of violence that severely affects their psychological health. This makes it difficult for host countries to meet the needs of refugee children and families. The migration, family relationships, friends, the acceptable economic situation, employment opportunities, and lack of respect for the person's world view increases the risk of emergence of mental problems. Also, migration can be reflected in the education process of children and may cause various adaptation problems in children (Kaştan, 2015, p.217).

Syrian children are faced with a variety of psychological conditions that they should come over in Turkey. Some of them are the problem of gaining an identity, social and cultural mismatch, marginalization, contempt, exclusion problem (Harunoğulları, 2016, p.29). In Turkey, Syrians attending public schools are facing difficulties such as reluctance of school management, bullying, exclusion by the school personnel, families, and students, othering which are the factors complicating their adaptation process to school (Emin, 2016).

Education helps to meet the psycho-social needs of displaced and often traumatized refugee children, provides group activities, and raises expectations for the future. However, the school is a suitable area for the establishment of a peer support system for refugee children and provides a suitable environment for adapting to the newly entered environment. In addition, the school is a safe environment that contributes to the socialization of children and helps their development. For schools to perform these functions, students need to be supported during the adaptation process and should not be subjected to exclusion or discrimination by their peers (Keskinkılıç Kara & Şentürk Tüysüzer, 2017, p.238). Because problems experienced with traumatic experiences in the integration process can make them more fragile.

e. Curriculum

Coordinators have been assigned to monitor the activity in the TTCs, which are accredited by the commissions established in the 21 provinces outside the camps, in which the language of instruction is Arabic, followed by the revised Syrian curriculum, within the framework of the protocols established by the National Directorates of Education. These coordinators, who are generally chosen from the administrators of the Imam Hatip School in the districts due to their knowledge of Arabic, are limited to administrative work due to heavy workload, language barrier, and foreign curricula (Özer et al, 2016).

When the content of the revised Syrian curriculum and textbooks is analyzed, there are inconsistencies in the transition period, civil war, and displacement. Also, the new curricula do not have a vision for students who have been displaced and trying to survive in another country (UNICEF, 2015, p.48).

Also in the research conducted by the Center for Science, Education and Culture Studies (BEKAM), it was stated that the teams of academicians and teachers examined the Syrian curriculum and that the curriculum still contains false information about the Ottoman Empire and Turkish history. The mischief between the two countries is a negative factor for the integration of children (Emin, 2016, p.22).

f. Economic Problems and Child Labor Problem

Migrant families do not care much about the child's education process (Erođlu and Gülcan, 2016). According to the survey conducted by Human Right Watch (HRW) (2015), Syrian citizens identified economic reasons as the biggest challenge to education. Because the families are required to transfer 150 TL every three months and 50-100 TL in transportation, most of the students live away from the GEMs where they are trained due to their insufficient resources (Dorman, 2014).

Turkey has provided the Syrian students conditionally with the same benefits it offers to its citizens (UNHCR, 2017). For this reason, the Ministry of Education put into practice applications such as conditional education assistance, scholarship, shelter, and transport education support to enable Syrian children to access school (General Directorate of Lifelong Learning, 2017).

Another problem of the problems caused by the education crisis is child labor. It can not benefit from educational opportunities for children to be forced to work with many Syrian refugees in Turkey (Harunođulları 2016, p.52). Children are forced to leave school and go to the streets to help their families, even though they are successful (UNICEF, 2015). Besides, the number of child workers and beggars is increasing day by day.

Despite the prevalence of child labor among these children, it is also true that there is an intense effort to bring them to school in Turkey. Syrian students in state schools in Turkey are entitled to the same rights as Turkish students (Tařtan ve Çelik, 2017).

Conclusion

The internal conflict and war that started in Syria in 2011 have increased the violence and millions of people who had to leave their country had to take shelter in border countries for their safety of life. Millions of Syrians came to Turkey owing to the war. This led Turkey to transform its short-term policy into a long-term one which seeks not only to ensure life and basic needs such as safety, shelter, food, etc., of the migrants but also to ensure their social and educational needs. The most important of these policies is undoubtedly educational policies. Half of the Syrians coming to Turkey is made up of children who broke their education because of the war. This shows that a very large segment of the immigrants needs training service. Thus, Turkey developed policies for Syrian children's education in the basic education age to respond to this need.

At the beginning, the children in the camps were trained in their native language and curriculum. Afterward, Temporary Education Centers were established in places where refugees were concentrated. Until 2013,

to apply to these centers, it was necessary to be registered but due to a large number of unregistered children, the government rescinded the obligation of residence permit. In 2014, temporary education centers for Syrian children were trained in their native language and curricula and even with Arab teachers. Besides, children were allowed to be enrolled in public schools of Turkey. Also, the government supported the opening of private schools for Syrians. Since 2015, public schools have been given priority to accelerate integration and to increase the quality of education, and temporary education centers have started to be closed. Arabic lessons and additional courses will be given in public schools for Syrian children.

Although several years have passed, the end of the conflict in Syria does not seem possible in short term. This is the reason of deepening the refugee problem in Turkey and neighbour countries. In the first year of the refugee crisis in Turkey (due to the assumption that it will end in the short term), decision-makers and the public mainly focused on problems to shelter Syrians, issues related to the education of school-age children have been neglected. As a result, in 2018, 430,000 refugee children, mostly children living outside the camps, could not access education. Children without access to education comprise of big risk both for Turkey and for the future of the Syrian people.

On the other hand, the awareness of the seriousness of the issue was increased in recent years and the search for new solutions to the problem has been realized. Reflecting the needs of refugees, the provision of educational services at primary and secondary levels facilitates the adaptation of refugee children to society. Temporary Training Centers in Turkey on this issue (TTCs) offered to refugee students educational opportunities which can be evaluated in the context of education policy. In this context, the number of refugees who started school as a result of the efforts of public institutions, international organizations, and non-governmental organizations has been on a rising trend. However, for children who still cannot attend school, these actors need to make more efforts and develop cooperation to solve the problem.

While difficult living conditions increase the direct and indirect costs of education, it has many obstacles for a new student entering the national system. In the lack of support from families struggling with traumatic experiences, socio-economic problems, future anxiety, and language-related communication problems, teachers play a major role in meeting the need for schools and role models. In this context, the school is of great importance in reducing the impact of structural barriers with relevant and experienced teachers and appropriate programs. In addition to teachers' vocational training support, special support staff or units for refugee training needs will be useful in schools where the number of refugee students is high.

Social support for refugees is an important resource for resettlement and integration. In this context, being a school is a protective factor that increases the resilience of refugees.

The immigration movement towards Turkey made problems visible related to the education of new children which are not on the agenda of the government. Moreover, Turkey has been allowed to better understand the weak points in its education system. This novel perspective offers many opportunities to transform the system into a structure that will raise young generations happy to live together and know how to worry about the world. Training is at the heart of the newcomers' being part of society and hoping for their future. Education will give the self-confidence to express the needs of refugee children. Making the system open to the demands of refugee children is among the basic duties of states and international organizations. The inclusion of newcomers in the community will directly affect not only the field of education but also all areas where public service is provided.

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Chapter 18

THE EFFECTS OF PROTECTION PRACTICES ON LOCAL PEOPLE: THE SAMPLE OF THE KIZILIRMAK DELTA (SAMSUN)



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1. Introduction

The increase and diversification of the world population and the needs of the population causes changes in societies' human and economic structure, which increases the pressure on natural environments. The horizontal expansion of residential areas and the need for more land for economic activities cause agricultural areas and natural environments to open up for settlement. Due to the increasing population needs, agricultural production is tried to be increased with drugs and fertilizers. This pressure on soil and water has led to the need to make plans and implement them for conservation and sustainable use of natural areas, which stand out with their rare characteristics, without losing, without losing time. For this purpose, many national and international protection statuses have been determined and put into practice.

The universe that works with its own rules and laws without human work is called nature (Atalay, 2013). Especially in the last century, natural elements' deterioration has brought the nature conservation approach to the agenda. It is possible to say that this concept, which is increasing in importance today, started in ancient times to understand protecting sacred areas, some animals, and their habitats (Kurdođlu, 2007,2). Nature protection; is to protect human health, the guarantee of life and for future generations, the existence of plants and animals living in nature, their habitats and habitats, and natural elements and natural elements worth protecting in the light of specific criteria (Yücel, 2005:5). International Union for Conservation of Nature (IUCN) defined the concept of protected area as follows: "A protected area is a geographic area that is valuable for its nature, associated ecosystems and cultural values, protected by legal regulations for a long term, and its boundaries and features are clearly defined" (IUCN, 2020). To protect nature and natural resources, human being develops various forms of nature conservation. Thus both nature and natural resources are protected, and people benefit from these areas more effectively (Dođru and Aydın, 2020).

Conservation and sustainable use of natural resources is one of the main struggles of today's world. However, this issue had not been ignored in the past. Many societies have made efforts to protect their living spaces with unwritten rules. This situation has revealed the traditional conservation approach. The first legal basis for understanding nature conservation in Turkey, issued in 1983, the National Parks Act. The planning and protection statuses made with this understanding in areas such as Kızılırmak Delta, the subject of the study, where the natural environment and human relations are intense, can be socioeconomically restrictive for the local people. This situation makes it challenging to adopt the conservation understanding, thus creating legal problems. Establishing management plans that take

all stakeholders into account in the management of protected areas and ensuring stakeholders' participation in creating a management plan is essential in achieving more successful results in the long term. The reason why conflicts between area management and local people have come to the fore in many conservation areas in recent years is that the public is not included in the management process. Increasing bans and introducing protection rules by taking an area under protection changes the balance of protection used by local people, revealing the idea of exclusion among local people.

In this study, the protection status' effects covering a part of the Kızılırmak Delta on the region's socio-economic structure have been studied. Kızılırmak Delta, depending on its location and natural environment features, includes wetlands such as lagoons, flooded forests, and swamps that host many life forms. Delta, in terms of humanity, on the other hand; it is exposed to intensive land use due to activities such as settlement, agriculture, and industry due to its location close to the center of Samsun, one of the largest settlements in the Black Sea Region and districts such as Bafra, 19 Mayıs, Alaçam on the Black Sea coastal road (D010). Delta attracts geographers and scientists from various disciplines as it is vital for the natural environment and human relations. Many studies have been published on the natural environment characteristics and temporal changes, human and economic structure of the delta (Ataol et al., 2019; Bağcı & Bahadır, 2019; Köksal, 1972; Uzun, 2006; Yılmaz, 2007; Zeybek et al., 2018; Gül, 2020).

Unlike the previous ones in this study, the effects of protection statuses on the region's socio-economic structure have been determined in the Kızılırmak Delta, a critical necessity to protect its sensitive habitats and also witnesses many economic activities. In areas such as Kızılırmak Delta, close links are established between settlements and wetlands. Thus, it is not correct to think that wetlands are only important for wildlife and have some ecological functions. For sustainable wetland protection, it is necessary to determine how people have used wetlands for a long time, how sustainable this use is, and how human activities affect the wetlands' functions and values. When the arrangements and nature protection activities in wetlands, local geographical conditions, and traditional use of the area are not known, it becomes difficult to achieve the desired results. In this context, it is necessary to study wetlands with a holistic approach and understand both the ecological functions of these ecosystems and their relations with humans (Arı and Derinöz, 2011).

There are several economic activities in the protected areas around the Kızılırmak Delta. However, with the protection applications, the local people who carry out these economic activities are restricted to access

these areas. Also, the problems about animal husbandry, agriculture, transportation, and zoning experienced in the area as well as protection statues are the inspiration of this research. The research as of its findings, reveals the current situation of the field, the problems experienced and likely to be experienced together with conservation practices. It is expected that this research may provide significant data to local people and mechanisms which make plans about the perception of local people towards protected areas, the reaction of local people for the idea of protection, and the problems caused by the protection approach and possible solutions.

1.1. Location and Boundaries of the Research Area

232 km² part of Kızılırmak Delta, which is located in the Middle Black Sea Region, in the Kızılırmak Delta; first, second and third-degree protected areas, wildlife development area, Ramsar area and all these were declared as “Sensitive Area to be Protected” by Presidential Decree dated 20.04.2020, constitutes the research field. These lands have been declared protected areas since they host many living species and have ecologically valuable wetlands. Conservation practices in this area, which corresponds to 35% of the Kızılırmak Delta, directly affect 15 neighborhoods (Figure 1).

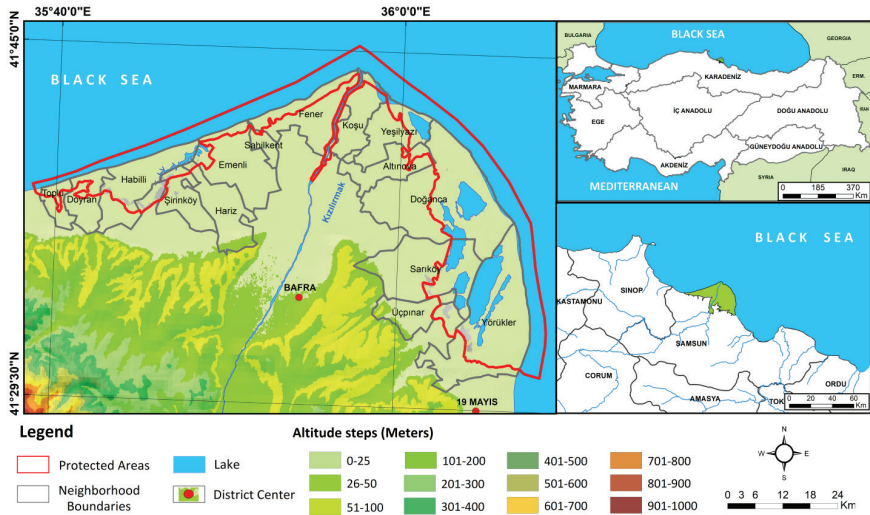


Figure 1. Location map of the research area.

Kızılırmak Delta, which is the Turkey’s third-largest delta after Çukurova and Yeşilirmak Deltas with a surface area of 677 km², is entirely within the borders of Samsun Province, on which there are 19 Mayıs, Bafra and Alaçam districts. The protected areas and neighborhoods subject to the study are located on the coasts of the Kızılırmak Delta.

1.2. Geographical Features of the Research Area

1.2.1. Natural Environment Features

Kızılırmak Delta started to develop in the Pliyo-Kuverterner period with the accumulation of alluvium on the shore that was carried by Kızılırmak which is the longest river with its length of 1335 kms. Delta, under the control of tectonic and eustatic movements during the Quaternary, has grown by being fed by Kızılırmak and developed in the form of a fan towards the Black Sea (Yalçınlar, 1958; İnandık, 1956, 1957; Turoğlu, 2011:6). The fact that the dams on Kızılırmak hold the sediments feeding the delta in the last 40 years caused the delta to have a deficit in the sediment budget (Zeybek et al., 2018:9). This situation caused the coasts of Kızılırmak Delta to decline with a speed of 32 m/year (Ataol et al, 2019:5).

In the Kızılırmak Delta, elevation values vary between 0-40 m, while slope values are relatively low (0-2 °). This situation paved the way for the formation of wetlands, which are the main elements of protection areas by making the drainage of rivers difficult. These wetlands, which contain fresh and saltwater creatures, constitute the ecotone zone between marine and terrestrial ecosystems. Wetlands, which had been seen as a problem in terms of socio-economic activities and a source of diseases such as malaria in the past, shrunk due to the drainage channels and dams opened. Protected areas of Kızılırmak Delta have wetlands and lagoons of Balık (1389 ha), Cernek (589 ha), Liman (272 ha), Gıcı (125 ha), Tatlı (52 ha), Uzun Göl (293 ha) and Karaboğaz (170 ha). Apart from these, there are also small lakes such as Altınlı, Sülüklü, and Mülk in the field.

According to the data of Bafra Meteorology Station (1963-2016); the annual average temperature of the Kızılırmak Delta is 13.9 ° C, and the annual rainfall is 783.5 mm. The most rainfall in the region is seen in October, November, and December. Quickly cultivable lands and climatic conditions of the Kızılırmak Delta made the region suitable for many economic activities. This situation caused intensive land use in the delta.

1.2.2. Population Characteristics

There are 15 villages directly related to the protected areas in the Kızılırmak Delta. According to TURKSTAT data, the total population of these villages is 12,447 (Table 1).

Table 1: Populations of the settlements in the study area for 2015 and 2019.

District	Neighborhood	2015	2019
19 Mayıs	Yörükler	2.117	2.029
Alaçam	Doyran	874	842
	Habilli	443	414
	Toplu	319	327
Bafra	Doğanca	2020	1.844
	Koşu	1.135	1.147
	Sarıköy	902	893
	Üçpınar	828	788
	Yeşilyazı	1.125	1.112
	Altınova	538	580
	Emenli	541	576
	Fener	524	538
	Sahilkent	244	256
	Şirinköy	556	541
	Hariz	621	560
Total		12.787	12.447

Source: TÜİK, 2020.

1-Although the villages in the cities with metropolitan status are accepted as neighborhoods, and the mentioned settlements are accepted as villages in this study, considering their settlement characteristics.

1.2.3. Economic Activities

a) Agriculture

The low slope of the Kızılırmak Delta, especially near the shore, causes drainage problems and high groundwater levels. These lands, which are in the protected areas today, have been used in rice agriculture for a long time. According to TUIK data for 2019, the Bafra district of 130,000 hectares and annual production of 96.785 tons of rice production in Turkey with the İpsala (Edirne) then has the maximum amount of rice production area (TUIK, 2020). Studies are underway for Bafra rice to obtain geographical indication.

Apart from rice agriculture, tobacco and vegetable production is also crucial in the research field, especially in the summer season tomatoes, cucumbers, peppers, eggplant, watermelon, and melon, in the winter season, spinach, leek, and cabbage.

b) Livestock

Small and bovine livestock and poultry livestock are carried out in the Kızılırmak Delta. However, water buffalo and sheep breeding come to the

fore in the protected areas and their surrounding. In terms of the number of buffalo in Samsun, Turkey ranks first; due to its natural, ecological, and cultural conditions, the area where buffalo breeding is most intense is the Kızılırmak Delta. According to TUIK data for 2019, 12.8% of the buffalo population is located in Samsun, Turkey, 6.2% is in Bafra. Samsun ranks first among provinces (9,966.9 tons per year), and Bafra ranks among districts (4,737 tons) to produce buffalo milk. Butter, cream, yogurt, and cheese made from buffalo milk add gastronomic richness to the region (Kaya & Keleş, 2019).

c) Fisheries and Aquaculture

On the Kızılırmak Delta coasts and in the wetlands within the protected areas, activities such as fishing, crayfish hunting, frog and snail collecting, Goga and reed cutting are carried out.

Freshwater fishing is carried out in the lakes in the study area. However, the invading species, which are thought to be released to the lakes later and referred to as the Israeli Carp (*Carassius Gibelio*), pose a problem for fishing activities. This fish species, whose adaptation to ecological changes and reproductive ability is higher than native species, provides an advantage over other competing species. Although it is not preferred by fishermen because it has no economic value, it is seen that most of the fish caught in the nets are female Israeli carp.

In the Kızılırmak Delta's wetlands, frog collecting is carried out in 4 months of the year (summer and autumn seasons) for an average of 120 days. It is forbidden to collect frogs between May 1 and June 30. While 96 tons of frogs were collected annually in 1992 in the delta in 1992, only 40 tons of frogs were collected by about 60 farmers in 2017. Snail collecting in the delta, on the other hand, is carried out in March-April and May. It is estimated that around 150 tonnes of snails are collected annually from generally untreated land and forests. It is forbidden to collect snails from June 1 to July 31.

On the other hand, Leech collecting in the Delta is mainly carried out by intermediaries from Çarsamba through collectors they bring. Approximately 2 kg of leeches are collected per person per day, and the annual production is estimated to be approximately 3 tons. The hunting and gathering of leeches in the delta between March 1 and June 30 has been prohibited (Şener et al., 2018, 84). Collected leeches and snails are exported abroad through aquaculture cooperatives and wholesalers (Can and Taş, 2012).

2- According to TÜİK data for 2019, the total number of female buffaloes in Bafra, Alaçam, and May 19 districts is 9,408. According to the

current data obtained from Samsun Breeding Buffalo Breeders Association, support aid is given to 11,007 buffaloes in total, 8.483 in Bafra, 1.582 on May 19, 942 in Alaçam.

d) Hunting

Hunting in the protected areas of the Kızılırmak Delta was being carried out towards domestic and migratory poultry for sports purposes. According to the MAK decision published in the Official Gazette dated May 22, 2017: due to the protection priorities of the Kızılırmak Delta, hunting is prohibited in the delta, except for the Karaboğaz General Hunting Ground (Şener et al., 2018).

e) Reed Cutting

The reed produced by the local people in the delta (*Phragmites australis*), Babur reed (*Typha angustifolia*), and reed (*Scirpus lacustris*) are generally used in the manufacture of products such as wicker or baskets, to cover the roofs of buildings, especially animal shelters, to lay the ground in barns or for decorative purposes in some buildings. In addition to these, reeds are used as fuel in village furnaces. The reed growing naturally in the delta is an important income source for the local people as it does not require any maintenance or cost. Simultaneously, the exporting company exported abroad was not preferred due to loss of quality after 2017, and therefore production activities decreased (Ministry of Environment and Urbanization, 2019).

1) Purpose, Material, and Method

With this research, it is aimed to determine the impact of national and international protection statues such as Wildlife Development Area, 1st 2nd and 3rd degree protection area, Ramsar Area, UNESCO World Natural Heritage Tentative List, and Sensitive Area to be strictly protected that were announced to protect the natural areas in The Kızılırmak Delta, on the region's socio-economic structure and local people's perception towards protected areas. The main data sources of the study constitute the field studies performed, the interviews with the stakeholders of the subject, the local people, mukhtars, relevant institutions and organizations. The materials and applications used in the research process are briefly as follows.

- Data collection techniques such as unattended observation, semi-structured interviews, and field studies were used in the research. To perform these activities, written permission was obtained from Ondokuz Mayıs University, Social Sciences and Humanities Publication Ethics Board and 19 Mayıs, Bafra and Alaçam district governorships.

- DEM (Digital Elevation Model) data of the research area were downloaded from USGS (US Geological Research Institute), and the location map was produced by processing with the ArcGIS program. Besides this, climate data from the 10th Regional Directorate of Meteorology, population, and agriculture data were obtained from TURKSTAT and used to explain the subject.

- Aerial photographs of the field taken with flying eyes were obtained from Samsun Metropolitan Municipality and 19 Mayıs Municipality and evaluated.

- The areas protected from the satellite images belonging to 2019-2020 in the Google Earth program and their surroundings have been digitized by dividing them into classes such as dune, water surface, swamp, forest, agricultural land, settlement, meadow, afforestation area.

- The boundaries of 15 neighborhoods, namely Yörükler, Üçpınar, Sarıköy, Doğanca, Altınova, Yeşilyazı, Koşu, Fener, Sahilkent, Emenli, Hariz, Şirinköy, Habilli, Doyran and Toplu, which cover the protection areas from the General Directorate of Land Registry and Cadastre, were provided and used in the maps.

- During the research process; Bafra Chamber of Agriculture, Bafra Hunting and Shooting Association, Samsun Breeding Buffalo Breeders Association, Bafra Altınkaya Irrigation Union, 11th Regional Directorate of Nature Conservation and National Parks were interviewed. Information was obtained about the protected areas and their boundaries, the activities carried out there, the prohibitions and limitations that came with the protection approach and the situation in the field before and after the protection approach.

- Within the scope of qualitative researches, the data of local broadcasters in the region were also used.

- Meetings were held with the headmen and residents of Doğanca, Altınova, Yeşilyazı, Yörükler, Emenli and Koşu neighborhoods located in the conservation area. The protest made by the local people against the protected area and press briefing on January 28, 2020, were followed up, and five residents living close to the protected areas were interviewed. In the village room of Yörükler Neighborhood, which borders the protected areas, 30 residents were interviewed about the protection approach and its effects on the local people. A semi-structured interview technique was used in the interviews. The information obtained from the interviews is explained under the related headings in the findings section.

- The following questions were asked to the participants within the semi-structured interview scope conducted within the scope of the research.

- o Do you know protected areas and their status, legal status of these areas?
- o Is your economic activity related to protected areas?
- o Have there been changes in your environment after the protection status was given to the region?
- o Did their protection status have an impact on your daily life and economic activities?

• While the interviewees within the research scope were chosen, It has been tried to select examples that know the area, have direct or indirect relation with wetlands, and interpret the subject in terms of age. It was diversified as much as possible. In this context, 35 people living in neighborhoods associated with protected areas were interviewed. The opinions of 8 of the interviewees were included within the scope of the issues discussed in the findings section of the research. In the analysis of the data obtained and in the writing of the publication, codes such as K1 and K2 were used instead of the names of the participants (Table 2).

Line	Code	Neighborhood	District	Gender	Profession
1	K1	Altınova	Bafra	Male	Public Employee, Agriculture, Livestock
2	K2	Doğanca	Bafra	Male	Public Employee, Agriculture, Livestock
3	K3	Yeşilyazı	Bafra	Male	Agriculture, Livestock
4	K4	Yeşilyazı	Bafra	Male	Livestock
5	K5	Yörükler	19 Mayıs	Male	Agriculture, Livestock
6	K6	Doyran	Alaçam	Male	Agriculture, Livestock
7	K7	Yörükler	19 Mayıs	Male	Agriculture, Livestock, Foraging
8	K8	Yeşilyazı	Bafra	Male	Agriculture, Livestock

Table 2. Some information about the participants whose views are included in the study.

2) Findings

Under the heading of the study's findings, after mentioning the conservation approach and status in the research area, the socio-economic effects of conservation decisions on the local people are handled. While dealing with these issues, the data obtained from the interviews held in the relevant places were used directly.

3.1. Conservation Approach in the Research Field

Protecting the wetlands in the delta and other natural elements around, the creatures living there and their living areas from the destructive impacts of economic activities such as agriculture, animal husbandry, hunting, gathering and tourism is the basis of the conservation approach in the Kızılırmak Delta. The lands that have been declared protected areas in the delta today have actually been protected by the residents of this region

with traditional ecological information since ancient times. For instance, local people who are concerned with the protection of wetlands and the environment have thoughts like; *“No toilet is built in a clean water source or in rivers where drinking water is provided. If it is done, the one who does it will be punished by God; who throws his garbage into clean water, sea and lake will be in trouble; those who pour the ash from his house into the path, stream and lake will be cursed”* (Gül, 2020). However, in recent years, the pressure on the protected areas has increased due to the reasons such as better recognition of the area, the increase in the population in the region, and the development of transportation opportunities to the area. Apart from the local residents, those who come from the surrounding settlements or from further afield for purposes such as visiting the area and hunting have started to damage the ecosystem here. This situation made it necessary to give protection status to the area.

The lands taken under protection in the Kızılırmak Delta almost completely cover the coastal parts of the delta. These lands mainly consist of dunes, swamps, wetlands, and forests; however, although a small amount of agricultural and settlement areas remained within the boundaries of the protected areas (Figure 2).

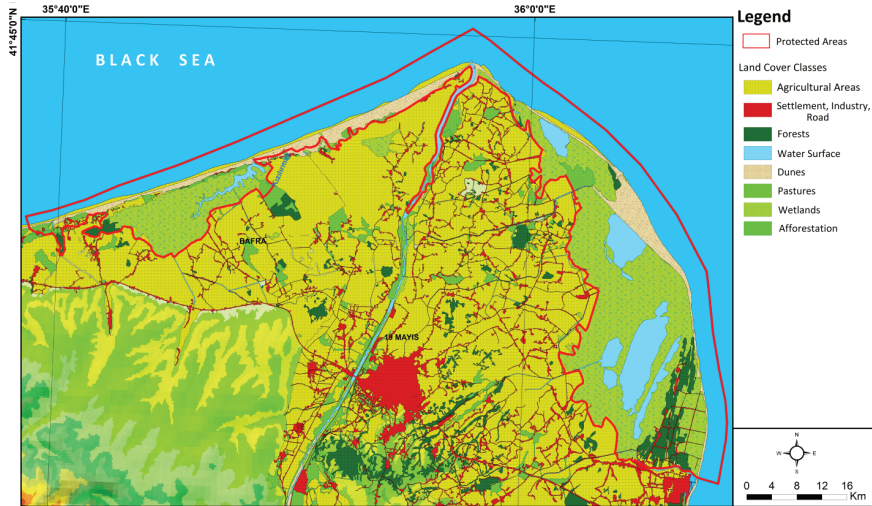


Figure 2. Status of the land cover in the research area as of 2019.

Wetlands and their surroundings, which constitute the main elements of the protected areas, also host many regions' economic activities.

3.2. Protection Status and Stakeholders in the Research Field

Kızılırmak Delta hosts 356 birds, 42 mammals, 35 fish, 13 reptiles, 12 amphibian animal species, and 555 plant taxa, one of which is endemic (*Linaria corifolia*) (Mermeroğlu, 2018). The natural wealth of the Kızılırmak

Delta is mainly concentrated in the coastal areas. Since the inner parts of the delta have been used for agriculture and settlement for a long time, they have lost their natural characteristics to a great extent. However, since the coasts are not very suitable for these activities, they are better preserved. The first studies known about the Kızılırmak Delta's wetlands were carried out in 1910 during the Ottoman period. The Kızılırmak Delta's wetlands were shown on a map of this date, and an irrigation project was prepared. Considering the history of the Republic, 23,686 hectares part of the Delta, which contains different habitats such as sea, river, lake, reeds, swamp, meadow, pasture, longoz, dune, was declared as a Natural Site Area in 1994 (19,857 hectares of First Degree, 63 ha of 2nd Degree, 3766 ha Third Degree Natural Site Area). 21.390 hectares part of the delta were declared as Ramsar Area in 1998; 5.256 hectares part of land, on the other hand, were declared as Wildlife Development Areas in 1979 (Table 3). The Kızılırmak Delta Wetlands and Bird Sanctuary, which are under protection on a national and international scale with their features such as habitat diversity and ecological richness, were included in the UNESCO World Natural Heritage Temporary List on April 13, 2016. Efforts are in progress to include the site in the permanent list of UNESCO.

Table 3. Protection status of Kızılırmak Delta coasts.

No	Status	Field (ha)	Year
1.	Wildlife Development Area	5.256	1979
2.	I. II. and III. degree site	23.686	1994
3.	Ramsar Area	21.390	1998
4.	UNESCO World Natural Heritage Tentative List		2016
5.	Definite Protection Sensitive Area	23.200	2020

A Presidential Decree was published in the official gazette dated 21.04.2020 related to the research field. With this decree, an area of 232 km² was declared as "Sensitive Area to be Strictly Protected" to cover all Delta protection areas.

When looked at the stakeholders of the field, the list is quite crowded. In the Kızılırmak Delta protection areas it has been seen that SAMKUŞ, Samsun Governorship and District Governorships (Alaçam, Bafra, May 19), Metropolitan Municipality and District Municipalities (Alaçam, Bafra, May 19), Samsun Environment and Urbanization Provincial Directorate, Land Registry and Cadastre 10th Regional Directorate, Samsun Provincial Directorate of Culture and Tourism, It has been observed that many institutions such as the XIth Regional Directorate of the Ministry of Agriculture and Forestry (Nature Protection and Wetlands Branch Directorate - Wildlife Branch), the State Hydraulic Works 7th Regional Directorate, Samsun Provincial Directorate of Agriculture and Forestry have a say and authority. As a result, each institution approaches the field

within the framework of its legislation, and this situation causes conflicts and authorization confusion among institutions and organizations. This situation makes it difficult to solve the problems of the local people living in the area.

3.3. Socio-Economic Effects of Conservation Decisions on Local People

According to the information obtained from the unattended observations and semi-structured interviews made within the study's scope, the conservation approach in the Kızılırmak Delta causes severe problems for the local people in some issues. It is possible to group them under four main headings (Table 4).

Table 4. Main problems faced by the local people with the protection status in the delta.

Headings	Descriptions
Transportation	Kızılırmak Delta protection areas were closed to motor vehicle traffic on 16/07/2018 with the Local Wetland Commission's decision. With the decision taken, local people can only enter the area on foot or by bicycle.
Reed Cut	The reed section, which has been a significant additional income for the local people since the past, has been limited with protection status. Burning the leftovers from the reed cut was prohibited.
Wild Animals	The ban on hunting with protection statuses has left the local people in a problematic situation by causing an excessive increase in wild animals such as jackals, foxes, and pigs, which cause problems in terms of agriculture and animal husbandry activities.
Zoning Problems	There are disputes about whether some of the lands within protected areas are owned by the state or privately owned. There are many ongoing court cases against these lands, which have been concluded but have resumed due to objection.

According to the findings, the local people's problems concerning the protected areas are mainly because their protection status interrupts the local people's economic activities. This situation made it difficult to adopt the conservation approach in the region. As seen in the land cover map (Figure 2), there are not many settlements and agricultural areas within the protected areas. However, local people benefit from wetlands, forests and earn additional income. That is why protection status caused public reaction as they reduced these income sources (Photo 1).



Photo 1. The action of the local people against the bans in the delta on January 28, 2020.

The conservation decisions taken in order to protect the natural beauties and ecological richnesses of the Kızılırmak Delta and the various protection statuses given to the region undoubtedly affect the socio-economic activities of the local people such as agriculture, animal husbandry, settlement, transportation, and access to infrastructure services such as sewage, drinking water and electricity. Identifying and explaining these effects constitutes the main subject of the study. The problems related to these issues have been identified and explained under headings.

a) Transportation

The Kızılırmak Delta protection areas were closed to motor vehicle traffic on 16/07/2018 with the Local Wetland Commission's decision. Transportation in protected areas can be provided from specific routes, buses, rental bicycles, or battery-powered vehicles allocated by the municipality provided that various rules are followed (Figure 3).



shore depending on the lakes and marshes, reaches the sea by following the belt channel through which the agricultural wastewater from the inner parts of the delta reaches the sea. This road was closed to traffic within the scope of the protection decision. Also, since the canal discharges the water contaminated by chemical wastes from agricultural areas into the sea, it is prohibited to enter the sea in and near the area where the canal meets the sea. This rule put forward to protect public health, and the closed road has broke the connection of the local people with the shore. People are not prohibited from entering the sea, but going to the sea without using this route means much more travel and time. The local people, who make a habit of swimming after agricultural work, have to travel for kilometers to reach the sea (Figure 4).

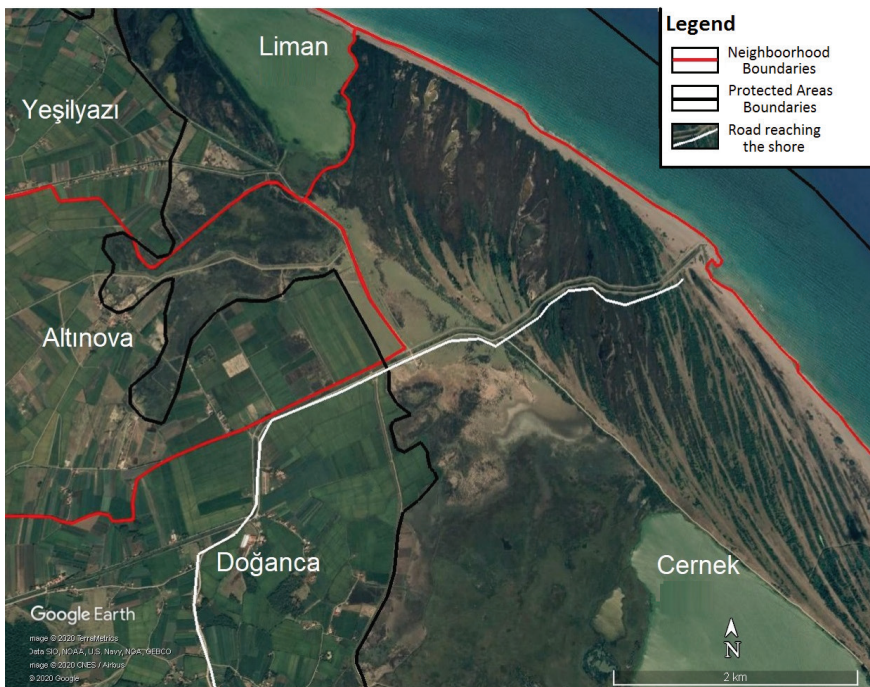


Figure 4. Closed roads and villages disconnected from the sea (satellite image dated 9.3.2019).

Because the closure of this road was not explained to the local people sufficiently for reasons of protection, as well as to protect public health, people who have lived in these neighborhoods for years with the sea and who frequently go to the seaside for purposes such as swimming, fishing and picnicking have created the perception that “the state spares us from the sea.” In this regard, the source person states the following:

“What can we do to the sea? Why is it prohibited to us? If the problem is grill and so on, let them show us a field, and if we go out of it, they shall

give the necessary penalty. Our culture that has existed for years should not be taken away from us. We are guided by the way that you can go to Atakum or May 19 to swim. We cannot swim there. We were motivating our children to take them to the sea in the evening while working in the field and going to the sea in the evening was a relaxing activity for us, now they took it from our hands too. Are they protecting our sea from us? "(P1).

The vehicle density that emerged during the period when vehicle access to the protected areas was free caused negativity for the area's flora and fauna. As a result, the area was closed to motor vehicle traffic. It was impossible to protect the site as it was difficult to control those who entered the field individually in previous periods. Controlling access to protected areas and specific binding rules negatively affected the number of visitors. The decrease in the number of visitors, on the other hand, decreased the income of the local people from tourism. One of the source persons of the research on this subject states the following.

"While transportation was free, the number of visitors was higher. Everyone was walking around with their cars and buying from the villagers' products. Some made a living in my village by selling yogurt and milk to the visitors. They blocked the road, and these citizens were unemployed, and they are struggling to find jobs with minimum wage and earn a living. Some even went to Istanbul to look for a job. As a headman, I am not able to travel within the borders of my village by vehicle. Since I do not have a buffalo I am not allowed to enter the area with my vehicle. I am an elected manager of this village. It is not possible for me to enter the field even in the face of a negative situation that will arise here. How true is that? "(P2).

b) Decrease in Reed Production and Reed Quality

In the interviews made with the residents of the neighborhoods around the protected areas of the Kızılırmak Delta, it was learned that the reed production, which is an essential source of income for the region, has decreased in recent years, the quality of the reeds grown is low, and it has no buyers. Today, agricultural pesticides are shown as the reason for the decrease in reed production and decrease in quality. According to the local people, on the other hand, the main reason for the decline in reed production is that the reeds do not consist of young individuals. In traditional reed production, the old elements remaining after the reeds are cut are burned and removed. However, reed burning is prohibited with conservation decisions. When this happens, old reeds and the remains of cut reeds prevent young individuals from surfacing and developing. This situation decreases the quality and commercial value of reed in the region. While the reed cutting is a traditional income source for the local people,

reed production has come to a halt due to protection rules. On the other hand, they were conducting scientific studies on behalf of Ondokuz Mayıs University Ornithology Research Center, Assoc. Dr. Kiraz Erciyas Yavuz stated that the main reason why the villagers burned the reeds was to get the fish out of their nests at the bottom of the reeds and to hunt them, burning reeds does not increase the quality and that the main reason for the decrease in quality is the increasing use of chemicals in agricultural activities in the area.

c) Wild Animals

With the area gaining a protection status, introducing a hunting ban is essential in protecting natural life. However, this situation brought some problems for the local people. The excessive increase in the wild animal population, which posed a problem in agriculture and animal husbandry activities in the region with the hunting ban, left the local people in a difficult situation. The number of wild animals such as jackals, foxes, and pigs, which were not come across very often in the past, increased with hunting bans. The villagers state that the poultry in the garden of their houses was killed by martens or jackals and could not intervene to protect their animals. The paddy plantations, which are the most important agricultural product in the delta, are destroyed, especially by pigs (Photo 3). A farmer who cultivates paddy in the field says:

“An average of 70-80 tons of rice is harvested from 100 decares of paddy farming land. Just this year (2019), we harvested 8 tons of paddy from a 100 decare field in Yeşilyazı village. The pigs are solely responsible for this. They both eat the best of the paddy and kick the rest on it, lay it down, and rot it.” (P3)



Photo 2. A paddy field was destroyed by pigs (Source: Temel KAYA).

Besides being an essential source of income for the Kızılırmak Delta's inhabitants, buffaloes are also a part of the wetland ecosystem, just like birds and fish. Water buffaloes have been living in harmony with other wetland creatures in the region for centuries. Mutualism can be observed between buffaloes and other animals in the field (Zduniak, Erciyas-Yavuz & Tryjanowski, 2017).

The local people usually leave their buffaloes in the wetlands and their surroundings in April and collect their animals in the barns in November (Photo 3).



Photo 3. Buffaloes grazing in protected areas and surrounding pastures.

The local people state that the pregnant buffaloes they left for the Delta returned to the barns with their young in November. However, recently their reproductive capacity has decreased due to the killing of the newly born water buffalo by jackals and other wild animals. This situation causes economic losses (Photo 4).

The local people say the following about the wild animals attacking the buffaloes.

“We are no longer able to make our animals graze, and jackals are walking in groups of 5, even we are in danger, God forbid they will eat us even if we meet these jackals. My buffalo cub's mouth was eaten by jackals, I took the animal to the faculty for treatment, but they said it was impossible to cure it. The animal was suffering and was not able to eat. So I had to cut it. I want to call the authorities. Is a measure going to be taken against the jackals wandering here? Every day we are afraid that our animals will be eaten, we want a solution to be found as soon as possible” (Bafra 55 Newspaper, 2020). (P4).



Photo 4. Buffalo cub attacked by jackals (Bafra 55, 2020).

The residents of the region state that they used to hunt wild animals that harmed them; therefore, these animals could not come close to the settlements. They are no longer able to cope with wild animals because the hunting bans brought a protection approach.

“They do not even allow me to walk on my land with my dog without a gun. While I was traveling with my dog, the officers came and warned me, saying that I was not allowed to enter the area with the dog.” (P5).

“We cannot take shelter on our owned lands. We are not allowed to release our dogs. We cannot protect our animals. We cannot deal with jackals. They take away our chickens right in front of our eyes.” (P6).

One of the species under protection in the study area is wild horses, known as Yılıkı horses. These uncontrolled animals damage the vegetables (leek, spinach, watermelon, melon, cabbage, etc.) produced by the villagers and the fields (Photo 5).



Photo 5. Wild horses are living in protected areas.

Due to their protection status, wild animals, whose number has increased more than it should be, are harmful not only to local people but also to natural life. In particular, jackals and foxes adversely affect the increase in the animal population by eating the eggs of ducks and other wild animals and their offspring who have not yet been able to fly during the water withdrawal. The local people think that the pheasants left in the area share the increase in the number of jackals and foxes. It is stated that predators multiply as the nutritional quality increases, and in this sense, pheasants left in the field contribute to this population increase.

d) Zoning and Title Deed Problems

The significant part of reactions against the conservation approach in the study field arises from problems about zoning and title deed. There are disputes as to whether some of the land within the protected area's boundaries belongs to the state or privately. There are many ongoing lawsuits against these lands that have been concluded but have begun again due to objection. The long duration of the lawsuits confronts the local people with public institutions about land use. State institutions believe that the citizens are not entitled to these lands because these lands were previously expropriated or belonging to the state. In contrast, the citizen reacts as I am not able to enter or use my land. It is essential to solve the zoning and title deed problems in the region and for the conservation approach to be adopted by the local people.

The lands within the Kızılırmak Delta protected areas and accepted as a 1st degree protected area have been prohibited from cultivating and building shelters on them. Infrastructure services such as electricity and water are not provided to these areas. Despite that, there is no expropriation of these lands too. This situation causes landowners to be deprived of their livelihoods and have difficulty in making a living. The residents of Yörükler Mahallesi who were interviewed about this subject within the scope of the research state the followings:

“This village is like an open greenhouse. All kinds of vegetables used to grow here before everywhere. In the past, 300 tons of beans used to be produced in this village. People leave this beautiful village and go to work in cities for minimum wage. We cannot work, agriculture or animal husbandry. We cannot get electricity, water, or build roads. We have 6,000 decares of land, neither can we enter with our animals nor can we farm. We cannot even enter our land on foot. The urban built roads used to be dirt roads, observation towers, wooden walkways, and visitor centers were built in the past. These do not disturb the balance of nature, but a hut or caravan that the villager will build out of wood and use to control their animals disturbs the balance of nature. Is that so?” (P7).

Since the settlements within the protected areas' boundaries are illegal, infrastructure services are not provided here. Consequently, some houses do not have electricity, water, and roads that are not opened. The villagers are not able to build shelters for themselves or their animals on these sites. Depending on this situation, anxiety has developed in people of the region for the future. The opinions of Yeşilyazı Mahallesi residents on this issue are as follows:

“The authorities tell us that we would sell products to the people who come here, we would develop economically. However, if the peasant cannot produce, what will he sell to the guest? If so, why are we not allowed to cultivate our land? “(P8).

4. Results and Suggestions

In this study, how the local people perceive the 232 km² area, which is under protection with statuses such as a Ramsar area, 1., 2. and 3rd-degree site, wildlife development area, sensitive area to be protected in the Kızılırmak Delta, and how the conservation areas affect the socio-economic structure of the region have been discussed.

The findings, detected problems, and solution suggestions at the end of the research are as follows:

- The area of the protected areas in the Kızılırmak Delta that is among the most important agricultural areas of Turkey with its topographical structure, climate, and water resources, equal to 35% of the total area of Kızılırmak Delta. Agriculture and settlement areas are very limited in protected areas, most of which are wetlands, dunes and forests.

- From the interviews with the local people, it has been determined that the public view positively on the understanding of the Delta's protection. However, they have experienced economic losses due to the prohibition and restriction of entering and leaving the protected areas. Consequently, the understanding of protection has not been adopted sufficiently by the local people. From time to time, it has been learned that there were people who did not obey the region's protection rules and were tried to be prevented by administrative penalties.

- In the Kızılırmak Delta's wetlands, economic activities such as fishing, buffalo breeding, snails, frogs, leech collecting, reed cutting, rice farming, and hunting have been carried out since the past. With the acquisition of protection status in the delta, these protected areas' economic activities have been either wholly prohibited or restricted.

- It has been determined that 15 neighborhoods that are directly related to the protected areas in the Kızılırmak Delta have a population of 12.447

living in these neighborhoods. The protection status affects this population in issues such as economic income, transportation, and housing. Some of the problems encountered in economic activities in the region and their solution suggestions are as follows;

- Renewal of reeds and the ability of young reeds to develop comfortably are important in terms of reed quality. However, burning reeds to remove slaughter residues is not an acceptable method as it harms many living things. In this sense, it is important to take precautions and encourage to maintain the reed activities coherent with the conservation approaches and sustainable that is in a way not to harm other living creatures. In case the reeds produced in the research area cannot find buyers in the foreign market, studies should be carried out to supply them to the domestic market.

- As a result of the research, with the conservation approach in the Kızılırmak Delta, it has been determined that the number of wild animals such as pigs, foxes, jackals have increased, these animals are a problem for agriculture and animal husbandry, and they are also harmful to wildlife. If the local people are given a limited hunting authorization for some species, it can be prevented that wildlife harms the public.

- While the paddy area planned in the Kızılırmak Delta is approximately 12%, this rate is approaching 50% with unregistered planting. Paddy cultivation around wetlands causes negativity for farmers. Villagers who illegally cultivate rice in areas where agriculture is prohibited complain that their fields are flooded, or wild animals have damaged them. It is essential not to allow agriculture in these areas by making controls in areas where agriculture is prohibited in the delta and preventing complaints that may arise.

- Grazing pastures is essential in terms of both ecological balance and benefiting from rangelands. Grazing for the area by calculating the grazing capacities of the rangelands in the protected areas grazing plans that determine their duration, periods, capacities, and locations should be made. In this way, both the sustainable use of rangelands will be ensured, and the local people's income will be increased. Incentives should be implemented to increase or decrease the number of animals depending on the planning.

- In the Kızılırmak Delta, some residents remain within or on the border of protected areas and react to the approach of protecting property over disputed lands. To prevent this situation, the situation of these lands subject to lawsuits should be investigated. If necessary, expropriation or litigation the process should be terminated by speeding up and finalizing the proceedings. Resolving disputes over land ownership will eliminate most of the reactions to the conservation approach.

- Many institutions and organizations are in the position of having a say, and implementing them in the protected areas of the Kızılırmak Delta causes bureaucratic chaos. To prevent this, a mechanism responsible for all activities should be established that can plan and manage the field together with all its stakeholders. Scientists in the field and the subject should be included in this mechanism, and the local people should be represented too.

- From the observations and interviews during the research process and the answers to the questions directed to the local people, the local people did not have enough information about the protection status and process, prohibitions, and opportunities Kızılırmak Delta. Explanatory information should be given to the local people about the mechanisms that have a say in the protected areas, the purpose and scope of the protected activity intended to be done here, the advantages for the local people, and the opportunities, prohibitions, and limitations.

- Construction is not allowed in the Kızılırmak Delta protection areas due to their statuses. However, the service facilities established in the area attract the reaction of the local people. When evaluated from this point of view, the villagers living in the area should be allowed to build structures that will not harm the ecology in limited areas and are compatible with nature.

As a result, it is the responsibility of today's world against future generations to take the areas under protection that contain ecological riches such as the Kızılırmak Delta before they deteriorate. This conservation approach will inevitably affect the people living around the protected areas, and they will also react. However, it should not be forgotten that the local people have contributed to the protection and enrichment of the natural life in these lands. Without the region people's support, it is impossible for such conservation activities not to be successful. This conservation approach should be implemented with plans that will not complicate the people's living conditions and support the local people. There have been images in people living around the protected areas that "the state did not get us out of our homes and lands, but with the protection decisions taken, demands us to migrate by discouraging us. " These people have been protecting and managing this wildlife for years, using unwritten rules involved in their culture, as set out by Gül, 2020. Without being sufficiently explained to the local people, many protection orders had been taken within the knowledge of headmen, local administrators, and bureaucrats. Generally, local people are informed when the rules start to be implemented. This situation creates a conflict between a group of people who are not asked their opinions informing the rules, who think they are excluded, and the public officials who try to implement the protection rules. As a result of every decision taken, the people whose living space is restricted and suffer economic

losses do not adopt the conservation approach and express this through written applications and actions such as press briefings. As mentioned earlier, a protection approach that does not include the local people and is tried to be kept watch by the state's law enforcement officers at the entrance gates seems unlikely to succeed. Transforming these protection statuses into opportunities, directing the local people to earn income, making incentives, and public benefiting from this business in the short term will also contribute to their adoption of the protection approach.

In Turkey, adjacent to the Kızılırmak Delta, mainly Yeşilirmak Delta rich in wildlife, many areas should be protected for its natural features and biodiversity available. The solution to the problems experienced here and the local people's support will set an example for other places. The negative perception that may arise in this regard will also negatively affect future conservation approaches.

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Chapter 19

INTERNATIONALISATION IN THE OTTOMAN HIGHER EDUCATION: MULTIETHNIC, MULTICULTURAL AND CROSS-NATIONAL PRACTICES¹



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¹ This book chapter was produced from a part of the PhD dissertation, entitled “The Effect of Internationalisation of Higher Education on Education Quality: Kayseri Case” submitted to the sociology department of Kırıkkale University Social Sciences Institute (Kırıkkale, Turkey).

INTRODUCTION

Today, internationalisation has been one of the critical elements of higher education. This term covers various multicultural and cross-national practices such as attracting foreign students, employing foreign faculties, establishing international cooperation, using international curriculum, opening international academic programmes, providing equivalence and recognition of diplomas and programmes, joining in academic mobilities, replacing national languages with a lingua franca as a medium of instruction, changing campus design and etc. Countries and higher education institutions earn many scientific, cultural, political and economic gains through internationalisation. Therefore, education and research should not be confined within a national or local scale, as knowledge needs to be transferred and circulated freely.

Indeed, the term “internationalisation of higher education” has some challenges regarding with its denomination, definition and relation with globalization. Firstly, there has been no general consensus in the literature on its naming since it has been called differently as multicultural education, intercultural education, study abroad, education abroad, borderless education, education across, global education, and offshore education (de Witt, 2011, p.243). Secondly, the term internationalisation of higher education is defined differently by various authors. For example, Rezaie et al. list 33 different definitions of this term (Rezaie et al, 2018, p.10-12). This can be partly explained by the very dynamic and complex nature of the internationalisation. However, the most cited definitions are the ones described by Janet Knight in 1993: “the process of integrating an international or intercultural dimension into the teaching, research, and service functions of the institution” (Knight, 1993, p.21), and its updated version in 2003: “... *the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of post-secondary education*” (Knight, 2003, p.2). In addition to the issue of a commonly agreed definition, another challenge is the confusion that can arise between the concepts of internationalisation and globalisation. Indeed, the terms internationalisation and globalisation are commonly incorrectly used interchangeably, even though they have distinctly different meanings. According to Daly as cited in Göver (2015, p.228) “*The most distinctive feature between them is that globalisation is mostly an integration into a common system, but internationalisation is mostly a movement between/ among nations*”.

Internationalisation, contrary to common belief that this is a recent phenomenon, is observed as a way of interaction between states throughout history since they have contacted each other with wars, education, trade and immigration. Accordingly, internationalisation in education should

not be considered as a modern or new development. For example, the old Greeks were at the very centre of the early internationalisation of education. Bergen (1994, p.39), referring to the study of Sandy, emphasized that the Greek Paideia (old Greek education) had become a part of not only the Greek learning approach, but also had become the central focus in other nations in which Greek culture and language had become internalized. Furthermore, the European medieval universities were receiving students not only locally but also from every region of the world (Peters, 2019:1064). It is possible to give much more example on the historical side of the issue, but it is clear that universities were transnational and the cradle of the universal knowledge in the past. However, nationalism and national languages harmed this feature of universities and made them national (de Witt, 2001:7).

Based on the fact that internationalisation in higher education is an old phenomenon, this study aims to investigate the initiatives of internationalisation of Turkish higher education through the Ottomans period in terms of multiethnic, multicultural and cross-national practices and to establish the differences and similarities between the past and the present. In the literature, there are a large number of studies which investigate the Ottoman education system in the context of Westernisation or modernisation movements. However, this literature review, unlike all the others, explores the practices of the Ottoman education system with a different point of view and a holistic perspective. This will be explained in relation to initiatives both within the various ethnic cultures that composed the empire, and beyond focusing on relationships with other nations, especially France and Germany. To support the primary line of argument of this paper that the initiatives enacted during the Ottoman period highlights yet another example of the long history of the internationalisation of education, what follows has been divided into four distinct sections. The first section explores the issue of student mobility, the second will discuss faculty mobility, the third section will analyse the factors of language and medium of instruction, while the concluding section will evaluate the similarities and differences in relation to past and present experiences of the internationalisation of education.

STUDENT MOBILITY

Incoming students and The Ottoman Palace School (Enderun)

In the Ottomans, there were three main formal education institutions: local schools (sıbyan mektepleri), madrasas, and the Enderun (The Ottoman palace school). Local schools provide human resources to the madrasas, and the madrasas are the higher education institutions where statesmen and scientists are educated. The third one, Enderun, emerged as

a higher education institution in the Ottomans in order to integrate the non-Muslim people living in their expanding territories and benefit from them as statesmen (Cihan, 2007, p.12). In this study, other than the madrasas, the Ottoman palace school will be explored as a typical sample of multiethnic and multicultural education in the Ottomans.

The Ottoman palace school is mostly accepted as a unique school that provided education to the gifted people (Ünlü, 2018, p.142-143; Sabancı et al., 2017, p.50; Işık & Güneş, 2017, p.2; Çorlu et al., 2010, p.20; Deniz, 2014, p.153-154). However, this school also should be regarded as an international school due to the ethnic diversity and a wide range of cultural backgrounds of the students.

There is no a clear consensus on which period this palace school was established. While some writers have asserted that it was founded in the period of Murad the Second, other writers believe that it was founded in the period of Bayezid the First. There are also other writers who indicated Mehmet the Second was the founder (Enç, 2005, p.298; Simit, 2019, p.325). Koçu (2004, p.27-28), who wrote the Janissaries, indicated Ali Pasha of Chandar, the grand vizier of Murad the Second, as the founder of the School together with the Devshirmeh Kanunu (the law of reclamation) which authorized the state to provide human resources from non-Muslim people both for the janissary corps and the palace school. It was also agreed that the school recorded a sound progress in the period of Mehmed the Conqueror also known as Mehmed the Second especially after 1460 (Kurban, 2016, p.87; Simit, 2019, p.325 and 332). At this prestigious Ottoman school, Non-Muslim students from various ethnic and cultural backgrounds under the Ottoman rule were selected through a special system called Christian Levy (Devshirmeh) from across the Ottoman Empire. According to Taşkın (2008, p.361), there were strict and clear rules to be obeyed when the boys were selected as the candidates for this palace education. Koçu (2004, p.30-31) lists these rules as follows.

- (1) The age of the boys who will be accepted as devshirmeh should be between 8, and 18.
- (2) The ones whose age is up to 20 can be accepted if they have the required qualifications for the devshirmeh.
- (3) Children should have a facial beauty, a proper body and a full health.
- (4) Reclamation is carried out according to the needs of the Novice Boys and the Janissary Master notifying this need.
- (5) According to the needs, reclamation is performed either in a limited area or all around the country.

- (6) In a certain reclamation time, only a boy is taken from one out of forty house in the villages or the neighborhoods of the districts.
- (7) The boy who will be taken in accordance with the laws should have at least one more brother.
- (8) Single son of a family cannot be taken even if he has the conditions stated in the law of reclamation.
- (9) The boys who are married and under the age of 18 cannot taken even if they bear the conditions in the law of reclamation.
- (10) The boys who have been taken are subjected to a second selection process. The most elites are sent to the service of the sultan as the page (the Enderun boy), and the others become the novice boy.

Subsequently, the selected candidates were transferred to İstanbul, the capital city of the Ottomans in batches of 100-200 people and were required to become practicing Muslims reciting the Islamic confession of faith (Taşkın, 2008, p.361). Then after this, they were known as *acemi oğlan* (Janissary recruit or cadet) and sent to Turkish families settled in Anatolia in order to learn Turkish culture. Afterwards, they were called back to the capital city and subjected to the palace education. The last stop of this journey was the Enderun School under the name of *iç oğlan* (page, inner boy) (Ünlü, 2018, p.143). However, this procedure was narrated differently by Koçu. According to Koçu, the first stop of each batch was Edirne city where the selected boys were crosschecked with the notebooks of *devshirmeh* and the driver who brought them to Edirne. Then, they were circumcised and given Muslim names. The ones with proper body structures and a facial beauty were sent to the palace as *iç oğlan* to study; the others were accepted as *acemi oğlan* to be a janissary in the Ottoman army (Koçu, 2004, p. 33-34). Thus, thousands of non-Muslim boys were collected from the Rumeli or the Balkans as *devshirmeh* under the corresponding law (Goodwin, 2006, p.4).

The Enderun School that hosted the boys who had been collected, had seven chambers that functioned as different level classrooms where various levels of basic and elective courses such as Turkish, Arabic, physical education, literacy and geography were taught. The chambers of the school were included a grand and small hall, a falconers dorm, a campaign chamber, the larder, the treasury and the privy chamber (Özcan, 2015, p.1612). It took at least 7–8 years for the candidates to complete their education at the school (Özcan, 2015, p.1612; Sabancı et al, 2017, p.51-52, 57; Kurban, 2016, p.94; Işık & Güneş, 2017, p.7). The candidates who failed to complete the palace education were called “*çıkma*” (expulsed) and were then recruited in the Ottoman military (Işık & Güneş, 2017, p.

5). This education system is visualized in the Figure 1 with its main stages and outputs.

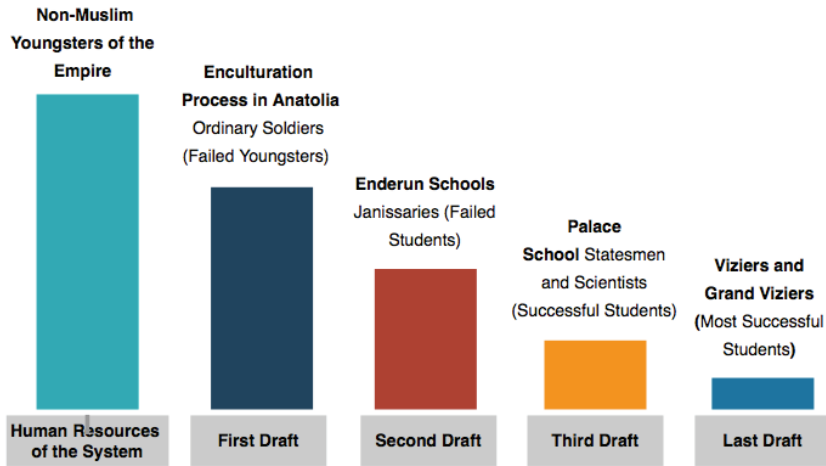


Figure 1. Enderun education system in the Ottomans (Adapted from the Enderun Pyramid, Corlu et al., February 2010)

Numerous statesmen, including grand viziers (prime ministers) were trained and educated at this special imperial school. The most famous ones were Damad İbrahim Pasha, Gedik Ahmed Pasha, Sokollu Mehmet Pasha (the grand vizier of Suleyman the Magnificent) and Köprülü Mehmet Pasha (the grand vizier of Mehmet the Fourth). (as cited in Işık & Güneş, 2017, p.8-9). In addition, artists, writers and army officers were also among its graduates. Over time, this long-standing school became dysfunctional due to deterioration of the devshirmeh system, changes at the ruling centre and the foundation of other institutions for the education of statesmen (Simit, 2019, p.332-345). As a result of all these developments, the palace school, having lasted more than 500 years, was closed by a decree in the early 20th century. There is no general consensus of the specific closing date of this school as on its foundation date and whether it was in 1909 (Simit, 2019, p.338; Cihan, 2007, p.35) or in 1924 (Özcan, 2015, p.1612) is still debatable.

Today, one of the key elements of the internationalisation of higher education is the social, economic, and cultural benefits that international students bring to the host country and institutions, which include but are not limited to global citizenships, competitiveness, broadened perspectives, diversity of language and culture, international solidarity, academic quality improvements, intercultural understanding and communication (Bolstrom, 2010, p.150). However, the Enderun School was used as a tool to assimilate different cultures into a single Ottoman culture by converting non-Muslims to Muslims.

OUTGOING STUDENTS

International student mobility in both directions can be observed across the Ottoman period. However, the incoming and outgoing flow did not occur simultaneously. Whereas incoming students were seen especially during the earlier periods, outgoing students were seen towards the later periods.

Since the 16th century, Madrasahs (the classical higher education institutions of the Ottomans) fell behind in the developments of sciences such as mathematics, physics and chemistry due to the emphasis on teaching of traditional Islamic knowledge (Şanal, 2003, p.152). Therefore, in order to modernize the education system, the Ottomans needed to send students to Europe (Kırpık, 2015, p.12). In this context, the initial students who studied in Europe included Massabiki and Osman Nurettin, who were sent to Italy in 1815 and to France in 1818 respectively by Mehmed Ali Pasha, the governor of Egypt. Afterwards, Mehmet Ali Pasha sent 44 more students to France to study in 1826. Following Mehmed Ali Pasha, the Ottoman Government (Bab-ı Ali) also started to send students to Europe. The first ones were Hüseyin, Ahmet, Abdüllatif and Edhem, as seen in the figure 2. They were sent to Paris, France in the late 1820s (Şişman, 2004, p.2-3).

This may seem to be a contradiction in terms of the classical core-periphery relationship, but there was a power shift from the core to periphery in the 18th century and it was Egypt, at the periphery of the Ottoman empire, that sent students to Europe first before the empire, the core, started this practice (Can, 2016, p.536). Mardin (1973, p.170) also confirms the relative autonomy of the periphery in the Ottomans and the clash between the centre and the periphery before the nineteenth century.



Figure 2. Gravure of the first Ottoman students sent to Europe (Erol, 2019, p. 68)

Initially, male students were sent to Europe mostly for military purposes. After *Gülhane Hatt-ı Hümayunu* (Tanzimat Edict) in 1839, civilian (male) students also started to be sent abroad (Kırpık, 2015, p.12). Across successive periods, this procedure became more systematic with the numbers of students increasing. Accordingly, a total of 423 students in Abdulhamid the Second Period (1876-1909) (Gençoğlu, 2014, p.36-37), and a total of 550 students during the Second Constitutional Period (1908-1920) (Gündüz, 2015, p.31-32), studied overseas. Of the countries they were sent, France and Germany were the most popular destinations. There is a certain rationale behind the choice of the countries for the Ottomans. Indeed, at this time, the Ottoman State established and developed close relationships with France and Germany respectively. In particular, the 1789 French Revolution and its political and cultural reflections on other countries made France the first choice for the Ottomans when sending students to Europe and the French language was preferred as the medium of instruction in various newly established Ottoman schools such as *Mekteb-i Sultani* (Galatasaray High School) and *Mekteb-i Tıbbiye* (Medicine School) (Bolat, 2005, p.152). As with France, the Ottomans also

had maintained close relationships with Germans that extended at least 250 years. Here, the most crucial factor is that Germany had never been directly at war with the Ottoman State. Germany further strengthened their relationship and cooperation through agreements especially in 19th century (Alkan, 2015, p.35 and 41-42).

However, sending students abroad had some unwanted political and cultural consequences. In relation to governance, a significant French influence was felt in terms of cultural affairs. This was a major factor that led to the emergence of an occidental elite group known as the New Ottomans and Young or Jeune Turks who were essentially alienated from their own values and traditions (Çidem, 2017, p.585; Demirtaş, 2007, p.390). The leaders of Young Turks were the graduates of Western institutions either in the West or in the Ottoman territories. They internalized Western culture and wanted to transfer it to the Ottomans with a social and political movement (Demir, 2012, p.106).

One more striking point is that, other than male students, for the first time, Muslim or non-Muslim female students were also sent to Europe after 1908 (Gündüz, 2015, p. 31-32). Indeed, the Ottoman government intended to send many more students to Europe. However, due to the political and financial difficulties which the Ottomans faced during this period, conservatives opposed to this policy and advocated establishing or opening modern educational institutions in the Ottomans' own territories (Çidem, 2017, p.581-582). Moreover, the Ottomans and its Governorship of Egypt opted to open their own schools in Paris instead of sending their students to French schools. These schools were the Mekteb-i Osmani or the Ottoman school (1856), the Ecole Egyptienne (1826) and De Ecole Militaire Egyptienne (1844) respectively (Gündüz, 2015, p.24). Among these schools, the Ottoman School was the first and the only school opened abroad by the Ottomans. It had both Turkish and French scholars together with the students both from the Ottomans and other nationalities such as Bulgarian, Armenian and Greek. Due to the simple financial problems such as educational costs, it was closed in 1864 with the total number of 94 graduates, however it inspired the establishment of a modern high school in İstanbul: Galatasaray Mekteb-i Sultanisi (Köse, 2020).

FACULTY MOBILITY

Incoming Faculties

As established by Uyar & Erickson (2009, p.281) in their study *A Military History of the Ottomans*, the Ottoman army or military forces was the backbone of the state. However, the defeats on the battlefields as of the 18th century resulted in the reform movements in the army to regain the old military power (İhsanoğlu, 2004, p.2). For the modernisation of the army,

recruitment of foreign military officers or technical specialists became the most frequent option applied by the Ottomans.

Some of these specialists or officers were converted to İslam like Comte De Alexander Bonneval (Landweber, 2008, p.1) who was renamed as Humbaracı Ahmed Pasha (Lord Ahmed the Bombardier) and opened a technical military school in 1734 under the name of Humbarahane (School of bombarding) or Hendesehane (School of geometry) in Istanbul. In this school, he, himself, taught mathematics to the students who would be assigned as bombardiers in the Ottoman frontiers after their graduations (Aydüz, 2011, p.21). In his memoirs, Bonneval noted that he was teaching the courses in Turkish in the newly established school “Mühendishane-i Bahr-i Hümayun” (Royal Naval Academy). Students, some of whom were about 60 years old learnt well and were able to solve the basic problems of trigonometry within 3 months.

In contrast to the example of Comte de Bonneval, some technical specialists and military officers were employed by the Ottomans without being converted to Islam like Baron de Tott who was employed in the Hendesehane (School of geometry) established in İstanbul in 1771. This school was one of the first engineering schools where students were educated in the European system. Other than Baron de Tott, Kermovan, Campbell Mustafa, Andre-Joseph Lafitte-Clave, Joseph Gabriel Monnier and Tondu were also teaching as foreign officer-instructors in this technical school (Kaçar, 1998, p. 82-98).

Another school where foreign scholars were employed was the Cerrahane-i Amire ve Tıbhane-i Amire (Surgery School and Medical school). At that time, the Ottomans were fighting on a multifront against the Western powers outside and minorities inside. Therefore, this modern school was established in 1827 and employed European clinical professors to meet the need of treatment of the soldiers who were injured on the battlefields (Ceylan, 2012, p.67-68). The key figures who taught in this school where the medium of instruction was in French were Karl Ambrosso Bernard, the founder of the school, Sigmund Spitzer, anatomy professor, Constantin Karadotori, Sarandi, Charles Bernard, (Sigmund) Spitzer, Sade de Galiere, Konstantin Efendi, Stefan (İstefanaki), Bogos, Dimitrashko Morozbeyzade, and a Hungarian clinician renamed Mehmet Necati (Ceylan, 2012, p. 68; Berkes, 2010, p.185; Şahin, 1999, p.89). Another medical school that employed foreign professionals is Gülhane Seririyat Hastanesi ve Tatbikat Okulu (Gülhane Clinic and Practice School), which was founded in 1898 and later renamed Gülhane Askeri Tıp Akademisi (Gülhane Military Medical Academy). Robert Rieder, Georg Deycke and Julius Wieting supported establishing this new school and gave various medical courses to the students (Paksoy, 2019, p.5).

In addition to these medical schools, the Ottoman language school and Dar-ül Fünun (currently renamed as Istanbul University) are other examples of higher education institutions that employed foreign or non-Muslim scholars between 1866 and 1892. These foreigners include Adosidi, Kostaki, Dimitri, Gatman, Ohannes, Konstantin, Dö Mantran Roj, Berdu Motnat Roj, İstimdaki, Namziye, Proni, Perad and Döbova (Balcı, 2008, p.87). Following Meşrutiyet the Second, (1908) İttihat ve Terakki Fırkası (the Committee of Union and Progress) that captured political power wanted to employ foreign scholars in order to transform the university to a modern educational institution (Dölen, 2008, p.1-2, 4). In this context, Prof. Franz Schmidt, working in the Education Department of German Ministry of Foreign Affairs, was invited to the Ottoman State in 1915 and he started working with the Ottoman Ministry of Education as a consultant. Consequently, a total of 25 German scholars came to the Ottoman State and were employed at the Istanbul University with the efforts of Prof. Schmidt (Dölen, 2008, p.29). Although these scholars were asked to teach courses in Turkish after 2-year stay in the Ottoman State, only a limited number of the scholars managed to teach in Turkish. Thus, Turkish assistants were allocated to those who failed to acquire enough Turkish language skill for the purpose of teaching (Türk & Yılmaz, 2013, p.49).



Figure 3. Photograph of the German scholars who started to teach at the Dar'ül Fünun (Istanbul University) in 1915. (Yalçın & Penck, 2019, p.12)

Furthermore, Şahin (1999, p.89) added some names to the list of the ones of those who were employed as a foreign scholar in Ottoman schools. As seen in the Table 1, it is clear that these scholars were mostly employed in the Ottoman War School, İstanbul University and School of Agriculture.

Table 1. Foreign scholars employed in Ottoman schools (Compiled from Şahin, 1999, p. 89).

Instructor's Name	Courses Given	Institutions Worked
Shrans	Painting	Ottoman War Academy
Movani	Military drill	
Hajino	Science	
Arkirus	French Language teaching	
Manyan	War tactics	
Dobrovil	Cavalry	
Malinofest	Attacks and engineering	
Sang	Mathematics	Ottoman Engineering School
Jakmo, Perar, Karolidis, Dolis, Jakobo Sövalye, Karo, Baroçi and Nikolaki	Not specified	Istanbul University
Kigork, Kannca, Ertneni Amasyan	Not specified	School of Agriculture
Gavri	Not specified	School of Political Sciences

In sum, most of specialists and military officers were generally employed in the military or technical schools, medical and surgery schools, language school and Dar-ül Fünun (The Ottoman University) (Ergün, 1990, p.439-440; Şahin, 1999, p. 88).

THE MEDIUM OF INSTRUCTION AND THE LANGUAGE SCHOOL

Until the foundation of the modern education institutions, there was no an apparent need to communicate with the different ethnic groups who lived in very large geographical areas ruled by the Ottomans, through their languages. (Demiryürek, 2013, p.130-131). Dolgunsöz (2014, p.101) listed the languages used by the different ethnic groups, as in the Table 2.

Table 2. Languages spoken by the Ottoman ethnic groups (Dolgunsöz, 2014, p.101)

Ethnic Groups	Languages Used
Armenians	Armenian
Bulgarians	Bulgarian language
Greeks	Greek Language
Georgians	Georgian Language
Ottoman Jews	Aramaic
Ottoman Kurds	Kurdish Language
Ottoman Circassians	Caucasian Language
Serbs	Serbian

Another important factor was that, non-Muslims were playing an intermediate role as translators between the Ottomans and the foreigners until the 18th century. Various religious factors were effective in this

situation. Any Muslim who spoke foreign language or dressed like a foreigner were strongly condemned by Islam. Also, the area of trade and commerce was left to non-Muslims. All these resulted in a lack of people who knew a foreign language in the Ottoman Empire (Balcı, 2008, p.81). Furthermore, the situation in which only non-Muslims could act as translators was perceived as a potential security threat by the Ottomans. For example, various governmental translators were working against the Ottomans. Such translators included Godrika who was the translator of Seyit Ali Efendi of the Morea, the Ottoman ambassador of Paris, and Constantin who was the translator of the Divan-ı Hümayun (Ottoman Imperial Council). The former leaked the official papers of the Embassy to French Prime Minister Talleyrand, and the latter prompted a revolt in Morea instead of calling Greek rulers to suppress the revolt (Bilim, 1990, p.33-34; Özkan, 2010, p.1788). From a more positive perspective, the Ottomans started to establish more frequent diplomatic contacts with the European states as of 18th century, which led to a need for the learning of a foreign language (Özkan, 2010, p.1798). All these developments resulted in a radical change on the communication and translation/interpretation issues of the Ottomans. Accordingly, studies commenced in order to teach a foreign language to the Ottoman people and in this context, a governmental (Bab-ı Ali) translation chamber was founded in 1821, foreign language courses were put in the curriculum, and Mekteb-i Sultani (Galatasaray Imperial School) was opened in 1868 following the foundation of a language school (Boyacıoğlu, 2014, p.655; Demiryürek, 2013, p.130-131). The modern military and civilian schools whose curriculums were either French or English were *Mühendishane-i Bahr-i Hümayun* (Ottoman Imperial Maritime Engineering School-1776), *Mühendishane-i Berri Hümayun* (Ottoman Imperial Land Engineering School-1796), *Mekteb-i Tibbiye* (Ottoman Medical School-1827) and *Mekteb-i Harbiye* (Military School -1834). The foreign policy of the Ottomans affected the curriculum or foreign languages teaching in the schools. In other words, the languages of the states with which the Ottomans had close political, economic or military relationships directly impacted on the foreign language policy of the Ottomans. In this context, although even the Japanese language was taught in the Ottoman Military Academy between 1891-1892 (Misawa & Akçadağ, 2013, p.253), French and German remained the most favoured and widely used languages for the curriculum and foreign language teaching in the Ottoman Schools (Boyacıoğlu, 2014, p.653, 656-657).

In relation to the foreign language teaching during the Ottoman period, the language school had the utmost importance since this school was the first to provide foreign language education (Boyacıoğlu, 2014, p.655). The curriculum, international instructors and educational purposes of this language school are very similar to today's modern language schools.

At the beginning, only French was taught to a very limited number of students. Later on, other than English, German, Russian and some other languages that ethnic minorities or non-Muslims spoke, such as Armenian, Bulgarian, Slavic and Greek were also added to the curriculum. In addition, the school offered French grammar and translation courses together with history, geography, economy, literature, public administration, international agreements and the laws of nations that normally took 5 years for students to complete (Özkan, 2010, p.1796). The demand for the school increased over time and the total number of the students studying at this school went up to 500 from an initial number of 20. However, this unique school was closed in 1892 due to the reasons of increased expenditure and ineffectiveness of the school (Özkan, 2010, p.1797; Balci, 2008, p.85-93; Boyacıoğlu, 2014, p.655).

CONCLUSION AND EVALUATION

In this study, by investigating the multicultural, multiethnic and cross-national practices in higher education in the Ottoman period, it was identified that the higher education system was internationalised in terms of student and faculty mobility, curriculum and medium of instruction. The most important expectation provided from the experience of the internationalisation especially in the late periods of the Ottomans was aimed specifically to reverse the decline and fall of the empire. Although it couldn't achieve this specific aim, it contributed to introduce the reforms of the new modern Turkish Republic, founded by Atatürk. Indeed, it would have been more difficult to introduce and maintain a modern country over a collapsed empire without a well-educated people.

In relation to internationalisation, it is clear that there are significant differences between the practices in the Ottoman period and today in term of the specific motivations, features and nature. In summary, the notable features of internationalisation during the Ottoman period can be highlighted as follows.

- Regarding the internationalisation of higher education, the key issues were incoming and outgoing students, incoming faculties, change in curriculum and medium of instruction.
- Today's internationalisation covers not only student and faculty mobility and change in the medium of instruction but also cooperation between higher education institutions, international campus design, diploma supplement programme and accreditation process. Therefore, it could be said that the internationalisation in the Ottoman period was not a complete, but a partial one.

- The mobility of incoming students was launched long before the mobility of outgoing students.
- In terms of both the mobility of students and faculties, a great majority of the ones subjected to the mobility were male. However, today such kind of mobility covers not only male but also female attendees.
- The Enderun or the Ottoman palace school where mostly Christian youngsters were enrolled and studied could not provide a cultural heterogeneity, but instead, it brought a cultural homogeneity, the opposite of what the internationalisation offers today.
- The first mobility in relation to outgoing students took place through the governorship of Egypt (the periphery) instead of the Ottoman State (the Core). This indicates the detachment of the core-periphery connection in the late periods of the Ottomans.
- Due to the close military and political relationships, France and Germany were chosen for the students to be sent to study and their languages became the first choices of the medium of instruction in the modern Ottoman schools. That means the higher education in the Ottomans was likely national in appearance (French or German) instead of international.
- Unlike today's practices, only incoming faculties were available in the Ottomans.
- Today, internationalisation is defined as diversification of students and faculties through interaction or cooperation of different nations and cultures. However, in this process, outgoing students can be easily affected by the culture of the countries in which they study and subsequently want to express the values from their experiences. With this aspect, outgoing Ottoman students were influenced by the French culture and wanted to convey it to the Ottomans.
- Internationalisation of higher education in the late periods of the Ottoman State was an attempt to eliminate their own political and military weakness against the West. Therefore, the military schools started before the civilian schools.
- While the internationalisation process in the Ottoman period was a product of the modernisation attempts of the Ottoman institutions, the main motive of today's internationalisation process is not modernisation but globalisation, or rather an attempt to embed higher education institutions in the global higher education system.

- When the Ottoman experience is evaluated in general, it is obvious that the internationalisation was not a previously planned and programmed action. Instead, it was irregular and made for just saving the day.

Due to the very dynamic and historical nature of the internationalisation in higher education, all the differences and features noted above should be considered normal and evaluated within the corresponding period.

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2. The gravure in Figure 2 was published in İkdam newspaper on April 10, 1914 (Erol, 2019, p. 68).

3. The photo in Figure 3 belongs to Penck Family Archive and was published in *Illustrierte Zeitung Leipzig* in 1916 (Yalçın & Penck, 2019, p. 12).

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Chapter 20

ELDERLY CONSUMERS AND TECHNOLOGY



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Introduction

Technological advancements have been becoming widespread day by day and these advancements' outputs are rapidly taking place in our daily lives. We inescapably use technology to communicate with our families, keep up with the current incidents, gain new skills, shop, pay bills and use banking services. While in some cases we use technology to simplify our actions, in some other cases we cannot avoid using it. Technology, based on the services and the products it provides, has transformed into something impossible not to be consumed by all segments of the society without exception (Rogers, Stronge, & Fisk, 2005).

In today's world, notwithstanding the fact that young people more seem to keep pace with technology and technological advancements, it is a prevalent point of view that elderly users haven't been taking advantage of various Technologies efficiently (Rogers et al., 2005; Czaja & Lee, 2007; McMellon, Schiffman & Sherman, 1997). In Turkey as well as all over the world, young consumers constitute the main target audience of the constantly advanced Technologies as well as the main determinants of these technology sectors. Besides, it is observed that elderly users cannot benefit from these technologies as much as the young population (Hazer & Kılınc, 2009; Öztürk, Özata & Er, 2012). Despite the fact that it is a widespread point of view which elderly consumers are often uninterested in adopting new technologies, not all the studies uphold it; elderly consumers express their eagerness to use new technologies. In addition, studies (Czaja & Lee, 2007; Melenhorst, Rogers & Caylor, 2001) have shown that these technologies can significantly facilitate the lives of the elderly consumers and make them independent. The rates of acceptance and use of technology by elderly consumers are increasing day by day (Czaja & Lee, 2007; Melenhorst et al., 2001). Campbell (2004) and Jay & Willis (1992) state that elderly consumers succeed by trusting their skills more, as they learn technology.

Nowadays, even tough new features are being added to consumer products such as household appliances, television and phones, these products are now accepted by all segments of the society and frequently used every passing day. Whereas, it is much more difficult to acknowledge the new technological products that just came into our lives (Hazer & Kılınc, 2009), we specially espy the importance of the new technologies such as internet-based information, communication technologies (ICT) and assistive technologies (AT) has been increasing with each passing day (Giulia, 2011).

Considering the rate of acquiring a computer and the internet which takes a leading part of technology, it is seen that this rate is increasing

gradually in Turkey as well as all over the world. When the internet first emerged, it had been more used by younger generation. Yet, the relationship of the elderly age-group with new communication technologies and social media is increasing every passing day with the widespread use of the internet (Pecchioni, Wright & Nussbaum, 2005).

Current studies show that numbers of the elderly population using internet is increasing gradually. The research of Pew Research Center (2018) in the United States of America (USA), reveals the internet usage rates of 65 year-olds and olders remarkably. According to this company's research, while the internet usage rate of elderly population in 2008 was only 3%, this rate increased to 14% in 2010, 35% in 2015 and 37% in 2018. In other words, today, one out of every 3 elderly individuals in the USA is in a position of social media user. The "Global Digital Report 2018" which was prepared on the basis of the data that has been collected from many countries around the world by UK-based digital marketing agency, We Are Social (2018), provides important information about the internet user statistics. According to the details of the report which reveals how the digital connections, which have become an indispensable part of the daily life, change human life; the number of the global internet users increased by 7% in 2018 compared to the year before, and reached 4 billion 21 million.

In Turkey, according to the TUIK (2020) data; based on results of the household information technologies use research, while the rate of the individuals in age group 65-74 who use internet was 5,0% in 2014, this rate increased by 19,8% in 2019. When the elderly individuals using internet were analyzed by gender, it was seen that men use internet more than women. While the rate of the elderly men using internet was 25,3% in 2019, the rate of the elderly women was 15,0%. As we can say, on the basis of these studies, internet and technology are rapidly integrating into the elderly's lives each passing day, and the elderly are rapidly becoming one of the important consumer segments of this sector.

In this context, for the relationship between elderly and technology to be perceived and for carrying through the suitable design for elderly; mentioning the features and the principles of seniors would be ideally placed.

Features Of The Elderly And Technology

In order to understand the relationship between elderly and technology, the changes in the basic features of human nature due to aging needs to be well-known. The heading topics of these features are perception, senses, motion control and anthropometry (Park, 2020).

We can explain the concepts of sense and perception, which are amongst the features that change in the elderly, as follows; the color

orange is a sense, while the pumpkin which orange evokes to you is the perception. In parallel with aging, deceleration occurs in the process of sensory and perception (Kline & Scialfa, 1997; Schieber, 2003). One of the most prominent features of the aging is the changes that experienced in one's feelings of perceiving and feeling the world (Rogers et al., 2005). Age change is experienced in all forms of sensory, but it is most prominently occurred in sight and hearing. It is an event that expected by almost everyone for a person in her/his 40s to wear glasses to read (Park, 2000). The elderly, related to sight, which is an element of sensory and perception; they have difficulties in recognizing faces, distinguishing shapes, colors and their tones. It is observed, in hearing ability which is one of the other sensory and perception-related factors, that the elderly have difficulties in hearing sounds with low and high frequencies (Rogers et al., 2005). As a result of age changes in hearing ability, it is a frequent condition that difficulty in speech comprehension increases due to aging. Many studies document an age-related decline in both speech comprehension and discernment abilities, particularly above the age of 50. Therefore, by the age of 80, people experience a loss in distinguishing words by 25% (Park, 2000).

Subheadings, that are related to cognitive skills of elderly, are; caution, memory, spatial skills, problem solving. Elderly people can be easily distracted during the use of technology, for example, interesting animations that is used on websites may suspend them from attaining the information they seek for (Mead, Lamson & Rogers., 2002). The elderly may also have difficulties in their current memory, for example, in telephonic vocal communication systems, elderly people may not remember where to connect with which key (Mayhorn, Rogers & Fisk, 2004). Spatial abilities are highly important, especially in terms of the ability to access information and transition between website links, but the elderly also lose this competence over years (Garfein Schaie, & Willis., 1988; Gomez, 1986; Pak, 2001). Problem solving competence also becomes prominent in deciding which website will lead them to the correct information and how to interpret this information to solve their current issues, but the elderly generally have more difficulties in rapid decision making and problem solving than young people (Czaja & Lee, 2007; Rogers et al., 2005)

In the research that conducted by Snav (2020), important conclusions have been reached about the problems that elderly have about internet, depending on their features. In the research, the most important problem, which participants have had about the use of the technological devices, was about the unclear explanatory information. The rate of the participants, who had thought that they still didn't have enough knowledge about using the device, were pretty high. Individuals ,who were aged 65 and over, stated that they didn't use the features they don't know about, thinking that

they could damage the device. It is a part of the lack of knowledge to not to have a comprehensive knowledge of the terms of new communication technologies. Besides the lack of knowledge, they also stated that they were afraid of damaging the device due to the expensive structure of technology. The small sizes of screens and keyboard-keys are also the most important factors that raises difficulties for the participants.

The elderly have difficulties in motion control, using a mouse on computers, etc. (Walker, Fain, Fisk & McGuire; 1997; Ketcham & Stelmach, 2004; Verbruyssen, 1997). Thus, the body structure of elderly are also different and changing every passing day. Developing technological designs suitable for them would be facilitating for the elderly. In this context, anthropometry, which tills researches on subjects such as; the measurement and analysis of body parts, body shape, body weight, and the analysis of changes in various parts of the body, should be taken into account in approaches to creating a field of study specific to the elderly (Kroemer, 2005; Steenbekkers & van Beijsterveldt, 1998).

Elderly Consumers And Technology

Timisi (2003) states that people can use the internet for personal, interpersonal and social purposes. The internet can also help to develop interaction, friendship and good fellowship among people who share the same interests. Also the findings of the research show that people in elderly age-group are able to take actions such as; texting, chatting etc. with their relatives and beloved ones in distant through internet. Especially since the banking transaction services and the services that are offered within the scope of e-government are things that requires a lot of time and energy in daily life, elderly consumers prefer to receive such services through internet. Here, it would be ideally placed to mention the Activity Theory about the elderly. According to the Activity Theory established by Havighurst, Neugaten & Tobin; The psychological and social needs of elderly people are the same as middle-aged people, except for biological and health-related changes. In other words, adult behaviors determine old age behaviors. The decrease in effectiveness in elderly people is originated from social reasons (cited in Koçak & Terkan, 2010: 31). Therefore, according to this theory, it can be counted as ordinary and natural for elderly consumers to take actions, which requires physical activity, through internet (Becerikli, 2013).

When speaking of elderly consumers, it is inevitable not to mention the concept of ‘‘Baby Boomers’’. They grew up in an environment that encouraged free-thinking and believing in the power of the individual unlike their parents, famous ‘‘Baby Boomers’’ generation, who were born between 1946 and 1964 during the growth and development period after

World War II. Studies that conducted with elderly consumers are frequently about Baby Boomers (Moschis, 1997). Baby Boomers have changed the point of view to traditional, ordinary, stereotypical elderly consumer behavior (Jones, 2005). This generation that lives by thinking “I am important” is the directors, consumers of the economy and the individuals that still set trends (as cited in Karahasan, Akdeniz, 2007). Baby Boomers have been leading innovations and developments in technological fields in accordance with the needs and demands of elderly consumers. Examples of these technological fields and products, which are examined in many studies, are health care technologies, medical devices and tele-medicine systems, computer-aided on-site aging systems (such as home monitoring systems), smart homes (living aids and systems, etc.), robots, smart phone applications, online information systems and providing online support for ones that undertake elderly care, consumer health informatics (individual health registration systems, web portals, individual information acquisition systems, etc.), emergency technologies (computer programs and agencies, etc.), tele-health services from home (telephone chain, rescue services, etc.), information presentation methods (image analysis, data storage and simulations) (Wendy, Stronge & Arthur; 2005; Aksu, & Fadiloğlu, 2010; Gusi, Prieto, & Forte, 2008; Giulia, 2011, Öztürk et al., 2012).

Baby Boomers use technology for everything, from entertainment to news, internet banking and social media. The first to adapt to online health in the USA are Baby Boomers. 98% of those who visit similar websites that provide health-related services are this group (Pew Research Center Madden, 2018). Thanks to Baby Boomers, the use of health care services has increased. Baby Boomers use two times the technology of the current older generation and have the same rate of use as the young. As a result, an activity that is rooted in popular culture and the lifestyle of young consumers, such as surfing the net, cannot be expected to be at the same rate among older consumers, who mostly have fixed income. However, considering the size of the baby-boomers generation, which has become an age-group for over 65, and rapidly developing computer technology, it is clear that this rate will show a great increase very soon (Pecchioni et al., 2005; Becerikli, 2013). As it can be understood, elderly consumers are the most important determinants in the sector of health-based technological products and services.

In addition to health-related technological systems, websites and the internet are seen to be much more useful and effective than other systems in terms of older consumers' accessibility to technology, low costs and convenience (Detlefsen, 2004). The areas, that elderly consumers use the internet to obtain information, are mostly health, news and hobbies (Pecchioni et al., 2005). For example, the rapidly increasing numbers of

websites, especially in abroad, have been designed to improve the healthy lifestyles of the elderly. While these websites inform the elderly on various health topics (medicine, use of medicines, etc.), these good practices enable them to gain positive attitudes to technologies such as websites (Mechanic, 1999; White, McConnell, Clipp, Branch, Sloane, Pieper, & Box; 2002; Gusi et al., 2008).

Even though the elderly stated that they have more difficulties in using the internet compared to the young people (Czaja & Lee, 2007), it has been determined that the elderly are willing to use websites, which are created with convenient subject headings and usage keys, and that they would prefer the internet especially for physical exercises, nutrition and social communication with their friends (Gusi et al., 2008). In accordance with the common needs and demands of the elderly consumers, convenience websites should be designed, and in all the studies that are conducted in this field (technological study fields such as websites, etc.), the features, needs and demands of the elderly people shouldn't be ignored (Coulter, 1998; Wantland, Portillo, Holzemer, Salughter & McGhee, 2004; Gusi et al., 2008). Furthermore, it is clearly seen that the internet and interactive programmes increase the healthy lifestyles of the elderly (Kressig & Echt, 2002).

The elderly make serious contributions to their lifestyles, especially in physical activities and healthy nutrition, in terms of living a healthy life. In addition, these programmes have a positive impact on the elderly in overcoming the obstacles that they may meet with, in physical activities (Anhoj & Jensen, 2004; Hageman, Walker, & Pullen, 2005). In the study that conducted by Gusi (2008), it was determined that health-related information technologies for the elderly help active aging. In addition, the internet has an infrastructure that supports other leisure activities such as reading newspapers/magazines/books. The features, that make internet a priority for these groups as leisure activities, are being creative, interactive, comfortable and economical (Becerikli, 2013).

As Robinson et al. stated; The internet offers an excellent platform for elderly to obtain information. One of the most important benefits of the internet is that it is a socialization tool for adults and the elderly (as cited in Robinson, Becerikli, 2013). The elderly have a limited social environment are highly eager to expand this environment. They have important values in making friends, which would keep them away from social isolation. However, the transportation to meeting points and the distance with their friends appear as obstacles that keep them apart from their friends. Such problems may cause them to stay away from social relationships (Gusi et al., 2008).

At this stage, the ability to communicate via internet, plays a very important role for the elderly. By teaching them this potential technology, that enables them to meet with friends and socialize, we can keep elderly people away from loneliness and depression (White et al., 2002). As a result of the research that conducted on the participants of SeniorNet, which aims to increase the internet usage rates of adults and the elderly, it has been revealed that these users use the internet to create an emotional and social bonds with other adults and the elderly, beyond specific interests and sharing information (cited in Furlong, Becerikli, 2013). Through various of trainings, it will be possible to help elderly people with disabilities to overcome many barriers to access information, active aging and socialization (Gusi et al., 2008).

Elderly individuals, who encountered technology in the last stages of their lives, have been experiencing a different socialization process in the digital field compared to the young people. Considering the aging of the population and increasing life expectancy; although the older individuals are concerned in the process of using technology, it facilitates their lives in all areas from communication to health problems and is helping them to live an independent life and have an active aging period. However, designing a new technology for young people causes the elderly to have difficulties in using and adapting to technology, to encounter various obstacles, to fear and anxiety. Therefore, new technology products should be designed by taking into account the physical and cognitive features of the elderly, as well as their gender, educational status, and economic condition, and in accordance with their needs and abilities, and should be adapted to make their lives easier (Uysal, 2020).

Conclusion and Recommendations

Technological products and services create an important potential in terms of the welfare of elderly. However, one of the most important problems of the elderly consumers is not being able to access the information about technological products and services that is oriented to them. In order to be able to use technology appropriately, elderly people must first know and understand technological products and services. Informing the consumers in this group and leading them to use these products through the written and visual media, which are commonly used information sources, can be an effective method to improve the quality of life of elderly (Özgen, 1997).

It is seen that especially as the education level decreases, the use of technology also decreases (Hazer & Kılınc, 2009; Becerikli, 2013; Öztürk et al., 2012). Therefore, it is essential to define the relationship of the elderly with technology, to provide the education and information that they need while accessing technology, and the obstacles they may encounter in

accessing technology should be determined and eliminated in advance. The necessity of designing easy-to-use tools, various techniques, methods and technologies, and teaching these technological systems to the elderly with explanatory materials and training programmes, has been revealed by many studies. Much more studies should be done for designing technologies to be used also by elderly consumers and for making these technologies a lot more useful for them (Gusi et al., 2008; Wendy et al., 2005; Öztürk et al., 2012).

Besides, collective initiatives, just as in the works of voluntary organizations, can also be used to overcome the poverty and low level of education barriers in terms of internet use for the elderly. A volunteer organization called SeniorNet, which has 210 learning centers and has approximately 40,000 members, both conveyed information about the access to internet and enabled group discussions on various issues via internet, with a study that helped adults and elderly people to gain computer literacy. Thus, it has been observed that adults can provide social support and collect important information about many health problems (cited in Furlong, Becerikli, 2013)

The importance of creating a system approach for technological training of the elderly emerges clearly in this context. The capabilities and limitations of the elderly should be taken into consideration in the process of the training programme (Mayhorn et al., 2004; Rogers et al., 2005). In Diagram 1, the system approach of training programme, which is designed by Rogers, Campell & Pak (2001), is seen. As it is seen in Diagram 1, in the first stage, which is considered as the key element, needs analysis should be done (includes task analysis and character analysis). In this way, the educational needs of the elderly will be determined and in accordance with which personal characteristics they need to be trained will be designed. The next step is the selection and design of the training programme by taking into account the previous researches and training programmes. The success of the training will be possible by updating the feedback of all these steps. This education system approach that is created for the elderly; will serve as a lodestar in technological trainings such as using computers, sending e-mails, using the internet, and using online banking.

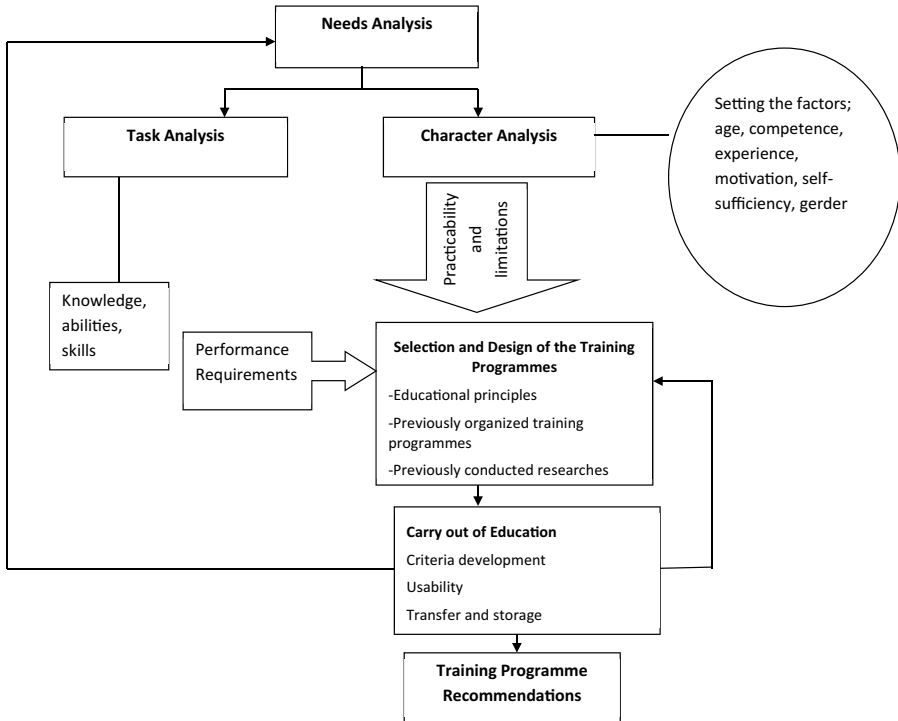


Diagram 1. A System Approach For Education. Rogers et al. (2001)

If we consider the elderly as consumers and the government as service providers, the obstacles they face in accessing technology should also be considered as government policies. With such systemic approaches, the spread of the trainings at a communal level will only be possible with long-term government policies. The World population is aging and the elderly community has become the largest social group, especially in Europe today, and is the group with the highest growth rate of the whole population. In the report that is titled ‘World Population Expectations: 2019 Revision’, prepared by the United Nations, it is predicted that the population of 80 year-olds and over, which are 143 million today, will triple to 426 million in 2050. In Turkey, the population aged 65 and over, which is considered to be the elderly population, was 6 million 192 thousands 962 people in 2014, while it increased by 21.9% in the last five years and reached 7 million 550 thousands 727 people in 2019. The proportion of the elderly population increased from 8.0% in 2014 to 9.1% in 2019 (TUIK, 2019).

While the demographic changes that is changing cause significant difficulties, especially for Europe, these changes play a very important role, not only in Europe, but also in determining the policies of all countries in the world and in Turkey. In this context, social policies generally support the idea of “aging in place” and recommend the development of “home

care services". In the future, in parallel with the increase in the number of elderly people, the number of elderly people in need of care will definitely increase. Necessary precautions should be taken to ensure that the increasing length of life of the elderly can bring along the quality of life (Gönen & Hablemitoğlu, 1991).

In order to overcome the problems that is related to elderly care in Turkey, "home care services" should be formed professionally (Onat 2001, Aksu & Fadiloğlu, 2010). It is necessary to find objective criterias in determining the patients to be provided with home care services, to supply the educational needs of home care providers, to establish care standards and to provide supportive services, and to create applicable and new home care methods (Aksu & Fadiloğlu, 2010).

"Aging in place" and "home care services", which are accepted as on-site solutions for issues such as health conditions, quality of life, social communication of the elderly, are also the most convenient approaches in terms of economic policies. In accordance with this approach, it is planned to increase the quality of life of the elderly by providing security, mobility and independence to the elderly by using various technologies so that elderly can live in their own homes (Wendy et al., 2005).

In order to increase the quality of life of the elderly, to facilitate a comfortable and safe old age in their own homes, to ensure that they can reach healthcare personnel easily when necessary; home care services should be planned by taking into account the current approaches and technological advancements in home care services, and detailed legal regulations that contains home care services in old age as a public service in our country, should also be improved.

Thus, while Czaja & Lee (2007) explains that potential technology supports abilities of the elderly to be able to move independently in their own homes, it also explains that technology will improve the lives of the elderly. Technology will help the elderly to maintain their health and leisure activities, thereby improving the quality of the elderly (Wendy, 2005).

Rational and elderly-specific websites and forums which are related to the daily lives of the elderly, family relations, social and current issues, medical education and leisure activities, should be established (Gusi et. Al., 2008). Health informatics in elderly care has started to attract a wide range of attention, especially due to the advancements in information technologies. However, technological need-based models of elderly's needs, are still very limited. In this context, departments in the field of social sciences such as Family and Consumer Sciences, Social Work, Sociology, Marketing and the departments such as Computer Technology and Information Systems and Robot Sciences should work in an interdisciplinary manner to tackle the problems of the elderly in all aspects.

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Chapter 21

PERIODIC FUNCTIONS AND FEATURES FOR ECONOMETRIC APPLICATIONS



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Introduction:

This study introduces brief and practical features of periodic functions, which plays a crucial role for the solvability of some time series equations. In the field of mathematics, and in other applied sciences, such as statistics, econometrics, Chemistry, Astronomy and electric-electronics engineering. Periodic Functions shoulder significant burden to clarify periodic time series problems. Periodic functions also take an important place in people's daily lives. A periodicity is observed in almost all events in nature. People's expectations and future plans are closely related to these periodic phenomena. People make their future plans according to the periodic structure of these facts.

Usually the occurrence of events varies according to seasonal effects. For example, ice cream consumption is high in summer. An ice cream maker should make his plans accordingly. However, foreign tourists who come to a country like Turkey generally prefer the summer. Tourism investors and budget makers should take this into account. Temperatures are higher in summer and lower in winter. For this reason, this periodic structure should be taken into consideration when dealing with meteorological data. Samples can of course be reproduced. However, there may also be events that do not have periodic features in nature. For example, although it is said that there is a periodicity in natural events such as earthquakes, there is no evidence of this yet.

Periodogram based unit root test was introduced by Akdi and Dickey in 1998. Hidden periodicities are ordinarily searched by using periodograms in the data. Furthermore, the status of a univariate series and the periodicities are checked by periodograms, which is one of the fundamental use of the periodogram. Akdi and Dickey 1998). $\hat{\sigma}^2$ was introduced as an estimated value of variance of the error term (Akdi et al., 2010). Amongst the standard time series tools, Frequency-domain based tests are the advantages. First of all, this kind of frequency-domain based test is seasonally robust and mean invariant. The mean-invariance property means that periodograms eliminate any deterministic trend in the series. What is more, since periodograms are obtained by trigonometric transformation, any probable periodicity in the series, such as cycles, is also taken into account. The second advantage is that these tests are model free, do not need lag selection, and the only parameter to be estimated is the variance of the error term. The last, in a periodogram-based unit root test the power can be calculated analytically, yet in conventional time series analysis the power of the tests is not exact (Akdi et al., 2010).

Making decision about a sequence exhibits unit root property, the Dickey-Fuller unit root test and its extensions are used amongst the standard technics. In the analyse, without trend and intercept components, the t-value of $\hat{\alpha}_1$, which is obtained by the estimation of equation (*), is compared to

critical values that are derived from simulations by Dickey and Fuller (1979.) in its basic form.

$$\Delta X_t = \alpha_1 X_{t-1} + \zeta_t \dots \dots \dots *$$

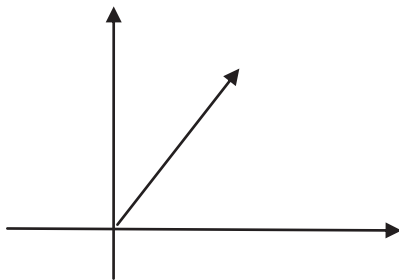
Balibey et al. (2019), the periodic components of the monthly average gross oil and natural gas prices of the period 2004: 01-2018: 12 were investigated. In this study, the cycles in the exchange rates of 2013:1-2018:12 period in the Turkish economy(5 working days) have been tried to be determined by using periodograms. Balibey and Akdi in 2019, Turkish Lira against Dollar closing value (Xt) and Euro closing value (Yt) are taken into consideration. The stability of the daily exchange rates was tested by standard unit root tests.

In this section, after the periodic functions are introduced briefly, Fourier series, also known as the expansion of functions to the series with the help of trigonometric functions, will be examined. Complex Fourier series are also among the topics to be examined in this section. The usage areas of periodic functions and Fourier series in statistics, especially time series, will also be included in this section theoritacally.

1.1 Periodic Functions:

1.2 Preliminaries:

In mathematics, many functions with periodic properties can be found. Trigonometric functions are the simplest examples of periodic functions. These functions are sine (sin) and cosine (cos) functions, and other trigonometric functions are written in their type. Trigonometric functions in the secondary high school mathematics curriculum, which can be found in almost all general mathematics books, are summarized below without any details.

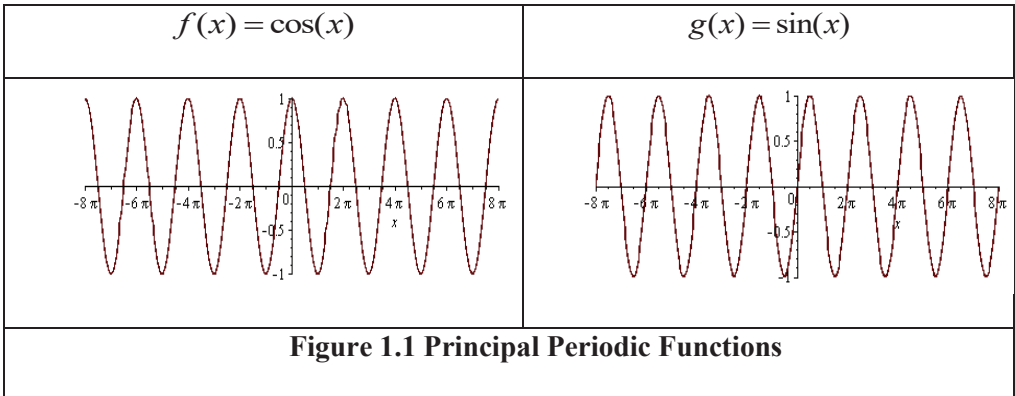


Graph 1.1.

Accordingly, we can write the following properties related to trigonometric functions.

- $\cos(\alpha) = x / \sqrt{x^2 + y^2}$

- $\sin(\alpha) = y / \sqrt{x^2 + y^2}$
- $\tan(\alpha) = \sin(\alpha) / \cos(\alpha) = y / x$
- $\cot(\alpha) = \cos(\alpha) / \sin(\alpha) = x / y$
- $\cos(\alpha \pm \beta) = \cos(\alpha)\cos(\beta) \mp \sin(\alpha)\sin(\beta)$
- $\sin(\alpha \pm \beta) = \sin(\alpha)\cos(\beta) \pm \cos(\alpha)\sin(\beta)$



Definition 1.1.1 (odd and even functions):

Defined function in a symmetrical interval I relative to the starting point, if for each $x \in I$

$f(-x) = f(x)$ if it provides the features and then, f called even function,

$f(-x) = -f(x)$ if it provides the features and then, f called odd function.

The following features are valid for odd and even functions. An integrable function f , which can be defined in x range 2-3

The following features are valid for odd and even functions. Including $a \in N^+$ f integrable function is identical in the interval $[-a, a]$;

$$\int_{-a}^a f(x)dx = \int_0^a [f(x) + f(-x)]dx$$

$$\int_{-a}^a f(x)dx = 2 \int_0^a f(x)dx , \quad \text{if } f \text{ even function,}$$

$$\int_{-a}^a f(x)dx = 0 \quad , \quad \text{if } f \text{ odd function,}$$

Provides the features above. For example , $f(x) = \sin(x)$ function is odd and $f(x) = \cos(x)$ function is even, which are identical in the interval $[-\pi, \pi]$.

Definition 1.1.2

Let be a continuous function f in any $[a,b]$ closed interval, it is the case that

$$f(x+p) = f(x)$$

A function f is said to be periodic if, for all values of x in the domain and so, a nonzero constant p for which this is the case is called a period of the function.

If f is a periodic function, whose period is p

$$f(x+np) = f(x)$$

For all $n \in N$, then all multiples of p are the period of the same function and there exists a least positive constant n with this property, it is called the fundamental period. If P is a periodic function with a period of f , then all multiples of p are the period of the same function, when the period of the function is called, the fundamental period comes to mind. Trigonometric functions are usually periodical(Altın, 2011).

For example,

For all $k \in N$,

$$\begin{aligned} \sin(x+2\pi k) &= \sin(x) , \\ \cos(x+2\pi k) &= \cos(x) , \\ \tan(x+\pi k) &= \tan(x) , \\ \cot(x+\pi k) &= \cot(x) \end{aligned}$$

As it is mentioned above, most of trigonometric functions are periodic and its periods;

$2\pi, 2\pi, \pi$ and π respectively. Despite the fact that, $f(x) = \sin(1/x)$

function is a trigonometric function but it is not a periodic function.

Periodic functions have important uses in time series as in almost all statistical analyses. Many time series are collected in a periodic manner. For example, inflation rates are calculated on a monthly basis. Also, if ice cream consumption is taken care of, ice cream consumption is expected to be greater in the summer. Therefore, ice cream consumption is expected to show periodic fluctuations.

Definition 1.1.3

Let ϕ_n be a sequence of continuous functions in any $[a, b]$ interval. For every $x \in [a, b]$ to be $q(x) \geq 0$ if for every $n \neq m$

$$\int_a^b q(x)\phi_n(x)\phi_m(x)dx = 0$$

if the condition is provided, the sequence of functions ϕ_n is called an orthogonal (perpendicular) system with respect to the weight function $q(x)$ in the range $[a, b]$. Also, the system of orthogonal functions ϕ_n ;

$$\int_a^b q(x)\phi_n(x)\phi_m(x)dx = \begin{cases} 0 & , m \neq n \\ 1 & , m = n \end{cases}$$

If the condition is provided, the system is called an orthonormal system.

Here, if $n=m$,

$$\|\phi_n\| = \left[\int_a^b q(x)\phi_n^2(x)dx \right]^{1/2}$$

its value is also called the norm of the sequence of orthogonal functions

ϕ_n .

Accordingly, $\cos(x)$, $\sin(x)$, $\cos(2x)$, $\sin(2x), \dots, \cos(nx)$, $\sin(nx)$ they form an orthogonal system in the range $[-\pi, \pi]$ of the sequence of functions. Really for $m, n = 0, 1, 2, \dots$,

$$\int_{-\pi}^{\pi} \sin(mx) \sin(nx) dx = \begin{cases} 0 & , m \neq n \\ \pi & , m = n \end{cases}$$

$$\int_{-\pi}^{\pi} \cos(mx) \sin(nx) dx = 0 \quad , \text{ for all } m, n$$

$$\int_{-\pi}^{\pi} \cos(mx) \cos(nx) dx = \begin{cases} 0 & , m \neq n \\ \pi & , m = n \end{cases}$$

Periodogram Based Unit Root test is one of the important application of the periodic functions respectively. In this point of view, some application could be taken into account in the other sections. Although, in this section theoretical basement of Unit Root test, which is one of the usage areas of periodic functions.

Periodogram Based Unit Root Test:

Periodogram based unit root test was introduced by Akdi and Dickey in 1998. Hidden periodicities are ordinarily searched by using periodograms in the data. Furthermore, the status of a univariate series and the periodicities are checked by periodograms, which is one of the main use of the periodogram (Akdi and Dickey 1998). For an univariate time series data $\{Y_t; t \in T\}$, the periodogram ordinates can be calculated without any model specification as;

$$I_n(w_k) = \frac{n}{2} (a_k^2 + b_k^2),$$

Where,

$$a_k = \frac{2}{n} \sum_{t=1}^n (Y_t - \bar{Y}) \cos w_k(t)$$

$$b_k = \frac{2}{n} \sum_{t=1}^n (Y_t - \bar{Y}) \sin w_k(t)$$

$w_k = 2\pi k/n$ is the mean of the series.

Furthermore, the equality can be written as follows:

$$\sum_{t=1}^n \cos w_k(t) = \sum_{t=1}^n (Y_t - \bar{Y}) \sin w_k(t) = 0$$

which brings to say that the periodograms are invariant to the mean. This leads Fourier coefficients and periodogram ordinate. Therefore, the periodogram based unit root statistic is invariant to the mean. Akdi and Dickey (1998) use test statistics;

$$T(w_k) = \frac{2(1 - \cos(w_k))}{\hat{\sigma}^2} I_n(w_k)$$

to test for a unit root, where, $\hat{\sigma}^2$ is the estimated value of variance of the error term (Akdi et al. 2010).

One of the main use of the periodogram is to search whether there is a periodicity in the data or not. This can also be used to test for a unit root (Akdi and Dickey, 1998). The critical values of the test statistic $T(w_k)$ has been provided in the related article under the null hypothesis of a unit root. Among the time domain approach, the periodogram has many advantages in the literature. The technics are usually used to search headen periodicities in time series. Moreover, the priodograms can be calculated without any model specification and the critical values of the test statistics are free of the sample size constraints. Akdi at al. (2020) used the periodogram ordinates to fit a harmonic regression for dailly electrical energy consumption.

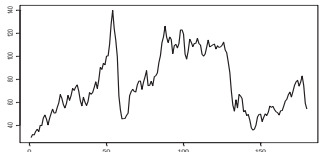
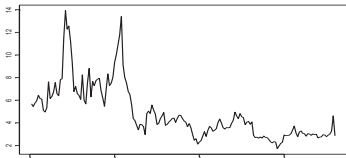
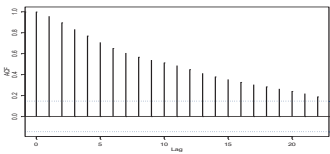
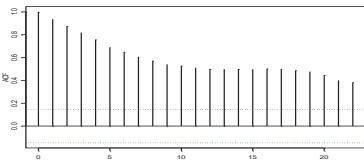
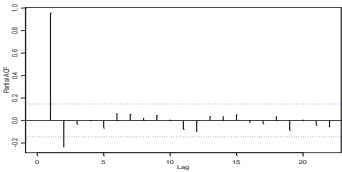
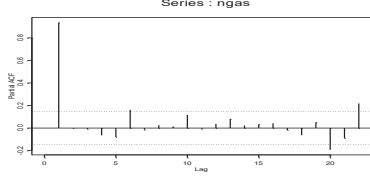
Table 1.1. The Results of Unit Root Tests for 26 Regions (Balibey and Turkyilmaz, 2014)

Regions Tests	1	2	3	4	5	6	7	8	9	10	11	12	13
ADF $\hat{\tau}_\mu$	-3.15	-1.21	-1.22	-1.62	-1.36	-0.02	-0.96	-1.28	-1.31	-0.66	-0.84	-0.79	-0.07
$\hat{\tau}_\tau$	-1.24	-4.09 I(0)	-4.09 I(0)	-3.71 I(0)	-3.69 I(0)	-5.29 I(0)	-3.03	-2.55	-2.12	-3.27	-3.92	-5.19	-5.47
PP $\hat{\tau}_\mu$	-3.10 I(0)	-2.25	-2.25	-2.49	-2.84	-0.20	-3.24	-2.89	-3.32 I(0)	-0.77	-1.86	-1.94	-0.46
$\hat{\tau}_\tau$	-2.39	-3.70 I(0)	-3.69 I(0)	-3.59 I(0)	-3.20	-3.99 I(0)	-2.41	-2.49	-2.33	-3.47 I(0)	-3.22	-3.77 I(0)	-3.24
KPSS $\hat{\tau}_\mu$	1.284	1.283	1.281	1.283	1.284	1.286	1.282	1.283	1.281	1.285	1.283	1.288	1.286
$\hat{\tau}_\tau$	0.302	0.264	0.264	0.291	0.292	0.111 I(0)	0.317	0.292	0.291	0.236	0.287	0.156	0.083 I(0)
$T_a(w_k)$	0.207	0.196	0.196	0.195	0.199	0.205	0.203	0.210	0.207	0.203	0.203	0.209	0.208
Regions Tests	14	15	16	17	18	19	20	21	22	23	24	25	26
ADF $\hat{\tau}_\mu$	-0.07	-0.11	-0.71	-0.25	-0.41	-0.21	-0.17	-0.03	-0.02	-0.36	-0.11	-0.19	-0.11
$\hat{\tau}_\tau$	-5.47	-3.69	-2.57	-3.40	-4.35	-3.89	-3.44	-3.62	-3.99 I(0)	-3.10	-3.89	-4.54 I(0)	-4.16 I(0)
PP $\hat{\tau}_\mu$	-0.46	0.003	-0.82	-0.22	-0.55	-0.14	-0.16	-0.06	0.02	-0.37	0.03	0.02	0.24
$\hat{\tau}_\tau$	-3.24	-3.21	-2.65	-3.68 I(0)	-3.10	-3.11	-3.01	-3.19	-2.76	-2.58	-2.61	-2.73	-2.39
KPSS $\hat{\tau}_\mu$	1.286	1.286	1.283	1.287	1.286	1.288	1.286	1.287	1.287	1.287	1.285	1.286	1.283
$\hat{\tau}_\tau$	0.05 I(0)	0.143 I(0)	0.212	0.074 I(0)	0.216	0.122 I(0)	0.111 I(0)	0.085 I(0)	0.168	0.139 I(0)	0.177	0.166	0.190
$T_a(w_k)$	0.211	0.214	0.207	0.208	0.209	0.212	0.209	0.209	0.214	0.217	0.218	0.215	0.221

*Critical Value (0.05) ADF, PP Test (with intercept) is -2.89, (with intercept+trend) is -3.45, Critical Value KPSS Test (with intercept) is 0.463, (with intercept+trend) is 0.146, Critical Value $T_a(w_k)$ is 0.178.

ADF, PP and KPSS Tests are supported by the results of the method . According to Engle-Granger and Johansen Methods, Balibey and Turkyilmaz (2014) investigated Bivariate cointegration relationships between CPI series for 26 regions. Furthermore, the Spectral Regression Technique based on Periodograms have been used to analyse bivariate cointegration relationships. In the application on above, all of dual combinations of the CPI data have been analyzed with these methods. This kind of example could be extended in the literature. As it is seen from the application, periodogram functions are very useful to detect unit root (Balibey and Turkyilmaz, 2014).

Table 1.2.The periodic components of the monthly average gross oil and natural gas prices of the period 2004: 01-2018: 12(Akdi et al., 2019).

	CRUDE OIL	NATURAL GAS
Time Series		
ACF		
PACF		

Akdi et al. (2019), investigated the periodic components of the monthly average gross oil and natural gas prices of the period 2004: 01-2018: 12. The data in the study were compiled on the basis of monthly averages by compiling the prices in the international markets (end of day closing values as of 00:00). As it is seen in the table1.2. besides the standard unit root tests, the unit was also tested with unit root tests based on periodograms and both series were not stable. There is no periodic component was observed in natural gas prices, the prices of the crude oil prices were 36 months (three years), 60 months (five years), 45 months and 90 months(Akdi et al, 2019).

Results and Recommendations:

In the recent years, the statistical analysis of time series has become important in terms of econometric, statistical analyses. What is more, time series analyses give the opportunity to make policy. In recent years, the statistical analysis of the precipitations, consumer price indeks, the average of gross oil and natural gas prices has become important in terms of agricultural and economic politics. Therefore, in this study, periodic functions are defined theoretically in a unique way to express the model perfectly. Moreover, their applications in the literatures explained with

some conducted applications, and their advantages over other time series methods are mentioned. Although, Fourier series, periodograms, and periodogram based unit root test for time series, explained briefly in the work, it is not adequate in the first step to understand the periodogram based unit root test and the other applications of periodograms. Periodograms have many advantages and applications to analyse time series especially, If the data obey kind of periodic fluctuations, periodograms could be more useful to analyse the time series rather than time domain analysis. Secondly, Periodograms are very useful to search hidden periodicities in the time series. And the other, periodograms can also be used to test for a unit root if the data contains periodic fluctuations, periodogram based unit root test maybe much more meaningful.

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Chapter 22

EXPECTATIONS OF PHYSICAL EDUCATION TEACHER CANDIDATES FROM THE TEACHING PROFESSION



Ahmet YIKILMAZ¹

1. LOGİN

The teacher, who makes the planning, implementation and evaluation of the educational process in educational institutions, is the most important element of the education process. Teacher e Implemented for teaching environments, objectives and plans detects addition, for the purpose of desired behavior determines the education environment to evaluate and make arrangements accordingly. The quality of the teacher assuming this responsibility can be associated with the teaching experience he gained before starting the service. The theoretical part is essential for the teacher to gain the stated experiences. while the application part makes it meaningful to be useful in the work done (Çoban, 2015; Alıncak, 2018). The aims of education are often grouped together in the form of self-knowledge, awareness of individual boundaries, awareness of the potentials they can overcome, self-realization, individual relationships, economic benefits and social responsibilities (Tamer and Pular, 2001). The teacher is one of the elements in the process in the education system. It is the person who constantly communicates with the students and guides them, encourages them, determines the gains and makes evaluations. Teacher's knowledge, skills, attitudes and behaviors affect the qualifications of the teaching process (MEB, 1999). The teaching profession has been adopted as a necessary and special profession needed in every period. Teacher Is esleg's in private and it is not necessary from a professional because; serious duties and responsibilities were assigned to teachers in all periods. Those who carry out the teaching profession were expected to perform this serious duty and responsibility in the most accurate and efficient way. Job as delta ğretmenlik its own private area, specialized vocational training including the branch. Because of this; Teachers are people who produce solutions to problems encountered in their places and contribute to the societies they live in (Aydın, 2009).

Education themati activities in the most effective e are direct teacher. For this reason, it is very important for teachers to improve themselves in achieving goals and objectives, as well as being effective and efficient. It is the teaching profession, which is accepted as the oldest and most sacred profession in the world. For this reason, the teacher's personality, behaviors and attitudes in the profession are very important (Alım and Bekdemir, 2006). The teaching profession is a profession that has its own characteristics and differs from other professions. Therefore, when an error occurs, it is a profession where it is difficult to compensate for the error. People in the teaching profession are shown as exemplary personalities in every society. Therefore, it is very important that the people to be assigned for the teaching profession are selected carefully. The teaching profession to certain values because it requires having each individual teaching

profession appropriate qualifications hosts made can (Celeb, 2004).

While physical education and sports lessons or physical activity have many benefits, there may be difficulties in practice (Pancar, 2020; Vural et al. 2019; Pancar, 2019. Pancar, 2018; Özdal et al. 2017). Physical education and sports teaching has various difficulties, just like other branch teachers. As in all teaching branches, physical education teachers want to be known as well-educated individuals who apply physical education programs effectively, and who value their profession. Teachers should achieve the role they have undertaken in order to deserve such mention by working willingly in the planning, implementation and evaluation stages within the educational integrity (Seçme, 2008).

Teacher candidates to the profession regarding attitudes to reveal, to carry out work related to the expectations of the teaching profession is required. Therefore, the behaviors and expectations of the individuals who will become teachers towards the teaching profession are very important. This study aims to determine the expectations of physical education teacher candidates to the teaching profession and to determine for what is to determine for. For this purpose, answers to the following questions were sought.

1. about the teaching profession in general as thoughts are what?
2. for the teaching profession that have lived what are the concerns?
3. What are the reasons to choose the teaching profession?
4. What are their expectations from the teaching profession?

2. METHOD

Qualitative research method was used in this study. Qualitative research is a method that enables individuals to examine their ideas and experiences in depth. For this reason, phenomenology design was chosen as the research design. Phenomenology design is used to have detailed information about the phenomena that we are aware of but do not have in-depth knowledge of (Yin, 1984; Yıldırım & Şimşek, 2006).

2.1. Research group

The open-ended question form prepared in order to determine the expectations of physical education teachers' uncles from the teaching profession was applied to the 30 physical education teacher candidates studying at Iğdır University School of Physical Education and Sports. The data about the research group are given in Table 1.

Table 1: Personal Characteristics of the Research Group (N = 30)

Variables	G u r u p s	n	%
Gender	Male	18	60
	Woman	12	40
Class	one	8	27
	2nd	6	20
	3	7	23
	4	9	30

Table 1 shows some personal characteristics of the research group. When we look at the gender of the teacher candidates participating in the study, it is seen that 18 (6.0 %) pre-service teachers are male and 12 (40 %) are female. When we look at the class in which the research group is studying; 8 (% 27) teacher candidate class 1, 6 (% 20) teacher candidate 2nd class, 7 (% 23) teacher candidate 3rd grade, 9 (% 30) teacher while the candidates studied in Class 4 are shown.

2.2. Open-ended questions of the form n Preparation and Implementation

In the study, a semi-structured interview form consisting of 4 items was used to collect qualitative data. Data collection tool vision used semi-structured me for m preparing the first Res normal urge t purgatory from the field survey has been conducted and the relevant physical education teacher to the candidates questions that can be asked, locate the semi-structured interview questions pool was created. Then, the questions created in the company of an expert were examined and the semi-structured interview form was finalized. The interview form given in the last form consists of the following questions:

1. What are their thoughts on the teaching profession in general?
2. What are the concerns that he / she has about the teaching profession?
- 3 . What are the reasons to choose the teaching profession?
4. What are their expectations from the teaching profession?

After the data collection tools were distributed, the participants were informed about the subject, purpose and content of the data collection tools. Filling out the measurement tools took 10-15 minutes depending on the respondents, and during this time, the questions from the participants were explained by giving the necessary feedback. Work ever forced to participate in any survey participants were taken into the scope of the implementation of the survey and collection process is carefully adhered to the principle of confidentiality. In the research, a semi- structured interview form was conducted with a volunteer 30 physical education teacher candidate studying at Iğdır University School of Physical Education and Sports. The

interviews were recorded with a voice recorder and then these recordings were written down.

2.3. Data Analysis

The information obtained from the data in the interview form in the study was analyzed by content analysis method. In qualitative research, content analysis is used to create and analyze themes that are not theoretically clear and sub-themes, if any (Yıldırım & Şimşek, 2006). The information collected in the obtained data was recorded separately and coded in groups. The groups and codings made were presented to the experts in their field and their opinions were taken and finalized, and the analysis part was started. During the analysis, the theme was determined for each question and the frequencies and percentages of the data and themes were calculated. Descriptive analysis was used in the data evaluation part. Finally, the report was made and the findings were presented.

3. FINDINGS AND INTERPRETATION

In this section, Iğdir University studying in Physical Education and Sports College, which Physical Education and of teaching the expectations of the profession en teachers in order to espite i la interviews as a result of place is given to the findings obtained.

Table 2 . Distribution of the opinions of the research group on the general thoughts about the teaching profession .

Themes	n	%
Is a sacred profession	24	22.7
It is a respected profession	22	20.8
It is a profession that should be valued	22	20.8
It is a profession that guides society	20	18.8
It is a profession that must be done with labor and love.	18	16.9
Total	106	100

Table 2 shows the distribution of the research group 's opinions about the teaching profession in general. When the opinions of teacher candidates about teaching profession in general are examined, 5 themes have emerged. It was observed that the participants expressed more than one theme.

According to the percentage ranking among these themes; holy is a profession (% 22.7), is a respected profession (% 20.8) , d is a profession that should be given if (% 20.8), society is a profession that direction (% 18.8), labor and love to be done with a professional (% 16.9) themes It has been seen to come to the fore.

Table 3. Distribution of the research group 's views on the anxieties they have experienced about the teaching profession.

Themes	n	%
Anxiety of not being appointed	28	28.6
Kpss anxiety	27	27.6
Anxiety about not getting a job	22	22.4
Not appreciating our branch	21	21.4
Total	98	100

Table 3 presents the research group for the teaching profession that have lived the concerns are about the distribution of opinions. Four themes emerged in the distribution of teacher candidates ' opinions about their anxieties towards the teaching profession. It was observed that the participants expressed more than one theme.

According to this; 28 teacher candidates (% 28.6) assigned inability concern, 27 teacher candidates (%27.6) Kpss concern,22 teacher candidates (%22.4) inability to find work anxiety, 21 teacher candidates if (% 21.4) opinion that not be worth our Branches that have expressed.

Table 4 of the group teacher of reasons for choosing the profession like the distribution of opinion on.

Themes	N	%
I have a sports background	25	26.6
I don't like the teaching profession	25	26.6
I do not like body training and sports	24	25.7
Being a profession loved by the society	20	21.1
Total	94	100

Table 4 from the research group teacher for like reasons for choosing the occupation of opinions presents distribution of s. 4 themes emerged from the opinions of the teacher candidates about the reasons for choosing the teaching profession. It was observed that the participants expressed more than one theme. According to the percentile rankings between these themes, athletes I have a history (% 26.6), I do not like the teaching profession (% 26.6), physical education and sports I dislike (% 25 .7), is a popular profession by society (% 21.1) theme of the foreground It was seen to be out.

Table 5. Distribution of data regarding the expectations of the research group from the teaching profession.

Themes	N	%
Being a qualified teacher in my field	26	15.9
Being a teacher guiding the society	25	15.2
Eliminating prejudices about physical education and sports	25	15.2
Endearing sport	25	15.2
To be able to improve myself individually	22	13.5
To train successful students	21	12.8
To be useful to students	20	12.2
Total	164	100

Table 5 shows the distribution of the opinions of the research group on the expectations from the teaching profession. 7 themes emerged from the opinions of teacher candidates about their expectations from the teaching profession. It was observed that the participants expressed more than one theme. According to the percentage ranking among these themes, being a qualified teacher in my field (15.9 %), being a teacher who guides the society (15.2 %), eliminating prejudices about physical education and sports (15.2 %), popularizing sports (15.2 %), individual to develop a sense of myself (% 13.5), cultivate successful students (% 12.8), the teaching of ncie to be useful to (12.2%) theme was seen to be coming to the fore.

4. DISCUSSION AND CONCLUSION

B Research Department fame also involved in the research group physical education teacher candidates place was given to the results obtained as a result of interviews with.

Research group of the teaching profession about what as we look at the view, large proportion of the teaching profession is a sacred profession, is a profession is a profession that should be respected and the value they represent. In addition, the research group regarding the teaching profession; giving direction to society, labor and should be done with love for the profession have noted. Made in different research, sacred profession of teaching is a profession the direction overlaps with the work of our emerging patterns (Okçabol, 2005; UBUZ and Yellow, 2009; Acer's, Alincak and Grapes, 2017) .

Also Cinpolat, Alincak and Abakay (2016) and Abakay, Alincak and Iron (2016) they have done their work against the teaching profession positive students in the direction of the attitude they concluded they exhibit. Grape and Takcak (2019) have achieved positive results in their studies on teacher candidates in choosing the teaching profession and the teaching profession.

When we look at the anxieties of the teacher candidates about the teaching profession, most of them stated that they had an anxiety of not being appointed and anxiety of kpss. Some preservice teachers stated that they fear not finding a job and that their branches are not valued. Different studies have shown the students' professional'm taking that entice low and this is the reason for doing this llama to concerns that the water of the said province is un (Akman, 1992;Acer et al. 2017). Also Sahin (2011) made by the study on the future of professional teachers they reported a negative opinion on the outcome has been seen.

When we look at the reasons for the research group to choose teaching profession; athletes have a past, love for the teaching profession, be that education and sports loving and t be loved by my ople a profession because of the report that they chose this profession. In their study, Üzüm and Alıcak (2019) reached positive results on the preference of teacher candidates to the teaching profession. In addition, in the researches, the encouragement of parents and teachers is effective in the professional choices of teacher candidates. When we look at the results, it overlaps with our study results (Kniveton, 2004;Çermik et al. 2010).

When we look at the expectations of the teacher candidates participating in the research from the teaching profession, the majority; He stated that he wanted to be a qualified teacher in his field and to be a teacher that guides the society. In addition, teacher candidates participating in the research; physical education and to eliminate prejudices related to sports, to enjoy sports, individual spontaneous sense stated that they want to improve the value. Besides, teacher candidates; They said that they wanted to raise successful students and be useful to students. Acun et al. (2017) stated in their study that their expectations from the teaching profession should be a profession without appointing anxiety, that it should meet my financial needs, and that it should be able to give a peaceful and orderly life. Elçiçek (2016) in his study, the teachers; He stated that the profession is not valued, dignified and teachers are not valued enough that the value against the profession is reduced. Therefore, he stated that the teaching profession should be given importance.

As a result, physical education teacher candidates, teaching profession; They stated that it is a sacred and respected profession. It is seen that the teacher candidates participating in the study prefer the teaching profession because they love sports and the teaching profession. Teacher candidates participating in the research; Being a qualified teacher in the field, to be a teacher guiding the society, eliminate prejudice related to physical education and sport to remove, to popularize the sport, an individual sense spontaneously has been found to be soluble in the development forecast. It was concluded that, in general, prospective teachers' expectations from the teaching profession were positive.

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Chapter 23

AN EXAMINATION OF THE US-CHINA TRADE WAR WITHIN THE FRAMEWORK OF GAME THEORY



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INTRODUCTION

International trade is the transfer of goods or services produced in one country to another country in return for goods, services or money of that country. This trade which is beyond the borders of the country provides more affordable product service to the consumer and increasing the level of social welfare by providing both higher competition and competitive pricing in the market. On the other hand, international trade makes countries, international organizations and business circles dependent on each other in terms of economic, social and political factors. In this context, trade and production terms which play an important role in the development of these factors provide utilities such as economic growth, development, increasing foreign exchange reserves and capital gain for countries (Balci and Göcen, 2019).

Different theories have been put forward about international trade from past to present. In this context, history has witnessed free trade practices, protectionist measures and trade wars in different periods. Trade wars and protectionist measures were first seen in the mercantilist period. According to this point of view, the main purpose of countries in international trade in this period is to restrict products other than raw material imports with various protection tools and to increase foreign trade surplus by further increasing the export of processed products (Erdem et al., 2018). In addition, liberals who defend the international trade increases the welfare level of countries evaluated international trade with different perspectives. In the book "The Wealth of Nations" published in 1776, Adam Smith argued that the wealth of nations would be achieved with growth and this only possible with the development of international trade by opposing mercantilist views¹. He also based this opinion on the "Absolute Superiority Theory". On the other hand, Ricardo put the theory on a more solid framework arguing that absolute superiority is not necessary for the development of international trade and that comparative advantage is sufficient. This approach of Ricardo has led to the formation of many models from the monetary system of capitalism to the financial approach by forming one of the liberal foundations of capitalism. The UK until World War II and the US afterwards were the pioneer of this view. For example, the IMF was established to provide monetary support to countries with balance of payments deficit and risk of disruption in international trade. On the other hand, the World Bank was established in to ensure that European countries that collapsed after the World War II stay in international trade,

¹ It is also stated that in the 19th century, newspapers contributed to the development of trade by attracting people's curiosity by covering the economic events in various countries (Öztürk, 2020: 30).

and initiate the infrastructure projects for developing countries to enter international trade (Eğilmez, 2019).

Globalization, which started with the Second World War and sped up in the 1980s, removed the trade borders by making countries dependent on each other (Karayel, 2018). Liberalization in world trade has taken for many years. International trade gained a corporate identity with the General Agreement on Tariffs and Trade (GATT) after World War II and the World Trade Organization (WTO) established in 1995 (Erdem et al., 2018). On the other hand, the efforts of countries for stronger domestic manufacturing and design have caused disagreements on budget balances, currency and trade wars by increasing competition further (Karayel, 2018).

Trade war can be described as conflict and conflict arising from the commercial tariffs that two or more countries impose or intend to apply against each other in a narrow sense (Kalaycıoğlu, 2019). The cause of the trade war can be either economic or non-economic reasons. In this context, countries may attempt to protect their own producer, a specific sector or some sectors arose from economic reasons. On the other hand, ideological, political or military reasons can be put forward as non-economic reasons. Trade wars in a broad sense can be defined as a term that includes non-tariff barriers, even economic sanctions and embargoes by making the applied commercial tariffs even heavier (Erdem et al., 2018).

Trade wars have serious negative consequences in terms of welfare level, labor market, sectoral balances, established value chains, bilateral relations and macroeconomic indicators. In this context, increasing protectionist measures push countries to develop more independent policy approaches in terms of the value chain and production composition of nations on a global scale (Karayel, 2018).

The increasing trade deficit of the US since the second half of the 1990s and the global financial crisis that emerged in the US in 2008 made the role of customs duties in foreign trade policies more important. On the other hand, the rapid development of the Chinese economy and its increasing political and economic power in the last 40 years have disturbed many people. Pro-Western intellectuals and business people have expressed on every occasion that this situation is contrary to Western and US interests. (Alexander, 2019). As a matter of fact, US President Donald J. Trump, who was disturbed by these developments, stated that regular trade did not serve the interests of the US during his candidacy period and initiated protectionist policies after he was elected president. President Trump fired the first fuse of the trade war between the US and China on March 8, 2018 (Aran, 2018). In addition, the decisions taken by the US in 2018 regarding the customs duties of some goods brought a new dimension to protectionism and freedom. US protectionism policies targeting trade partners including

China, Mexico, Canada, the EU and Turkey have increased the risk of gaining a global dimension with their involvement in this process in other countries (Şahin, 2019).

The US-China trade war is seen as the most important political and economic event of the 21st century. While China relies on its dense population, rapidly developing economics, technological and military power, the US relies on its powerful allies, leadership experience, military and economic strength in this trade war. The trade war, which flared up in the first half of 2018, deeply affected both the US and Chinese economy and the entire world economy. Although the first agreement was reached as a result of the negotiations between the US and China in the last quarter of 2019, high tariff rates and mutual moves continue today. This study aims to strategically examine the mutual moves of the US and China in the context of the trade war. The aim of our study is to analyze the US-China trade war with game theory methods and to examine the decision-making processes of both countries. In this direction, firstly, academic studies on trade wars, US-China trade relations and the history of the trade war were touched upon, and then the US-China trade war was analyzed with game theory methods and the sanctions policies of countries were emphasized.

Literature Review

There have been many recent studies on the US-China trade war. A summary of some of these studies is given in Table 1.

Table 1. Literature Review on the US-China Trade War

Method of Study	Content and Outcome of the Study
In the study of Ghoneim and Reda (2008), they designed the US-China trade war as a dynamic game and analyzed using the backward inference method.	It was mentioned that the main purpose of the US is to increase its exports by reducing foreign trade imbalances against its goods and services. In the dynamic game designed in this context, it has been concluded that it is appropriate for China to protect the value of its own currency (prevent devaluation) against the threats of the US.
In the study of MccGwire (2018), the US-China trade war was adapted to a dynamic game with full knowledge firstly and incomplete information lately. Also, prisoners take dilemma game as a reference in these games.	It is concluded that the subgame perfect Nash equilibrium in the complete information dynamic game is the equilibrium state applied by the US and China to the tariff. In the dynamic game with incomplete information, possible movements of the US and China are interpreted under asymmetric information. In this context, it has been stated that there are two possible types of China, aggressive and tactical, and the US profit changes according to these types.

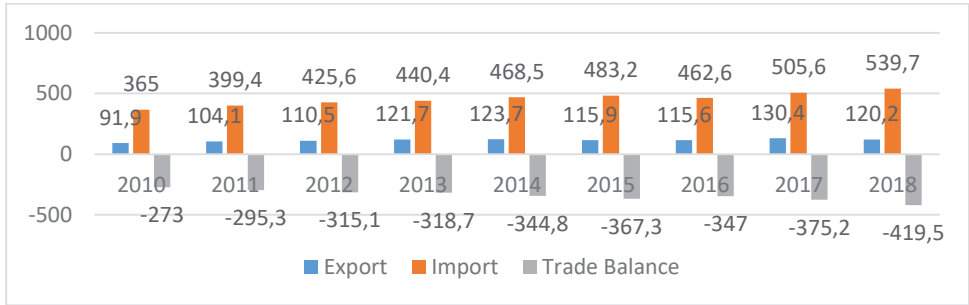
<p>In Yin and Hamilton's work (2018), they analyzed the US-China trade war with game theory methods and also demonstrated games in both strategic and extensive form.</p>	<p>It has been stated that losses in trade wars are asymmetrical. It was also stated that "if a country has to impose sanction and as a result, if the damage incurred by the opponent is greater than its own loss, it is appropriate to make sanction in this case" and the trade war has been interpreted accordingly.</p>
<p>In the study of Li et al. (2018), they used the Nash Bargain equilibrium model to measure the impact of the US-China trade war and simulated the results.</p>	<p>It has been stated that the trade war will seriously damage both sides and will deeply injure the world economy. On the other hand, it has been stated that the US will win as a result of unilateral sanction against China, however if China answer back, the US will lose.</p>
<p>In the study of Archana (2020) the simulations with different tariff rates using the SMART method to measure the effect of tariff policies between the US and China were made.</p>	<p>It is concluded that when the tariffs between the US and China are removed, both countries are affected very positively in terms of total trade and welfare effect. On the other hand, when a 25% tariff is set between both competitors, it has been concluded that the US will suffer more from China in terms of both trade and welfare effects.</p>
<p>Dong and Whalley (2012) conducted simulations based on different trade rates to determine the impact of retaliation between the US and China on international trade flow and welfare after the 2008 global financial crisis.</p>	<p>In the model, five groups are taken as the US, China, Japan, EU and other world countries. It has been stated that the increase in tariff rates between the US and China constricts world trade and China's dependence on export-based economic growth will remain vulnerable to global economic shocks. It was also stated that the tariffs are not a good policy for the US and will cause a loss of welfare in the country.</p>
<p>In the work of Jiang et al. (2020), they adapted the funky chicken game to the US-China trade war, and obtained optimum strategies for both rivals.</p>	<p>In the study, it was stated that the US is stronger, the Chinese government and people both feel safe and brave against the trade war. According to the outcome of the game, it was concluded that compromise and negotiation would be likely, where both opponents had the maximum profit.</p>
<p>In his study, Mallick (2018) prepared a report on the US-China trade war using macroeconomic data.</p>	<p>It has been stated that the US is uncomfortable with both the growth and aggressive attitude of China and the trade war will continue if China continues its stable domestic policy and growth. On the other hand, it has been stated that this trade war has seriously damaged the world economy and its consequences will get worse.</p>

<p>Jiming and Yangmei (2018) described the historical process of the US-China trade war and interpreted the trade war with macroeconomic data.</p>	<p>In the study, the trade imbalance and development of the US and China were discussed. In this context, it has been stated that if China takes protectionist measures, the Chinese economy will suffer more and inflation will increase in the US.</p>
<p>In the study of Chong and Li (2019), they analyzed the US-China trade war from a historical perspective and focused on different scenarios using macroeconomic data.</p>	<p>It has been stated that the trade war between the US and China cannot be easily resolved and its consequences are felt heavily all over the world. In addition, it has been concluded that China will lose 1.1 % in employment and 1% in terms of GDP in this trade war.</p>
<p>In his study, Karayel (2019) analyzed the trade wars of the US with China and Mexico within the scope of case study.</p>	<p>It has been stated that trade wars are caused by multivariate influence groups such as trade relations between countries, geographical location, economic size, traditional rivalries, supply-demand balance in the domestic market, labor structure, terms of foreign trade, general macroeconomic structure, commercial orientation and targets.</p>
<p>Mao et al. (2019) designed the US-China trade war as an incomplete information game. In addition, the game was handled in the context of mixed strategy and the results of the strategies were formulated according to certain probabilities.</p>	<p>In the study, although it seems that the US adopting protectionist policies is more utility for the country, on the contrary, it is stated that free trade is more utility. However, in an environment of mutual reprisals in the trade war, it has been concluded that the US and China's adoption of protective policies are more utility for their own country's interests and this is a Nash equilibrium.</p>

As seen in Table 1, the US-China trade war has been strategically analyzed in some studies using game theory and some studies using simulation method.

Trade Relations Between the US and China

The economic relations between the US and China have expanded significantly in the last thirty years, and the trade volume increased from 2 billion dollars in 1979 to 636 billion dollars in 2018. Trade and investment relations between the US and China are of great importance for both countries. China, the largest importer of the US, is the second largest trading partner of the US and the third largest export market (Morrison, 2018).



Source: The World Bank Data (2019).

Figure 1. US Import and Export Rates to China by Years.

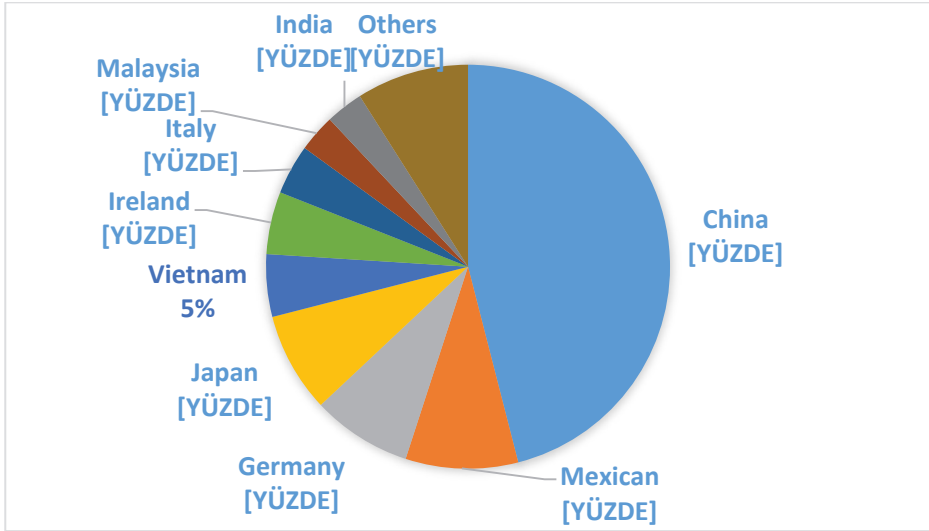
Figure 1 shows the macroeconomic data of the US for the years before the trade wars. In the light of these data, the amount of goods exported by the US to China in 2000 was 91.9 billion dollars, the amount of goods imported from China was 365 billion dollars and the trade deficit was 273.1 billion dollars. On the other hand, in 2018, the amount of goods exported by the US to China was 120.2 billion dollars, the amount of goods imported from China was 539.7 billion dollars and the trade deficit was 419.5 billion dollars. In this context, the US trade deficit to China has increased by 53.6% in the last eight years. This ratio has been one of the biggest factors that triggered trade wars.

Table 2. The Products Exported to and Imported from China by US in 2018

Products	Export (Million \$)	Export (%)	Import (Million \$)	Import (%)
Transport Vehicles	27.810	23.1	186.152	34.5
Computer and Electronic Products	17.990	15.0	50.096	9.3
Chemicals	16.135	13.4	43.949	8.1
Non-Mechanical and Electrical Devices	11.083	9.2	38.780	7.2
Other products	47.134	39.2	220.696	40.9
Total	120.148	100.0	539.676	100.0

Source: ITA (2019)

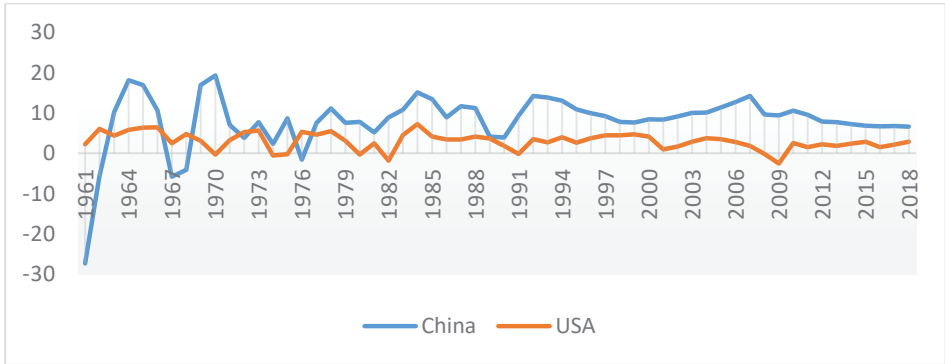
Table 2 shows the products that exported to and imported from China by the US in 2018. The US mostly imports and exports products to China are transportation vehicles. However, the trade deficit of the US in transportation vehicles is 44% of the total trade deficit and is worth 186 billion dollars. On the other hand, there is a trade deficit of approximately 32 billion dollars in the US for computer and electronic products. In other products, there is a trade deficit of 27.8 billion dollars for chemicals, 27.7 billion dollars for machinery and non-electrical products, and 173.5 billion dollars for the remaining products, respectively.



Kaynak: Jiming ve Yangmei (2018).

Figure 2. Distribution of the US Trade Deficit by Country

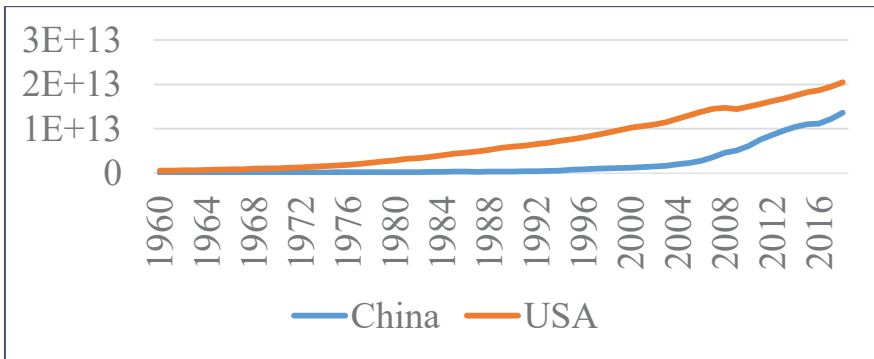
Figure 2 shows the distribution of the US trade deficit by country. The country with the highest trade deficit for the US is China. Next is Mexico with 9% and, Japan and Germany with 8% ratios. When we take into account that the trade deficit of the US with China has increased by 53.6% in the last eight years, the importance of the trade war that has emerged in the last period becomes even more clear.



Source: The World Bank Data (2019)

Figure 3. The Distribution of Growth Rates of the US and China between 1961-2017 by Years.

The distribution of the growth rates of the US and China between 1961-2017 is shown in Figure 3. Although the growth rate of China before 1963 was behind the US, it increased sharply after 1963 and surpassed the US. In the following years, there were serious fluctuations in the growth rates, and China's growth rates were below the US some years and above some years. As a matter of fact, after 1977, the growth rates of China have always been above the growth rates of the US and the difference has gradually increased in some years. As a result, these data clearly explain that China is the biggest obstacle to the US, which is seen as the world's superpower, from seeing China as a threat and the US losing power.



Source: The World Bank Data

Figure 4. Distribution of US and China's GNP Data by Years between 1960-2018.

Figure 4 shows the GNP data of the US and China between the years of 1960 and 2018. The US increased its GNP regularly between 1960 and 2018, but there was a decline due to the 2008 crisis. On the other hand, China has had a significant increase in its GNP after 1992. While the GNP

of the US was 543 billion dollars in 1960, it was 59.7 billion dollars for China. However, in 2018, the GNP of the United States reached \$ 19.30 trillion, while China's was 12.24 trillion. In this context, the GNP of the US was approximately 9.09 times that of China in 1960, while this was 1.57 in 2018.

Considering the macroeconomic data of the US and China in general, it is seen that the trade volume of the US and China has increased rapidly in recent years and the US has not been able to close its trade deficit during this period. On the other hand, China has profited very much from this trade with a trade surplus of 419.5 billion dollars. The US administration, disturbed by this situation, claimed that its partner China was in an unfair competition and sparked the trade war by adding additional taxes to the tariffs on March 1, 2018.

US-China Trade War

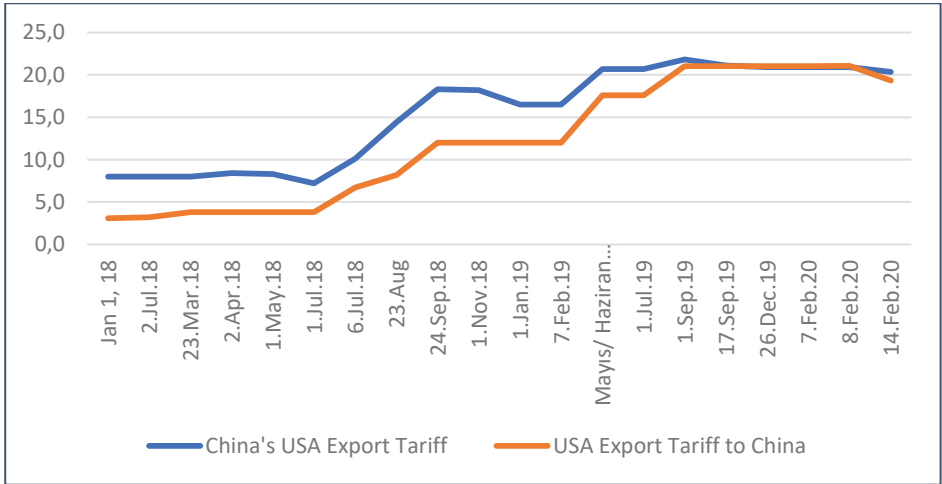
With Trump, who was elected as the new president in the US, taking drastic measures and applying heavy tariffs, the US-China trade war has gained a global dimension and has become a major threat that surrounds the whole world. Table 3 lists the events that triggered the US-China trade war.

Table 3. Events that led to the US-China Trade War

Date	Event
August 14, 2017	US President Trump has employed Robert E. Lighthizer, a member of the US House of Representatives, to conduct this investigation to protect the country's intellectual property rights and Technology (Jiming and Yangmei, 2018).
January 22, 2018	Trump applied a 50% duty on solar panels and a 30% duty on washing machines (Jiming and Yangmei, 2018).
March 1, 2018	President Trump announced on March 1, 2018 that he will apply 25% and 10% additional tax on imported steel and aluminum, respectively, to all trading partners. The US argued that this decision is essentially compatible with the WTO's "protection" rule. He also stated that countries have the right to apply customs tariffs against products that they see as a problematic in terms of national security or have a significant increase. In addition to this, the US has stated that their biggest exporter and target is China, while China has taken a very measured, multilateral and systematic attitude (Aran, 2018).
March 22, 2018	Based on the report of the investigation commission established by Trump on August 18, 2017, the US applied additional taxes on China on the grounds of unfair practices on technology and intellectual property. In this context, it has applied additional taxes on Chinese products worth \$ 60 billion and has also sued to the WTO (Palacioğlu, 2018).

April 2, 2018	China made a move against the US. In this context, China is responded by applying an additional 25% additional customs duty on American imported products such as aluminum scrap, pork and fruit, which was worth of \$2.4 billion in 2017 (Palacioğlu, 2018).
April 4-5, 2018	On the other hand, China gave a respond by applying a 25% additional tax on 106 products consist of mostly land, sea and air transportation vehicles and soy products, worth of \$49.8 billion on April 4, 2018. A day later, Trump launched an investigation to apply additional duty on China's products which is worth of \$100 billion (Kapustina et al. 2018).
May 29, 2018	The US has announced that they will apply an additional tax on products worth of \$50 billion, according to the list to be finalized on June 15. In this context, on June 15 it was announced that a 25% tax will be applied to the product with a value of approximately \$50 billion and the tariff will be applied on July 6. On the other hand, it has published a countermeasure product list worth of approximately 45 billion dollars to be implemented in 2 stages on the same day in China. She announced that the first application will be made as a counter move on July 6, and the second application will be made depending on Trump's attitude(Wong and Koty, 2020).
June 18, 2018	On June 18, China announced that she had employed the Minister of Commerce to work on \$200 billion of Chinese goods which will be taxed 10% in addition to the \$50 billion list that announced by Trump on June 15 as a response. In this context, an additional list of 5000 products where a 10% additional tax will be applied including auto spare parts, telephones, furniture, ready-to-wear products, lighting products and suitcases were announced on July 10. As a result, with these moves, an additional customs tax was applied on almost half of the \$504 billion product imported from China in 2017. On the other hand, on August 1, Trump announced that a 25% additional tax was applied instead of the 10% additional tax on the products that announced on July 10 (Bown, 2019).

As a result of the events listed in Table 3, the trade war has gained a different dimension. During this time, the countries made mutual moves and provoked the trade war. In addition, as seen in Figure 5, competitors increased their tariff rates almost continuously from the second half of 2018 to the second half of 2019. As a matter of the fact, with the commercial negotiations between the US and China in September 2019, there has been a decrease in the tariff rates. However, this decrease was limited. Today, the trade war is still alive.



Source: PIIE (2020).

Figure 5. Chart of Tariff Rates of the US-China Trade War.

METHODOLOGY AND ANALYSIS

In this study, the US-China trade war, which concerns the whole world, is analyzed with game theory and strategies that will serve the national interests of both countries are determined. Accordingly, the trade war was first handled in the context of pure strategy, but since the parameters in the utility functions could not be defined clearly, the game was then evaluated within the framework of the mixed strategy.

Game theory is a strategy method that examines the sharing process of two or more decision-maker or opponents in an environment where resources are scarce and with certain rules (Uçan and Aytekin, 2013). In game theory, there are different types of games according to the rules of the game, the achievements of the player, the number of repetitions of the game, the level of knowledge of the players, the concept of time in the game whether the players cooperate or not (Polat, 2020). In addition, strategies in game theory are divided into two as pure and mixed. Pure strategies are precisely or clearly played strategies, while mixed strategies are made between two or more pure strategies according to a certain probability. (Akan and Polat; 2020).

Mixed Strategy: The mixed strategy occurs when there are more than one strategy. Some games may have more than one equilibrium. Mixed strategies in this case provide the best decision strategy bundle for players. Thus, players have the opportunity to apply a strategy in part of their moves against their opponents and a different strategy or strategies in the other part. (Ramusen, 1989).

Definition; The mixed strategy of player i is a probability distribution for pure strategies in the strategy set S_i . The mixed strategy is denoted by the symbol σ_i and is a function defined in the range $[0,1]$ in the S_i strategy set of player i . That is, player i takes values in the range of $[0,1]$ for strategy s_i . If the mixed strategy played by player i is one of the pure strategies ($s_i \in S_i$) then the probability of player i to choose strategy s_i is shown as $\sigma_i(s_i)$.

The sum of the probability values of a mixed strategy with Pure Strategies is equal to 1;

$$\sum_{s_i \in S_i} \sigma_i(s_i) = 1.$$

The mixed strategy of player i refers to the list of probabilities corresponding to pure strategy. The combination of mixed strategies of n numbers of players in any game is called the mixed strategy profile ($\sigma = \sigma_1, \dots, \sigma_n$) (Karabacak, 2018).

Expected Utility In Mixed Strategies: The deterministic (no probability in) utility function is used for players to rank on their own preferences. For example, let any player have moves like a and b in her movement set. If the player's preference is $u(a) > u(b)$, then the player prefers move a to move b ($a \geq b$). As can be seen, players know their strategy profiles precisely in deterministic games, but contrary to what is assumed in this example, in some cases the utility to be obtained at the end of the game may not be known. In such uncertainties, the expected utility hypothesis is used to achieve equilibrium (Yılmaz, 2016).

For example; In a two player game, players get a win pair as in the strategy profile (10, 20). To get this win, the first player must choose strategy X , the second player the strategy Y . What would be the expected utility in a situation where the probability of player 1 choosing X is 0.4 and the probability of second player choosing Y is 0.6?

Definition; The expected utility of player i from the mixed strategy; It is denoted as $Eu_i(\sigma)$. The probability that the strategy profiles will occur $s = (s_1, s_2, \dots, s_n)$ is equal to the probability of each player i playing the strategy s_i , denoted as $\sigma_i(s_i)$.

In this context, the probability of playing a strategy in a game of n players (Yılmaz, 2016; Karabacak, 2018);

$Pr(s) = Pr(s_1, s_2, \dots, s_n) = \sigma_1(s_1) \sigma_2(s_2), \dots, \sigma_n(s_n) = \prod_{i=1}^n \sigma_i(s_i)$ it happens in the form.

As stated in the example, if the first player has 0.4 probability of choosing strategy X and the second player has the possibility of choosing strategy Y with a probability of 0.6, the probability of the (X, Y) strategy

coming out; $0.4 \times 0.6 = 0.24$, which is the probability coefficient of the strategy profile.

In a game with mixed strategy $\sigma = \sigma_1, \sigma_2, \dots, \sigma_n$, each pure strategy first has the expected utility to find the expected utility of player i. the expected utility of player i in a game of n players;

$u(\sigma) = Eu_i(\sigma) = \sum \Pr(s) \cdot u_i(s) = \sum [\prod \sigma_i(s_i)] u_i(s)$ it happens in the form.

The probability of players playing the strategy (X, Y) above was 0.24, and the first player earned 10 units from this profile. In this case, the expected utility from the first player playing strategy X would be $20 \times 0.24 = 4.8$, while the expected utility from the second player playing strategy Y would be $10 \times 0.24 = 2.4$. If this game is considered as a game with 4 different strategies, the expected utility of the player first from the other 3 strategy profiles are; If 1.6, 2.4, 3.6 is the expected total utility of first player in this game is $2.4 + 1.6 + 2.4 + 3.6 = 10$ (Karabacak, 2018).

Game theory has four basic elements. These are players, strategies, game rules and scores. Games are usually played by two or more people. Games can be related to daily social phenomena as well as can be played between economic organizations, states, national or international organizations (Allan and Dupont, 1999).

Tariffs, embargoes or sanctions applied in the trade war are political process tools in which countries determine their policies and strategies in this direction by taking into account their own interests in terms of both effected and target countries. In this context, governments or countries that are strategy-setting and decision-making are the main players in this process. The strategy that each country or player will make on the basis of dependency, rationality and utility maximization or how they will follow the sanctions applied on them by the opponent is their strategy. The earnings they earn in this process or the costs they have to endure are score or utility functions (Köse, 2015).

Elements of the US-China trade war game:

Players: US and Republic of China.

Actions: Applying or not applying sanction.

Strategies:

1. When the competitor applies sanction (T), apply sanction (T).
2. When the competitor applies sanction (T), apply free trade (S)
3. When the competitor is free trade (S), apply sanction (T).
4. When the competitor is free trade (S), apply free trade (S).

Levels of Utility: There has been a lot of scientific research on the US-China trade war. The summary of these researches is given in Table 4. In Table 4, data expressing the level of utility that competitors will bear or will gain as a result of possible strategies in the US-China trade war are given. These data were used to interpret the likely consequences of the US-China trade war game.

Table 4. Effects on the US and China in terms of GDP according to the scientific study of trade wars

Author/ Authors	Scope of the Study	Trade war impact on competitors in terms of GDP	
		US	CHINA
Walmsley and Minor (2018)	US and China mutually apply 25% tariff on all goods (until 2030).	-2,7	-1,3
Freund et al.(2018)	US and China mutually apply 25% tariff on all goods (until 2030).	-2,5	-0,4
Balistreri et al.(2018)	Section 232 (aluminum and steel) and Section 301 measures plus retaliation until January. 2019	-0,34	-0,2
Caceres et al.(2019)	US and China mutually apply 25% tariff on all goods	-0,3	-0,6
Itakura (2019)	If the US and China mutually maintain the current situation in 2019 until 2030	-0,9	-1,6
Itakura (2019)	If the US and China make full-fledged mutual sanctions by 2030 (If 25% mutual tariff is applied)	-1,6	-5,7
WTO (2019)	All tariffs announced and implemented until Oct. 2019 under Section 232 and Section 301 (until 2023).	-0,35	-0,24
Felbermayr and Steininger (2019)	US and China mutually apply 25% tariff on all goods	-0,25	-0,14
Bellora and Fontagné (2019)	Section 232 (aluminum and steel) and Section 301 measures plus retaliation until January 2019. Tariff shocks aggregated with ref. weighting. (until 2030)	-0,41	-0,59
Yane and Nishioka (2019)	25% tariff increase between the US and China + US motor tariffs	-0,8	-0,7
Li et al. (2018)	Mutual trade war with the same level of 15% tariff measures	0.007	-0.667
Li et al. (2018)	Unilateral 30% tariff measures by the US	0.241	-1.260
Li et al. (2018)	Mutual trade war with the same level of 30% tariff measures	0.037	-1.152

The basic assumptions based on the US-China trade war game model:

1. Both the US and China have a policy of free sanctions or not.
2. The US and China are dependent on each other. In other words, there is a situation where no single competitor can have complete control over the results and the outcome depends on the decision of the opponent.
3. Both rational competitors try to maximize profits.
4. Competitors have incomplete information. That is, competitors have incomplete knowledge of the parameters that determine each other's utility levels and utility levels.
5. If the US and China are based on mutual free trade strategy, the GDP ratios of both competitors would be α and β respectively.
6. If the US is based on the free trade strategy and China imposes sanctions, there will be a loss of θ in the US GDP, while a increase in China's GDP.
7. If China takes the free trade strategy as a basis and if the US imposes sanctions, there will be a loss of τ in China's GDP, while there will be an increase in the rate of ABD of the US GDP.
8. If both competitors make mutual sanctions, they will suffer a loss of ϕ from the US 'gain from unilateral sanctions, while China will suffer a loss of from the unilateral sanctioning situation.

Model Establishment

The US-China trade war game was first discussed in the context of pure strategy and is given in Table 5. Two actions and four strategies are defined for the competitors. In addition, the utility levels that competitors will obtain as a result of the defined movement sets have been formulated according to certain parameters in the context of basic assumptions.

Table 5. Showing the US-China Trade War Game in the Context of

		China	
		S ₁ (T) (Apply Sanctions)	S ₂ (S) (Free Trade)
US	S ₁ (T) (Apply Sanctions)	$\alpha + \gamma - \phi, \beta + \vartheta - \omega$	$\alpha + \gamma, \beta - \tau$
	S ₂ (S) (Free Trade)	$\alpha - \theta, \beta + \vartheta$	α, β

Pure Strategy

For the trade war game shown in Table 5, pure strategy Nash equilibrium was not obtained. Because, as seen in Table 4, the parameters in the game could not be clearly defined due to the different results obtained in the scientific studies related to the trade war. Therefore, the trade war game

is discussed in Table 6 in the context of a mixed strategy in which players act according to certain probabilities.

In the trade war game in Table 6, the US's mixed strategy is an ordered pair in the form of $(p, 1-p)$: S_1 with probability p and S_2 with probability $1-p$, so $\sigma_{US}(p, 1 - p)$. Alternatively it can be expressed as: $\Pr (S_1) = p$, $\Pr (S_2) = 1-p$. Thus, the US's mixed strategy space, that is, the set of all possible mixed strategies is expressed as follows:

$$\sum_{US} = \{(p, 1 - p): p \in [0,1]\}$$

In the trade war game in Table 6, the China's mixed strategy is an ordered pair in the form of $(q, 1-q)$: S_1 with probability q and S_2 with probability $1-q$, so $\sigma_{China}(q, 1 - q)$. Alternatively it can be expressed as: $\Pr (S_1) =q$, $\Pr (S_2) = 1-q$. Thus, the US's mixed strategy space, that is, the set of all possible mixed strategies is expressed as follows:

$$\sum_{China} = \{(q, 1 - q): q \in [0,1]\}$$

Table 6. Showing the US-China Trade War Game in the Context of a

		China	
		S ₁ (Apply Sanctions) (q)	S ₂ (Free Trade) (1-q)
US	S ₁ (Apply Sanctions) (p)	$\alpha + \gamma - \varphi, \beta + \vartheta - \omega$	$\alpha + \gamma, \beta - \tau$
	S ₂ (Free Trade) (1-p)	$\alpha - \theta, \beta + \vartheta$	α, β

Mixed Strategy

The expected utility of each competitor is calculated for the solution of the game. For example, when US chooses S_1 with probability p ; if China chooses S_1 with probability q , the US's utility level will be $\alpha + \sigma - \varphi$, but if China chooses S_2 with probability $1-q$, the expected utility of the US is $\alpha + \sigma$. If this situation is stated more clearly, the expected utility as a result of the sanctions of the US is as follows:

$$EU_{US(Apply\ sanction)} = (\alpha + \gamma - \varphi) \cdot q + (\alpha + \gamma)(1 - q)$$

Similarly, if the US chooses free trade, the expected utility is as follows:

$$EU_{US(Free\ Trade)} = (\alpha - \theta)q + (\alpha)(1 - q)$$

The expected utility of the US in the context of all strategies is as follows:

$$EU_{US} = p \cdot [(\alpha + \gamma - \varphi) \cdot q + (\alpha + \gamma)(1 - q)] + (1 - p)[(\alpha - \theta)q + (\alpha)(1 - q)]$$

On the other hand, the expected utility of China's sanctions is as follows:

$$EU_{China(Apply\ sanction)} = (\beta + \vartheta - \omega) \cdot p + (\beta + \vartheta)(1 - p)$$

Similarly, if the China chooses free trade, the expected utility is as follows:

$$EU_{China(Free\ Trade)} = (\beta - \tau)p + (\beta)(1 - p)$$

The expected utility of the China in the context of all strategies is as follows:

$$EU_{China} = q \cdot [(\beta + \vartheta - \omega) \cdot p + (\beta + \vartheta)(1 - p)] + (1 - q)[(\beta - \tau)p + (\beta)(1 - p)]$$

To find the mixed strategy Nash equilibrium of the trade war game, p and q probability values must be found. If the derivative of the expected utility level of the US is taken, the optimal value of q is obtained as follows:

$$\frac{\partial EU_{US}}{p} = q\theta - q\varphi + \gamma = 0 \qquad q^* = \frac{\gamma}{\varphi - \theta}$$

If the derivative of the expected utility level of China is taken, the optimal p value is obtained as follows:

$$\frac{\partial EU_{China}}{q} = p\tau - p\omega + \vartheta = 0 \qquad p^* = \frac{\vartheta}{\omega - \tau}$$

Table 7. Distribution of Player Strategy Clusters According to Certain Possibilities

Strategies	(S ₁ , S ₁)	(S ₁ , S ₂)	(S ₂ , S ₁)	(S ₂ , S ₂)
Possibility	$(\frac{\vartheta}{\omega - \tau})(\frac{\gamma}{\varphi - \theta})$	$(\frac{\vartheta}{\omega - \tau})(1 - \frac{\gamma}{\varphi - \theta})$	$(1 - \frac{\vartheta}{\omega - \tau})(\frac{\gamma}{\varphi - \theta})$	$(1 - \frac{\vartheta}{\omega - \tau})(1 - \frac{\gamma}{\varphi - \theta})$

Analysis of the US-China trade war game

In mixed strategies, the utility level of each competitor depends on the competitor's move, as in pure strategies. So each player's mixed strategy depends on the competitor's utility parameters. For example, the mixed strategy of the US depends on the, ϑ , τ and ω parameters of China, which gives the p probability value. Likewise, China's mixed strategy depends on the, γ , φ and θ parameters of the US, which gives the q probability value.

On the other hand, the US's best response to China's moves depends on China's strategic (q^*) probability value. The solution to maximize the utility level of the US is (p^*) value, provided that China has a strategy set ($q^*, 1 - q^*$). If the possibility of China imposing sanctions against the US is $q < \frac{\gamma}{\varphi - \theta}$ (ie, if China adopts free trade), the move that will maximize the level of US utility would be to impose sanctions². Because this condition shows that γ and θ parameters increase and φ parameter also decreases. This shows that sanctions will be more utility for the US. In addition, the US response function $B_{US}(p)$ against different probabilities is expressed as follows:

$$B_{US}(q) = \begin{cases} (1) & \text{if } q < \frac{\gamma}{\varphi - \theta} \\ (p: 0 \leq p \leq 1) & \text{if } q = \frac{\gamma}{\varphi - \theta} \\ (0), & \text{if } q > \frac{\gamma}{\varphi - \theta} \end{cases}$$

Similar results are emerging for China. The solution to maximize the utility level of China is (q^*) value, provided that the US has a strategy set ($p^*, 1 - p^*$). If the probability of the US to impose sanctions against China is $p < \frac{\vartheta}{\omega - \tau}$ (that is, if the US adopts free trade), the action that will maximize the level of utility of China is to apply sanctions. Because the fulfillment of this condition depends on the increase of the parameters ϑ and τ and the decrease of the ω parameter. In such a case, it would be more utility for China to impose sanctions. On the other hand, if the probability of the US imposing sanctions against China is $p > \frac{\vartheta}{\omega - \tau}$, the move that will maximize the utility level of China is free trade.³ Because the fulfillment of this condition depends on the decrease of the ϑ and τ parameters and the increase of the ω parameter. Such a movement between parameters shows that the cost of sanctioning for China has increased. In addition, China's response function $B_{China}(p)$ against different probabilities is expressed as follows:

² γ value is the extra return that will occur in GDP as a result of the unilateral tariff implementation of the US. φ value is the extra cost in GDP that will occur as China responds to the unilateral tariff implementation of the US. The value of θ , on the other hand, expresses the loss of US GDP as a result of China's tariff implementation despite the US's free trade.

³ ϑ value is the extra return that will occur in GDP as a result of China's unilateral tariff implementation. ω value is the extra cost that will occur in GDP as the US responds to China's unilateral tariff implementation. τ value, on the other hand, expresses the loss that will occur in China's GDP as a result of the US tariff implementation, despite China's free trade.

$$B_{China}(p) = \begin{cases} (1) & \text{if } p < \frac{\vartheta}{\omega - \tau} \\ (q: 0 \leq q \leq 1) & \text{if } p = \frac{\vartheta}{\omega - \tau} \\ (0), & \text{if } p > \frac{\vartheta}{\omega - \tau} \end{cases}$$

Consequently, the mixed strategy Nash equilibrium solution of the trade war game depends on the condition $[(p^*, q^*) = (\frac{\vartheta}{\omega - \tau}, \frac{\gamma}{\varphi - \theta})]$. In other words, the state of sanctions in the US depends on the probability of $(\frac{\vartheta}{\omega - \tau})$, whereas China's state of sanctions depends on the probability of $(\frac{\gamma}{\varphi - \theta})$. The Nash equilibrium solution of the trade war game depends on how stronger the US sanctioning γ parameter, and how much the θ parameter falls for free trade. Likewise, China's sanctions depend on how strong the ϑ parameter is and how much the τ parameter decreases if it does free trade.

In scientific research on the US-China trade war, especially Dong and Whalley (2012), MccGwire (2018), Yin and Hamilton (2018), Li et al. (2018), Tyers and Zhou (2019) and El Namaki (2018) have the following summary of the results of their studies:

1. If the US imposes sanctions, and China retaliates and imposes sanctions, both the US and China will suffer seriously.
2. If the US imposes sanctions and China does not respond and impose sanctions, the US will gain the greatest utility of any existing strategy with this strategy.
3. If China imposes sanctions, the US retaliates and imposes sanctions, both China and the US will suffer seriously.
4. If China imposes sanctions, and the US does not respond and impose sanctions, China will gain the most utility.
5. If the US and China stop sanctions and start free trade, both the US and China will gain.

As can be understood from the summary of scientific studies, it is seen that the values of γ and ϑ parameters are increasing and these values will continue to increase in the future. This reinforces the strategy of sanctions for both the US and China. On the other hand, it is seen that the (θ) and (τ) parameters are also increasing and these values will continue to increase in the future. This shows that the cost of free trade is increasing for both the US and China. In the light of scientific studies in general, when we look at the mixed strategy Nash equilibrium solution condition of the trade war

game $\left[(p^*, q^*) = \left(\frac{\vartheta}{\omega - \tau}, \frac{\gamma}{\varphi - \theta} \right) \right]$, the optimal solution is It emerges as a situation where it makes sanctions.

CONCLUSION

China has achieved a higher growth rate than the US since 1977, and during this time, it has become the second largest economy in the world. At the same time, China, which has become the biggest competitor of the US, has become both the US's largest importer and the third largest export market. On the other hand, despite China's growth, the US trade deficit with China has gradually increased. While this trade deficit was 273 billion dollars in 2010, it was 419 billion dollars in 2018. The US administration who disturbed by these developments started the trade war by introducing additional sanctions for some products on March 8, 2018, to prevent this position of China.

With China's response to the US move, mutual moves followed each other, and the trade war became more violent. While the highest sanction rates were applied, negotiations for a trade agreement between the US and China began in the second half of 2019. As a matter of fact, the first trade agreement was signed on January 15, 2020. Today, some statements made between the US and China make it questionable whether the parties will remain loyal to the agreement. On the other hand, it remains uncertain whether there will be new agreements or whether the trade war will fire up again.

In our study, the US-China trade war has been strategically analyzed using game theory methods. First, the trade war game elements were defined and then the games were designed and played. Pure strategy Nash equilibrium could not be achieved in the complete information static game where players move simultaneously and cannot observe each other's movement. Because the parameters found in the utility levels of the competitors are not clearly defined. Therefore, the US-China trade war game is handled within the framework of an incomplete game and in the context of mixed strategy. The mixed strategies of the US and China in the game are defined according to specific probabilities, and then the utility function of each player is calculated. Thus, by deriving the obtained utility functions, the condition $\left[(p^*, q^*) = \left(\frac{\vartheta}{\omega - \tau}, \frac{\gamma}{\varphi - \theta} \right) \right]$ for the mixed strategy Nash equilibrium solution of the trade war game has been obtained. The parameters in the mixed strategy condition obtained were interpreted in the light of scientific studies. In this context, the optimal solution for the game's mixed strategy Nash equilibrium has been determined as the situation where both opponents sanction. Because, as can be seen in many scientific researches, in an environment where there is a trade war between the US and China, it is seen that the cost of free trade increases and sanctions are

even more advantageous. However, in an environment where there is no unilateral moves and cooperation between the US and China, free trade or agreements on reasonable tariff rates will be more advantageous for the interests of both countries.

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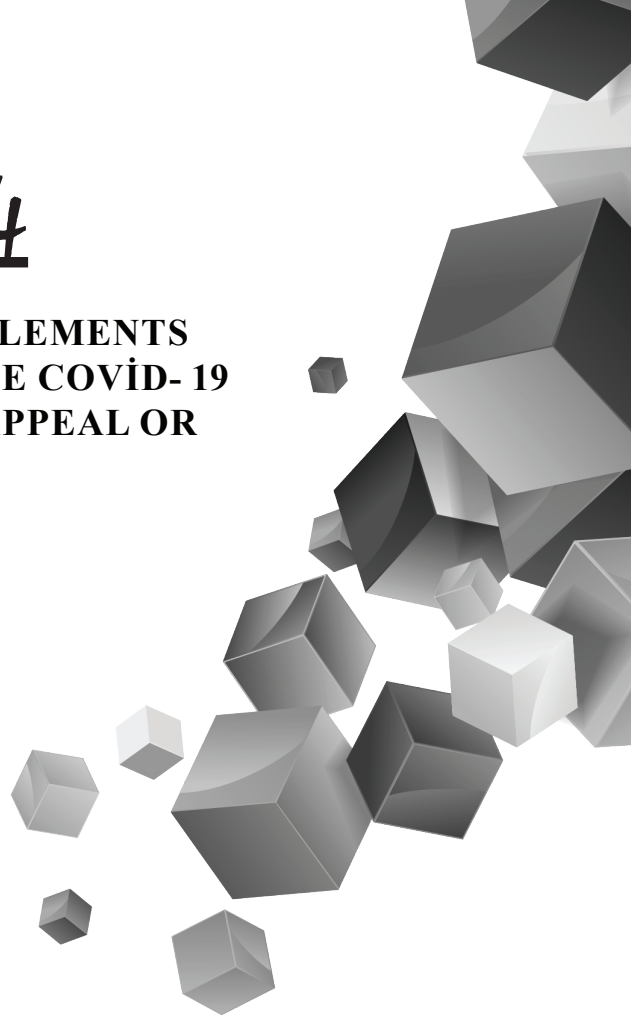
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Chapter 24

THE USE OF FEAR ELEMENTS IN THE NEWS OF THE COVID-19 OUTBREAK: FEAR APPEAL OR PERSUASION?



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INTRODUCTION

Throughout history, the greater impact of epidemics that have caused widespread devastation and death has been a sense of fear and anxiety on human psychology. A solution has not yet been found for the current Covid-19 outbreak. These fears of uncertainty and insolubility have increased many times over. Unlike previous epidemics, the lack of a treatment method yet and the uncertainty in seeking treatment, the rate of spread of the epidemic, its effects on daily life and the deaths it caused have increased anxiety and fears. The reflection of this situation in the media and its reflection in the media is based on fear. Beyond the dimension of health communication, even while the media fulfills its most basic function of reporting, it causes fear of Covid-19 with its local and global dimensions and the spread of this fear.

The main problem of this study is to determine, with examples of news texts, whether the aforementioned fear and its types are the use of fear attractiveness as a manipulative approach to attract attention to news or the purpose of persuasion in health communication. The news with the element of fear in the content were selected with the “criterion sample” which types of fear are used in reporting the news about Covid-19, and analyzes were made on the relevant text.

As a result of the study, it was determined that ‘death’, ‘loneliness’, ‘illness’ and ‘future fear’ were used in the news. In addition, it has been observed that fear elements are used explicitly or implicitly in warnings and recommendations other than news about the epidemic. In the light of all these data, it has been determined that fear elements are used in health communication for persuasion and awareness raising against the epidemic.

Epidemics have occurred many times throughout human history and caused great damage. The greater impact of these epidemics, which caused material damage and countless deaths, was the fear and anxiety they left humanity. In the time period we are in, the epidemic of Covid- 19 started and spread to every corner of the world and a solution has not been found yet. This environment of uncertainty has increased the fears experienced during previous epidemics many times. Although Covid- 19 shows many physical symptoms in the human body, it causes many changes in the feelings and thoughts and lifestyles of individuals in sociological and psychological terms.

Unlike previous epidemics, the lack of a treatment method yet and the uncertainty in the search for treatment, the rate of spread of the epidemic, its effects on daily life and the deaths it caused have increased the feelings of anxiety and fear.

Its reflection on the media is also based on fear. Beyond the dimension of health communication, even while the media fulfills its most basic function of reporting, it causes fear of Covid- 19 with its local and global dimensions and the spread of this fear.

The main problem of this study is to determine whether the fear in question is a manipulative approach to attract attention to the news or is the subject of the news in order to convince in health communication and to adopt the idea of combating Covid-19, with examples of news texts. For this purpose, it has been focused on which types of fear are used in the reporting of Covid-19 in international news sources. With the “criterion sample”, which is one of the purposeful sampling types, the news with the fear element in its content were selected according to the types of fear, and analyzes were made based on which fear element was included in these news, the sentence containing the fear element and the related text.

As a result of the study, it was determined that death, loneliness, illness and fear of the future were used in the news together with the fear appeal. In addition, it has been observed that fear elements are used explicitly or implicitly in news, warnings and recommendations given about the epidemic in media sources. In the light of all these data, it has been determined that fear elements are used in health communication for persuasion and awareness raising against the epidemic.

Fear is an emotional reaction generated by thoughts about danger. People try to avoid things they think are dangerous as much as possible, and if they are in danger, they try to get rid of that situation as soon as possible. According to this, fear is an emotion that leads to avoidance and protection behaviors with the effect of the idea of danger (Gençöz, 1998:10). In Turkish Language Institution Dictionary, according to psychological sense of fear; “Waking up in the face of a real or expected danger and intense pain and euphoria, yellowing of the skin, dry mouth, breathing and heartbeat, etc. While it is defined as the emotion with symptoms or manifests itself with more complex physiological changes, there are also meanings of “possibility of evil, danger” and “anxiety, sadness in the face of a danger or danger thought”.

According to Witte, fear is defined as a negatively valued emotion with a high level of arousal (Witte, 1998: 410). According to Altay, fear is an emotional reaction that results in a fight or flight reaction that occurs when any stimulus is perceived as threatening (Altay, 2005: 3).

Fears are an emotion that regulates people’s lives and directly affects their daily lives. This feeling, which is strong enough to change even the lifestyles and habits of people, is used in many areas such as news, advertisements, health communication campaigns and political

communication campaigns, especially cinema, which it calls a genre.

In the study, it is seen that the elements of fear were used for the purpose stated by Çobaner. According to him, “the element of fear is used in many different areas such as marketing a good, creating persuasive messages for any idea, changing a behavior in the social field and adopting an idea” (Çobaner, 2013: 212).

Fear, which is found in many life forms in nature, has a very important place in human life. The dominance of the feeling of fear gradually begins with phrases containing fear such as ‘if you do not eat your food, I will call the doctor, I will give you an injection’, which started in childhood when the first impressions and experiences about life began to be gained. This dominance can lead to changes in people’s lifestyles and habits. People live with many elements of fear in their daily lives. Many things such as the house where you live, working hours, rest hours, the roads to be used can be determined according to fears (Torun, 2011: 45; Tali, 2012). There are many types of fear that are thought to shape people’s lives. Since it is not possible to address all of these fears within the scope of this study, the types of fear related to work will be addressed. While determining the types of fear addressed in the study, they were selected according to the criteria of being directly related to health and expressing them with the expressions included in the content of health news.

1-Fear Types in Covid- 19 Outbreak News

1.1.Fear of Death (Tanataphobia)

Fear of death is a type of fear found in most people. Because it expresses the end of human life, it is a very strong fear and in this respect, it differs from other fears. Death fear that under the not so strong, d lim memories and filmed will be considered bitter, his own body especially the human being, who loves to have to lose everything, and when it would be in what manner of death, reasons such as knowing what to expect, lies after death. Fear of death has a great effect on human life. If this effect causes pathological problems, medical support may be required. Fear of death is the underlying truth under many forms of anxiety and phobia. In this respect, it can lead to different phobias and anxiety (Ayten, 2009: 89; Çiftçiöğlü and Seren, 2019: 4; Furer and Walker, 2008: 167-168).

1.2.Fear of Disease (Hypochondria)

Hypochondria is a type of fear that is generally caused by a person’s benign and often misinterpreting minor bodily sensations and thinking that the person has a serious medical condition. Although people with hypochondria are told that they do not have any disease as a result of medical examination, they find it difficult to be persuaded by the belief that

they have a disease. Hypochondriacs are generally people who always have physical complaints and seek understanding. These complaints are expressed by the hypochondriacs by linking their bodily sensations to possible illnesses. For example, they describe my headache as I have a brain tumor (Toğrol, 2012: 54; Olatunji, et al., 2014: 64).

1.3.Fear of Loneliness (Monophobia)

The fear of being alone can be defined as the feeling that one is or will be emotionally alone rather than being physically alone. People who harbor this fear may worry about being alone even when they are in crowds. Fear of being alone can sometimes trigger problems such as panic attacks or depression in adults and can cause fainting, tremors, seizures and even loss of consciousness (Yiğit, 2019). Some people can comfortably stay at home for an afternoon or even a few days, but they are uncomfortable at the thought of living alone for a long time. Like the fear of being home alone, this fear often stems from a lack of self-confidence (Fritscher and Gans, 1994).

1.4.Fear of the Future (Futurephobia)

The individual who has fear of the future lives in the future constantly, creates different scenarios about the future in his mind and cannot enjoy the moment he is in. By constantly trying to keep the future under control, it causes anxiety and fears to increase. In times of social crisis, economic uncertainty and fear of the future, the question of anxiety spreads to a wider audience (Kamacı, 2020).

Since the sense of fear serves people to protect themselves in any dangerous environment, it can be considered useful to a certain extent (Çoklar and Solak, 2017: 313). In addition to this, a certain O in behavior or attitude changes often can be used to generate fear element. Here, fear is transformed into a functional state by using fear appeal.

2.Fear Appeal in Health Communication

From a general point of view, the fear appeal, first used in advertisements, has become a widely used a persuasion tool of health communication in areas such as the fight against AIDS, cancer, drugs and cigarette addiction.

Fear appeal,” their individual potential hazards that could happen to them if they do not accept the advice given and stressing loss, trying to convince feared messages are annoying. These messages are often used in political communication, health communication and advertising clubs in the hope of reducing risky attitudes, intentions or behaviors. Although significant laboratory research has shown that fear appeal motivates behavioral change in a variety of behaviors, public health researchers and practitioners claim that fear can have the opposite effect (Tannenbaum, et al. 2015: 3).

The horror charm has been used for many products, services, ideas and causes. Smoking cessation, dental hygiene, personal safety, pregnancy warnings, child abuse, AIDS prevention, safe driving practices, insurance, financial security, sun exposure, climate changes, food additives, anti-drug, sexual abuse, epidemics, vaccination, cell phones, stress are examples (Williams, 2012: 4).

There are many theories about the attraction of fear. These theories are important both in terms of showing how the fear appeal is used and how successful it is, and in terms of guiding in the interpretation of the data to be discussed in the study.

2.1. Drive theories

Drive theories suggest that between fear and attitude change, a moderate amount of fear stimulation produces the most attitude change. According to this theory, there is an inverted U-shaped relationship between fear and attitude change. In the early 1970s, this theory was rejected for lack of support for the inverted U-shaped model. The main reason for the rejection of the theory is that the hypothesis that when fear subsides, there will be a change in attitude is not proven (Witte, et al. 2001:12).

2.2. Parallel Response Model

This model was introduced by Leventhal in 1970, but has never been tested. The parallel process model shows that fear appeal produces two distinct and potentially interconnected processes: hazard control processes (efforts to control threat / danger) and fear control processes (efforts to control threat / fear of danger). While Leventhal could not clearly state when to initiate danger control and fear control processes, the model was later criticized as lacking specificity and untenable, while the model changed current thinking about fear appeal and separated it from emotional cognitive processes (2001:15).

2.3. Subjective Expected Utility Model (SEU)

R.W. Rogers was one of the first to apply Protection Motivation Theory (PMT) to the Subjective Expected Utility Model. According to Rogers, the effectiveness of fear appeal depends on the ability to create three perceptions in message recipients. These are the perceived seriousness or concern of the threat contained in the message, the perception of sensitivity to the threat contained in the message, and the perception that the proposed response will effectively mitigate or eliminate the threat. The original formulation of this model claims that all three ingredients are essential ingredients in an effective horror appeal. The model suggests that a person's intention to adopt a proposed behavior is a multiplicative function such as perceived harmfulness, perceived sensitivity, and perceived effectiveness

of the response. Although PMT is a good model for explaining when and why fear attraction occurs, it cannot explain when and how fear attraction is unsuccessful (Stiff and Mongeau, 2016: 154)

2.4. Extended Parallel Processing Model (EPPM)

“The Expanded Parallel Processing Model (also known as Threat Management or Fear Management) describes how rational thoughts and emotional responses (such as a fear of a health threat) come together to determine behavioral decisions. The degree to which a person is threatened by a health problem determines their motivation to act, while the confidence to effectively reduce or prevent the threat determines the action itself. There are four key variables in the EPPM model, two related to beliefs about threat and two to beliefs about effectiveness” (<https://healthcommcapacity.org>). For example, in the case of HIV / AIDS, questions to ask someone to measure these beliefs might be:

Threat variables

Perceived violence; How serious do you think the consequences are if you are infected with HIV?

Perceived sensitivity; How likely are you to be infected with HIV?

Activity variables

Intervention effectiveness; How effective is a recommended remedy, such as the use of condoms, in preventing HIV infection ?

Self-sufficiency; How sure are you that you can successfully implement the proposed solution?

2.5. Health Belief Model

The health belief model was first developed by social psychologists in the early 1950s to understand why people did not accept preventive health services, screening tests, clinic visits, and drug use (Williams, 2012: 11). The model focuses on the impact of perceived sensitivity, perceived violence, perceived benefits, and perceived barriers. According to the model, individuals will perform the attitudes and behaviors expected of them for fear of illness.

Beliefs provide a crucial link between socialization and behaviour. Beliefs are enduring individual characteristics that shape behaviour and can be acquired through primary socialization. Beliefs are also modifiable and can differentiate between individuals from the same background. If persuasive techniques can be used to change behaviour-related beliefs and such interventions result in behaviour change, this provides a theoretical and practical basis for evidence-based health education. The relationship between health beliefs and behaviours was conceptualized primarily

in terms of Lewin's (1951) idea of 'valence' (Abraham and Sheeran, 2007: 97-102). The model focuses on the impact of perceived sensitivity, perceived violence, perceived benefits, and perceived barriers. According to the model, individuals will perform the attitudes and behaviors expected of them for fear of illness.

The Health Belief Model focused on two aspects of individuals' representations of health and health behaviour: threat perception and behavioural evaluation. Threat perception was construed as two key beliefs: perceived susceptibility to illness or health problems, and anticipated severity of the consequences of illnesses. Behavioural evaluation also consisted of two distinct sets of beliefs: those concerning the benefits or efficacy of a recommended health behaviour, and those concerning the costs of, or barriers to, enacting the behaviour (Abraham and Sheeran, 2007: 97-102).

Apart from these theories; Multidimensional Arousal Model or Activation Theory, Transactive Attitude Accessibility Model, Four-Stage Information Processing Model, Heuristic-Systematic Model i theories are also available. When looking at the general of the fear attraction theories, the hypotheses that the theories focus on and try to put forward can be listed as follows;

- When people feel fear, they are motivated to reduce the fear, threat or danger.
- The horror appeal is built on fear. That is, they describe the negative consequences of not using a product or the negative consequences of engaging in unsafe behavior.
- The use of fear attractiveness pursues the goal of being effective in increasing interest, participation, recall and persuasion power by creating potential distress for the target audience.
- In general, there is a curvilinear relationship between fear intensity and target audience change. If the fear is too low, it may not be recognized. If he reaches a very high threshold, the person can enter denial and avoidance.
- When the tension gets too high, the fear appeal seems less effective. That is, high voltage leads to energy depletion and negative mood.
- Fear attractiveness should contain sufficient threat and coping information to both evoke a manageable level of fear and inform about adaptive behavioral responses.
- The fear appeal will not succeed if the individual feels powerless to change behavior. Attractiveness of fear does not have the same effect on every individual (Williams, 2012: 15-16)

The element of fear appears in many different areas . In this study, news about Covid 19 on news sites will be discussed. Health communication campaigns are mostly carried out through the media today. One of the pillars of these campaigns is the statements about health in the news. It is thought that it will be useful to take a look at how the fear caused by this is included in health communication and news.

3.Fear Element in Healthcare Communication Campaigns

Epidemics can cause people to change their strategies for managing their daily lives. The individuals who make up the society are instantly caught in an extraordinary emotional vortex that seems beyond everyone's control, even for a while. Moreover, as this strange situation poses a real or potential immediate threat to public order, it can strongly influence the size, timing and pattern of social and political response in many areas affected by the outbreak. The emerging diseases disrupt our assumptions of a known risk universe, and reactions and behaviors that can be considered abnormal in normal times can be regarded as normal in this process (Dingwall, et al. 2013: 168-169). In extraordinary times such as this, health communication can come into play, informing individuals and the society about the current risk through health communication campaigns and even helping to reduce the current risk.

Health communication campaigns are a type of communication campaign used to change health-related behaviors in individuals or communities (Okay, 2009: 115). Health communication campaigns first emerged in the USA in the early 1700s. These campaigns are emerging to persuade individuals to get a smallpox vaccine or to reduce or control alcohol consumption. Health communication campaigns operate in a wide range of areas such as informing the society about epidemic diseases such as AIDS or explaining to the society why children should be vaccinated (Ertekin, 2017: 139).

Health communication campaigns resort to propaganda activities in order to convince the masses on many issues that concern the society (such as alcohol, hygiene, contraception, epidemics). Another propaganda method that these campaigns are often used to be successful is the element of fear. The element of fear is a method of persuasion that brings out the negative situations that may happen to people as a result of people not complying with them by offering various suggestions and recommendations, and in this way, the desired changes are achieved. It is possible to find these horror elements on the posters drawn for the propagandas of the campaigns in the 1800s (Okay, 2009: 118-119; Çobaner, 2013: 212-213).

Most of the American AIDS experts and reproductive health professionals emphasize that fear-based tactics used to develop a health-related behavior do not motivate continuous behavior change and that

these tactics are unethical, unprofessional, and very susceptible to misdirection. However, many African AIDS experts continue to use fear-based campaigns and claim that a significant decrease in AIDS rates in certain areas is due to these fear campaigns (Green and Witte, 2006: 245-250). People fear not only that AIDS will be fatal, but also have economic and family fears (Hoosen and Collins, 2004: 495). The fears that people have are determined and the campaigns to be developed are built on these fears.

Traditionally, the print media, television and radio are the biggest information transmitters from public health institutions to the society and play a major role in intensifying and weakening the interest of individuals against existing risks or risks (Chew and Eysenbach, 2010: 1). In this respect, media tools become a very important tool of health communication campaigns. Health communication campaigns frequently use the phenomenon of fear in health news.

3.1. Fear in Health News Texts

Infection usually spreads when one carrier infects another. However, a horror epidemic can be spread by a very different and arguably more virulent vector: the news media. This carrier has the potential to simultaneously expose hundreds of thousands or more messages to the same scary messages. Although the news media occasionally react to infectious disease with reassuring messages, most transmission news tends to minimize risk and danger, ways of stressing or treatment (Vanden Bulck and Custers, 2009: 370).

Sandman says that during pandemic times, the authorities left the public in fear with their alarming statements and by not fully informing people about the facts. “Frightened people are left alone with their fears and begin to think that those who rule them betray them. For example, during the severe acute respiratory syndrome (SARS) outbreaks in 2003, the Chinese government disguised actual death numbers. Later deaths, or somehow heard, caused greater fear and panic in China ” (Sandman, 2009: 323). In this context, it can be said that the thought that fear and panic can be prevented in individuals by hiding the facts can cause greater panic and fears. Instead, if the fear and panic that occurred in the first place can be directed correctly by explaining the facts, the awareness of the individuals about the pandemic can be increased more easily and the individuals can more easily follow the rules they are asked to obey.

Fear finds its place in all subjects, traveling between topics in the news in newspapers. Fear has caused many people in the United States to change their habits and lifestyles, limiting activities such as where and when they go shopping, where they will work, and where to go alone. For decades,

researchers have argued that such concerns were due to the mass media coverage of news as well as media (Altheide and Michalowski, 1999: 485).

3.2. Analysis and Findings

In the study, the fear element in the news texts selected by “criterion sampling”, which is one of the purposeful sampling types, was analyzed with the news sentence and the whole news text. Purposeful sampling is used to strategically select cases that are rich in information, situations that will illuminate the research question in terms of their nature and substance (Patton, 2015: 265). Criterion sampling is formed by bringing a certain criterion to the sampling subject to research. The researcher himself decides which event, person or situation will be studied and determines the criteria himself. In studies using criterion sampling, observation units can be composed of people, events or situations with certain qualifications. The rationale of criterion sampling is to review and examine all situations that meet a predetermined criterion, thereby explicitly (or implicitly) comparing criterion states with those that do not show the criterion (Patton, 2015: 281). As a matter of fact, the criterion in the study was to include an element of fear in Covid-19 epidemic news. In terms of scope and limitation, uncountable news has been written since the emergence of the epidemic and the announcement of a pandemic by the World Health Organization . Of course, since it is not possible to examine all the news, the study has been limited with the news with an element of fear.

Information and news about the Covid 19 disease, which has turned into a global epidemic from a regional epidemic, are transferred from many media. In this context, news sites on the internet, which are applied for information about Covid 19, have an important place. Internet news sites were preferred for reasons such as the internet being easily accessible from many different channels and increasing the speed of reaching the news. In this context, CNN broadcasting in the USA, BBC broadcasting in the UK, Rai News broadcasting in Italy and the websites in our country are handled as a sample of four news published between March and July 2020 and containing fear elements that form the basis of the study has been taken.

The study is built on the assumption that ‘ fear elements and fear appeal were used for persuasion in Covid-19 epidemic news ‘ . As a premise of this;

- *Fear of death elements were used in Covid-19 epidemic news.*
- *Covid-19 epidemic news items used fear of disease .*
- *Covid-19 epidemic news contain elements of fear of loneliness .*
- *Covid-19 epidemic news have elements of fear of the future .*
- *In Covid-19 epidemic news, the fear element was used to attract attention to the news.*

- *In Covid-19 epidemic news, the fear element was used to persuade health communications.*
- *The assumptions that the fear element in Covid-19 news was used to change behavior in combating the epidemic was also analyzed within the scope of the study.*

Table 1. CNN News Date: 12.04.2020

News Title: NewYork Hart Island and coronavirus: ‘A meaningful place in a dark time’

Horror Item	Phrase with the Fear Element	Related Text
The fear of death (Tanatophobia) What s the Tracer Fear (Monofobia)	The rage of the coronavirus pandemic is death alone.	The victims were packed and moved from morgues to freezer trailers outside the hospital. There is no mourning in places of worship, funeral homes or cemeteries. When New York officials announced this week that a poor and derelict potter’s field on Hart Island would be used for virus victims, the island, previously branded as a prison, was turned into a public cemetery.

In the news in Example 1, it is intended to give the message that traditions such as mourning or condolence held after funerals, which are present in many religions and cultures, can no longer be made. It is emphasized that even in an important event such as death, it will be dangerous for people to come together. These messages advise people to a more solitary life.

Table 2. CNN News Date: 06.05.2020

News Title: A long-term ‘disaster morgue’ has been set up at Brooklyn’s 39th Street Pier to help New York’s overwhelmed funeral system

Horror Item	Phrase with the Fear Element	Related Text
The fear of death (Tanatophobia)	Four trucks with a capacity of 60 bodies joined the city’s struggle to keep up with rising deaths last week on a busy street outside the Brooklyn funeral home.	Authorities removed the bodies from the morgue and the state suspended the funeral home’s license. According to a law enforcement source, the funeral home was full and there was no room left for corpses waiting to be cremated. According to one source, at least one truck’s refrigerator wasn’t cooling, the bodies were on ice packs. The sudden increase in deaths also strained graveyard operators.

Considering the news in Example 2, attention was drawn to the increase in the number of deaths caused by Covid 19. Emphasizing that there is no place for corpses in funeral homes and that even refrigerated trucks are not enough for corpses, it appears as a story based on the fear of death.

Table 3. CNN News Date: 12.05.2020

News Title: He prayed at the head of his father, who died of coronavirus. They were buried together 16 days later.

Horror Item	Phrase with the Fear Element	Related Text
The fear of death (Tanatophobia) Fear of Disease (Hypochondria)	Sixteen days later father and son were buried together. The old Moran's wife and daughter, who lived with her and visited the hospital the night she died, tested positive for coronavirus, as were the other two family members in her room that night.	Miguel Moran died from coronavirus complications. His 23-year-old son and 4 other family members put their masks on their faces and rushed to the suburban hospital in New York and waited by their father. Miguel Moran died of acute respiratory failure from Covid-19 on April 16, according to his death certificate. Eight days after praying on his father's body, Daniel himself died of illness.

The news in Example 3 has been highlighted that family ties bring togetherness and increase the risk of getting Covid 19. The news of the young person infected with the virus because he visited his father on his deathbed gives the message that the disease will also be transmitted from the dead and can kill the young people.

Table 4. Rai News Date: 24.02.2020

News Title: Fear in Spain: Old people abandoned among the corpses in the nursing home

Horror Item	Phrase with the Fear Element	Related Text
The fear of death (Tanatophobia) Monophobia (Monophobia) Fear of Losing People Fear of the future (Futurephobia)	Having been in the field for days to bring down the Coronavirus epidemic in the country of Iberia, the army found hospitalized elderly patients completely abandoned, some even dead in their beds.	Margarita Robles confirmed in a television interview that the government insisted that it "would not be flexible in controlling the care of the elderly" in nursing homes. "The army found some old people completely abandoned, even dead in their beds." The judiciary has launched an investigation.

The news in Example 4 contains many elements of fear. The army’s landing on the field to combat the pandemic refers to the scale of the epidemic. The old people who were abandoned and found dead in nursing homes gives the message of a lonely and terrible death. The message is given to relatives of people living in nursing homes and those who have to stay in a nursing home, that such an end can wait for themselves and their loved ones.

Table 5. Rai News Date: 26.05.2020

News Title: Journey to hell in the Brazilian city of Manaus, devastated by Covid-19 between death and denial

Horror Item	Phrase with the Fear Element	Related Text
The fear of death (Tanatophobia) Fear of Disease (Hypochondria)	Manaus is one of the cities most affected by the pandemic in Brazil, with more than 23,000 official Covid-19 victims to date.	In Manaus on Saturday, locals flocked to the lively river market as usual, buying fresh fish, unaware or indifferent of the importance of social distance. Loyal groups returned to gather in the city’s evangelical churches as collapsed intensive care units tried to welcome new patients who came intubated from the Amazon.

In the news in Example 5, it is emphasized that social distance rules should be followed, intensive care units collapsed due to intubated patients and the number of people who died due to the pandemic.

Table 6. Rai News Date: 27.05.2020

News Title: South Korea, thousands of students return to classroom, but new wave of infection worrying

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia)	In South Korea, elementary school children have returned to class, but the atmosphere of enthusiasm and festivity has been thwarted by a new wave of coronavirus infections: 40 positive cases have been reported in the past 24 hours.	About 200 schools in Seoul and North Gyeongsang provinces will not reopen until 1 June. Authorities say that seven primary schools and five kindergartens in the capital decided to postpone reopening after a six-year-old child tested positive for covid-19.

In the news in Example 6, it is emphasized that there is an increase in the number of cases again in Korea, which opens schools, and it is emphasized that it is earlier to return to normal life. Open Schools in humans is not going to be, a vague fear of the future that the disease fear is aimed.

Table 7. BBC News Date: 17.07.2020*News Title: Coronavirus immunity: Can you get caught twice?*

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia)	Just because you can be protected by your antibodies doesn't mean you still can't harbor the virus and pass it on to others.	The new coronavirus didn't take long enough to know how long the immunity was, but there are six human coronaviruses that might give clues. All four produce cold symptoms and immunity is short-lived. Studies have shown that some patients can become re-infected within a year.

Considering the news in Example 7, the possibility of catching the Covid 19 virus more than once was discussed. This possibility may also recall illness and future fears.

Table 8. BBC News Date: 22.07.2020*News Title: Coronavirus cure: What progress are we making in treatments?*

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia)	There may never be a "cure" for coronavirus. We don't have a cure for the flu or cold or similar infections .	Some entirely new experimental coronavirus drugs are also being tested in the lab, but are not yet ready for human testing.

In the news in Example 8, it was stated that the Covid 19 vaccine would never be available, targeting the future expectations of people, and the fear of disease was targeted with the message that there is not much to be done against the disease.

Table 9. News: BBC News Date: 22.07.2020*News Title: Coronavirus vaccine: Could it have side effects?*

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia)	Would a vaccine be 100% safe? I am worried that a vaccine could be thrown out and there could be unwanted side effects.	New vaccines are subject to stringent safety controls before they are recommended for widespread use. Although research on coronavirus vaccine is carried out very quickly, these controls are still carried out in clinical studies. Any vaccine can have some side effects, and vaccines are no different.

In the news in Example 9, it is emphasized that the vaccine to be developed against Covid 19 may not be safe. Vaccine development studies, which are currently an important step in the fight against Covid 19, are also an important element that can help people look to the future with confidence and eliminate their fears of getting sick. Looking at the news content, new fears are raised by emphasizing that the vaccine may have side effects.

Table 10. Milliyet Date: 20.07.2020

News Title: Scandal decision from the hospital! They will leave it to die ...

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia) The fear of death (Tanatophobia)	The ethics committee of a hospital in the USA will decide who will receive coronavirus treatment and who will be left to die because of the impossibility.	It has been announced that the only hospital in the town of Starr County, on the Mexican border, in the US state of Texas, will establish an ethics committee that will decide which coronavirus patients will be treated and “which will be sent home to await their death” due to impossibilities.

In the news in Example 10, it was tried to reveal the magnitude of the epidemic by emphasizing the impossibilities caused by the disease, based on the decision taken by a town hospital. However, by mentioning that people would be left to die, more than one element of fear was used.

Table 11. Milliyet Date: 20.07.2020

News Title: The coronavirus made it kneel ... thousands of dead in 24 hours!

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia) The fear of death (Tanatophobia)	According to the breaking news, 1156 people died in Brazil, 737 in Mexico and 757 in India in the last 24 hours from Kovid-19.	In Brazil, the second country most affected by the epidemic, 1156 people died in the last 24 hours due to the virus. According to the data of the Ministry of Health of Mexico, the loss of life from Kovid-19 in the country in the last 24 hours increased by 737 to 42 thousand 645. According to the statement made by the Ministry of Health of India, with the death of 757 more people in the country, the number of deaths from Kovid-19 rose to 31 thousand 358.

Considering the news in Example 11, it was emphasized that the epidemic and deaths continued to increase by giving one-day death statistics of various countries.

Table 12. News: Milliyet Date: 25.07.2020

News Title: Everything is back, nightmare begins again! The warnings are coming one after the other ...

Horror Item	Phrase with the Fear Element	Related Text
Fear of Disease (Hypochondria) Fear of the future (Futurephobia)	Incoming last minute according to the news; In the corona virus (covid-19) epidemic, the second wave began to increase its effect. Especially in European countries, concern has peaked.	In Spain , new cases of the new type of coronavirus (Kovid-19) epidemic, especially concentrated in the autonomous regions of Catalonia and Aragon in the east of the country , have started to cause concern in other countries of Europe.

Looking at the news in Example 12, it was emphasized that the epidemic started to rise again. Emphasizing that the epidemic did not end, but on the contrary, it became more widespread, messages containing disease and future fears were given.

CONCLUSION

This assumption was confirmed by the analysis of the news samples selected as a sample in this study, based on the basic assumption that ‘fear elements and fear attractiveness were used in Covid-19 epidemic news’ .

In addition to this basic assumption, the assumptions that fear of death, fear of disease, fear of loneliness and fear of the future were used in the news of the Covid-19 epidemic are also confirmed.

In the study, it is seen that the fear elements are used for the purpose stated by Çobaner. As a matter of fact, it is seen that the period in which the news, which is the sample, was selected, was used to convince the public about the measures to be taken and to change the behavior, especially in social distance, in the period when “confusion” was experienced in the fight against Covid-19, so to speak, right after the pandemic was declared.

As seen in the analysis in the sample “fear of death elements were used in Covid-19 epidemic news” assumption was confirmed. It is even seen that they are used together in some news.

Another assumption confirmed that “in Covid-19 epidemic news, the fear element was used to persuade health communications.” The masses who do not know how to behave at the beginning of the pandemic, or even deny coronavirus, have been convinced to fight the pandemic and coronavirus, especially through the news.

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Chapter 25

THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE IN PUBLIC LISTED COMPANIES: EMPIRICAL EVIDENCE FROM TURKEY ¹



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¹ This study is derived from Shakhida Zaitova's the master's thesis entitled "The Effects of Corporate Social Responsibility on Financial Performance of Public Companies in Turkey" under the supervision of Asst.Prof.Dr. Cüneyd Ebrar Levent. Preliminary and abstract version of this study was presented at "1. International Baku Scientific Researches Conference" as oral presentation. The scope of the study and model was expanded in line with the recommendations and discussions made at the Conference.

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1. Introduction

Corporate social responsibility is a broad term that includes important areas such as economy, environment, harmony, human and animal rights, diversity, stakeholders' interests, education and philanthropy. In other words, it can be described as a "social contract" between a company and a society in which it operates.

Corporate social responsibility is addressed from two perspectives: The first is the shareholder approach advocated by Milton Friedman. According to Friedman, "business has only one social responsibility, that is to increase profits" (Friedman, 1962). Whereas Freeman's Stakeholder Theory states that corporation should fulfil the interests of all stakeholders of a firm. Freeman said: "If the needs of both shareholders and relevant stakeholders are met, they will in turn maximize the returns of the company" (Freeman, 1984).

Today, approaches that treat the concept of social responsibility like Friedman have left their place of approaches that argue that companies are a part of the system and that companies are structures that should only be considered together with their stakeholders. However, there is no consensus definition of corporate social responsibility even among those who support stakeholder theory. Nevertheless, the four pillars (economic, legal, ethical, and philanthropic) that Carroll (1979) outlined in the framework of corporate social responsibility are frequently used to define this concept.

Corporation might question, why is it important to engage in corporate social responsibility activities? First and foremost, it is for a reputation enhancement, investors would more likely invest in a socially responsible company. Moreover, corporate social responsibility and corporate sustainability go hand in hand, which mean that those companies which are responsible are likely to be more successful and live longer.

Second, stakeholders that do benefit from corporate social responsibility program of a company, are more likely to remain loyal and give back to the organization. This loyalty is actually closely related to trust. Especially in the last 30 years, there have been incidents in the world where investors suffered financial losses such as corruption, fraud, company crises and unethical events stemming from the irresponsible actions of companies. In aftermath of such events, investors wanted to have confidence in stocks they are buying, hence demand for company's transparency and ethical business operations was increased and urged by governments.

Third, and a debatable reason, which is addressed in this study, is that corporate social responsibility practice increase firm's financial performance.

The purpose of this research is to find the effect of corporate social responsibility on corporate financial performance of Turkish publicly traded companies. Corporate social responsibility - financial performance relationship, has not been studied enough in Turkey. Moreover, there are no studies that combine three phenomena such as corporate social responsibility, corporate sustainability and corporate governance, and analyse whether a company that is engaged in all three has better financial performance than those that do not. In this context, following study is expected to make an important contribution to the literature.

In this quantitative research, companies listed in the BIST 100 index were selected as the sample. Financial institutions and sports companies were excluded due to differences in accounting periods and practices. The research period is 5 years, including 2015-2019. Financial performance was represented by return on assets (ROA), Tobin's Q and earnings per share (EPS), while corporate social responsibility and corporate governance variables were used as independent variables. Various control variables were also added to the models. Panel data analysis, which takes both time and cross-sectional dimensions into account, was preferred as a method.

Section 2 of this study focuses on the literature review on the relationship between corporate social responsibility and financial performance. Section 3 focuses on the methodology of carrying out the research; following with Section 4 which will provide research findings, and finally section 5 will interpret the results and concludes the whole research.

2. Literature Review

There are two different approaches to corporate social responsibility. A group of academics and professionals argue that the sole responsibility of any business is to make a profit. The profitable company pays salaries, taxes and creates more jobs, fulfills its responsibility to society, which is a shareholder approach. The other group believes businesses should serve a larger purpose and work to benefit. According to this approach, companies should also serve the society they live in, apart from making a profit.

The most famous name included in the first group is Milton Friedman, who created striking ideas about corporate social responsibility. Many studies on the subject quote Friedman's view on corporate social responsibility, describing it as "The social responsibility of the enterprise is to increase its profits". He had a traditional view of every business and argued that businesses should only be judged by the free market economy, not by governments. Friedman believed that all companies' resources should be spent to increase shareholders' wealth (Friedman 1962).

The humanistic and social view of corporate social responsibility was actually defended by many intellectuals before Friedman. Howard R.

Bowen was one of them. Howard R. Bowen's book "Social Responsibilities of the Businessman", written in 1953, was the first to discuss somewhat modern definition of corporate social responsibility. He defined corporate social responsibility as "the obligations of businessmen to pursue those policies, to make those decisions or to follow those lines of action which are desirable in terms of the objective and values of our society" (Bowen, 1953). During 1960 to 1970's Bowen's research raised awareness among business owners to consider giving back to society.

Ten years after Bowen, McGuire brought a different perspective to corporate social responsibility. According to McGuire (1963), social responsibility entitles corporations not only to economics and legal obligations but also some responsibility towards society.

In line with these views, Davis (1973) argued that companies should not only meet legal obligations, but also meet and improve social and environmental needs.

Carroll (1979) created a pyramid of corporate social responsibility, where four dimensions such as economic, legal, ethical, and philanthropic are discussed. The first fundamental obligation of a business is to be profitable by producing goods and services. Economic responsibility is required by the society. The second responsibility is legal obligation of a business, i.e. complying with all the laws, rules and regulations of the country, and industry specific rules. Most of the companies have a special department called "compliance" departments where they make sure that all the financial, operational, and other departmental activities are in lined to the laws. The next responsibility up the pyramid is ethical obligations of the firm. It is when a company chooses to do the right things, even if they are not required by the law. According to Carroll (1979), ethical corporation is expected by the society. Lastly, philanthropic responsibility is desired by the society. Indeed, stakeholder approach is also focused on philanthropic activities, they may be donations to charity, sponsoring schools, funding special events and so on.

Tens of different definitions of corporate social responsibility were made within the framework of these two opposite approaches. Dahlsrud (2006) conducted a research focusing solely on analyzing definitions of corporate social responsibility. The author concluded that most definitions refer to five factors: environment, society, economy, stakeholder and volunteering. Additionally, Dahlsrud (2006) points out that, definitions describe corporate social responsibility, but do not suggest solutions on how to cope with the challenges the corporate social responsibility phenomena brings.

Today, corporate social responsibility is more than a cause related marketing, or business ethics. Corporate social responsibility is broadly

defined as a corporation's responsibility both to shareholders and stakeholders (employees, suppliers, business partners, customers, potential investors, society, non-profit organizations, and environment).

It can be easily stated that corporate social responsibility has an economic dimension besides marketing. In this context, corporate social responsibility is not only about helping society, but also about managing risks, increasing company's value, and creating opportunities beyond company's core activities in the interest of both shareholders and stakeholders (Yilmaz, 2011).

Examining the shareholder and stakeholder approaches to corporate social responsibility from the perspective reveals the aspects that actually intersect with the concept of corporate governance. Corporate governance has two views: narrow and broad. In its narrower aspect, corporate governance represents the agency theory in which managers focus primarily on increasing the wealth of shareholders. While broad view represents stakeholders theory, and this is where corporate social responsibility and corporate governance do overlap. Objectives of both corporate social responsibility and corporate governance is to satisfy the needs of all stakeholders. Corporate social responsibility focuses on external control while corporate governance on internal, yet both work on the same objective to reduce company's risk and make it sustainable (Pintea & Fulop, 2015).

In this context, it would not be correct to say that corporate social responsibility, corporate sustainability and corporate governance concepts are not unrelated to "financial performance".

Studies in the literature show that three main findings have been reached regarding the relationship between corporate social responsibility and corporate financial performance. First, that investing in social activities reduce financial performance of the company. Second group argue that vice-versa engaging in corporate social responsibility have boosted firms' financials. Third group of results do not find a link between the two.

Preston and O'Bannon (1997) examined the relationship between corporate social responsibility and financial performance. Financial performance is represented in the study with rates based on profitability. The authors found strong evidence that corporate social responsibility positively affects financial performance. This perspective also suggests that if a company is more profitable than expected, higher engagement in social activities are observed. This perspective suggests that corporate social performance and corporate financial performance are interconnected, and it is hard to trace which on the two caused the other phenomena.

Barnett and Salomon (2006), cover 26 years of data from 60 companies measuring social performance - financial performance relationship, study suggests positive relationship.

Luo and Bhattacharya (2006), research on the impact of corporate social responsibility rating on Tobin's Q and stock prices of 452 US companies had positive corporate social responsibility - corporate financial performance relationship.

Blasi et al. (2018) found some common positive patterns between corporate social responsibility and corporate financial performance (ROE, ROA, ROI, ROS), sample size included 988 Italian firms with data of 12 years.

Beck et al. (2018) examined the relationship in 116 public companies in different countries: UK, Australia, and Hong Kong; study resulted in significant positive relationship between corporate social responsibility and corporate financial performance.

The relationship was studied in construction industry of Hong Kong was examined by Wang et al. (2016), results suggest positive correlation of ROA, EPS and ROE and corporate social responsibility disclosure MSCI.

Hasan et al. (2016) studied 986 US companies in manufacturing industry with 17 year data set; corporate financial performance was measured by Tobin's Q, ROA, and total factor productivity, whereas corporate social responsibility was measured by merging Compustat and KLD databases; resulting in positive relationship.

Similarly, Yang and Baasandorj (2017) studied the relationship in airline industry and found a positive effect of corporate social responsibility disclosure on ROA and Tobin's Q of airline companies.

Hategan and Curea-Pitorac (2017) also observed a positive corporate social responsibility - corporate financial performance relationship in Romanian public companies; ROA, ROE, Total asset turnover, leverage, price to sales ratio, price to book value ratio were used to measure financial performance while charitable contributions measured corporate social responsibility activity.

Likewise, Taylor et al. (2018) came to a significantly positive corporate social responsibility - corporate financial performance relationship of 432 US publicly traded firms; financial performance was measured by Tobin's Q when corporate social responsibility was measured by ESG scores for environment, social and governance activities.

On the other hand, "theoretically desirable" findings could not be reached in some studies. Makni et al. (2009), examined 179 Canadian companies to test the connection between corporate social responsibility

and financial performance measured by ROA, ROE and Tobin's Q; the result of the study was negative.

Mišura et al. (2018) assessed the relationship in Croatia's Tobacco industry and found no significant corporate social responsibility - corporate financial performance relationship.

Correspondingly, Theodoulidis et al. (2017) analysis of tourism industry of 683 firms in Italy and UK had no significant corporate social responsibility - corporate financial performance correlation.

Likewise, Akisik et al. (2017) found no significant corporate social responsibility - corporate financial performance relationship.

Whereas Yoon and Chung (2018) study focused on 59 US firms in hospitality industry, yet no significant results were found.

The study with the biggest data set so far, with 12,294 observations from 1992-2005 was carried out by Lee et al. (2018); 3 different US databases were used; researchers came with neutral result of the corporate social responsibility - corporate financial performance relationship.

There was a study conducted by Margolis and Walsh (2003) who analysed 127 previous studies on the relationship between corporate social performance and corporate financial performance, they reached to a non-definite conclusion. About half of the studies had a positive relationship, the rest had negative or no relationship.

This issue has also been examined in the Turkish literature. However, it should be emphasized that the number of firms examined is not sufficient. From these studies, Yilmaz (2011) focused on finding the relationship between corporate social responsibility disclosures and financial performances of 27 banks in Turkey. A social score has been created for each company depending on the amount of social activities of the firm. Yilmaz (2011) also run the vice versa relationship, making corporate financial performance as an independent variable. As a result, only two variables (total assets and net profits) had a significant positive relationship, while others had no significant relationships.

Erdur and Kara (2014) have studied the relationship between corporate social responsibility and corporate financial performance through Borsa Istanbul Corporate Governance Index. Financial data of 33 companies from 2006-2012 was studied. According to the analysis they have found string positive relationship between corporate social responsibility and firms' Tobins Q, ROE and ROA, leverage ratios and net profit. Whereas no relationship was found between corporate social responsibility and total sales and return on sales ratios.

3. Data and Methodology

3.1. Data

The main purpose of this study is to reveal empirically the effect of corporate social responsibility practices on the financial performance of companies. Beyond the theoretical approaches, this study will address corporate social responsibility, corporate sustainability, and corporate governance altogether.

In line with this purpose of the study, two types of data will be used in the study:

a) Financial data: ROA, Tobins Q and EPS as dependent variables. Firm size, growth rate and leverage as control variables.

b) Non-financial data (corporate social responsibility, corporate governance, and listed years)

Both types of data were gathered from public sources. Financial data were collected from the Public Disclosure Platform (KAP) and Borsa Istanbul (BIST).

Corporate social responsibility values were taken from the BIST Sustainability Index (XUSRD). The companies listed in the index are assumed to be socially responsible, as they have been thoroughly analyzed by EIRIS and meet the requirements for sustainability. Corporate governance data as well as stakeholder's rating were obtained from the BIST and Corporate Governance Association of Turkey (TKYD).

3.2. Sample

The research covers public companies listed in BIST 100 Index. Financial institutions such as banks, investment funds and sports companies were excluded.

After thorough analysis of the sample, 73 companies out of 100 were chosen, other 27 companies were removed due to the following reasons:

1. All banks and insurance companies were removed due to their accounting differences with other companies, especially sources of revenues and expenses.

2. All sport team companies were also removed, due to their accounting period being pegged to a sports season, which is different from usual Jan 1- Dec 31 accounting period.

3. Several other companies were removed because they were missing some important financial data like revenues.

For the data size to be scientifically sound, the researchers decided to take five-year time frame from 2015 to 2019 included.

3.3. Variables

Independent Variables

Corporate social responsibility level (CSR) is a dichotomous variable, companies that are included in BIST Sustainability Index XUSRD are given value 1, otherwise 0.

The Total Corporate Governance level (CGL) indicates the corporate governance compliance rating of the companies. These ratings are given by independent rating institutions authorized by the CMB (Capital Market Board). It is not compulsory for companies to get ratings, however, companies that have been rated are an important indicator in terms of showing that they are ready to be evaluated in terms of corporate governance. Rating grades are between 0-100. In this study, CGL is rated as an independent variable as follows.

0: No rating

1: Rating <69.99

2: Rating 70-79.99

3: Rating 80-89.99

4: Rating ≥ 90

Stakeholder's Rating (STR) is a sub-rating of CGL, numerical values are taken from corporate governance compliance rating reports. In the analyzes, the original values were divided by 100 and the values from 0 to 1 (for example 0.7987) were used.

Dependent Variables

In the study, three dependent variables are used as indicators of financial performance: ROA, Tobin's Q and EPS.

Return on Assets (ROA) measures the profitability of company's assets. It indicates how much profit a company earns in comparison to its overall resources. ROA formula is given below.

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

Tobin's Q (TOBIN) is a ratio between firm's market value and replacement cost (total assets). It gives investors and other decision makers whether the stock is under-priced or overpriced. If the Tobin's Q < 1 then the stock is under-priced, if Tobin's Q > 1 then the stock is overpriced.

$$\text{Tobin's Q} = \frac{(\text{Total Debt} + \text{Market Value})}{\text{Total Assets}}$$

Earnings per share (EPS) also indicates firm's profitability. It is calculated as total income divided by total shares of stock.

$$EPS = \frac{\text{Net Income}}{\text{Total Shares Outstanding}}$$

Control Variables

The study uses four control variables: Firm Size, Growth Rate, Listed years and Leverage.

Firm Size (FS) measured by natural logarithm of total assets, firm's size measures the magnitude of a firm.

$$\text{Firm Size} = \ln(\text{Total Assets})$$

Growth Rate (GR) is measured by sales growth. It showcases how fast or slow a company grows, and whether that growth is positive or negative. The growth is calculated as the percentage change of sales in t year versus t-1.

Listed Years (LY) is number of years the firms are listed in the Borsa Istanbul. Natural logarithm of listed years is used in the panel data analysis.

Leverage (LEV) measures the riskiness of a firm, leverage tells the decision makers whether the firm can pay off its liabilities.

$$\text{Leverage} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

3.4. Model and Hypotheses

The main hypothesis of the study is that "corporate social responsibility has an effect on financial performance". The basic model is built on this. However, as stated in the above sections, this research includes corporate governance level (CGL) and Stakeholder Rating (STR) in the models, taking into account the relationship between corporate social responsibility and corporate governance. However, CGL and STR are not included in the same model together. Again, as mentioned above, various control variables are added to the established models.

The 6 econometric models to be tested in the study are as follows:

Model 1

$$ROA = \beta_1 CSR + \beta_2 CGL + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Model 2

$$ROA = \beta_1 CSR + \beta_2 STR + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Model 3

$$TOBIN = \beta_1 CSR + \beta_2 CGL + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Model 4

$$TOBIN = \beta_1 CSR + \beta_2 STR + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Model 5

$$EPS = \beta_1 CSR + \beta_2 CGL + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Model 6

$$EPS = \beta_1 CSR + \beta_2 STR + \beta_3 FS + \beta_4 GR + \beta_5 \ln LY + \beta_6 LEV$$

Panel data analysis method, which takes into account both the time dimension (2015-2019) and the cross-sectional dimension (73 companies), is preferred in the study. Panel data includes a cross-section of many subjects like the regression analysis, while also observing these subjects over time like in time series analysis (Frees, 2004).

The next section gives the research findings. Before moving on to panel data analysis, descriptive statistics and correlation matrix findings are presented first. Then, unit root test and multicollinearity test results are illustrated. The Hausman test is used to determine which panel data model is preferred, and finally, panel regression findings of 6 models are presented. In the study, solutions suggested by Reed and Ye (2011) and Moundigbaye et al. (2016) were used against possible autocorrelation, heteroscedasticity and cross-section dependency problems in the literature, and estimation was made by selecting PANEL EGLS in the Eviews program for panel data analysis.

4. Research Findings

Table 4 presents the descriptive statistics of all the variables used in the study. The findings show that Return on Assets varies between -0.3439 being the lowest and 0.9954 being the highest value of the sample, while the mean of ROA is 0.0521; standard deviation of ROA is showed to be 0.0952. Second dependent variable Tobin's Q has a mean of 1.3277, with a standard deviation of 0.6922. Maximum value of Tobin's Q is 5.7429, while the minimum is 0.2186. The third dependent variable EPS has mean value of 2.2733, with a standard deviation of 8.2806. EPS values range between -4.7966 and enormous value of 110.32. Independent variables CSR 0.3753, CGL 1.3836 and STR have 0.3358 mean values. Firm Size that is measured in ln (Total Assets) ranges between 19.1255 and 26.7305, with its mean being 22.1941. Growth Rate (GR) of the sample on average is 0.3036, and with a deviation of 1.2994 from a mean. Last from control

variables is Leverage (LEV), having a mean of 0.5631 with a standard deviation of 0.2298. Highest risk is 1.1665 while the lowest is 0.0779.

Table 1. Descriptive Statistics

	N	Mean	Median	Minimum	Maximum	Std. Dev.
ROA	365	0.0521	0.0461	-0.3439	0.9954	0.0952
TOBIN	365	1.3277	1.1703	0.2186	5.7429	0.6922
EPS	365	2.2733	0.6053	-4.7966	110.3238	8.2806
CSR	365	0.3753	0.0000	0.0000	1.0000	0.4849
CGL	365	1.3836	0.0000	0.0000	4.0000	1.8900
STR	365	0.3358	0.0000	0.0000	0.9951	0.4585
LNFS	365	22.1941	22.1498	19.1255	26.7305	1.4707
GR	365	0.3036	0.1749	-0.9999	22.7672	1.2994
LNLY	365	2.9150	3.0445	0.6931	3.4965	0.5362
LEV	365	0.5631	0.6029	0.0779	1.1665	0.2298

The correlation matrix of the variables in the research is given in Table 2. Correlation between dependent variables which represent company's financial performance ROA, TOBIN, and EPS range between weak positive and moderate positive relationship. Correlation between ROA and TOBIN is 31.9%, ROA with EPS 43.1%; TOBIN and EPS have the 23.8% positive correlation.

When looking at correlation of independent variables with each other, weak positive correlation around 36%, is found between variables CSR and CGL, and CSR and STR. Very strong positive relationship is between independent variables CGL and STR, it is expectable as, stakeholder's rating (STR) is part of a total corporate governance level (CGL). In this research, it should be emphasized again that STR and CGL cannot be found in the same models, but analyzed in separate models.

Table 2. Correlation Matrix

	ROA	TOBIN	EPS	CSR	CGL	STR	LNFS	GR	LNLY	LEV
ROA	1.0000									
TOBIN	0.3190	1.0000								
EPS	0.4312	0.2375	1.0000							
CSR	-0.0067	-0.0211	-0.0406	1.0000						
CGL	0.0274	0.0167	-0.0531	0.3521	1.0000					
STR	0.0221	0.0171	-0.0529	0.3576	0.9985	1.0000				
LNFS	-0.1106	-0.3252	-0.1416	0.5795	0.2731	0.2836	1.0000			
GR	0.1437	-0.0308	0.0177	-0.0449	0.0890	0.0809	-0.0658	1.0000		
LNLY	0.1232	-0.0635	0.1343	0.0206	-0.0193	-0.0171	0.0804	0.0309	1.0000	
LEV	-0.4507	0.0181	-0.2049	0.3293	0.0591	0.0674	0.2354	-0.1156	-0.1784	1.0000

Unit Root tests are conducted to check whether variable has a unit root and if the variables has stationary structure. All variables are tested for Unit Root, Levin, Lin and Chu (2002) test was performed in EViews program. Table 3 summarizes the results of unit root test of all dependent, independent, and control variables. If the probability is <0.05 then the variable does not have a common unit root. All variables except CGL has a probability value of 0, hence no unit root was observed. It is decided to keep CGL at 10% significance level, since the probability value is close to 0.05. Hence all variables are stationary.

Table 3. *Levin, Lin and Chu Unit Root Test Results*

Variable	Statistic	Probability
ROA	-80.02	0.0000***
TOBIN	-28.77	0.0000***
EPS	-20.34	0.0000***
CSR	-6.99	0.0000***
CGL	-1.55	0.0612*
STR	-6.25	0.0000***
LNFS	-10.77	0.0000***
GR	-217.11	0.0000***
LNLY	-77.01	0.0000***
LEV	-38.71	0.0000***

*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.

Multicollinearity test performed as one of the steps to test the quality of models, it is measured by centred Variance Inflation Factor (VIF). Literature suggest if the VIF value is lower than 10, then there is no multiple linear connection (Gujarati,2004). Table 4 illustrates the results of VIF test for all models, none of the values exceed value 10, hence there are no multiple linear connection issue found in the models.

Table 4. *Variance Inflation Factor (VIF) Test Results*

	CSR	CGL	STR	LNFS	GR	lnLY	LEV
Model 1	1.7150	1.1743	-----	1.5450	1.0286	1.0537	1.1905
Model 2	1.7134	-----	1.1786	1.5480	1.0270	1.0534	1.1895
Model 3	1.7150	1.1743	-----	1.5450	1.0286	1.0537	1.1905
Model 4	1.7134	-----	1.1786	1.5480	1.0270	1.0534	1.1895
Model 5	1.7150	1.1743	-----	1.5450	1.0286	1.0537	1.1905
Model 6	1.7134	-----	1.1786	1.5480	1.0270	1.0534	1.1895

Hausman (1978) Test is conducted to decide on the type of panel data analysis, fixed or random effects. Table 5 represents the results summary of Hausman test for 6 models; 5% significance level is used in this study. Null hypothesis suggests that random effects model is valid. If the probability

value is smaller than 0.05 then it is significant, and the Null hypothesis should be rejected, therefore fixed effects model should be used. In other hand, if the probability value is higher than 0.05 significance level, than the Null hypothesis should not be rejected, hence random effects model should be used.

Since the probability value of all models are less than 0.05, Null hypothesis is rejected, it is now appropriate to use fixed effects panel data analysis for the study.

Table 5. Hausman Test Results

	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Model 1	29.62	6	0.0000***
Model 2	29.60	6	0.0000***
Model 3	14.59	6	0.0237**
Model 4	13.99	6	0.0297**
Model 5	26.64	6	0.0002***
Model 6	26.69	6	0.0002***

, **, * indicate significance at 10%, 5%, and 1% levels, respectively.*

Panel data regression analysis, in other words it is known as longitudinal data analysis is performed for all 6 models using fixed effects method. The following analysis of the results of the study and will give an answer to the research question: public companies with higher corporate social responsibility and corporate governance practices in Turkey, has better financial performance than others?

Model 1 tests the relationship between independent variable CSR (measured by inclusion in BIST Sustainability Index) and second independent variable CGL (total corporate governance level) and dependent variable ROA as well as having several controlling variables. Regression analysis results for Model 1 are given in Table 6. The significance of the Model 1 is seen from the probability value of F statistics is 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 1 is significant. Results in Table 6 show probability value of independent variables: CSR to be 0.0017 ($p < 0.05$), CGL 0.2978 ($p > 0.05$). The probabilities of control variables are: LNFS 0.0000 ($p < 0.05$), GR 0.0036 ($p < 0.05$), LNLY 0.0000 ($p < 0.05$) and LEV 0.0000 ($p < 0.05$). All variables except CGL show statistically significant results. Looking at negative 0.007 coefficient of CSR, hence it can be concluded that, CSR has a weak negative effect on ROA of a firm. In conclusion, being included in BIST Sustainability Index and having high Corporate Governance Level ranking do not have positively effect on firm's ROA.

Table 6. Panel Regression Analysis Results for Model 1

Dependent Variable: ROA				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.0070	0.0022	-3.16	0.0017**
CGL	-0.0029	0.0028	-1.04	0.2978
LNFS	0.0242	0.0037	6.62	0.0000***
GR	0.0154	0.0053	2.93	0.0036**
LNLY	0.0196	0.0055	3.53	0.0005***
LEV	-0.3633	0.0232	-15.64	0.0000***
C	-0.3364	0.0683	-4.93	0.0000***
F statistic: 26.16 Prob(F-statistic): 0.0000***				
*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.				

Model 2 tests the relationship between independent variable CSR and second independent variable STR and dependent variable ROA as well as several controlling variables. Regression analysis results for Model 2 are given in Table 7. The significance of the Model 2 is seen from the probability value of F statistics 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 2 is significant. Results in Table 7 show probability value of independent variables: CSR to be 0.0052 ($p < 0.05$), STR 0.2178 ($p > 0.05$). The probabilities of control variables are: LNFS 0.0000 ($p < 0.05$), GR 0.0035 ($p < 0.05$), LNLY 0.0004 ($p < 0.05$) and LEV 0.0000 ($p < 0.05$). All variables except STR show statistically significant results. Looking at negative 0.0068 coefficient of CSR, hence it can be concluded that, CSR has a weak negative effect on ROA of a firm. The results are the same as for the previous model. In conclusion, being included in BIST Sustainability Index and having high stakeholder's ranking do not have positively significant effect on firm's ROA.

Table 7. Panel Regression Analysis Results for Model 2

Dependent Variable: ROA				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.0068	0.0024	-2.82	0.0052***
STR	-0.0146	0.0119	-1.23	0.2178
LNFS	0.0242	0.0036	6.71	0.0000***
GR	0.0153	0.0052	2.94	0.0035***
LNLY	0.0201	0.0056	3.61	0.0004***
LEV	-0.3629	0.0235	-15.44	0.0000***
C	-0.3369	0.0658	-5.12	0.0000***
F statistic: 26.45 Prob(F-statistic): 0.0000***				
*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.				

Model 3 tests the relationship between independent variable CSR and second independent variable CGL and dependent variable Tobin's Q which represent financial performance of a company. Regression analysis results for Model 3 are given in Table 8 below. The significance of the Model 3 is seen from the probability value of F statistics 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 3 is significant. Results in Table 8 show probability value of independent variables: CSR to be 0.2180 ($p > 0.05$), CGL 0.0062 ($p < 0.05$). The probabilities of control variables are: LNFS 0.0008 ($p < 0.05$), GR 0.2928 ($p > 0.05$), LNLy 0.1271 ($p > 0.05$), LEV 0.0142 ($p < 0.05$). The probability of all variables: CSR, GR, and LNLy are higher than 5% significance level, hence the results are statistically insignificant. On the other hand, CGL has a coefficient of -5%, meaning that Corporate Governance has a negative weak relationship with Tobin's Q. In conclusion, being included in BIST Sustainability Index and having high Corporate Governance level ranking do not have positively significant effect on firm's Tobin's Q.

Table 8. Panel Regression Analysis Results for Model 3

Dependent Variable: TOBIN				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.0371	0.0300	-1.23	0.2180
CGL	-0.0502	0.0182	-2.76	0.0062***
LNFS	-0.1449	0.0426	-3.40	0.0008***
GR	0.0089	0.0085	1.05	0.2928
LNLy	-0.1314	0.0858	-1.53	0.1271
LEV	0.2762	0.1120	2.47	0.0142**
C	4.8525	0.9760	4.97	0.0000***
F statistic: 37.12 Prob(F-statistic): 0.0000***				
*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.				

Model 4 tests the relationship between independent variable CSR and second independent variable STR and dependent variable Tobin's Q which represent financial performance of a company. Regression analysis results for Model 4 are given in Table 9 below. The significance of the Model 4 is seen from the probability value of F statistics 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 4 is significant. Results in Table 9 show probability value of independent variables: CSR to be 0.1609 ($p > 0.05$), STR 0.1106 ($p > 0.05$). The probabilities of control variables are: LNFS 0.0008 ($p < 0.05$), GR 0.2924 ($p > 0.05$), LNLy 0.1257 ($p > 0.05$), LEV 0.0215 ($p < 0.05$). The probability of all independent variables and control variables except Firm Size (FS) and Leverage (LEV) are higher than 0.05. Model 4 analysis show statistically insignificant results. In conclusion, being included in BIST Sustainability Index and having high Stakeholder ranking do not have positively significant effect on firm's Tobin's Q.

Table 9. Panel Regression Analysis Results for Model 4

Dependent Variable: TOBIN				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.0433	0.0308	-1.41	0.1609
STR	-0.1521	0.0951	-1.60	0.1106
LNFS	-0.1438	0.0427	-3.37	0.0008***
GR	0.0087	0.0083	1.05	0.2924
LNYEAR	-0.1304	0.0849	-1.54	0.1257
LEV	0.2590	0.1120	2.31	0.0215**
C	4.8188	0.9808	4.91	0.0000***
F statistic: 37.13 Prob(F-statistic): 0.0000 ***				
*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.				

Model 5 tests the relationship between independent variable CSR and second independent variable CGL and dependent variable Earnings per Share (EPS) which represent financial performance of a company. Regression analysis results for Model 5 are given in Table 10 below. The significance of the Model 5 is seen from the probability value of F statistics 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 5 is significant. Results in Table 10 show probability value of independent variables: CSR 0.0005 ($p < 0.05$), CGL 0.5049 ($p > 0.05$). The probabilities of control variables are: LNFS 0.0000 ($p < 0.05$), GR 0.0293 ($p < 0.05$), LNLY 0.0004 ($p < 0.05$), LEV 0.0000 ($p < 0.05$). CSR has a coefficient -0.3894, it is a statistically significant result at 5% significance level. The result of Model 5 shows an interesting result, there is a moderate negative relationship between CSR and EPS of a firm, meaning that firms that are engaged in CSR have lower EPS. In conclusion, being included in BIST Sustainability Index and having high Corporate Governance level ranking do not have positively significant effect on firm's EPS yet is has moderate negative results.

Table 10. Panel Regression Analysis Results for Model 5

Dependent Variable: EPS				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.3894	0.1105	-3.53	0.0005***
CGL	0.0331	0.0495	0.67	0.5049
LNFS	2.5164	0.1338	18.81	0.0000***
GR	0.0763	0.0348	2.19	0.0293**
LNLY	-0.5618	0.1580	-3.56	0.0004***
LEV	-6.7621	0.3208	-21.08	0.0000***
C	-48.0531	2.7375	-17.55	0.0000***
F statistic: 20.24 Prob(F-statistic): 0.0000 ***				
*, **, ***				

Model 6 tests the relationship between independent variable CSR and second independent variable STR and dependent variable Earnings per share (EPS) which represent financial performance of a company. Regression analysis results for Model 6 are given in Table 11 below. The significance of the Model 6 is seen from the probability value of F statistics 0.0000, which is less than 0.05 at 5% significance level this indicates that Model 6 is significant. Results in Table 11 show probability value of independent variables: CSR 0.0003 ($p < 0.05$), STR 0.4671 ($p > 0.05$). The probabilities of control variables are: LNFS 0.0000 ($p < 0.05$), GR 0.0312 ($p < 0.05$), LNLV 0.0004 ($p < 0.05$), LEV 0.0000 ($p < 0.05$).

CSR has a coefficient -0.3887, it is a statistically significant result at 5% significance level. The result of Model 6 shows the same interesting result as Model 5, there is a moderate negative relationship between CSR and EPS of a firm, meaning that firms that are engaged in CSR have lower EPS.

Probability of another control variable Leverage is 0.0000 with a coefficient of -6.73, the result show significant negative relationship between LEV and EPS; the higher the Leverage, the lower the EPS; it is a very expected result. The results of Model 6 are very similar to results of Model 5. In conclusion, being included in BIST Sustainability Index and having high Stakeholder's rating level ranking do not have positively significant effect on firm's EPS.

Table 11. Panel Regression Analysis Results for Model 6

Dependent Variable: EPS				
Method: Panel EGLS (Cross-section weights)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CSR	-0.3887	0.1068	-3.64	0.0003***
STR	0.1390	0.1909	0.73	0.4671
LNFS	2.5115	0.1327	18.93	0.0000***
GR	0.0779	0.0360	2.17	0.0312**
LNLV	-0.5832	0.1641	-3.55	0.0004***
LEV	-6.7331	0.3299	-20.41	0.0000***
C	-47.9016	2.7020	-17.73	0.0000***
F statistic: 20.32 Prob(F-statistic): 0.0000 **				
*, **, *** indicate significance at 10%, 5%, and 1% levels, respectively.				

Panel regression analysis of the 6 econometric models established can be interpreted as follows. Corporate social responsibility does not have a positive effect on the profitability of the companies within the scope of the research. Similarly, taking place in the XUSRD index does not positively affect Tobin's Q derived from public companies' market values. Finally, it has been found that social responsibility does not have a positive effect on earning per share.

It is possible to say similar results for corporate governance level (CGL) and Stakeholder Rating. In none of the 6 analyzes conducted, it was determined that companies that certify good corporate governance practices with Corporate Governance Rating Reports are not better than others in their financial performance.

5. Conclusion

Today, corporate social responsibility is critical not only from an “ethical point of view”, but also for the continuity and sustainability of business operations. In this respect, the concept of corporate social responsibility cannot be considered separate from corporate sustainability nor corporate governance. If “social responsibility” and “a firm” are to be mentioned, its financial dimension should be handled with measurable and comparable criteria.

This study has brought a new perspective by examining the concept of corporate social responsibility from this aspect and modeling it econometrically at the same time. In this context, the main purpose of this study, corporate social responsibility practices of publicly traded companies listed on the Borsa Istanbul in Turkey is to demonstrate empirically the impact on financial performance. As stated above, the study deals with corporate social responsibility, corporate sustainability and corporate governance together, beyond theoretical approaches.

This study analyses 73 companies from Borsa Istanbul BIST 100 index, the study period is five years between 2015-2019. Determinants of corporate financial performance were chosen to be ROA (Return on Assets), Tobin’s Q and EPS (Earning per Share). While the determinants of corporate social responsibility are corporate governance rating and an inclusion in BIST Sustainability Index. This research has four supporting control variables such as: listed years, leverage, sales growth, and firm size. Panel data analysis method, which takes into account both the time dimension (2015-2019) and the cross-sectional dimension (73 companies), was preferred in the study.

In the research, 6 econometric models were established to analyze the relationship between corporate social responsibility and financial performance. Before creating the models, the Levin Lin Chu unit root tests were used to test whether the variables in the models were stationary or not. Similarly, Variance Inflation Factor (VIF) test was applied to each model separately against the possible multicollinearity problem in the models. Hausman test was used to determine the most suitable panel analysis method. Fixed Effects Method was determined for the most appropriate panel data analysis method in all 6 models.

After conducting panel data analysis, no positive relationship between corporate social responsibility and financial performance were found. Results of Model 1 reveal a very weak negative relationship between CSR and ROA. Therefore, being included in BIST Sustainability Index and having high Corporate Governance Level ranking do not have positively significant effect on firm's ROA. The results of Model 2 which tests the relationship between CSR and Stakeholder's rating effect on ROA; has the same results as of the previous model.

Another significant finding is seen in Model 3, it was found that there is a weak negative relationship between Tobin's Q and Corporate Governance ratings. Hence, being included in BIST Sustainability Index and having high Corporate Governance level ranking do not have positively significant effect on firm's Tobin's Q.

More interesting results are seen for the Model 5 and 6; analysis reveal that there is a moderate negative relationship between company's corporate social responsibility activity and Earnings per share. For this reason, being included in the BIST Sustainability Index and having a high level of governance and stakeholder ranking does not have a significant positive effect on the EPS of the company. The results obtained in both models created with EPS are also similar to the results in the other four models.

Research results are in contrast to the findings in the literature that corporate social responsibility increases firm performance. However, in many studies in the literature, evidence has been obtained that corporate social responsibility does not affect financial performance. From this perspective, this study also supports those studies that find a neutral relationship (discussed extensively in the literature review section).

The results were somewhat expected since corporate social responsibility is not a top priority for investors in Turkey at this moment. Turkey is an emerging economy; thus, one may guess, that sustainability concept is newly born in Turkey and not yet adapted in many companies.

The findings may also suggest that financial benefits of corporate social responsibility are not seen in short term. Since the Sustainability Index was only established in 2014, it was not possible to study longer periods. Corporate Sustainability is per se, operating a company in a way, to live and be profitable many decades to come. This may be the major reason for the revealed results.

Furthermore, results may indicate that there may be an indirect benefit of corporate social responsibility on finances. For instance, employees who choose to work for a pro- corporate social responsibility firm in turn work more efficient and will not cost company termination expenses,

thus benefiting company financially. Such indirect financial benefits may happen with suppliers, financial institutions and with other stakeholders. The results of this study may serve as a motivation for investors, companies and even government bodies to think in a corporate sustainability perspective.

It is expected that this study will make a significant contribution to the corporate social responsibility - corporate financial performance literature overall, since it uses uniquely created models, combining sustainability and corporate governance rating as a representation of corporate social responsibility, as well as controlling the data with four control variables.

In addition, the market for Turkey in this context (time and horizontal cross-sectional dimension in the context) that a study be done, this research could provide a basis for future researchers will work on Turkey and the emerging markets. Future researchers may also opt for the sustainability index to mature, then take a longer study period, which could be 10-15 years. By doing this, researchers can observe a long-term impact of corporate social responsibility (and sustainability) on corporate financial performance.

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Chapter 26

GREEN SUPPLY CHAIN MANAGEMENT AND ITS IMPORTANCE



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Introduction

Over the past few decades, supply chain management has been applied to the industry. In order to adapt to a changing environment, it has gained growing interest and new ideas have been created. Supply chain-related analysis was analyzed from multiple perspectives, such as organizational research, modeling, modeling, and management. Due to market developments, such as content requirements preparation (MRP), manufacturing resource planning (MRP II), just-in-time, enterprise resource planning (ERP), lean manufacturing, customization, six sigma, and radio frequency recognition, related supply chain principles have been modified regularly (RFID). One of the new topics developing over the last few years is ecological supply chain management.

Supply Chain Management (SCM) is the close loop of operations to supply the goods to the consumer more efficiently at reduced prices, businesses are now seeking to standardize SCM business requirements. The supply chain is a network of material sourcing equipment, raw materials refining into goods and consumer delivery of finished Products (Devika et al., 2014, see Figure 1). It is possible to have and write supply chain management programs using intranets, special SCM applications or extranets (Laudon, C.and Laudon, J., 2005).

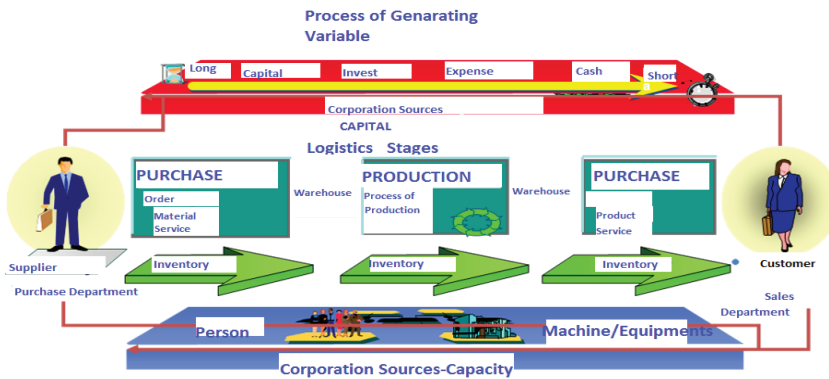


Figure 1. Framework of SCM (SAP Guidebook/SCM Module, 2006)

Since the focus on environmental issues is becoming increasingly relevant over time, primarily due to global warming and the constant damage to the atmosphere by humans. Today, with the signs of global warming continuing to impact daily life, people are beginning to try to play a part in trying to save the world. Even though people can be inspired by emotional rewards and encouraged to begin helping to slow global warming, corporations require more nuanced and more interest-based motives, including such economic gains, reputation, market recognition, or compliance with laws and regulations

These environmental initiatives, however, are not confined within organisations. Implementation at the level of the company is inadequate to meet the objectives of protecting the world. Collaboration within a group of organisations or between government departments and organizations is generally seen. One essential concept of supply chain management, which can be carried out both within an enterprise and among organizations, is teamwork. Since supply chain management includes all product-related business functions, the introduction of sustainability projects at the supply chain level would be much more effective than at the level of the enterprise. The whole chain of goods from vendors, producers, factories, dealers, stores, and shops to consumers is considered by the supply chain. Consequently, it is more effective to incorporate environmental principles into supply chain management and gives more advantages to the entire supply chain thus helping the customer.

Authors claim that sustainability concerns are vital to long-term organization viability and success. Sustainability has been worthy, essential for management processes, scholars, practitioners and academics in all science subjects (Dao et al., 2011). Current convergence of social or environmental targets that expand the economic scale, variable to the TBL (triple bottom line) defines popular and general SCM, which focuses on organization strategic, economic and cost evaluation (Brandenburg et al., 2014; Seuring et al., 2010).

GENERAL OVERVIEW

Based on new environmental policy issues, a variety of scholars have related to the green supply chain over the past decade. With the rise of business environmental sustainability, environmentally friendly development policy, and supply chain management research, development in this green supply chain literature dates back to the early 1990s (Zhu and Sarkis, 2006).

Supply Chain Management

In the 1980s, the Supply Chain Management (SCM) hypothesis developed. By then, the methodology was listed as part of the organization's activities and logistics section. Porter (1985) continues to stand out among the pioneering philosophers who developed the concepts embodied in what is known as SCM, study carries the framework on which all others were founded. Porter started a revolution that would last three decades with the implementation of the value chain principle, reforming the approach of leveraging the supply chain to maximize profits. SCM can be subdivided into five main areas to be understood and directed by the administrator (Hugos, 2006). These are;

(i) Production: In SCM, production falls down into two regions: production planning, needing an understanding of the product process and the planned use of the product, and capacity planning, requiring a thorough understanding of supply and demand and order distribution by the SCM group (Hugos, 2006).

(ii) Inventory: The quality impacts to provide the content cushion required for SCM to achieve some part of the production process. The value of inventory will contribute to a continued investment in raw resources and involves a system of monitoring that ensures appropriate levels of inventory (Vollmann et al., 2005).

(iii) Location: Using successful models that contribute to a high-performance SCM, operators must concentrate on where output and supplies can be put. In the technology sector, the pioneer activity of the “just-in-time” or “build-to-order” supply chain was established (Christensen et al., 2005).

(iv) Transportation: According to Hugos (2006), transport plays a vital role in SCM and is the mechanism by which the commodity is shipped from one manufacturing warehouse to another or sent to a vendor.

(v) Information: A leadership can easily manage commodity choices associated with the supply requirements with good, timely information (Vollmann et al., 2005). Each of these main roles led to the next stage of SCM growth.

Introduction of Green Supply Chain Management

In supply chain management (SCM), environmental management is a crucial topic (Azevedo et al., 2011). In order to please the final customer, the SCM includes the incorporation and collaboration of inter-organizational processes and strategic cooperation among all supply chain (SC) businesses (Green et al., 2012). Green Supply Chain Management (GSCM) methods handle ecological factors as they occur, especially before they occur. GSCM promotes the service processes within the cooperating agreements and the ideal supply chain to reduce the offensive-unaccepted sustainability issues of supply chain activities (Sheu et al., 2005; Sarkis et al., 2011; Eryuruk, 2012).

Existing studies related to green supply chain management was compiled and classified by Srivastava (2007). He described GSCM as incorporating environmental thought into supply chain management, involving product design, procurement and selection of products, production processes, market distribution of the finished product, and product end-of-life management after its useful life. GSCM refers, according to this definition, to a wide variety of industrial practices, from product design to processing or destruction.

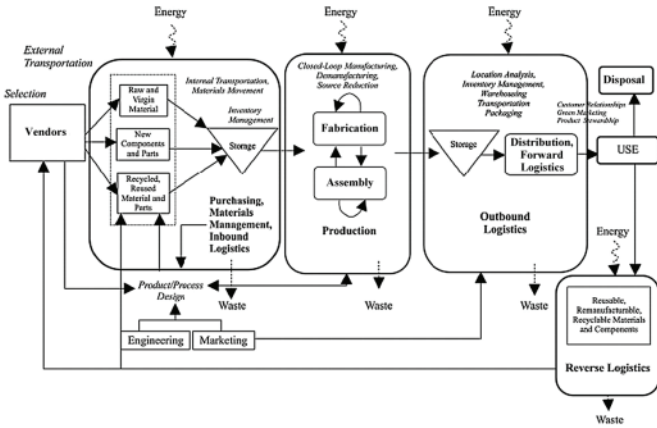


Figure 2. Process-Phases in green supply chain management (Hervani et al., 2005).

Along with Walker et al. (2008), the definition of the green supply chain encompasses all aspects of the life cycle of a product, from the exploitation of raw resources through the design, manufacturing, and delivery stages, to the consumer’s use of the product and its disposal at the end of the lifecycle of a product. Hervani et al. (2005) address the different techniques used in GSCM. These phases are seen in Figure 2.



Figure 3. Concept of GSCM (Sharma et al., 2017)

GSCM is characterized as the inclusion of operations of green initiative relating to the distribution of products or services to end users from primary sources (Foo et al., 2018; Wang et al., 2020), particularly green buying, green processing, green packaging, green marketing and reverse logistics (Gandhi et al., 2015; Wang et al., 2020, see Figure 3). GSCM is now regarded an optimal way for businesses to pursue greater economic profits and to control the supply chain by reducing material consumption and improving ecological performance (Zaid et al., 2018; Wang et al., 2020).

The focus of this research is to examine the relationship between corporate social responsibility (CSR), GSCM and company efficiency, and to take into account the potential of big-data analytics. The hierarchical multiple regression approach was used to analyze the data and evaluate

their theories on the basis of 260 samples from the Chinese manufacturing industry over three measurement times. The analytical findings suggest that internal CSR (employee management practice) and external CSR (external stakeholder management practice) have a beneficial affect on GSCM. GSCM has a significant effect on organisational efficiency, and the opportunity to evaluate big data has a significant positive influence on the interaction between external CSR and administration of the green supply chain (Wang et al., 2020).

Due to ever-increasing environmental legislation, customer perception, and market competitiveness, etc., the element of greenness in the SCM is added in the present scenario (Sarkis, 1999; Deshmukh and Vasudevan, 2014; Lamba and Thareja, 2020). According to the available literature, the GSCM methodology discusses the numerous study resources that are little or not thoroughly covered in conventional SCM (Simpson and Power, 2005; Mezher and Ajam, 2008; Lamba and Thareja, 2020). The conceptual literature on the industrial supply chain is analyzed for the present report, which outlines the principle of green supply chain management. In comparison, the ISM paradigm is used, which turns the decision-unclear/maker's badly articulated conceptual constructs into a well-defined paradigm for a given system/task. The study concludes that the most important aspect is the position and strategies of government agencies. It is therefore paramount to frame appropriate policies and force them on industries to maximize the number of industries adopting GSCM (Lamba and Thareja, 2020). According to Asif et al. (2018)'s study, three strands of GSCM research have been systematically analysed. Firstly, GSCM deployment drivers and challenges were analyzed and three major priority drivers were chosen for the conceptualization, respectively government legislation, consumer expectations and performance of suppliers. Secondly, it evaluated the GSCM practices and their implementation advantages specific to developing countries, contributing in the identification of four promising practices: eco-design, green sourcing, green development and reverse logistics. The research on the use of strategic management in GSCM was then analyzed to show the theoretical ramifications of the model. Eventually, the strategic paradigm that corresponds with the processes, operational and distribution of innovation ideas and goals is presented with a high degree of cooperation between international and domestic businesses, states, consumers and suppliers (Asif et al., 2020).

Over the past few decades, GSCM has become an increasingly studied area due to rising environmental issues, aggressive tactics and increased global understanding of environmental issues (Hervani, et al., 2005). Although the GSCM field has been addressed and better established over time, development is still deficient in developed countries such as

Pakistan and Thailand. In comparison to an excess of overall results, Testa and Iraldo (2010) suggest that there is potential for more study when it refers to GSCM in the field of organizational implementation policy in the developed world. In addition, inspiration was taken from Stentoft et al.(2012) and Fahimnia et al.(2015), who found out that development has been going extensively to South Asia at an increased pace, but in relation to GSCM, related studies are not performed around them.

Mostly at the expense of short-term lower benefit, the GSCM drivers pressure businesses to accept GSCM because it can contribute to positive sentiment. More specifically, if the organization wishes to market internationally, the stresses concerning export requirements include the need to achieve specifications that achieve ISO: 9000 uniform and ISO: 14001 certifications (Scott, 2001). A quantitative approach is used to gather data from a personalized sample of 121 businesses working in Palestine's most polluting industries (i.e. the dairy, chemical and pharmaceutical industries). The data analysis was done utilizing structural equation modeling of partial least squares. The data review findings indicate that both green human resource management practices and green supply chain management activities have a significant mutual impact on sustainability production. The findings have shown that green human resource management strategies have a significant impact on environmental production, with this impact mediated by green supply chain management practices (Zaid et al., 2018).

A research of existing literature further highlights a lack of observational research in developed countries on GHRM and GSCM in the industrial sector (Rehman et al., 2016; Jabbour et al., 2017; Mishra et al., 2017; Nejati et al., 2017; Zaid et al., 2018). Confidence in GSCM from business operations specialists is increasing, mostly due to a growing understanding of the adverse impact of industrial organizations on nature. GSCM is also perceived to be a way of successful strategic management that, in addition to enhancing other sustainable efficiency goals, increases the environmental performance of manufacturing companies (Hassan et al., 2016). In consideration of this, De Giovanni (2012) argues that GSCM is not only a method for minimizing the environmental footprints of goods and practices, but also a specific strategy for delivering economic gains and improving social welfare.

Wang et al. (2018) recommend that cost and consumer drivers affect internal and external green policies to increase environmental efficiency, drawing on the GSCM research. The findings show that both price drivers and consumer drivers have a substantial effect on internal and external green practices, which in turn lead to environmental efficiency, based on a survey of 246 businesses in multiple countries. This analysis reveals that internal and external sustainability practices and, fundamentally, environmental

efficiency are affected by clients and price drivers. Cost drivers have been found to have a slightly smaller effect on small businesses' internal and external green policies than on those of big corporations. This distinction is slightly significant, even though consumer drivers tend to have a greater effect on small firms' internal and external green practices than on those of large firms. These results expand our knowledge of the theories and activities explored in the research of the GSCM (Wang et al., 2018). The context of green practices has been expanded by globalization as well. Green practices have been expanded from independent companies to the supply chain, as corporations focus increasingly on their supply chain suppliers to achieve competitive advantage (Zhu and Sarkis, 2004; Ghadimi et al., 2015).

Wang et al. (2014) performed case research on five GSCM areas: products, methods of product design, enhancement of supplier processes, assessment of suppliers, and incoming logistics activities. Zhu and Sarkis (2006) concentrated on internal environmental control, green sourcing, environmental criteria collaboration, investment revival, and eco-design activities with consumers. In conclusion, various GSCM classification systems appear in the literature depending on different objectives of study. By exerting pressure on the business (Jayaram and Avittathur, 2015), consumers can motivate companies to adopt environmental strategies, as consumers have the market potential to support the application of green practices. In order to purchase orders from consumers, for instance, suppliers must meet with quality requirements for environmental problems, such as ISO 14000. Through training their suppliers, clients will also push sustainability practices. In the supply chain literature, manufacturing companies can learn environmental strategies from their customers and handle their own methodologies and collaborative partnerships with suppliers, a process called supply chain contagion (McFarland et al., 2008). It is suspected that, provided the revolution in supply chain management, admired behavior will also be influential. This action is also associated with the distribution in the GSCM background of innovation theory claims (Sarkis and Zhu, 2011). Customers are externally focused drivers of green supply chain implementation practices

By constructing three levels of supply chains, respectively, primary supply chain, secondary supply chain, and reverse supply chain; the zero waste goal is accomplished. At a particular pace, the primary product deteriorates, which produces a large amount of waste. In a recycling center, the garbage disposed of by customers is categorically separated between "main product waste" and "packaging waste." In this study, by establishing a nonlinear mathematical model for reducing overall cost, they suggest a model for the structured supply chain structure (the three levels of supply

chain decision making together). In fact, by looking for the optimum time in the planning horizon using an analytical optimization strategy, the minimum value of the cost is achieved. In addition, we minimize the resources consumed for primary and secondary items to be manufactured and the packaging material to be recycled. The robustness of the model is confirmed by numerical tests and sensitivity analysis. The proposed system provides 98.4 percent waste removal efficiency, which is seen by the effects of computational experiments. GSCM includes conserving energy supplies in addition to reducing chemical waste. Increased oil costs and the environmental effects of energy use have contributed to the need for management in the supply chain to reduce their energy use (Iqbal et al., 2019). Lee (2012) proposed that it could be possible to turn the excess of a mainstream commodity into a profitable byproduct. He called the by-product synergy (BPS) of this method. In their analysis, the paradigm proposed extends this research by integrating BPS with packaging material recycling. Rashid et al. (2013) proposed that the use of a product over many lifecycles could be made possible by optimizing the design and production of the product. The researchers have adopted conservative resource production to save material and energy, reduce pollution and preserve the atmosphere.

Thyberg and Tonjes (2016) directly studied the generation of food waste drivers. The researchers investigated the effect of food system industrialisation, urbanization, globalization and economic development on food waste production. The aim of study of Jasmi and Yudi (2018) is to examine the relationship between Green Marine Supply Chain Management Drivers and Maritime Green Supply Chain Management Dimensions (MGSCM) processes. Focused on the Malaysian maritime market, the conceptual model was built from institutional theory to examine the operators of MGSCM. By addressing a problem with regard to questionnaire research proof of a theoretical framework of MGSCM, this result corresponds to maritime transport research (Jasmi and Yudi, 2018). In green supply chain management, the green factor has been implemented. It is now regarded, along with other efficiency objectives, as an important management method to enhance environmental sustainability (Fernando et al., 2018a). Maritime supply chains have broad and complicated networks that require investigation through vulnerability analysis, according to Liu et al. (2018). With regard to agricultural practices, shifts in coastal hydrology, and greenhouse gas footprints, dynamic networks are difficult to track. Green supply chain management will help the maritime industry comply with the regulations of the International Maritime Organization (IMO) and meet environmental objectives that favor society and future generations (Jasmi and Yudi, 2018). The study of Noh and Kim (2019)

incorporates two nonlinear integer programming models, a crisp model and a fuzzy model, to represent the demand characteristics. To solve the models, a genetic algorithm (GA) and hybrid genetic algorithm-pattern search (HGAS) were created. Numerical analyses assessing the success of the algorithms indicated that the HGAS solution worked better than the GA. It is also noticed that the overall cumulative cost of the crisp model was smaller than that of the fuzzy model. The findings as a whole suggest that the models are able to assess contract efficiency and maximize collaborative green supply chain management (Noh and Kim, 2019).

GSCM has been created by environmental issues in SCM, which is developing rapidly around the world. For eg, Asda, Tesco, and M&S, all UK businesses, need their distributors to mitigate Green House Gas (GHG) emissions through manufacture and transport (Ramanathan, et al., 2014). Some researchers have carried out important studies on the manufacture, inventory and transport of GHG emissions in GSCM (Ramudhin et al., 2010, Jaber et al., 2013, Sarkar et al., 2015, He et al., 2016, Mokhtari and Rezvan, 2017, Aljazzar et al., 2018). While these researchers have shown that the control of GHG emissions has a profound effect on GSCM production, inventory, and transportation, complicated circumstances such as single producer and multiple retailers (SMMR), multiple product styles, and scarce capital have not been taken into account separately. In addition, only a few studies have proposed problems with eco-friendly goods in GSCM models with temporary or permanent demand (Chiu et al., 2014, Lo et al., 2018). This research therefore proposes two GSCM models that are more realistic and functional than previous ones since they incorporate several product categories, newly introduced eco-friendly products' market characteristics, and finite capital (Noh and Kim, 2019).

The study of Maditati et al. (2018) research summarizes the literature on green supply chain management (GSCM) and offers a detailed view of the systemic relations between the variables of the GSCM, viz. Cars, indices of practice and metrics of success (Maditati et al., 2018). Sarkis et al. (2011) published a study of the developments of numerous operational philosophies, where implementations of stakeholder theory and transaction cost economics are evident. Hassini et al. (2012) concentrated on GSCM indicators and Ahi and Searcy published a study of concepts of green and sustainable supply chain management (2013). The research of Qorri et al. (2018) analyzed the empirical studies in the relation on GSCM practices and conduction of this study to fulfill the analysis objective. The techniques of meta-analysis suggested by Hunter and Schmidt (2014) and Geyskens et al. (2009) were adopted by this research. It leads to theory and practice by oversimplifying the positive and important effect of GSCM activities on the fiscal, financial, social and organizational success of the organization (Qorri et al., 2018).

The purpose of Kazancoglu et al.'s research (2018) is to suggest a new comprehensive conceptual for GSCM performance measurement system that incorporates the performance of environmental, fiscal, logistics, operational, organizational and marketing. The system has a three-dimensional hierarchy that comprises the key criterion, sub-criteria and success evaluation steps of GSCM that are of considerable value for the application of successful GSCM. The research of Foo et al. (2018) seeks to critically examine whether the introduction of selected green supply chain management (GSCM) approaches among ISO14001-certified manufacturing companies in Malaysia would improve and motivate sustainability. In addition, the importance and strength of the relationships between GSCM activities and the success of sustainability were also analyzed and consequently evaluated using a two-stage approach to PLS-ANN (partial least squares-Artificial Neural Network). As a consequence of global warming and business development, Malaysia has also witnessed the Urban Heat Island phenomenon and its related effects, according to Ramakreshnan et al. (2018).

Sustainable procurement of natural resources, rising cost increases due to global sustainability, environmental and political limitations in the supply chain and environmental issues have become increasingly necessary for industries to have sustainable economic models. Businesses need to identify efficiency and the closed-loop cycle for the change from a linear economy to a circular economy. The circular economy stresses minimal use of energy and conservation of the environment, so businesses start adopting the green supply chain. In fact, the conventional supply chain creates pollution, induces environmental issues and does not take culture and the environment into consideration. Companies continually need to consider environmental issues in their strategic plans and their activities as a corporate environmental policy because of tighter legislation, a high degree of commercial competition and increased public pressure (Zhu et al., 2008, Vanalle et al., 2017). Manufacturing companies have taken steps to incorporate and enforce sustainability standards through their supply chains in order to address urgent challenges and also to help alleviate environmental and socio-economic problems. GSCM offers fair security for increasingly environmentally aware investors as a resounding response (Adebanjo et al., 2016; Scur and Barbosa, 2017).

In essence, GSCM includes incorporating sustainability measures through a supply chain, including but not limited to proper waste management (Sarkis, 2003; Scur and Barbosa, 2017); transitioning from the conventional 3R model - reduction, reuse and recycling of goods and packaging to a more systematic 6R concept - reduction, reuse, regeneration, overhaul, remanufacturing and recycling of materials (Jayal et al., 2010). The research of Tseng et al. (2018) suggested a hybrid approach for

resolving this issue of multi-criteria assessment. The Fuzzy Delphi approach proposes to screen the measurement criterion and the weight method of converged interval-valued triangular fuzzy numbers-grey relation Analysis (IVTFN-GRA) manages the complexity of the vagueness mechanism and missing knowledge with relationships of interdependence. Therefore, the suggested hybrid approach improved the management of the green supply chain and applied multi-methods to increase their efficiency in the electronic focal firm of Taiwan. The outcome revealed that, considering the variations with the current average weighting process, the fully integrated weight is consistent with the existing procedures (Tseng et al., 2018).

GSCM describes a range of strategies and procedures that businesses may use within their products or systems to boost and maintain performance. It was used as an approach between manufacturers and consumers to deal with environmental and economic issues simultaneously (Wu et al., 2015). The relationship between GSCM and performance has been explored by several studies to explore the crucial drivers for sustainability growth. Zhu et al. (2008) suggested environmental management, green buying, eco-design, consumer environmental collaboration and investment recovery to create a performance assessment model.

In the last few years, GSCM has drawn tremendous interest from scholars. However, considering their critical significance in implementing and pursuing optimum green solutions, the impact of human factors (for example drivers' differences) in establishing and implementing green supply chains (GSCs) has been neglected. A different technique to incorporating driver variations is introduced in this study to analyze their impact on fuel consumption and CO₂ emissions signified by the Green Driving Index (GDI) in the optimization of the green supply chain at the point of tactical and organizational management. The objective of the proposed approach is to reduce the overall expense and pollution of CO₂ through the supply chain. It also attempts to achieve optimum arrangements between cars, drivers and destinations, as well as to pick and develop the chosen drivers in the best way possible (Asrawi et al., 2017).

As permissible limits for CO₂ emissions become heavier, the findings reveal that the model picks drivers with higher GDIs. The findings suggest that in green supply chain management, driver discrepancies should be accepted in order to produce practical strategies for minimal costs and CO₂ emissions (Asrawi et al., 2017). Yang et al. (2013) examined the influence of internal green practices and external green collaboration on the green performance and the firm's competitiveness. Recent researches focus on the importance of Green Human Resource Management (GHRM) for adopting GSCM like Jabbour and de Sousa Jabbour (2016), Teixeira et al. (2017) and Tramarico et al. (2017).

Due to multiple criteria that exist in a dynamic supply chain, inter-organizational steps for green supply chain management tend to exhibit varied trends. This research defines various inter-organizational green supply chain management interventions into multiple patterns of cooperation and evaluates their institutional relationships by interpretive structural modeling. The findings indicate the patterns of cooperation that have higher driving force and reliance than other patterns and therefore require more attention. The aim of this study is to explain the processes of development and interaction of collective initiatives for GSCM. This paper distinguishes distinct collaborative steps from the GSCM, conventional supply chain management (SCM) and environmental management research and categorizes them into 12 patterns of cooperation (Kang and Hwang, 2017). GSCM is known to be one of the most relevant approaches to environmental management. The adoption of GSCM activities is also in its early stages in developed countries like Pakistan. The GSCM approaches examined in this study are: internal practices, external practices, investment recovery and eco-design. The performance metrics identified, however, are: environmental emissions, operating costs and flexibility in the organisation (Mumtaz et al., 2018).

In order to assess green supply chain efficiency, Bhattacharya et al. (2014) used a multi-criteria model focused on fuzzy ANP) and a balanced scorecard. Using a structural equation model to validate the efficiency of GSCM activities in US manufacturing industries, Green Jr. et al. (2012) concluded that GSCM has a positive impact on fiscal, environmental and organizational performance. In order to identify specific performance metrics and drivers, Cucciella et al. (2012) conceptualised a natural resource model focused on GSCM.

The objective of this essay is to highlight the different performance measures and sub-indicators essential for the application of green supply chain management and to verify its effectiveness and use analytical hierarchy process analysis to rate them. It has been suggested that the top three success metrics comprise internal environmental protection, environmental design and regulatory pressure. This is one of the first research to propose success metrics for the introduction in the agricultural sector of green supply chain management (Sharma et al., 2017; see Figure 3). GSCM is an incorporation of sustainability philosophy into the management of the supply chain, involving product creation, purchase and selection of products, processing procedures, distribution of the finished product to the customer and end-of-life management of the product beyond its useful life (Srivastava, 2007).

In the energy market, environmental impacts have been tackled specifically, by regulations and regulatory directives, and indirectly, through alternative energy strategies and performance development.

Solutions to these issues lie in hybrids of safer and more effective output, suitable control equipment and more efficient end-use equipment (Antonette and Murthy, 2006). The study of Soda et al. (2016) aims to achieve the following strategic goals: to review the current supply chains of State-owned Power Companies (SOPCs) in the Punjab State and to find bottlenecks in the implementation of GSCM initiatives.

Green Supply Chain Management

The early research in the field centered on the important effect of the method on the well-being of the societies in which businesses function, as GSCM expanded and attracted increased interest from researchers. As an economic strategy for sustainability, much of the work of early economists centered specifically on the green solution. The rudiments behind the trend for green practices were explored by Porter and van der Linde (1995a, 1995b), which were (i) increasing supply savings, (ii) reducing waste, and (iii) increasing efficiency. In GSCM, three methods have appeared, according to Srivastava (2007): the reactive, the constructive and the value-seeking. Of both, the reactive solution requires the least investment in supply, which typically entails improving product labels and finding ways of reducing the environmental effects of production. The constructive strategy is a mid-level endeavor in which, in an effort to self-regulate, companies spend minimal resources and concentrate research and design on the development of greener goods while taking action to implement a recycling policy. The last approach is value-seeking, in which firms concentrate on adopting ISO architecture and using a green buying approach.

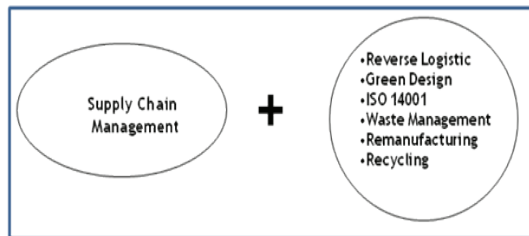


Figure 4. *Structure of Green Supply Chain Management*

GSCM comprises some concepts (see Figure 4). These are defined as below;

(i) **Waste management:** Waste management is the management of inverted materials in accordance with the amount of resources that are potentially discarded. Due to the increased awareness of companies in the European Union, both in EU countries and in countries that export to the EU, waste management is a common subject in literature (Zhu et al., 2007).

(ii) **Green Design:** The design for “green” is often associated with environmental design or Green design -ecodesign. The electric vehicle is

one such green commodity. Automobile producers had to upgrade the new engine to use less gasoline or none at all because of rising demand and declining petroleum availability. The electric car has evolved. McAuley (2003) tackled the automobile's green nature to use thinner and less components. The production firm wants a high degree of collaboration with their vendors in developing a component. Investigation in EcoDesign on supplier-manufacturer collaboration is conducted by Stevels (2002).

(iii) Green Supply Approaches to Manufacturing and Remanufacturing: The description of GSCM is expected to protect the environment while policies are moved forward; recycled content is a key component of the strategy. Recycling is largely motivated by economic and regulatory considerations and is done in order to reclaim the material quality of used and non functioning goods (Srivastava, 2007). The bulk of recycling costs are related to the purchase of recyclables and the shipment and receipt of recyclables (Sheu et al., 2005). Two sectors, consumer electronics and vehicles, have continued to resolve recycling-related cost barriers.

Remanufacturing was described by Chung, Wee, and Yang (2008) as the method of incorporating recycled materials into the production process. For more public use, electrical and vehicle recycling helps enterprises to restore and reclaim goods to a like-new condition. Although these goods are not fresh (although the content correlated with the recycled product is comparable), the method describes a person with a means to purchase a product that would otherwise be commercially out of his or her control.

(iv) Environmental Management System - ISO 14001: Environmental system such as ISO 14001 is collaborative, with its primary goal of helping firms to continuously enhance their environmental efficiency. The environmental management framework specifications are specified by ISO 14001. This does not carry out environmental performance criteria, but sets a basis for an efficient environmental sustainability scheme that an enterprise or corporation should consider (summarized via ISO 14001:2015

Environmental Management System Implementation Guide).

(v) Reverse Logistics and Closed loop supply chains: The traditional supply chain-forward logistics effectively incorporates the closed-loop supply chain with reverse logistics, taking the object into account after it has fulfilled its initial position. Wells and Seitz (2005) describe closed loop supply chains as; There are in general two supply chains: one front and one reverse chain, which means that a recuperated product re-enters the traditional forward chain, while Defee et al. (2009) defend this process, explaining the need of integrating both policy and operational decisions across forward and reverse supply chain systems that is capable of integrating.” The closed loop supply chain, as can be understood by this

concept, seeks to place the supply chain in a recirculation mood, facilitating waste minimization.

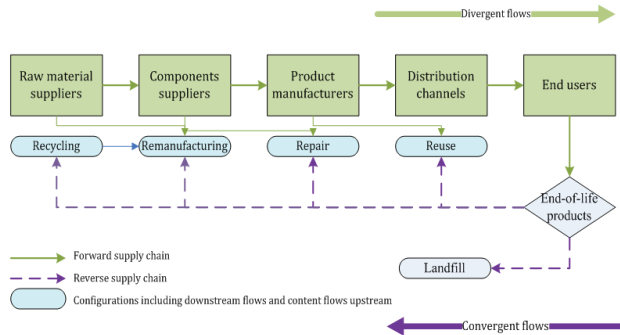


Figure 5. Forward and reverse SCs- Closed loop supply chains (modified by Khor and Udin, 2012; Sheriff et al., 2012; Govindan and Soleimani, 2017).

The closed loop supply chain is the targeted formation with regard to sustainable and environmentally sustainable applications for industries, as it serves the purpose of protecting the environment by minimizing the waste produced. Therefore, it can be said that if the target is the closed loop supply chain, reverse logistics, which is a means of green supply chain management, is the ideal way to achieving that goal, since a reverse flow must be implemented into the supply chain in order to reduce waste and it can be handled in order to allow the best use of the returned materials/products by repair and reuse, refurbishment (Kumar and Malegeant, 2006; see Figure 5). Due to this close partnership, this thesis would discuss the research on closed loop supply chains and reverse logistics in parallel. Closed-loop supply chains bring uncertainty to the current supply chain, since investment is commonly needed and the newly introduced supply chain roles are subject to uncertainty (Kocabasoglu et al., 2007).

(v)Recycling: The practice of breaking down and reusing items that will otherwise be thrown out as garbage is recycling. By putting branded containers in the open for general use or offering bins for home and business owners with curbside collection, many cities and organizations find it easy to recycle (Converse Energy Future, 2021).

Green drivers: A literary analysis and decision-making committee, which comprises industry professionals, is the main drivers for the introduction of green supply chains management practices. The key factors- Drivers of GSCM involved in this analysis are listed as below (Diabata et al., 2011): Certification of the environmental protection scheme of manufacturers , Environmental coordination with manufacturers, Collaboration between product designers and manufacturers to reduce and eradicate environmental effects on products, Regulation and laws

of the Government, Green Design Design, Certification of ISO 14001, Integrating consistency environmental management in the preparation and operation process, Reduction of energy consumption, Reuse and recycling of products and packaging, Environmental coordination with consumers, Logistics reverse.

Obstacles to Green Supply Chain Implementation

Sustainable Green Supply Chain is so essential to companies across diverse sectors. About this concern, the following aspects are illustrated as below: (modified, be summarized by Mathiyazhagan et al., 2013)

(a) *Regulation with international standards*: Many policymakers reacted with intensified regulation of business practices in the context of increased irregularities around the world in regards to corporate ethics and governance.

(b) *Income enhanced*: Strengthen industry practices such as increased usage for sustainable products, healthy work conditions; sleek development and quality control were one of the main facets of sustainable green supply chain management. These strategies would lead to needless running costs being minimized.

(c) *Absolute Social Corporate Obligations*: Through implementing these ethical practices, corporations will exclude investment questions on these matters to ensure that employees work effectively and transparently.

(d) *Develop a holistic picture of a trusted organisation*: A good ways of developing a sustainable consumer loyalty and establishing a unique selling proposition in relation to the green policies is by green supply chain management. This allows brands to boost their marketing strategy and, ultimately, to achieve long-term customer interest and loyalty.

CONCLUSION

As general understanding of their environmental implications has grown, Green values and policies have become important for enterprises. Customers nowadays are becoming more health conscious and consciously embracing cleaner and more efficient lifestyles. In order to minimize pollution and protect the sustainability of commodity environment and natural resources, green supply chain (GSC) has gained traction among both authors and practitioners. Environmental and technologies in re-manufacturing are also being valuable tools for recommended practice. One of the most relevant themes nowadays is care for the climate. In the past few decades, understanding of environmental effects has grown. Green concepts, like the supply chain, have spread to many areas. In explaining the structures, issues and challenges of green SCM (Green Supply Chain Management), a research methodology has been presented. In the research,

studies usually concentrate on the past of green SCM and its meanings. In addition to green up the contemporary SCM, there are restricted studies the proposed model. Some studies also test Green SCM efficiency through using Green SCM operators. For the past few years, ecological supply chain management has been developing. From the first to the last phase of the life cycle or from product design to recycling, this concept encompasses every point of development. Green supply chain management is also applicable to other industry fields, such as government and services, outside production. In the current review, Green SCM explanations have been offered.

GSCM activities in firms will increase performance, decrease costs, reduce management effects, boost service, optimize profits, increase market share, revenue and growth as well as credibility. Economic success also involves cost savings in imports of goods, energy consumption. GSCM has created new opportunities for companies to achieve the goal of benefit and market share while minimizing environmental risks and increasing environmental efficiency.

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Chapter 27

CABIN SERVICES IN CIVIL AVIATION SECTOR IN TURKEY



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1. INTRODUCTION

Civil aviation is a globally developed, technology-based industry in which intense and dependent competition comes to fore. Economic and political instability in the world, fluctuations in fuel prices, insecurity arising from the activities of rival enterprises and terrorist incidents increase the competition in the aviation sector. On the one hand, communication networks and global security problems are developed, on the other hand, the most ideal services should be provided to people who need fast transportation. If airport operations and flight services are provided in a safe, fast, and economical manner, it is difficult for competitors to change these services, so aviation is one of the high value-added service sectors (Yılmaz, 2020).

The success of aviation sector partly depends on the quality of its human resources. The flight crew members, cabin attendants, ground service officials are of great importance for the flight company to sustain competitiveness in aviation sector. In an effort to employ quality staff for aviation sector, the number of the schools and training centres all over the world has increased in recent years. Besides, the aviation departments in the universities have given significant labour resources to this sector.

2. THE HISTORY OF AVIATION IN TURKEY

Aviation attempts in the Turks started in the Ottoman period as limited to the military field. The Ottomans, who were attacked by the Italians during the 1911-1912 War of Tripoli, realized the importance of aviation and started the first attempt in the field of military aviation. The first civil aviation attempts in Turkey started in 1912 in Sefaköy, right next to today's Atatürk Airport, in two hangars and a small square as a facility.

In 1925, the institutional foundations of Turkish aviation were laid with the establishment of the "Turkish Aircraft Society" (Türk Tayyare Cemiyeti), which later became the Turkish Aeronautical Association.

In 1933, civil air transportation started to be carried out under the name of Turkish Air Mail (Türk Hava Postaları) with a fleet of 5 aircrafts. In the 10th year of the Republic of Turkey, Airlines State Administration belonging to Ministry of National Defense was established. This institution has been authorized to establish civil aviation business and to make transportation in Turkey, forming the first building blocks of Turkish Airlines that still exist today (Bolayırılı, 2000). Private enterprises also started in this period and Nuri Demirağ established the aircraft factory in Beşiktaş, Istanbul in 1935, the "Airplane And Engine Factory" and the "Sky School" at Divriği in Sivas, and the "Airport And Sky School" in Yeşilköy, Istanbul. In the mid-1940s, Turkey had Europe's 3rd largest aviation industry as state and

private sectors.. While the Turkish Aeronautical Association manufactured aircraft and engines at its Kayseri and Etimesgut / Ankara factories, Nuri Demirağ built the first Turkish-type passenger aircraft with completely local engineers and workers. Nu / D-38 type passenger aircraft was chosen as the best of of “European Class A” passenger aircraft in its category in 1938.

In the aviation industry that requires advanced technology, our country has become a member of various international organizations in order to closely follow international aviation developments and to fulfill the requirements of the age. In 1945, our country became a party to the “International Civil Aviation Agreement - Chicago Convention”, which forms the basis of International Civil Aviation, and was among the founding members of the International Civil Aviation Organization-ICAO. In addition, our country, which became a founding member of the European Civil Aviation Conference - ECAC in 1956 in the European region, is also a member of the European Navigation Safety Organization EUROCONTROL. Apart from these, our country, which is a member of various organizations at regional level, continues its aviation activities in accordance with national and international legislation (SHGM, 2020).

After 1983, the airline transportation sector has entered into a significant development, especially since the second half of the 1980s, with the enactment of the Civil Aviation Law No. 2920, which was enacted on 14.10.1983. In this period, it is seen that THY started to develop its fleet within the framework of a modernization and standardization program, made an effort to increase its service standards and turned towards economically advantageous international lines rather than domestic lines. Private airline companies were also allowed to be established and operated in the country with the Law No. 2920. In the same period, significant increases were observed in the number of private sector airlines, their fleet capacities and the share they got from the sector. However, faced with problems such as operating capital shortage, the disadvantage of operating with relatively old aircraft, insufficient maintenance and repair and other infrastructure facilities, difficulties encountered in procuring qualified personnel at all levels of their activities, and insufficient support for the sector, some of the private airlines have gone bankrupt and ended their activities in the sector. It is seen that airport investments focused on the development of existing standards rather than the construction of new conventional airports in the late 80's and early 90's. Meanwhile, investments aimed at increasing the quality and reliability of air traffic control, communication, navigation services, ground handling services and similar services have continued. At the end of 1980s, STOL (Short Distance Take-off and Landing) type small airports were started to be built in various regions with the contribution

of local administrations and a protocol was signed between the General Staff and the Ministry of Transport on 19 November 1986 to open military airports to civil air transportation. Military squares were opened to civilian transportation under this protocol.

In 1998, the economic crisis in the air transport sector in the Far East countries, Turkey has negatively affected. In order to compensate for these negativities in the sector, airline companies had to gather themselves by reorganizing their activities, discharging personnel and rescheduling their fleets. During this period, the privatization of THY came to the agenda, but the privatization efforts have not been concluded yet (Korul and Küçükönel, 2003).

3. CABIN SERVICES IN AVIATION

In parallel with the modern and rapid development in air transportation, the companies providing cabin service are increasing day by day. These companies are competing with each other to serve customers better. Therefore, flight attendants, who do the service very well, always have the opportunity to work in advanced air transport companies with high wages. In Turkish Airlines and other private airline companies, they can usually work in flight duties and rarely in ground handling.

3.1. Cabin Crew

In the performance of a flight mission, apart from the cockpit crew, the personnel whose main duty is the cabin of the aircraft and who have been certified by the operator by taking the necessary basic and refresher training to meet the passenger safety and requirements are called cabin crew. Cabin Crews receive the best training in flight safety and are one of the important factors that ensure safe travel of passengers (IATA, 2017). Today, cabin crews are included in the latest and most up-to-date airline safety management programs accepted in the world and receive training in basic flight safety. Prior to resuming services, airlines should review their standard operating procedures to identify whether any changes are required for both short term and long term. Where any change is related to safety regulation, these should be submitted to the regulator for acceptance and approval (IATA, 2020).

Hierarchical task order of cabin services is formed as General Director, Head of Quality, Head of Flight Management, Director of Cabin Services, Deputy Director of Cabin Services, Trainer of Cabin Crew, Responsible Staff of Cabin Quality, Responsible Staff of Cabin Standardization, Cabin Control Supervisor, Cabin Supervisor, Cabin Attendant (Table 1).

Table 1: *Hierarchical task order of Cabin Services*

	GENERAL DIRECTOR	
	HEAD OF QUALITY	
	HEAD OF FLIGHT MANAGEMENT	
	CABIN SERVICES MANAGER	
	DEPUTY DIRECTOR OF CABIN SERVICES	
TRAINER OF CABIN CREW	RESPONSIBLE STAFF OF CABIN QUALITY	RESPONSIBLE STAFF OF CABIN STANDARDIZATION
		CABIN CONTROL SUPERVISOR
		CABIN SUPERVISOR
		CABIN ATTENDANT

The duty of the cabin services manager is to plan and coordinate the trainings and inspections required for the development of professional standards of cabin crews in accordance with international rules, and to ensure the implementation of regulations related to their basic duties. He is responsible for the maintenance and management of cabin crew standards, determining the training needs of cabin crews, and implementing appropriate training programs.

Control Cabin Supervisor observes the annual performance evaluations of the cabin crew on and before the flight and fills the appraisal form. He observes the performances of cabin crewmembers in order to reach the desired highest level in all flights, and informs the cabin services management by stating their deficiencies and malfunctions in the performance evaluation form. A control cabin supervisor appointed by the cabin services manager monitors the assessments by informing the cabin services manager statistically. He takes charge in flights, participates in the control cabin supervisor meetings held by the cabin services management. The control cabin supervisor makes the assessments objectively, states in writing above and below standard impressions. He operates in accordance with the standard norms in the flights in which he participates as an officer. Control cabin supervisor does not intervene verbally unless there is an emergency during the assessment flight. He conveys its impressions by showing a positive approach to the end of flight. The control cabin supervisor should be constructive in verbal feedback. He should always be in contact with the instructors.

The cabin supervisor is the cabin crew with a valid certificate approved by the company and observant to the captain responsible for flight safety and management of the cabin during flight duty. His duties are to make pre-flight crew union, do the distribution of duties among cabin crew, to meet

the passengers, to help their settlements, to solve their problems, to provide services within the framework of flight duty responsibilities in accordance with company standards, to make technical and emergency controls on the aircraft with a check-list, to ensure that the catering and cleaning materials are received completely, to take safety precautions regarding passengers on the ground and on the plane, and to represent the company during the flight.

The cabin crew is the one with valid certificates who are responsible for the safety and comfort of the passengers during the execution of the flight duty and are responsible to the captain and cabin chief. He participates in the meeting held before departure and reads the instructions, checks the cleanliness of the interior of the plane, controls rear right and left security measures, helps passengers settle on the plane, takes care of sick, elderly travellers who need special assistance, informs the passengers about the weather, flight conditions and behaviours that should not be done in case of danger, serves drinks and food, and makes preparations for landing and ensures safe landing of passengers.

3.2. Cabin Attendants

The staff responsible for the implementation of the necessary safety and security measures and passenger comfort in passenger aircrafts are defined as “Cabin Attendants” or “Cabin Officers”. Cabin attendants who work in the cabin section of the aircraft in order for the flight to be carried out safely, securely and comfortably are persons who have successfully completed their training by meeting the requirements specified in the relevant legislation issued by the General Directorate of Civil Aviation, and as a result, have been awarded the “Flight Attendant Certificate”.

Aircraft maintenance, repair, ground handling, flight and cabin crews are the elements of the civil aviation system to ensure a safe flight. A malfunction in any of these items prevents the flight from happening safely. Cabin crews are people who work in the cabin, except the flight crews (Captain and 2nd Captain). In addition to satisfying the passengers, their most important task is to ensure that they travel safely from one point to another throughout the flight period, from meeting the passengers before the flight to the farewell after the flight. In order to fulfil their vital duties, they need to provide physical and psychological competencies determined by General Directorate Of Civil Aviation (GDCA) in addition to their education. There is no determination or restriction on the competencies they need to have in order to fulfil their duties, this issue is left to the initiative of institutions operating in the field of civil aviation. When the training is completed with physiological-psychological competencies, the flight attendant reaches the competence to perform his duties.

The minimum requirements required under the legislation in order to be a flight attendant in our country include being at least 18 years old, having been regularly examined or evaluated by a health institution authorized by the General Directorate in order to check that it is suitable for performing its duties in terms of health, being competent to perform their duties in accordance with the procedures specified in the Business Manual (height, weight, psychological test, etc.), being a graduate of a high school or similar school with a minimum of 10 years of education in Turkey or abroad and knowing English. The details regarding this issue is determined by the internal procedure of the enterprise to be assigned.

Flight Attendants have clear roles and responsibilities inside the aircraft. The most important, but least visible, of these is to ensure the safety of the passengers. This main responsibility made it necessary for flight attendants to receive continuous and special training. In addition to theoretical knowledge, this training includes developing their own self-confidence and providing the authority they need with this sense of self-confidence while performing their own duty. Their second and most prominent task is to meet the needs of the passengers and to make a good impression for the airline company they work for.

As in all activities of Civil Aviation, the processes such as Interview and recruitment process, Education process and Operation process that concern cabin crew should be documented in company handbooks or in-house procedures approved by the General Directorate of Civil Aviation.

Cabin crew members are responsible for the area inside the cabin starting from the cockpit door and up to the part of the cabin called “back kitchen”. Flight attendants do not have any duties and responsibilities inside the cockpit or outside the aircraft.

Generally speaking, there is an exit door on the right or left side of the aircraft for which each flight attendant is primarily responsible. This responsibility covers both normal operational conditions and emergency conditions. In normal operational conditions, the responsibilities include opening and closing the responsible exit doors using the methods specified in the company operation manuals, opening them in emergency conditions using the methods specified in the company operation books, and keeping them closed if external conditions are unsafe.

The duties of cabin crew regarding service vary according to companies. The service can be summarized as the presentation of the products and materials deemed appropriate by the airline company to the passengers after loading them on the plane, within the flow and order determined by the company. Sales of duty-free products on international flights are considered within this scope. Trainings regarding the points to

be considered and procedures in performing the service are provided by the company. The duties of cabin crew members regarding safety and security can be grouped under two main headings:

1) Making observations and providing communications to prevent a situation that may threaten safety and security (for example, observing the cabin / toilets at certain periods to prevent fire / smoke inside the cabin). In spite of all the precautions taken, in order to ensure the safety and security of the passengers in emergencies, the application of emergency procedures as soon as possible with the least possible injury (for example, in case of an emergency, taking the instructions of the Captain Pilot and testing the aircraft certification of all passengers and crew on board evacuated within the time period)

2) The trainings (basic safety training, renewal trainings) in which these subjects are conveyed are determined in the relevant legislation of the General Directorate of Civil Aviation and are documented in the training books approved by the General Directorate of Civil Aviation of each company.

The minimum requirements required under the legislation in order to be a flight attendant in our country include being at least 18 years old, having been regularly inspected or evaluated by a health institution authorized by the General Directorate in order to check that it is suitable to fulfill its duties in terms of health, being competent to perform their duties in accordance with the procedures specified in the Operation Manual (height, weight, psychological test, etc.), being a graduate of a high school or similar school providing a minimum of 10-year education in Turkey or abroad and knowing English.

3.3. Competencies of Cabin Attendants

Cabin attendants are persons who are responsible for the safe, secure and satisfied travel of passengers on aircrafts within the scope of civil aviation activities, and have the “basic training certificate” by receiving the necessary training in this field. Persons who do not have the basic training and training certificate for the aircraft they will serve cannot perform the duty of cabin crew.

The phrase “rules in civil aviation are written in blood” expresses the high risk inherent in the civil aviation sector. This high risk in the civil aviation sector is tried to be reduced with the competencies of the employees and the training they receive. At the same time, the competencies, qualifications and trainings of cabin crews are critical in terms of sustainability in order to meet the developing sector needs of the service quality due to the increasing competition in the civil aviation sector. The competencies and qualifications required of flight attendants

are important for the formation of a qualified workforce in the civil aviation sector (Akduman and Karahan, 2020).

By using competency-based training models, which will be created by taking into account the roles of flight attendants at universities and airlines, there will be an increase in customer satisfaction as well as improving the personal competence of flight attendants (Kim and Park, 2013; Chen, 2006; Kay and Russette, 2000).

Although the necessary criteria in the field of education, physical and mental health have been determined, the requirements in the dimension of competence are left to the initiative of the airlines. When we examine job advertisements of five airline companies serving in Turkey (Turkish Airlines, Onur Air, Sun Express, Pegasus, Atlas-Global), a competency-based criteria are no longer available. However, it is very important to have a high level of communication and empathy for people-oriented, which requires high-level disciplined and meticulous work due to the responsibility it contains. In addition, due to the duty of representing the agency, flight attendants, which is a mandatory profession, should always be well-groomed, stylish and smiling. In order to meet these requirements, flight attendants receive training before starting their profession and as long as they perform their profession (Chen, 2006; Akduman and Karahan, 2020).

4. RESULT

For airline companies to serve better, they should have cabin crew with high standards and qualifications. For this reason in-service trainings and academic trainings are of great importance for the students to be recruited in this sector.

While providing the Cabin Crew Basic Training approved by the GDCA, Civil Aviation Cabin Services Training Programs in various universities in Turkey should know and develop the competencies required by the flight attendants and train better equipped personnel for airline operators. The preference of personnel with these competencies in the recruitment processes of the institutions serving in the field of civil aviation will result in easier job finding for students who have graduated from educational institutions with the necessary competencies and a decrease in the educational workload of airline companies (Akduman and Karahan, 2020). The increase in the number of employees with the necessary training and competencies working in the field of civil aviation cabin services will also have a positive effect on meeting the qualified human resource needs of the sector.

By using competency-based training models, which will be created by taking into account the roles of flight attendants at universities and airlines, there will be an increase in customer satisfaction as well as improving the personal competence of flight attendants.

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Chapter 28

INTEREST POLICY OF THE TCMB IN COVID-19 PROCESS: REFLECTIONS OF INTEREST POLICY ON INFLATION AND CONSUMER LOANS



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Introduction

Central bank is the term used to describe the institution responsible for policies affecting a country's money and credit supply. A country's central bank is one of the most important institutions that play a role in the development of the country's economy. It plays an extremely important role in ensuring and maintaining economic stability in the country and is state-owned in many countries. It is possible to define economic stability as an economic structure without excessive fluctuations in macroeconomic variables.

Sveriges Riksbank was the first institution in the world to be recognized as a central bank. It is seen that similar institutions emerged in England and the USA afterwards. Although the Ottoman Empire is one of the largest empires in history, it can be said that during its times it failed to encourage sustainable development and create a strong capital base. Therefore, it is seen that the first attempt in central bank status was in 1847. But this attempt was very short-lived. It is not possible to say that the expectations on this issue have been met, although there have been a few more attempts afterwards. The last attempt on this matter is the Ottoman National Credit Bank, which was established on March 11, 1917. However, the defeat of the Ottoman Empire in the First World War prevented the bank from becoming a national bank to assume central bank functions. initiatives on the establishment of a central bank in the Republic of Turkey after the First World War, the country is seen that global monetary policy will lead to accelerated parallel to efforts to create an independent agency. National state-owned banks as a result of a parallel studies the idea of establishing Central Bank of the Republic of Turkey No. 1715 dated June 30, 1930 Law Official Gazette was published. October 3rd, 1931 in the Central Bank of the Republic of Turkey (TCMB) has become operational.

Central banks try to influence market rates through the interest rates they apply in the process of exchanging money with banks. As the last liquidity authority in the economy in the TCMB, it can lend or borrow money to banks in the markets. In this way, it determines and uses interest rates in order to influence the markets. This is called an interest policy.

19 Covidien's emergence in Turkey in March 2020, and the economic impact is seen that with the spread began to be felt in a gradual manner. Although it was not clear at the beginning, the seriousness of the event was understood in time, and the slowdown in the economy became more evident in April and started to spread to all sectors. In parallel, necessary measures were taken by the TCMB.

The Central Bank Concept and a Brief History of Central Banks

The central bank is the institution authorized to control the money supply, achieve price stability, achieve economic output and employment

targets, regulate commercial banks, achieve macroeconomic stability, and provide a payment system (<https://2012books.lardbucket.org>). The central bank is an independent national authority that implements monetary policy, regulates banks and provides financial services, including economic research. These ultimate goals, such as achieving price stability or full employment, may differ depending on the conditions and period of the country (Amadeo, 2020).

In addition to the aim of maintaining the stability of the currency and the money supply, central banks also have duties such as being the last credit authority of the banking sector and controlling the interest rate. They may also have the power to audit banks and other financial institutions against recklessness and fraud.

Central banks are, by their nature, non-market-based institutions that even hinder competition. The critical feature that distinguishes a central bank from other banks is its legal monopoly status, which gives it the privilege of issuing banknotes and cash (Segal, 2020).

The central bank concept is actually more difficult to understand than it seems at first glance. Today, it is not possible to say that institutions under the central bank label are all the same. Things can get even more complicated in this context if you go back in time (Ugolini, 2018).

When we look at the development of central banking in the historical process, it is possible to see that its story goes back to the 17th century, that is, the establishment of Sveriges Riksbank, the first institution to be recognized as a central bank (Bordo, 2007). The oldest central bank in the world is Sveriges Riksbank, founded in Sweden in 1668. To make up for the coin shortage, Chancellor Axel Oxenstierna proposed in 1619 to establish a bank in each town. The first copper coins were minted when Sweden enacted the copper standard in 1624, due to the shortage of silver and gold due to prolonged wars and the desire to preserve the price of copper, Sweden's most important export product. In the 1630s and 1640s, production at the Falu copper mine increased significantly, and it was decided to produce large plate coins made of copper to raise the price of copper. Johan Palmstruch, after living for a while in the Netherlands, where the banking system was more developed during this period, established Sweden's first bank Stockholms Banco in Sweden in 1656. Stockholms Banco is Europe's first real banknote issuer in 1661. Therefore, Sweden is the first country in Europe to export banknotes. In the background of this is that Sweden had the heaviest coins (19.7 kg of copper coins) in the world at that time. Banknotes were initially successful as they were easier to handle than heavy old coins. However, in the following years, the bank printed more and more banknotes and the rapid increase in the number

of banknotes caused the banknotes to depreciate. This process resulted in serious bank failure as Palmstruch tended to issue much more banknotes than the value deposited in the bank. After the public lost confidence in the banknotes issued by Stockholms Banco, the bank went bankrupt just eight years after it was founded. Subsequently, Palmstruch was found guilty of mismanagement of the bank by the Svea Court of Appeal in 1668 and sentenced to death, but his sentence was suspended. In 1668, the nobles attempted to establish a new bank from the ruins of Stockholms Banco. Thus, the oldest central bank in the world, today's Sveriges Riksbank, was established. Established as a joint stock company in 1668, the bank was granted privileges such as lending state funds and acting as a clearinghouse for trade (Sveriges Riskbank, 2021). At that time, it is seen that the king had a great influence on the bank as in almost all state institutions. In this context, the bank had to finance the wars and the king's expeditions, including the Great Northern War, which had disastrous consequences on Sweden. The Bank, XII. He became independent for a while after the death of Karl, but this situation lasted until the Hat party (Hattarna) took control of the Parliament. From the very beginning, one of Riksbank's tasks has been to maintain price stability (Ország, 2017).

Sveriges Risk Bank was followed by the Bank of England, founded in London by Willieam Peterson in 1694. The Bank of England is The Central Bank of the United Kingdom. In 1800, the Bank of England became the country's only limited liability joint stock bank. The Bank of England was the first public bank to assume most of the characteristics of modern central banks, including acknowledging a formal role in maintaining the integrity of England's banking and monetary system in the late 19th century. The bank was nationalized in 1946 (Srivastava, 2017; Encyclopaedia Britannica, 2020).

The Federal Reserve System was established by Congress a century ago, when President Woodrow Wilson signed the Federal Reserve Act on December 23, 1913, to serve as the US central bank. The history of the Federal Reserve is linked to its effort to build a more stable and secure financial system. The Federal Reserve System belongs to a later wave of central banking that emerged at the beginning of the twentieth century (FRBS, 2021). Central banks were created primarily to regulate, oversee and provide financial stability for the various instruments people use for their currency. After 1914, central banking spread rapidly to other parts of the world and II. With the outbreak of the World War, many countries have adopted these institutions.

The Role of Central Banks Today

Money has been at the service of humanity for over 4,000 years. It is seen that most of this process does not have central banks in the world. The

importance and position of central banks, which play an important role in the economic lives of nations, has grown and changed in the last 150 years (Middleton, Marsh & Plender, 2020).

The functions and character of modern central banks reflect history to some extent. Looking at the historical process, it can be said that most central banks are relatively new. They were created by governments in the mid-20th century to fulfill a range of tasks in line with the concept of economic management. However, the old basic functions of central banking, such as monetary policy, are a little different today than they were in the early days of central banking. It appears that the first pioneering central banks were the main institutions issuing banknotes. His dominance over bond issuance generally provided these central banks with adequate scale in the government banking business. This scale also created the opportunity to transfer some of the export revenues to the state. Monetary stability and the search for a reliable monetary system were indeed at the heart of the first central banks, although in a slightly different way from now. Interest rates were tried to be adjusted by these banks in a way to maintain stability. Major changes in the late 19th and early 20th centuries linked these original central banking functions more directly to public policy objectives. The main change is in the transformation of goals rather than functions. Of course, the first central banks were generally established for public interest. However, these public goods are not their only purpose. The debates on central banks in the 19th century increasingly emphasized their impact on national welfare. In connection with this transformation, it is also possible to move away from commercial targets. Before the 20th century, central banks all emerged as profit-making organizations. The potential conflict between public policy objectives and financial interests is clear. The feature of the last credit application authority of central banks has also raised the issue of neutrality in their relations with their commercial competitors. Similar problems arose in terms of monetary management, as dominant banks turned out to be generally more profitable in times of monetary and financial instability. Most 19th century central banks were withdrawn or excluded from business activities in the early 20th century. Driven by the economic crises between wars, the collapse of the gold standard, and changes in thinking about the government's role in economic management, the transformation of central banks into public policy institutions was completed early (Archer, 2010).

The central bank is a government-owned financial institution and a monetary policy agency that has a central role in managing the currency today. They are public policy institutions whose main objectives are to maintain monetary stability and support financial stability. They also often manage the country's gold and foreign exchange reserves. Central

banks also play an important role in the oversight and development of the financial system, in collaboration with other authorities. These become more pronounced in times of financial turmoil. Central banks perform a number of other functions besides their normal functions in many countries. Within this framework, they usually provide banking services and asset and debt management services for the government, and sometimes provide analysis and advice on economic and development policies more generally. The design of effective governance arrangements, especially for the core functions of central banks, can be quite complex. The process often requires a choice and compromise between alternative social goals. It often also has important financial stability functions, and the nature of these roles, responsibilities assigned and the scope of other functions assigned may differ between countries. The differences in the conditions surrounding the origins of central banks mean that their roles and functions are not all developed in the same way (Archer & Bingham, 2010).

It is observed that central banks have become more independent in the last 20-30 years. Financial regulation and supervision has been transferred to a separate agency in some countries. Although this new environment has changed some of the structures implemented by central banks in relation to the financial system, it does not appear to change the natural role of the central banks in ensuring financial stability. This natural role stems from the central bank's function as a monetary authority and is closely related to the relationship between monetary and financial stability. However, although much has been written on this relationship, there is still no clear consensus on how one affects the other, and especially how the synergy between them is. Indeed, this issue deserves more attention as it can help design regulations and policy interventions that will promote both monetary and financial stability. Financial stability is a difficult concept to define. One of the reasons for this difficulty is that, at first glance, stability is not associated with any volatility and volatility is not necessarily bad for financial markets. That is, financial instability refers to conditions in financial markets that damage or threaten to harm the performance of an economy through its effects on the functioning of the financial system (Herrero & Rio, 2005; Miskin, 2000).

The crisis that started in the USA in 2007 spread rapidly and affected the whole world and changed almost all balances. The global financial crisis has deepened since the last quarter of 2008 and caused countries to review their economic goals and their policy strategies to achieve these goals (Öztrürk & Gövdere, 2010: 378-397). In this process, it is seen that many people accept that the period of inflation targeting and interest rate instrument, which is a single policy target, is over and it is not enough to provide a stable monetary system. Hence, it is increasingly expected that

central banks will fulfill various functions such as controlling inflation, stimulating economic growth, and also protecting against financial system instability and crises. However, changes in policies and expectations arising from the financial crisis are not the only driving force of change. The world is increasingly transformed with the acceleration of developments in a number of areas, including technology, demography, urbanization and changes in global economic power (Foster, 2020).

After the emergence of the global financial crisis, much attention is now paid to the responsibilities of monetary policy for financial stability and, more generally, to the interactions and possible conflicts between policies that foster price and financial stability. The crisis strengthened the view that maintaining financial stability is also among the responsibilities of central banks (Visco, 2014).

Development of the Historical Process of the Central Bank of Turkey

Historically, it is possible to say that the development of modern banking has been an important component of economic change. However, it has not always been clear whether it is a factor in the realization of growth or a reaction and result to it (Clay, 1994: 589).

Although it was among the great empires that played a global role in the times of the Ottoman Empire, it appears to fail to create a strong capital base to promote sustainable development and increase prosperity within its borders. Because the empire missed the industrial revolution, it also missed the chance to accumulate private wealth. It can be said that the Ottoman sultans were too late to understand the dynamics of banking and finance. In addition, all the revenues of the Empire were used for war financing and the building of increasingly beautiful palaces, rather than investments that increased productivity. This has brought a great financial burden to the budget (Görmez, 2008).

Institutions that have emerged in the historical process and institutional changes can be defined as key variables that help explain the drastically different economic performance of different societies over the past five hundred years. The Ottoman Empire was geographically located at the crossroads of intercontinental trade from the Balkans and the Black Sea region to Anatolia, Syria, Mesopotamia and most of the coasts of Egypt and North Africa through the Gulf. It would not be wrong to call it the best bureaucratic and agrarian empire in the world for most of its six centuries of existence. The first bank established in the Ottoman Empire is Banque de Constantinople (Dersaadet Bank), which was established in 1847 with a capital of 200,000 pounds. The bank was established to provide short-term loans to the government and fix the rate of Ottoman paper money. Venture

and capital for the bank came from two of the leading Galata bankers. However, due to the expansion in the volume of paper money, the bank could not prevent the deterioration of the exchange rate for a long time. The bank had to close in 1852 due to the increasing losses and the state's inability to provide financial support for its activities (Pamuk, 2004: 27-30).

In the Ottoman Empire, before the establishment of a central bank, economic activities such as determining the amount of money, regulating the credit volume, managing gold and foreign exchange reserves, conducting domestic and foreign payments were carried out by various institutions such as treasury, mint, jewelers, foundations, bazaars and guilds. The Empire had to issue banknotes (Kaime-i Nakdiye-i Mütebere) in 1840 in the face of financial problems triggered by domestic borrowing and wars. During the 1854 Crimean War, it was seen that the Ottoman Empire borrowed money from other states for the first time in its history. A state bank was needed to mediate in the process of opening up and the repayment of these foreign debts, and after some unsuccessful attempts, the Ottoman Bank (Bank-ı Osmanî) was established in London in 1856 with a British capital of 500,000 Pounds. However, the center of operations has been determined as Istanbul. In 1863, the Ottoman Bank was dissolved and the Ottoman Imperial Bank (Bank-ı Osmanî-i Şahane) was restructured as a state bank with the 50% partnership of the French financial group Banque de Paris et des Pays-Bas in addition to the British capital.

The existence of this bank came to an end when it joined Garanti Bank on December 31, 2001. The Ottoman Imperial Bank, besides other banking transactions, was also equipped with the authority to issue banknotes and became the bank with the privilege of printing a single banknote for a period of thirty years. More than 80 percent of the bank passed to the French in the 1880s and the Paris Committee soon became the real decision-making body in Ottoman affairs. The Bank maintained its priority in the Ottoman bonds market until World War I, but in this later period, commercial and investment banking activities became more and more prominent. The bank has developed an extensive network of eighty organizations (branches and sub-branches) in the Ottoman Empire as well as other branches in Egypt and Cyprus. The Bank also supported and to some extent coordinated the activities of French capital groups not only in Ottoman bond issues, but also in various direct investment projects such as railways, ports, utilities, mining and insurance companies. Over time, the capital of the Ottoman Imperial Bank in another state triggered reactions and laid the foundations for a national central bank. Attempts to establish a central bank with national capital resulted in the establishment of the Ottoman National Credit Bank on March 11, 1917. However, the defeat of the Ottoman Empire in the First World War prevented the bank from becoming a national bank that

would assume central bank functions (TCMB, 2021a; Kepenek, 2012: 22; Pamuk, 2004: 29-30).

The biggest impact on the collapse of the Ottoman Empire, the Republic of Turkey is a huge debt burden inherited from the Ottoman Empire. Almost the last 50 years of the empire have been lost in wars that resulted in border losses and devastating destruction of already scarce infrastructure. Turkey Second World War defense costs have increased rapidly even though the state's economic development efforts to enter these expenses and have extremely negative effects and reduced the average growth rate (Görmez & Yiğit, 2005).

A central bank of the Republic of Turkey efforts on the establishment, after the First World War, the countries of establishing global monetary policy by the central bank with the power to print money is seen that independently accelerated in parallel with the tendency to formulate. The idea of establishing a national state bank was first discussed at the Izmir Economy Congress in 1923. In this framework, the draft law on the establishment of a central bank presented by the Minister of Finance Abdülhalik Renda in 1927 was accepted, and views were exchanged with other central banks. The Government of the Republic of Turkey, evaluating all aspects related to this issue, the central bank has begun to prepare the necessary legal framework for the establishment. For this purpose, Prof. A draft law on the establishment of a central bank was prepared with the contributions of Leon Morf. Law, on June 11, 1930 was adopted by the Grand National Assembly of Turkey and the Central Bank of the Republic of Turkey Law No. 1715 dated June 30, 1930 in the Official Gazette was published. The Central Bank became operational on October 3, 1931 (TCMB, 2021a).

About Central Bank of the Republic of Turkey entered into force on January 14, 1970 Law No. 1211, the Bank's legal status and significant changes in organizational structure has created with powers and duties. Turkey's economy in 1980 is both a period of extremely important development for both the Central Bank. Implemented in 1980, decisions of January 24, the beginning of a structural transformation of the economy to include Turkey (TCMB, 2012).

In terms of 2001, it said that Turkey is extremely difficult. The crises experienced in November 2000 and February 2001 have aggravated the problems in the banking sector and caused new problems to arise. It is observed that the banking sector was exposed to interest risk after the crisis in November 2000 and to both interest and exchange rate risks after the crisis in February 2000, resulting in serious losses. As a result of this process, the stabilization program based on exchange rate was terminated

(Öztürk, 2003: 171-178). Following the 2001 economic crisis, the floating exchange rate regime was adopted on 22 February 2001 and a structural transformation process began in the economy. 2001 was also a milestone in combating inflation. At the beginning of the structural transformation process, important amendments were made in the Central Bank Law dated April 25, 2001, and it was clearly stated that the main objective of the Central Bank was to achieve and maintain price stability. In this context, the Law stipulates that the Bank will determine the monetary policy and instruments to be implemented at its own discretion. This means that the bank gains instrument independence. The law also states that the Bank will support the government's growth and employment policies, provided that they do not conflict with the price stability target (TCMB, 2008).

With the amendment made in the Central Bank Law dated April 25, 2001, the TCMB has adopted the view to adopt the inflation targeting strategy since 2002. However, the implicit inflation targeting strategy was implemented between 2002 and 2005 in order to create the necessary conditions for the implementation of the explicit inflation targeting strategy, and the explicit inflation targeting strategy was implemented as of January 1, 2006 (The Banks Association of Turkey, 2005). Within the framework of the inflation targeting regime, the overnight interest rates applied in the Interbank Money Market and the Istanbul Stock Exchange Repo-Reverse Repo Market have been accepted as the main monetary policy tool of the Central Bank (Kara & Orak, 2008).

It can be said that there is an increasing globalization trend in the world, especially after the 1990s. Innovations in information and computer technology and the effect of these innovations on financial instruments facilitated the acceleration of capital flows, but also had a negative effect on the spread of crises. It can be said that the financial markets in the world fell into the deepest crisis ever experienced in the historical process in 2008. The financial crisis that emerged in the USA in 2008 deeply affected the developed and developing countries and created a serious shock throughout the world (Öztürk, 2011: 23-40). The global financial crisis has shown the world that price stability alone may not be sufficient to increase financial imbalances and systemic risks, even under stable economic growth conditions. In other words, the world has caused the world to confront the fact that ignoring financial stability may threaten macroeconomic stability and price stability in the medium and long term. This process in the world has led central banks to seek alternative policies. Therefore, after the global financial crisis, it is seen that monetary policies pay more attention to the conflicts and interactions between policies that take into account price and financial stability together (Visco, 2014). In this context, in the framework of a new monetary policy search, the TCMB

has expanded its price stability target since the end of 2010 in a way that also takes into account financial stability. The strategy implemented is based on a flexible framework based on an active liquidity policy with an asymmetric and wide corridor system where more than one interest rate is used as a tool. It has also increased the variety of policy tools. In this context, the TCMB aimed to ensure financial stability as well as price stability by using tools such as Required Reserves and Reserve Options Mechanism (TCMB, 2021b).

In the report on the Basic Framework of the 2021 Monetary and Exchange Rate Policy, it is stated that the TCMB has decided to continue its tight monetary policy in 2021 until strong indicators for permanent decline in inflation and price stability are formed. In other words, it is seen that the TCMB will fully implement the inflation targeting regime in 2021 (TCMB, 2020).

Interest rate policy used by The Central Bank of the Republic of Turkey to fund of banks

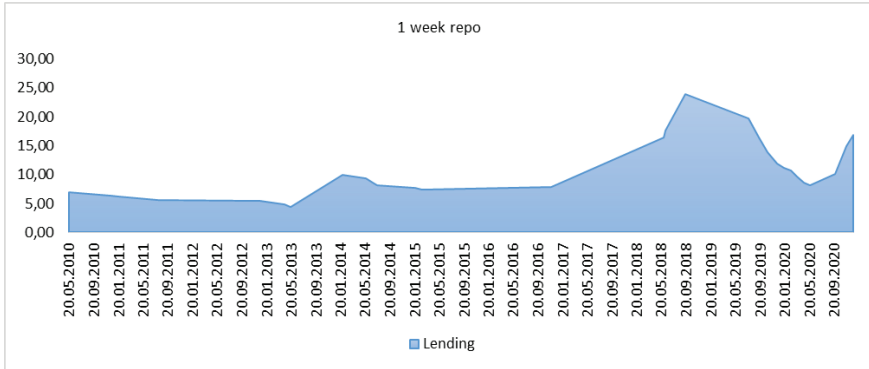
As the last liquidity authority in the economy, the Central Bank can lend money to banks in the markets or borrow money from banks. Central banks try to influence market rates through the interest rates they apply in the process of exchanging money with banks. In other words, the Central Bank determines and uses the interest rates in order to affect the markets. This is called an interest policy. There are different interest rates used by the TCMB within the framework of the interest policy. These can be expressed in three headings.

- Policy Rate (1-Week Repo Interest Rate) (%)
- Overnight Funding Interest (O / N) (%)
- Late Liquidity Window Interest (LON)

The policy rate is the one-week repo rate. The interest rates of the borrowing made to withdraw the excess liquidity in the economy or the short-term loans given to banks to provide the liquidity required by the banks are determined by the central bank. The central bank can affect the policy interest rate and the interest rates applied by banks and financial institutions to the market and the prices of various assets. Monetary policy decisions on policy rates in Turkey in meeting pre-determined and announced by the Board more history is taken. These decisions are made public at 14:00 after the meeting, and the issues discussed at this meeting are evaluated and made public within 5 working days as a summary. As of June 1, 2018, the one-week repo rate has become the Central Bank policy rate. The Central Bank has decided to set the overnight borrowing and lending rates at a margin of - / + 150 basis points compared to the one-week

repo auction rate and to apply the Central Bank borrowing interest rate to be applied in Late Liquidity Window transactions as 0% (TCMB, 2021c). In the report on the Basic Framework of the 2021 Monetary and Exchange Rate Policy, it is again emphasized that the main policy instrument of the TCMB is the one-week repo auction rate (TCMB, 2020).

Figure 1: *Funding Interest Through TCMB Weekly Repo Auctions - Policy Rate (%): 2010-2020*

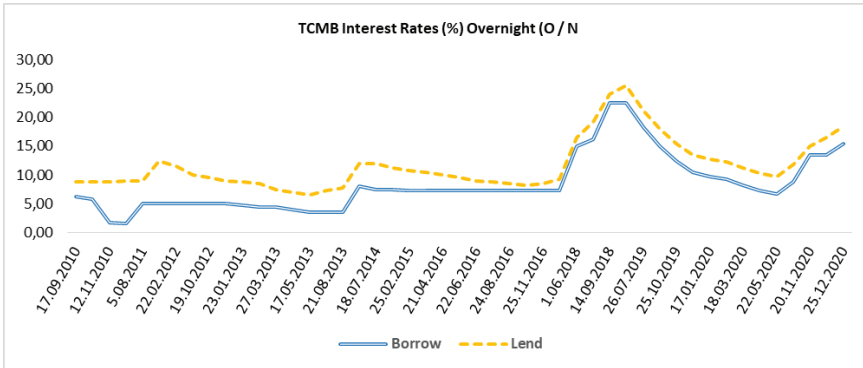


Source: TCMB, <https://www.tcmb.gov.tr>

When we look at the TCMB Weekly Repo Funding Interest, it reached the highest level between 20.05.2010-20.10.2020 with 24.00% on 14.09.2018. On 17.04.2013, it was realized at the lowest level with 5.00%. After 25.11.2016, it is seen that it never went below 8% and fluctuated between 8% and 24%. After 25.09.2020, it started to climb again and increased from 10.25% to 17% (Figure 1). One-week repo auctions are carried out by quantity auction method according to the liquidity needs of the market. In this way, it is ensured that the overnight interest is realized within the framework of the interest corridor and at the levels determined by the Monetary Policy Committee.

Overnight Interest is the interest applied by the TCMB to banks that want to borrow overnight or lend overnight in order to close their accounts. It is generally used for a short time when there is a temporary liquidity shortage in the market. The corridor formed by the overnight interests in the market is called the interest corridor, and these interests are called the corridor interest. In this way, the TCMB can affect the short-term interest rates, exchange rates and the growth rate of loans in the secondary market (Eğilmez, 2020). In the report on the Basic Framework of the 2021 Monetary and Exchange Rate Policy, it is stated that the interest corridor used to control the fluctuations in the Overnight Interest rates during the day and the Late Liquidity Window, which functions as the TCMB's ultimate lender, will not be used as monetary policy tools other than their current functions (TCMB, 2020).

Figure 2: Interest Rates Applied to TCMB Overnight Transactions (%): 2010-2020

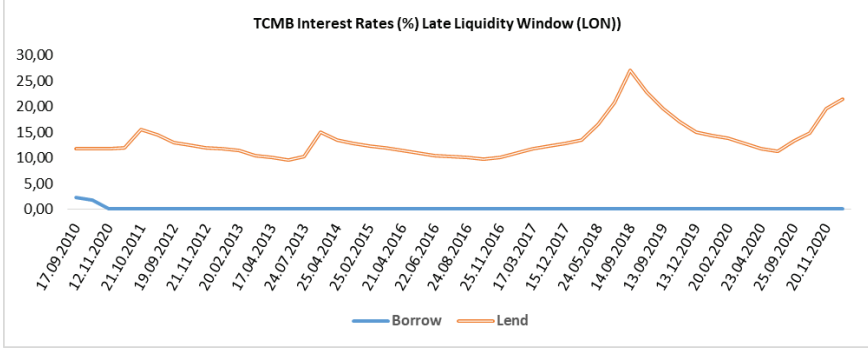


Source: TCMB, <https://www.tcmb.gov.tr>

When we look at the Interest Rates Applied in the TCMB Overnight Transactions, it is seen that the lending interest rate reached the highest level between 17.09.2010-25.12.2020 with 25.50% on 21.09.2018. On 17.05.2013, it was at the lowest level with 6.50%. After the date of 29.01.2014, it has never decreased below 8.25%. Between 17.09.2010-25.12.2020, this rate fluctuates between 6.25% and 25%. After 22.05.2020, it started to climb again and increased from 9.75% to 18.50%. It is observed that there is not a fluctuation in the borrowing interest rate as high as the lending rate. It is seen that the difference between borrowing and lending rates varied between 2.5% and 7.5% in the same period (Figure 2). The borrowing interest rate announced by the Central Bank within the framework of the overnight interest rate is accepted as the floor and the lending rate as the ceiling. The gap between borrowing and lending rates is called the interest rate corridor. Overnight interest rates occur within this interest corridor. Interest rates applied to overnight transactions and interest rates applied to weekly repo transactions can affect the short-term interest rates in the secondary market, exchange rates and the growth rate of loans.

Late Liquidity Window (GLP) Interest is an application that covers the deterrent interest rates applied to the banks waiting until the last moment to close their accounts or to lend their money. This application is carried out between 16:00 and 17:00. The difference between the TCMB Lending Interest Rate and the Overnight Lending Interest Rate, which will be applied in GLP transactions by changing the operational framework of the monetary policy on October 22, 2020, was determined as 300 basis points (TCMB, 2021b).

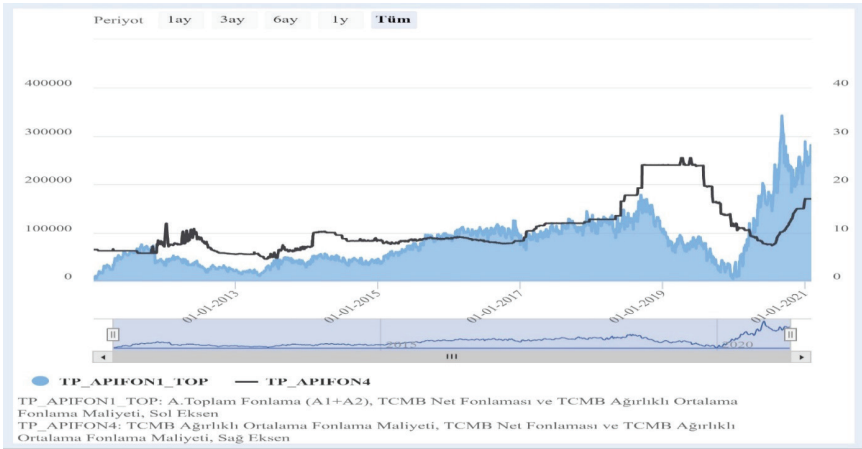
Figure 3: TCMB Late Liquidity Window Interest Rates - GLP (%): 2010-2020



Source: TCMB, <https://www.tcmb.gov.tr>

When we look at the TCMB Late Liquidity Window Interest Rates, it is seen that the lending interest rate reached the highest level between 17.09.2010-25.12.2020 with 27% on 14.09.2018. It was at the lowest level with 9.50% on 17.05.2013. Between 17.09.2010-25.12.2020, this rate fluctuates between 9.50% and 27%. After 22.05.2020, it started to climb again and increased from 11.25% to 21.50% (Figure 3). Late liquidity window is normally supposed to be a tool used to interfere with falling bank distress in the recent period are used as policy rates in Turkey.

Figure 4: TCMB Average Funding Interest and Total Funding Amount (Percent, Million TL)



TP_APIFON1_TOP: A. Total Funding (A1+A2), TCMB Net Funding and TCMB Weighted Average Funding Cost, Left axis

TP_APIFON4: TCMB Weighted Average Funding Cost, TCMB Net Funding and TCMB Weighted Average Funding Cost, Right axis

Source: TCMB, *TCMB Ortalama Fonlama Faizi ve Toplam Fonlama Miktarı, 2021*, <https://evds2.tcmb.gov.tr/index.php?/evds/dashboard/1441>

Figure 4 shows the TCMB Average Funding Interest and the Total Funding Amount together. TCMB Weighted Average Funding Interest is the TCMB's Weekly Repo Auction Funding Rate, the TCMB's Interest Rates for Overnight Transactions and the TCMB Late Liquidity Window Funding Interest and the interest rate calculated by weighting with the amounts borrowed. This rate of interest which could be considered as a kind of fourth is the most important application in the interest of Turkey (TCMB, 2021d).

Interest rate decisions taken by central banks are expected to be fully reflected in all market rates adjusted by maturity and credit risk in a perfectly competitive structure where money markets operate perfectly. However, in practice, the lack of fully competitive conditions, different regulations and the differences in behavior of active people in the market cause deviations in the transfer of monetary policy decisions to market interest rates. The fact that these expected deviations are zero indicates the monetary transfer structure that functions completely effectively, while the increase in deviation values can be said as the effectiveness of the monetary transmission decreases. (TCMB, 2018).

The Effects of the TCMB Interest Rate Policy on Inflation and Consumer Loans in the COVID-19 Process

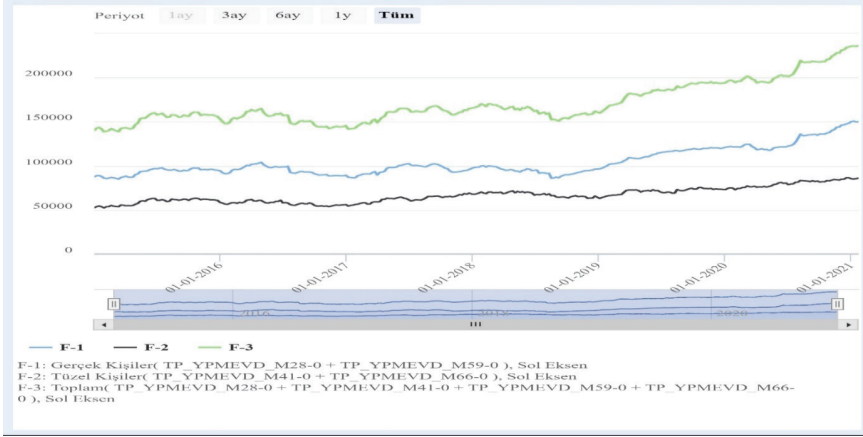
Inflation is defined as a general increase in the price of goods and services throughout the economy, or in other words, a general decrease in the value of money. Conversely, deflation refers to a general decrease in the price of goods and services across the economy or a general increase in the value of money (Congressional Research Service (CRS), 2020). In other words, inflation is a phenomenon that indicates the imbalance in the economy. Typically it is a broad measure such as an overall increase in prices or an increase in the cost of living in a country (RBNZ, 2007). Inflation rates may differ between countries and over time for a variety of country-specific reasons (Calderon & Schmidt-Hebbel, 2008). Prolonged periods of high inflation are often the result of loose monetary policy. If the money supply grows too large for the size of an economy, the unit value of the currency decreases, ie purchasing power decreases and prices rise. Pressures on the supply or demand side of the economy can also cause inflation. Supply shocks that disrupt production, such as natural disasters, or increase production costs, such as high oil prices, can reduce aggregate supply and lead to inflation. Correct anti-inflation policies aimed at lowering inflation depend on the causes of inflation. Central banks can often implement tightening policies that restrain aggregate demand by raising interest rates. However, when inflation is driven by global rather than local developments, such policies may not work (Öner, 2010).

Especially after the 1990s, the control of inflation has become the main target of monetary policies in western economies. This is because it is firmly rooted in the belief shared by many economists and politicians that inflation costs are not negligible, so keeping inflation in check will correspond in the future in the form of higher per capita income and a more stable economic structure (Andrés & Hernando, 1997).

Inflation in Turkey is one of the main problems as long struggled for years. The high and volatile inflation makes it difficult for economic agents to make sound decisions while making investment and consumption decisions. Unless price stability is achieved in the country, resources cannot be used rationally in the long term and they move away from productive investment areas. Uncertainty arising from inflation causes an unsafe environment by preventing companies from seeing the future, and leads companies to financial investments rather than fixed capital investments. Likewise, as it decreases the purchasing power of households by causing a decrease in their real incomes, it encourages dollarization and more consumption for protection from inflation. In addition, high inflation disrupts the income and wealth distribution of households, causing wealth loss (TCMB, 2020).

Dollarization is the name given to residents' use of foreign currencies, which are accepted and respected in the world, instead of their own national currencies as a unit of account, value accumulation tool and medium of exchange. It can be applied in two different ways as full dollarization and partial dollarization. Full dollarization is when a country leaves its official national currency and accepts another foreign currency as its official currency. Partial dollarization is the fact that residents of a country hold their financial assets in foreign currency as their confidence in the national currency is shaken due to the economic and political instability environment (Berg & Borensztein, 2000).

Figure 5: Foreign Currency Deposits of Residents (Real and Legal Persons, Million USD)

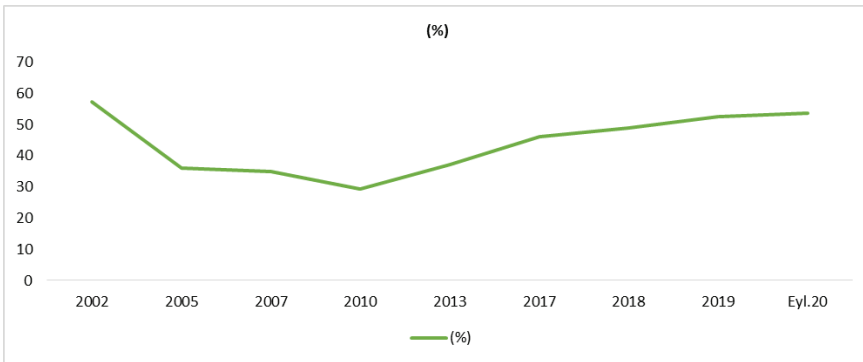


- F-1: Real People (TP_YPMEVD_M28-0 + TP_YPMEVD_M59-0), Left axis
 F-2: Legal Persons (TP_YPMEVD_M41-0 + TP_YPMEVD_M66-0), Right axis
 F-3: Total (TP_YPMEVD_M28-0 + TP_YPMEVD_M41-0 + TP_YPMEVD_M59-0 + TP_YPMEVD_M66-0), Left axis

Source: TCMB, Yerleşiklerin Yabancı Para Mevduatları, 2021, .php?/evds/dashboard/451

In Figure 5, the non-bank resident real and legal persons in Turkey held in bank deposits and foreign currency deposits, the level of participation is seen. As can be seen from the figure, it is seen that the dollarization in the country has also increased in periods of increase in inflation or in an environment of instability where people's expectations deteriorate.

Figure 6: Dollarization in Turkey (%): 2002-2020

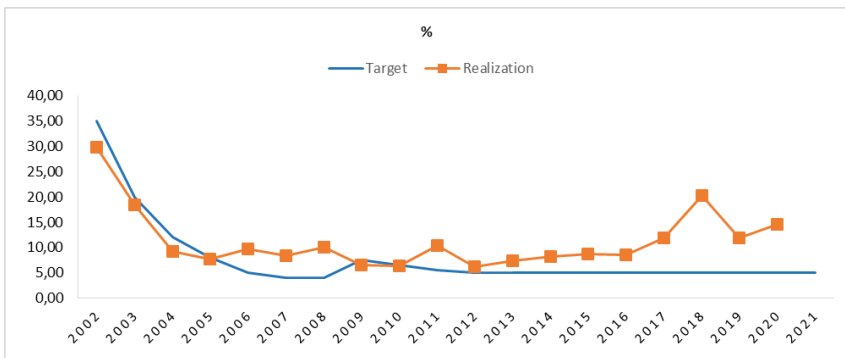


Source: Mahfi Eğilmez, Dolarizasyon Yeniden Zirveye Giderken, 28.09.2020, Investing.com, <https://tr.investing.com/analysis/dolarizasyon-yeniden-zirveye-giderken-200454367>

Dollarization, rose to 57.3% in the aftermath of the 2001 crisis in Turkey. After the crisis, as a result of the positive performance of the economy and the gradual turning of people's expectations into positive, it declined to the level of 30%. It is observed that inflation and interest rates also decreased in the same period. After the global financial crisis in 2008, and after 2010, with the increase in the USD / TL exchange rate, the dollarization rate started to increase. As of September 2020, this rate is at the level of 53.7%. Likewise, inflation and interest rates are at high levels during this period (Figure 6).

Within this framework, the TCMB started to implement the inflation targeting strategy, which has become increasingly popular in the world after the 1990s in order to successfully combat inflation. First, by making amendments in the Central Bank Law dated April 25, 2001, it was stated that "the main objective of the TCMB is to ensure and maintain price stability". Turkey has been implementing implicit inflation targeting strategy in the since January 1, 2006, ars 2002-2005 period. In this strategy, the main instrument of monetary policy is short-term interest rates (Policy Interest). The central bank aimed to be effective in the economy in various ways by using the policy interest (Öztürk, 2009: 191-192). Inflation targets are determined by the TCMB together with the Turkish Government in 3-year periods and within the framework of this regime, the year-end inflation rates calculated as a result of the 12-month change in the Consumer Price Index (CPI) are taken as basis. In addition, these targets are set as point targets and 2 points above and below the inflation target are determined as the uncertainty band. If inflation is outside this uncertainty range at the end of the year, the Central Bank writes an open letter to the Government stating the reasons for this and what measures it will take. Turkey's compared with developed countries structural transformation in recent years and seems to aim for higher inflation rates for reasons such as rigidities in the past brought to live with high inflation (TCMB, 2021f).

Figure 7: TCMB Inflation Targets and Realizations (%): 2009-2021



Source: TCMB, *Enflasyon Hedefleri*, 2021, <https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Temel+Faaliyetler/Para+Politikasi/Fiyat+Istikrari+ve+Enflasyon/Enflasyonun+Hedefleri>

It is observed that the inflation has remained within the uncertainty band only in 2008, 2009 and 2012 since the first of January 2006, when the TCMB started to implement the Explicit Inflation Targeting Strategy (Figure 7). From this point of view, it is not possible to say that the TCMB is successful in combating inflation. However, compared to the process of Turkey inhabited until the 2000s inflation to remain at lower levels and in certain lines can be interpreted positively.

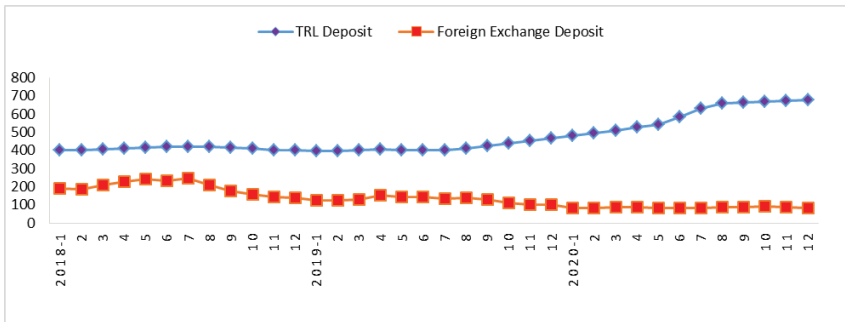
In order to limit the effects of the COVID-19 process on the economy and finance sector, the TCMB continued the interest rate cut process, which started in July 2019, in the March-May period of 2020. It is observed that the economic activity has recovered significantly, driven by domestic demand, with the support of strong credit momentum following this rate cut. In addition, the TCMB lowered the foreign currency required reserve ratios for banks that comply with the credit conditions set. However, the improvement in these domestic demand conditions and the high inflation expectations had negative effects on the inflation outlook, thus, consumer inflation was realized above the expectations. Within the framework of these developments, it was decided to raise the policy rate by 200 basis points in September in order to support price stability by reducing inflation, and flexibility in liquidity management was increased. In this context, the difference between the TCMB lending rate to be applied in GLP transactions and the overnight lending rate has been determined as 300 basis points. In the period from July to November after COVID-19, the weighted average cost of funding increased by approximately 750 basis points to 14.87 percent. In November, the policy interest was increased from 10.25 percent to 15 percent. Following a flat line around 12 percent until October 2020, the CPI increased in the last quarter and reached 14.60 percent at the end of the year. In this process, it was decided that all short-term funding would be made at the policy rate. In this context, the funding provided by the TCMB with one-month traditional method repo auctions and GLP facilities started to be made with one-week repo amount auctions, which are the main monetary policy tool, as of 20 November 2020. In this period, the system's funding needs were met through TL swap transactions against foreign exchange realized within the TCMB and BIST in addition to OMO funding. It is observed that the TCMB went through a strong monetary tightening in December. In its meeting held on December 24, 2020, the Monetary Policy Committee increased the one-week repo auction interest rate, which is the policy interest, from 15 percent to 17 percent. The Board kept the interest rate unchanged at 17 percent at its meeting on January 21, 2021 (TCMB, 2020; TCMB, 2021g).

In the reports prepared by the Central Bank in line with the goal of achieving price stability, it is seen that it tends to apply all the tools it has in a strong and determined manner. However, how successful you will be in this fight will depend on the course of COVID-19 and fluctuations in the global economy.

Consumption is the use of goods and services by households in the economy. Consumption differs from consumption expenditure, which is the purchase of goods and services for use by households. Because neo-classical economists generally regard consumption as the ultimate goal of economic activity, the level of per capita consumption is seen as the central measure of an economy's productive success (Carolla, 2021). In the Law No. 6502 on Consumer Protection published in the Official Gazette dated 28/11/2013, the consumer is defined as "a real or legal person acting for commercial or non-professional purposes" (Resmi Gazete, 28/12/2103: 12152). Consumer expenditures are the total expenditures made by households on final goods and services in an economy. It is a key driving force in economics and a concept in economic theory. Investors, operators and policy makers closely follow statistics on consumption expenditures while making investment decisions and political strategies. Consumer spending is also the primary component of aggregate demand, which is the most important short-term determinant of economic performance (Kelly, 2020).

Banks are the most important institutional structures of the financial system that collect funds, especially in developed economies. These funds are transferred to the party requesting funds. This process manifests itself in credit or other accounts in the balance sheets. The loans to be made available by banks may be investment loans for commercial enterprises or as consumer loans for consumers to meet their housing, vehicle and some basic needs (İbicioğlu & Karan, 2009: 12). Consumer loans have a different structure than commercial and professional loans. Consumer loans, one of the products provided by banks, are an important financing product that helps consumers to meet their current consumption demands for consumption immediately. In commercial and industrial loans, the main purpose is to maximize profit by increasing the volume of trade and production (İnağ, 1990).

Figure 8: Development of Consumer Loans (Housing Loan + Vehicle Loan + Personal Finance): 2018-2020 (Million TL)



Source: BDDK, Aylık Bankacılık Sektörü Verileri <https://www.bddk.org.tr/BultenAylik> (BDDK Aylık Bankacılık Sektörü Verileri Kullanılarak Hazırlanmıştır)

Developments in the economic structure and in the banking sector cause new products to be introduced every day and the scope of consumer loans to expand (Tekirdağ, 2009). Consumer loans, a type of financial product for financial institutions, are an important factor to be taken into account in the economic policies of countries, especially in monetary policy implementations. The TCMB takes into account its effects on consumer loans in its decisions on interest rates. Because consumer loans are among the important sub-factors that trigger macro aggregates such as economic growth and inflation. Consumer loans are an important factor affecting private consumption expenditures. Considering the importance of private consumption expenditures for economic growth, the importance of consumer loans can be understood more clearly. Especially when considering the effects of the construction and automotive sectors on economic growth in Turkey, it will be more apparent (İbicioğlu & Karan, 2009: 12).

Likewise, it should not be overlooked that the spending increases related to the areas other than these will create pressure on the general level of prices. Although there is no consensus on the direction of the relationship, especially the nature of the interaction between retail bank loans and inflation has a determining role in monetary policy choices. For this reason, it is very important that the TCMB takes into account the effects of this on banks and loans when determining interest rates (Karahan & Gürbüz, 2017: 411).

While the TCMB Policy Interest Rate was 19.75% on 26.07.2019, it has decreased to 8.25% on 22.05.2020 and remained at this level until 25.09.2020. The effects of this reflection on bank loan rates can be seen in the figure. As a result of the decline in loan rates in line with this policy rate cut, it is observed that consumer loans increased in the same period. Afterwards, it was observed to follow a flat course with the effect of the interest rate increases made by the TCMB. The continuation of the pandemic period and the financial distress of people are the most important reasons for this trend to decline. In the same period, the opposite situation is observed for foreign currency loans. It can be said that the rapid depreciation of the TL against the Dollar and the Euro and the instability in the exchange rates have an effect on this (Figure 8).

It is observed that the negative impact of domestic demand, which gained strength with the cumulative effects of the credit increase during the epidemic period, on the current account balance and inflation still continues. The high credit growth experienced in this period caused an increase in imports both through domestic demand and through inflation expectations and dollarization, and became an important determinant of the deterioration in the current account balance in 2020. With the increase in

financial difficulties, it is expected that the slowdown in loans, the limiting effect of domestic demand and imports will become more apparent and will affect the current account balance positively.

CONCLUSION

Coronavirus (COVID-19) is defined as the disease caused by a novel coronavirus, first known as a respiratory disease and later called severe acute respiratory syndrome (SARS-CoV-2). The current outbreak first appeared in Hubei Province, Wuhan City, China in December 2019. On January 30, 2020, the World Health Organization (WHO) declared COVID-19 a global health emergency. On March 11, 2020, COVID-19 was declared a global epidemic.

With this epidemic in the world, it is seen that many things have changed in every field. It can be said that the economic structure was affected the most by these changes. With the negative national and global expectations, everything turned upside down and serious breaks occurred in the basic macroeconomic indicators of the countries in this process.

As the institution responsible for the policies that direct the money and credit supply of a country, the main objective of central banks is to maintain the stability of the currency and the money supply. Central banks can be described as a government-owned financial institution and a monetary policy agency, which has a central role in managing the currency today. Central banks also usually manage the country's gold and foreign exchange reserves. As the last liquidity authority in the economy, the Central Bank can lend money to banks in the markets or borrow money from banks. They also try to influence market interest rates through the interest rates they apply in the money exchange process. In other words, the Central Bank determines and uses the interest rates to affect the markets, which is called the interest policy.

Interest rate decisions implemented by central banks are expected to reflect fully on all market rates in a perfectly competitive structure where money markets operate perfectly. However, the lack of fully competitive conditions in practice, various regulations and the differences in behavior of market players cause deviations in the transfer of monetary policy decisions to market interest rates.

Consumer loans, inflation and dollarization are the main economic factors that especially developing countries have to control today. All balances in the economy can be compared to a domino. In other words, when one of the stones collapses, it affects the others and causes problems.

Inflation can be defined as a general increase in the price of goods and services in the economic structure, or in other words, a general decrease in

the value of money. In other words, it is a phenomenon that indicates the imbalance in the economy. Inflation in Turkey is one of the main problems as long struggled for years. The high and volatile inflation makes it difficult for economic agents to make sound decisions while making investment and consumption decisions. Likewise, as it decreases the purchasing power of households by causing a decrease in their real incomes, it encourages dollarization and more consumption for protection from inflation. Central banks can often implement tightening policies that restrain aggregate demand by raising interest rates. However, when inflation is driven by global developments rather than local developments, such policies may not work.

Banks are the most important institutional structures of the financial system that collect funds in national economies, and these funds are transferred to the people demanding funds. The most important tool of this transmission channel is loans. Consumer loans have a different structure than commercial and professional loans that are provided to meet housing, vehicle and some basic needs. Consumer loans are tools used to achieve an increase in consumption. Consumer loans, a type of financial product for financial institutions, are an important factor to be taken into account in the economic policies of countries, especially in monetary policy implementations. Because consumer loans are among the important sub-factors that trigger macro aggregates such as employment, economic growth and inflation. It is not enough to produce only for the growth of an economy. At the same time, the goods and services produced must be consumed and the supply-demand balance must be maintained in the markets. Likewise, it should not be overlooked that the spending increases related to other areas besides these will create pressure on the general level of prices. For all these reasons, it is extremely important for the TCMB to consider the reflections of this on basic macroeconomic variables while determining the interest rates.

Covidien-19's 2020 emergence in Turkey in March and along with the spread of the economic impact is seen that began to be felt in a gradual manner. Although it was not clear at the beginning, the seriousness of the event was understood in time, and the slowdown in the economy became more evident in April and started to spread across the sectors. In parallel with this, necessary measures were taken. The contraction in economic activities has especially affected exports and tourism severely.

In this process, the TCMB continued the Interest rate cut process in 2020 as of 26.07.2019 in order to limit the economic effects of COVID-19. The policy interest rate declined to 8.25% on 22.05.2020. While the rapid expansion in loans and monetary aggregates during this period supported the economic performance of the country, it adversely affected the

current account balance and inflation outlook. Deterioration of inflation expectations, especially after Turkey for a long time, has led to the re-empowerment of dollarization trend.

In the period from July to November, the average funding cost was increased by 750 basis points to 14.87% in order to control inflationary expectations and related risks within the framework of post-epidemic tightening. In order to control inflation expectations and related risks, the policy rate was increased from 10.25% to 15% in November. In addition, the main policy instrument of all short-term funding has been determined as the policy rate. TL depreciated by about 40% as of mid-December. In the first 12 months of the year, the inflation rate followed a horizontal course of around 12%, and rose to 14.03% in November, and the annual inflation rate for 2020 was 14.60%. It is observed that the risk of an upward increase in inflation continues to be important in 2021.

In this context, in order to ensure economic stability in Turkey in this process in the Central Bank's global epidemic level and must continue to maintain the controlled interest rate policy. Economic rather than political preferences should be prioritized in the formulation and implementation of the policy set. Otherwise, very costly and unrecoverable damages may occur in the country's economy for many years. In addition to all these, the depletion of the Central Bank reserves is extremely negative. In this context, the TCMB's foreign exchange reserves should be strengthened in terms of ensuring the efficiency of the monetary policy and financial stability.

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