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MASTER’S THESIS

**AN ANALYSIS OF CONSUMER’S GAZE POINTS AND
DURATION OF ATTENTION TO THE USAGE OF
HUMAN IMAGES ON WEBSITES: A
NEUROMARKETING APPLICATION - EYE-
TRACKING ANALYSIS**

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APPROVAL PAGE

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DECLARATION

I hereby declare that this master's thesis/non-thesis master's term Project titled as "An Analysis of Consumer's Gaze Points and Duration of Attention to the Usage of Human Images on Websites: A Neuromarketing Application - Eye-Tracking Analysis" has been written by myself in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honour.

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ABSTRACT

Master's Thesis

An Analysis of Consumer's Gaze Points and Duration of Attention to the Usage of Human Images on Websites: A Neuromarketing Application - Eye-Tracking Analysis

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The purpose of this thesis is to determine the effect of the product presentations used in websites together with human images and without human images; on focus points of respondents and their duration of attention. For this purpose, an eye-tracking analyses was undertaken. The results have also been analyzed according to gender and depending on if the products are hedonic or utilitarian.

In the methodology part two surveys (preliminary and post) and eye tracking methods are used. A preliminary survey to 82 respondents was applied. However, in the second phase of the study 50 out of 82 respondents came to the laboratory and participated in the eye tracking study. After the analyses of the eye tracking results 8 of them was found not to be eligible resulting with 42 analyses that met the criteria for evaluation. 42 people of who 21 are women and 21 are men attended to this eye tracking analysis. Eye tracking analysis, which is a neuromarketing method, is used as a research method; and also a survey has been applied on 42 people who joined the analysis to define their demographic profile and online shopping habits. Moreover, structured-interview have been carried out with 42 attendants related to the eye tracking analysis as a part of post survey. Results will be helpful in designing and enhancing e-commerce websites to be more effective.

Keywords: Web Design, Neuromarketing, Eye-Tracking.

ÖZET

Yüksek Lisans Tezi

Web sitelerinde İnsan Görseli Kullanımının Tüketici Bakış Noktası ve İlgi Süresine Etkisi Açısından Değerlendirilmesi: Nöropazarlama Uygulaması – Göz İzleme Analizi
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Bu çalışmada web sitelerde insan resmi kullanılan ve insan resmi kullanılmayan ürün sunumunun tüketicilerin odak noktası ve dikkat süresindeki değişime etkileri incelenmiştir. Bu amaçla bir göz izleme analizi uygulanmıştır. Sonuçlar aynı zamanda cinsiyet ve ürünün hazcı veya faydacı olup olmasına göre de analiz edilmiştir.

Metodoloji bölümünde iki anket ve nöropazarlama metotlarından, göz izleme analiz yöntemi kullanılmıştır. İlk ankete 82 katılmış, analize ise 50 kişi katılım göstermiştir. Göz izleme analizine 21 kadın ve 21 erkek olmak üzere toplam 42 kişi katılmıştır. Bu analize katılmış olan 42 kişiye analize girmeden önce uygulanan ilk anketle demografik özelliklerin belirlenmiştir. Analiz sonrası uygulanan anket, katılımcıların alışveriş alışkanlıklarına dair bilgiler sunarken bu bölümde uygulanan mülakat ile de göz izleme analizine dair görüşlerine başvurulmuştur.

Çalışma çıktıları web sitelerinin iyileştirilmesi ve daha etkili olarak dizayn edilmesi için fayda sağlayacaktır. Aynı zamanda pazarlamacılara da yön gösterici nitelikte olacaktır.

Anahtar Kelimeler: Web Dizayn, Nöropazarlama, Göz İzleme.

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CONTENTS

APPROVAL PAGE	ii
DECLARATION	iii
ABSTRACT	iv
ÖZET	v
CONTENTS	vi
ABBREVIATIONS	ix
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF APPENDICES	xiii
INTRODUCTION	1

CHAPTER ONE

WEBSITE DESIGN AND EFFECTS ON CONSUMERS

1.1. WEBSITE DESIGN	3
1.1.1. Visual Design in Web Design and Dimensions of Visual Design	6
1.1.1.1. Layout and Composition	8
1.1.1.2. Colors	9
1.1.1.3. Fonts	10
1.1.1.4. Usage of Pictures in Web Design	11
1.1.1.4.1. Usage of Human Pictures in Web Design	11
1.2. BANNER ADVERTISEMENT IN WEB DESIGN	12
1.3. FACTORS THAT INFLUENCE THE DESIGN OF A WEBSITE	15
1.3.1. Target Market	18
1.3.2. Types of Product	21

1.3.3. Hedonic and Utilitarian Types of Shopping	22
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CHAPTER TWO

NEUROMARKETING AND APPLICATION IN WEB DESIGN

2.1. NEUROMARKETING	26
2.2. THE IMPORTANCE OF NEUROMARKETING	27
2.3. NEUROMARKETING RESEARCH TECHNIQUES	28
2.3.1. Neurometric Measurement	29
2.3.1.1. Functional Magnetic Resonance Imaging (fMRI)	29
2.3.1.2. Positron Emission Tomography (PET)	30
2.3.1.3. Electroencephalogram (EEG)	31
2.3.1.4. Steady State Typography (SST)	32
2.3.1.5. Transcranial Magnetic Stimulation (TMU)	32
2.3.1.6. Magnetoencephalography (MEG)	33
2.3.2. Biometric Measurement	33
2.3.2.1. Eye Tracking (ET)	34
2.3.2.2. Facial Action Coding System (FACS)	36
2.3.2.3. Galvanic Skin Response (GSR)	37
2.4. RESEARCHES RELATED TO NEUROMARKETING IN TURKEY AND THE WORLD	37

CHAPTER THREE

METHODOLOGY AND THE FINDINGS

3.1. AIM OF THE STUDY	49
3.2. SAMPLE OF THE STUDY	49
3.3. METHODOLOGY	50
3.4. HYPOTHESES DEVELOPMENT	54
3.5. DATA ANALYSIS	55
3.5.1. Questionnaire Findings	56

3.5.2. Results of the Eye Tracking Analysis	61
3.5.2.1. Heat Maps	68
3.5.2.1.1. Heat Maps of Hedonic Products	69
3.5.2.2.1.1. Heat Maps of Shoes	69
3.5.2.2.1.2. Heat Maps of Sunglasses	71
3.5.2.2.1.3. Heat Maps of Perfume	74
3.5.2.2.2. Heat Maps of Utilitarian Products	77
3.5.2.2.2.1. Heat Maps of Headphone	77
3.5.2.2.2.2. Heat Maps of Cellphone	79
3.5.2.2.2.3. Heat Maps of Television	81
3.5.3. Results of the Structured-Interview Questions	83
CONCLUSIONS	90
REFERENCES	94
APPENDICES	

ABBREVIATIONS

AOI	Area of Interest
EEG	Electroencephalogram
ET	Eye Tracking
FACS	Facial Action Coding System
FC	Fixation Count
FMRI	Functional Marketing Resonance Imaging
GSR	Galvanic Skin Response
MEG	Magnetoencephalography
PET	Positron Emission Tomography
SST	Steady State Typography
TTF	Time to First Fixation
TFD	Total Fixation Duration
TMU	Transcranial Magnetic Stimulation

LIST OF TABLES

Table 1: Scientific Studies in Neuromarketing in Turkey	p. 42
Table 2: Participants Demographics	p. 56
Table 3: Online Shopping Habits of Respondents	p. 56
Table 4: Shopping Tendency for All Respondents	p. 57
Table 5: Descriptive Statistics for Shopping Tendency of Respondents	p. 58
Table 6: Cronbach's Alpha for Image Appeal Scale	p. 60
Table 7: Evaluation of the Respondents Regarding Image Appeals in the Websites	p. 60
Table 8: Mann-Whitney U Test Results for the Comparison of "Image Appeal (Total)" Mean Values According to Gender	p. 61
Table 9: Normality Test	p. 61
Table 10: Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)" Mean Values (All Respondents)	p. 63
Table 11: Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)" Mean Values (Male)	p. 65
Table 12: Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)" Mean Values (Female)	p. 65
Table 13: Wilcoxon Test Results for the Comparison of "Total Fixation Duration (With Human)" and "Total Fixation Duration (Without Human)" Mean Values (All Respondents)	p. 66
Table 14: Wilcoxon Test Results for the Comparison of "Total Fixation Duration (With Human)" and "Total Fixation Duration (Without Human)" Mean Values (Male)	p. 67
Table 15: Wilcoxon Test Results for the Comparison of "Total Fixation Duration (With Human)" and "Total Fixation Duration (Without Human)" Mean Values (Female)	p. 67
Table 16: Summary Table for Hypothesis	p. 68

Table 17: Question 1: Are there any images that stand out in your mind?	p. 84
Table 18: Question 2: How did these images make you feel?	p. 85
Table 19: Question 3: Were There any Images that Made the Website Look Positive?	p. 86
Table 20: Question 4: Where there any images that made the site look negative?	p. 87
Table 21: Question 5: Are There any other Impressions You Would Like To Share?	p. 88



LIST OF FIGURES

Figure 1: The Heat Map of Males for Shoes	p. 69
Figure 2: The Heat Map of Females for Shoes	p. 70
Figure 3: The Heat Map of All Attendants for Shoes	p. 70
Figure 4: The Heat Map of Males for Sunglasses	p. 71
Figure 5: The Heat Map of Females for Sunglasses	p. 72
Figure 6: The Heat Map of All Attendants for Shoes	p. 73
Figure 7: The Heat Map of Males for Perfume	p. 74
Figure 8: The Heat Map of Females for Perfume	p. 75
Figure 9: The Heat Map of All Attendants	p. 76
Figure 10: The Heat Map of Males for Headphone	p. 77
Figure 11: The Heat Map of Females for Headphone	p. 77
Figure 12: The Heat Map of All Attendants for Headphone	p. 78
Figure 13: The Heat Map of Males for Cellphone	p. 79
Figure 14: The Heat Map of Females for Cellphone	p. 80
Figure 15: The Heat Map of All Attendants for Cellphone	p. 81
Figure 16: The Heat Map of Males for Television	p. 81
Figure 17: The Heat Map of Females for Television	p. 82
Figure 18: The Heatmap of All Attendants for Television	p. 82

LIST OF APPENDICES

Appendix 1: First Survey	app p.1
Appendix 2: Second Survey	app p.3
Appendix 3: Structured-Interview Questions	app p. 5



INTRODUCTION

Technology is constantly changing and improving. In recent decades, as a result of technological developments and increase in e-trade and e-shopping, design of websites have gained much more importance. Websites of companies can be considered as virtual faces of businesses, that enables them to reflect their corporate identity and quality as well as acting as communication venues to inform and attract their customers. Thus, since it is evident that companies can attract and appeal to their target customers with the help of a successful web design, it is important for companies to give importance to the design of their websites.

Features that influence the ease of use of website and visual contents used in the websites are among the most important dimensions that must be shaped according to developments in technology and desires of target customers. Research shows that positive emotional experiences encourage a web user's tendency to approach the website (Deng and Poole 2010), and excellent experience offered by the websites and the impressive visual content can positively affect consumer's purchase decision (Fiore et al. 2005). One of the common visual elements used in websites are human images, which leads to emotional reactions of customers' (Riegelsberger, 2002) as well as enhancing the visual appeal of web pages (Djamasb of et al. 2010).

For years, images in advertising have been used to convey product and brand information and to give emotional impulses to consumers. From 1954 to 1999, the use of images in advertising has doubled (Phillips and McQuarrie 2002), however, research on the effectiveness of the usage of visual elements in advertising has been limited (Larsen et al. 2004; Peracchio and Meyers-Levy 2005; Phillips and McQuarrie 2005). In online environments, images of people can be used to induce emotional responses that can result in positive attitudes towards the site (Riegelsberger et al. 2003). Literature implies that the usage of human image in advertisements can lead to positive emotional stimuli (Fiore et al. 2005). However, current research on human image rarely focuses on researching the impact that human image has on users' emotions (Cyr et al.,2009). Thus, considering the importance of human image as a visual element, and its impact on consumers' level of attention, the main research question of this thesis is to uncover whether the

consumers reacts differently to the usage of human images in the advertisements of products.

The, relationship between images and image appeal can be affected by the usage of different product types (Cyr et al., 2009). Thus, the impact of human images used in product advertisement can change according to product type. Thus, in this thesis it will also be investigated if different genders reaction would be different to the usage of people images and does this reaction change depending on the type of product (hedonic or utilitarian) advertised.

This thesis consists of three chapters. First chapter covers important topics regarding the concept of effective visual design for websites and variables that affect customers' purchase decision. Second chapter composes of neuro-marketing, its importance and the role of neuromarketing on the buying decision of the customer. Followed by neuromarketing examples from Turkey and World are provided. The last chapter is about the analysis of the research and methodology. The design of the research, sampling and the details of the application and the results of the research have been shared. In the methodology part two surveys, structured- interview and eye tracking methods are used.

CHAPTER ONE

WEBSITE DESIGN AND EFFECTS ON CONSUMERS

1.1. WEBSITE DESIGN

In today's world, having an attractive website is crucial for most of the companies, since companies' online presence can affect their business positively or negatively. If the website does not seem suitable with the business and also if it is not designed well in term of navigation, usability, color design and these kinds of technical necessities it will directly affect user's preference to continue or exit the website. Thus, having a website does not guarantee any success to a company. A good website necessitates a professional design whereby the business the company is in, the products, the target market and their desires should be considered and reflected.

Web design is very important because it is one of the touch points (in some cases the only one), where by the company and its customers interact. Thus; it is a place that the first impression, negative, positive or neutral is created. It is the window or mirror of a company. Product presentation on website will affect customers' in terms of the evaluation of products offered. They will decide about the business within seconds. In these first few seconds, seller who want to make a positive impact on customers should be careful about good and effective website design. Well designed web pages contribute a lot to the marketing activities. Thus creating a web page that will attract the attention of the customer and where the customer can find the relevant information is very important (Karagöz and Özel, 2013).

Also, if you are running B2C e-commerce business, it can be said that your potential customers include the ones who spend time to make research before shopping. It is being figured out that more and more buyers look into the prices and compare them and make a deep research before deciding to buy big things according to GE Capital Retail Bank's second annual Major Purchase Shopper Study (2013). Also the study states that 81 percent of the buyers go out to the shopping centers after they make an online research make an online research. E-commerce foundation

suggests that no matter they shop online or from the stores 88 percent of buyers look into their shopping online before buying in United States e-commerce country report (2018). So if the website includes quality, detailed and descriptive images, it will increase the sales.

Consumers visit the website not only for the products and the services of the business, but also for pleasure while surfing on the net. They will visit the website even if they aren't interested in the product at that moment just to learn some useful information. Also this benefit will lead customers to have a positive view and experiences about the brand and increase the potential to buy in the future. Website designers must design the websites effectively and properly to make it possible for the buyers to hang around the website and get information without getting bored and have the successful shopping experience.

According to Behrens (1984), for Gestaltists, contents vary depending on where it is located and the elements that surround it. It is important to understand Gestalt's design principle which is about one of the most important web design principles. According to Mullet and Sano (1995) Gestalt principles that apply in design are as follows: **similarity** principle, **proximity** principle or **contiguity**, **continuity** principle, principle **closure**, **area** policy and **symmetry** policy (as cited in Costa Aparacio, et al., 2004).

The principle of similarity: It is the visual properties of objects such as shape, size, color, texture, value are organized within themselves.

Proximity or contiguity principle: It can be defined as visually organizing of closer objects together which in groups.

Continuity principle: it is to guess the continuation of the figures.

Closure principle: It is the completion of the missing information.

The principle of area: It is that two visuals that are actually small are perceived as large by coming together.

Symmetry principle: It is the perception of the whole rather than part of a figure.

This theory mentioned above, tells us understanding of visual design and effects on consumer evaluation of website is also important. Because website is one of the most important parts of businesses that might create competitiveness and differentiate your company from competition. Efficient and effective ways of designing website are the keys of reaching success for businesses. For this success, there are a lot of elements which make website design impactful on consumers. It will be discussed in the next headings that, layout and composition; colors, fonts and images used in the website are very important and should be taken into consideration while designing a website.

In addition to those mentioned, one of the most important factors to consider is usage of images for effective visual design. Norman's theory can be consulted when we analyze the effects of an image on a website on consumer perception (Norman, 2002). Norman states that the first and immediate decisions are made depending on the visual elements of a website during shopping experience. According to Norman this is because the first and the dominant level of shopping experience is “visceral” which is defined as “look and feel” perception and this effects on a large scale the primary attitudes of consumers towards the website (as cited in Kim and Lee, 2002).

The other thing which is aesthetics related with visual design has an impact on consumers' attention towards website design. It is clearly defined in literature, since the ancient times the aesthetics has played an important role in social life (Arnold, 2016) The aesthetics of the images appearing on the website change the manner of the customers about the website. In addition, quality of the website design is an important figure to make them shop again and revisit the online shopping website (Rashed, 2013).

To sum up, when companies design their websites, they need to focus on the factors that will make the customers spend more time in the websites. For example, having an interactive website presentation, creative and appealing images, adequate information, harmony of design elements plays an important role for this pleasure experience. Appreciation of a website by the consumer is related to the positivity of his / her overall experience with the website. There are some researches about visual stimuli used for ads but the effects of online (Naponen, 2017). The visual subjects'

affectivity on their choices have not been clearly studied at online platforms (Usher and Skinner, 2010). It can be studied in depth to improve way of designing a website. The following part is about importance of visual design in web design.

1.1.1. Visual Design in Web Design and Dimensions of Visual Design

One of the key elements of web advertisings' success; is accepted as visual design (Cho, 1999). Being aware of the importance of the Internet, Singh and Dalal (1999, p.92) claim that "designing effective messages (ads or websites) is a key component in reaching the target customer". In addition, Duffett (2015, p.520) states that "ads should be carefully created to be interactive and encouraging".

Visual hierarchy is the basic element of any effective visual communication. It is an order that directs the reader to absorb information in a certain way (Pranita, 2015). Visual design aims to improve and shape the experience of users by taking into consideration the effects of colour, design, atmosphere, typography, the pictures and illustrations used (Estrada and Davis, 2015). As research shows, the first impression of the consumers is very important. It leads them either to like or to dislike a website. The enjoyment of the website design and images used will also create an impression regarding what is inside the website, and the usefulness of the website. (Heijden, 2003).

Websites are more than just a visual stimulus, they are a combination of images, audios and texts. In the Internet context, visual appeal has been shown to affect the quality of interaction between online stimuli and internet users (Chou, Chen et al., 2015; Lee, Ahn et al., 2015). For this reason, the use of various remarkable tools such as size , vibrant colors and animation used in web ads is extremely important in making an effective first impression on visitors. As Dreze and Zufryden (1997) stated, visual design for web advertising includes color, shapes, images, font type, font size and dynamic techniques, etc. As long as these mentioned factors coincide with the attitudes, beliefs and values of the customers, the effectiveness of advertising on consumers will increase (Braun, Latour et al., 2006).

In particular, product in online display has significant role in terms of the process of deciding to buy for customers on a website. For marketing of the product

via web, both product and web aesthetics affect the product quality perception. Perception of webpages by the online users could be affected by visual aesthetics of e-commerce websites (Deng and Poole, 2012). Also, the Visual Rhetoric theory (Scott, 1994), which includes design factors, is a widely accepted theory. This theory argues that visual elements such as images and colors can facilitate message delivery in terms of marketing, reduce the role of cognitive efforts and hence influence the target audience. Since its emergence 21 years ago (Scott, 1994), the Visual Rhetoric theory has become one of the most commonly referenced and powerful theories for predicting consumer behavior online. When referring to the design factors of a website, good design doesn't just mean having beauty and charm. At the same time, design should provide comfortable usability as it affects the emotional states of the consumer (Desmet and Hekker, 2007). Therefore, the consumer must feel a high level of usability to be able to call it a well-designed website (Cristóbal, 2006). A design that attracts a customer can evoke a sense of pleasure in a customer browsing the website (Flavián and Gurrea, 2008). As a result, adequate usability in relation to the convenience of the consumer can create a positive bias against the website in the consumer. Even higher levels of satisfaction, trust and loyalty towards a particular website are also related to the perception of usability. (Flavián et al., 2006; Kim and Eom, 2002; Chen et al., 1999).

Consumers' previous experiences and attitude can be defined as reaction of a person to an object or situation which brought by like or dislike approach. Previous experiences effectuate attitude which affect the acts of users in naming the attitude (Hasan, 2010). It means that shoppers' like or dislike towards online purchasing could be defined as attitude. Some authors emphasized the importance of consumers' beliefs and perceptions of the value created by the features of websites (Keeney, 1999; Torkzadeh and Dhillon, 2002). Other authors have addressed the key features of the quality of websites from a consumer's perspective (Aladwani and Palvia, 2002; Van der Heijden and Verhagen, 2003).

Consequently, to present aesthetic experiences and the visual effect on the website, communication also plays a great role. It doesn't matter if it's wanted or not; when a visual like a color, word or a text is used, visual communication starts. Therefore, it's not possible to ignore the importance of graphic design of the website

(Estrada and Davis, 2015). It is important for the visual designed product to be displayed in a way that looks familiar or natural to the users (Yamazaki et al., 2006). Familiar words used and perceived in visual design improve the understanding and mental assimilation of the given message (Bailey, 1989; Laberg, 1973). Familiarity with objects increases visual perception, as familiar objects are encoded and represented symbolically in analog spatial form (Wickens and Hollands, 2000)

Essentially, Arnold, Reynolds (2003) suggests that the design and the order of the shopping elements play an important role in defining the appeal of the customers. This proves us how effective the environmental issues of website are for the manners and the feelings of buyers. Visual design obviously doesn't only focus on the images in the website; it also refers to the "resolution and number of images, color harmony and the quality of the design." So the effectiveness of the B2C websites is impacted by the graphics, page layouts, presentation of the information, fonts, the use of animation and the proper use of multimedia (Tan et al., 2009).

Layout and composition, colors, fonts and pictures are main components which affect website design (Tan, 2009). In order to be effective, the design and layout of the web page must clearly relate the table of contents of the article to the content and separate this navigation element from other site-wide navigation. Visual and graphic information used in web design complements the textual information on the web pages and improves the navigation of the consumer. (Karanam, van Oostendorp, Puerta Melguizo, and Indurkha, 2009) We will discuss these components of visual design which is stated by Tan (2009) starting from layout and composition.

1.1.1.1. Layout and Composition

Page layout is an arrangement and is the style implementation of elements (content) on a page. In other words, it can be defined as the use of a combination of text (typography) and visual arts (verbal images, images and text design) (Ranade, 2016). Layout and composition are the backbone of a website. So, these are important components of a web design. First, a good composition directly will have effect on consumers' attention and their clear understanding. It is important, owing to

the fact that it is a way of a presentation of content on a website. Simple layout requirements, such as white space and composition, affect how people respond to visual stimuli. It can motivate the customers stand on the website or exit from it (Caulson, 1998). It is the composition balance that determines the visual balance for white space and the attractiveness of the page for a successful website (Swann, 1989).

Second, page layout emphasizes on designing style of web pages (Serrano, Roudaut et al., 2017). For example, people interpret information presented in a top-down way (Wickens et al., 2003). Lindsay and Norman (1972) argue that much of human perception occurs in a top-down way. Design preparation from top to bottom; improves consumers' letters, words, patterns and image recognition (Wickens and Hollands, 2000). Words are perceived faster and better understood than abbreviations or abbreviations (Norman, 1981). Thus, top-down processing enhances visual recognition (Palmer, 1975). Reading is slowed down by completely uppercase text, unlike normal text (Fisk et al., 2004).

1.1.1.2. Colors

Color is used in a design to capture the reader's attention, group elements in the design, and indicate meaning. The use of colors increases the quality of the aesthetic design. Therefore, using color is an important aspect of creating a great website. Colors have an important meaning and should be considered well before designing a website (Bonnardel, Bigot and Piolat, 2011). Web design may not be the same for everyone, some companies design by appealing to a certain gender. If you are one of these companies, you want to know what the favorite and least favorite color of men and women (Bonnardel, 2013).

Colors send messages to the brain directly and easily. Colors are not only used for design; they are also used for giving messages to consumers for product or a company (Singh, 2006). Communicating with the receiver and sending correct messages to them via colors is, therefore; important. There are a lot of messages sent to consumer that some of them should be differentiated with the components of a brand and also website. Furthermore, Large, flashing, bright and colorful items

attract more attention than others (Wickens and Hollands, 2000). A sudden stimulus, such as the burning of a light, also attracts visual attention (Wickens and Hollands, 2000).

In the past studies analyzing effects of colors scientifically and investigating of each color usage on any special human act were studied (Schachtel, 1943). Basically: it matters which color used to create an effect, contributes on user's purchasing process. (Belizzi and Hite, 1992).

In conclusion, marketers should address their target audience while designing their web sites. Colour can influence the retail shoppers of emotions, beliefs, attitudes and behaviours (Bellizzi et al., 1983). Factors to consider include demography (age, gender, industry, location, etc.) and the emotions you want to uncover. For example, blue refers to trust and loyalty and is used by financial companies such as PayPal.

1.1.1.3. Fonts

Font is one of the elements that also effect the sensation of buyers. Every font has different characteristics. It is used as a crucial tool to create an effect for designing an impactful website. The optimum use of the font is crucial for website selling (Tobola, 2019).

The font types used on websites differ according to the target audience; in that if a target audience is someone that likes extreme sports such as skateboarding and snowboarding then the font should be in grunge-style. Also, it is possible to create a new font which is sometimes prepared by special designers for usage of a special brand to differ from others in terms of brands outlook and target audience (Grohmann, Parkman et al., 2012).

In addition to matching your business personality, you should also make sure that your audience perceives your website and your message sits well with their idea. For example, if you're running a serious business, you might want to stay away from Comic Sans, but if your business is open-hearted and fun and you want to be portrayed this way, this might be the right font for you (Tariq, 2004).

1.1.1.4. Usage of Pictures in Web Design

Pictures are the one of the most important elements of visual design in terms of creating effect on consumer perception. It is known that the usage of pictures makes it easy to define the product and/or presented thing. If there is no picture for the product, then visitors of the website will try to figure out the thing which only has information. Pictures are the main components presenting the product, because it would be hard to presenting od product just with text (Baggett, 1989).

In addition, the sizes of pictures have important role in catching consumers' attention and consumers usually prefer to shop from websites where the image is used in big size without any text. To add with, increase in visual appeal is directly affected by non-text picture which is composed of big picture with no-text (Tullis and Tullis, 2007).

Reactions of online users are more positive for picture-based online shopping websites compared to the text-based website designs. Moreover, usages of images instead of text are not only important for website store appearance but at the same time creates the feeling of fun for the customer and make them feel safer (Oh et al., 2008).

Furthermore, sometimes it is not enough to use a picture to describe the product, that's why it is necessary to use variety of pictures, qualified pictures and realistic pictures. The usage of pictures is of vital importance on website selling because pictures too, include information about products. Because, the use of images in the design draws the attention of the viewer (Bleier, Palmatier, et al., 2018).

1.1.1.4.1. Usage of Human Pictures in Web Design

At first sight, using human pictures gives a chance to the buyers to imagine how the products would look because they interiorize the human and/or part of human showed in the website. So, as a visual element; usage of human picture can create big impact on consumers purchasing decision.

In the second place, usage of human picture is also important in terms of engaging emotions of consumers. It is possible that giving this sense via highly qualified photos in terms of technical and aesthetics. In other parts, we have

discussed the importance and the effect of presence of visual image on online websites; we may also mention the “beauty” of these pictures and the positive effect that they create on buyers. As Tobola mentioned that the matter of beauty also effects on marketing and sales (Tobola, 2019). It can be understood that not only adding a human pictures on a website, but also taking the pictures’ beauty standards into consideration will play a crucial role on sales.

In conclusion, to find a picture appealing depends on what the customers expect and what they’re interested in. Chau et al. (2000) in his study found that presentation of information effects customers’ shopping manner. Also the interest of a human brand’s picture is related with all the other known human brands. It is important we know that the usage of product’s picture influences effectiveness and efficiency for buying process better than its text.

1.2. BANNER ADVERTISEMENT IN WEB DESIGN

As Internet technologies evolved, e-commerce has grown, offering consumers various forms of advertising (for a general review see Ha, 2008). When we examine the current literature on Internet advertising, it is revealed that Internet advertising is editorial, fun, useful, valuable and important. Ducoffe's (1996). Online advertising is a sales strategy that mediates the Internet to generate website traffic and deliver marketing messages to the right customers.

The most common of these is banner advertising (Cho, Lee et al., 2001). Online Banner advertising is a different type of advertisement than a standard advertisement in terms of visual quality, attention-grabbing ability and creative application. In fact, the most efficient form of online advertising is banner advertising (Term Tech, 2014) Banner ad is often defined as a " online ad slot, consisting of a combination, and includes an internal link (information on the advertiser's host site) to target the ad pages, or an external link to the advertiser's Web site via a click-through URL (Chatterjee, 2005). Online Banner ads are text and graphic images that are hyperlinked to the advertiser's uniform resource finder (URL). The aim of online banner advertising is to raise awareness about the brand and attract the attention of internet visitors (Dreze, 2003).

Traditional banner ads (also called display ads by the Internet Advertising Bureau) use graphics and sometimes textual images to promote a product brand. Text-only ads (also known as Google-style a Text-on ads, contextual ads, or search ads) usually use a simple font or font without using photos. This is because such ads usually appear next to a list of text when a person performs an Internet "Google search". This approach is usually a match of sponsor's messages and consumers' search terms (Ciaramita, Murdock et al., 2008; Li and Zhang-Li, 2009). Text-only ads can be easier and cheaper than display banner ads, as they are often not required to create a professional photographer and advertising staff.

According to Pieters and Wedel (2004), image perception relies more on "automated, parallel, fast and less troublesome environmental and preattentive processes; "The perception of written text," "the more voluntary focus is based on painstaking processes, serial, slow and laborious " (Kimefeld, 2001). You can benefit from both sub-systems of the brain by transmitting additional information about photographic display ads and text usage, increasing memory compared to text-only ads (Mayer, 2001). In a study of more than 1,300 printed advertisements using sophisticated eye movement tracking, Pieters and Wedel (2004) found that pictorial ads attract consumers more than just text ads. (Goodrich, 2011).

Since the photos attract more attention, they can also improve the product recall feature. Shepard (1967) asked the subjects to examine 612 stimuli and then to examine 68 double stimuli. Each pair included one of the original stimuli and a stimulus never seen before. Stimuli consisted of words, sentences or pictures. Subjects were asked to choose the stimulus they had seen before. Correct recall rates were 90% for words, 88% for sentences and 98% for pictures.

In addition, a nice photo with a product brand may produce a positive emotional response (Edwards, 2009) and photos may have more emotional attitude effects when the amount of text is limited (Kim and Lennon, 2008). By adding photos, display ads can increase the likelihood that the consumer will develop a positive attitude towards the product brand when served with such ads (Mitchell and Olson, 1981).

A banner advertisement with photos allows customers to see some of the features of the product they are interested in and learn more about that product. It

may also attract consumer attention to further investigate the product (Edwards, 2009; Mitchell and Olson, 1981). In contrast, consumers may choose to ignore some of the advertisements. Since pictures are the factors that attract the attention of consumers, consumers are less curious about the photos in banner ads for the products they are interested in. In fact, consumers can react negatively to advertisements that they are not interested in.

According to the study of Im, Lennon et al., (2010), the pleasure of both the aesthetic design of a photo website and the images contained in these photos affect the intention to purchase. In general, attitudes towards products are related both to the function of the consumers' understanding and the cognitive details on the message in the advertisements as well as the affective response to the advertisement (Wyer, 2002).

Many scientists have investigated the relationship between online banner advertising and purchase intent, various aspects of online advertising, and their impact on consumer intent to purchase. Kimefeld found a pragmatically strong influence of advertising in predicting purchase intent (Kimelfeld et al., 2001). Consumers are more likely to purchase a product when they react positively to an advertisement related to a product (Haley et al., 2000). Similarly, Raney et al. defined Purchasing Intentions as an important indicator of the success of online advertising (Raney et al., 2003). While this attitude shows that it has a positive relationship with purchasing intentions, the factors that mediate the relationship between attitudes and intentions are uncertain. Many studies think that the attitude towards advertising has a significant impact on the consumer's intention to buy.

In conclusion, a banner advertisement with a photo allows customers to see some of the product features so they can learn more about the high participation product; it may also attract consumer attention in further research of the product (Edwards, 2009; Mitchell and Olson, 1981). Therefore, advertisers who want their products to look attractive will be wise to choose the ad type by product type. The ad should be placed on compatible web pages with the product.

1.3. FACTORS THAT INFLUENCE THE DESIGN OF A WEBSITE

In recent years, a lot of research has been done to determine what factors contribute to the success of a website. It has been concluded that the consumer's perspective is the most important factor in designing a successful e-commerce site. In general terms and within the scope of electronic commerce, a successful website means "a website that attracts customers, makes them feel that the site is reliable and creates customer satisfaction" (Liu and Arnett, 2000)

Users' online experience means the process the consumer goes through while using the Internet (Zhou et al., 2007). The quality process that online users have in online shopping plays an important role in deciding whether their perception of the website is good or bad (Constantinides, 2004).

In addition, various studies have been conducted in order to enumerate these determining factors and highlight the importance of ensuring online customer satisfaction (eg Zviran et al., 2006) and its effect on purchasing intention. (Ranganathan and Ganapathy, 2002). They insist on examining online consumers' perceptions to identify aspects that might affect their online purchasing attitudes and intentions. These authors determined that aspects related to product perceptions, shopping experience (eg required effort, convenience), services (eg sufficient information and attractive appearance), and perceived risk (eg payment, possible dissatisfaction) were determined by consumers' buying attitudes and intentions.

Often the development of website design is understood as paying attention to website layout and website content (Liu and Arnett, 2000). However, companies that focus too much on design and content lead to poor Internet marketing (Fan and Tsai, 2010). Businesses will be more successful if they can adopt an Internet marketing strategy (IMS) and direction. In this way, companies will create value and loyalty with their customers. In fact, it will increase the customers' intention to buy from a certain shopping site and their loyalty to that site (Fan and Tsai, 2010). Keeney (1999) stated that internet shopping does not mean anything on its own since it is a process method, not a product. Finding out what internet shopping means to customers can be possible by directly asking customers. It can be summarized that factors affecting the web site satisfaction; the convenience of the website, the

environment of the website, customer relations and product value (Torkzadeh and Dhillon 2002). Increasing value for both businesses and consumers in the buying and selling process is the main purpose of marketing. Also marketing; it means strengthening the importance of this value (Kotler, 2003). Therefore, Internet marketing should provide not only a sales channel for businesses, but also a broader Internet market (Daniel and Janal, 1995). Depending on the different shopping motivations of internet shoppers, there are differences in different IMS preferences of shoppers (Hoffman and Novak, 1996). Therefore, businesses should distinguish between different consumer groups, taking into account the characteristics or attitudes of different consumers. And then a marketing strategy should be developed by companies based on the needs and expectations of these consumer groups (Armstrong and Kotler, 2000).

There are some previous researches which emphasized that websites are prepared according to gender. There are also some researchers who underline the different issues like website trust, satisfaction depend on website design and gender difference. Firstly, website design and satisfaction studied by Cyr and Bonanni at 2005, second one is website trust studied by Awad and Raowsky in 2008 and also Riedl et al, 2010 and the third one is online risk studied by Garbariona and Strahilevitz in 2004. As a result, Cyr and Boanni (2005) suggested that gender plays a crucial role, creates differences between the responses from customers' point of view on webpages.

Online shopping behavior is commonly studied by researchers. However, there are still limited studies which include gender and website. Therefore, it is important that gender differences should be taken into account while designing a website. In previous studies, this term was analyzed in accordance with factors such as perception, attitudes, motivation, preferences, perceived risk and satisfaction which affect consumers' behaviors. So, analyzing these factors in this term plays a crucial role in creating and shaping of form and content of a website as an effective one. Therefore, it is necessary to recognize these factors to help sellers create better online shopping experience according to gender.

In addition, for the best marketing strategy gender differences must definitely be analyzed as women and men show distinctive differences in shopping behavior

(Meyers-Levy and Loken, 2015). As an important element, website design plays crucial role in purchasing process of buyers (Allen, 2001; Kwak, Fox et al., 2002). At the same time, understanding of website design depends on gender. Women see the same website as less visual and less satisfying for their wants and expectations as men do otherwise. That means it is of vital importance to figure out the differences between two genders' visual attention in order to create and develop online shopping strategies.

There are a lot of researches which support men buy and spend more money than women in internet shopping. In addition, online shoppers though it is risky prefer buying products online to pay less and save more time. (Petrtyl, 2012).

Secondly; ease of use of a website is important. For instance, with the intention of getting in their consumers' minds, clothing sellers are using newly occurring technologies for their websites to make "easier atmosphere to buy" while shopping (Grannis et al., 2007). Creating an easy atmosphere to shop using up to date technologies plays more important role for females rather than males, which makes us understand how big the effect of gender is while online shopping (Venkatesh and Morris, 2000). Hence, women tend to pay attention to details more than men.

Thirdly, types of shopping motivations should be taken into consideration in designing a website and online presentation of a product. Online shopping motivation is categorized in two different motivations by Huand and Yang (2010) which are utilitarian and hedonic motivations. The first category emphasized rational approach to shopping such as time saving, product related information, price comparison and cheaper price which is the most traditional way of shopping (Sar Kar 2011; Veronika 2013). The second category is hedonic, as an emotional approach, purchasing products for liking; enjoying or feeling excited is the main cause of an online shopping experience.

In conclusion, we can say that there are many factors that affect website design, but most of the factors studied in the literature to shape a website are target market, types of product and hedonic and utilitarian type of shopping motivations. We will focus on these main factors that should be considered in order to design the website for the right target audience.

1.3.1. Target Market

Target market is a very important dimension of an effective marketing strategy. It focuses on people who are likely to invest the product or service of a business. Target audience can be identified as the population or community likely to show the most demand for the product or service sold (Camilleri, 2017).

Darley and Smith's study also proves that the brain reactions to visual elements are different in women and men (Darley and Smith, 1995). When neutral, positive and negative visual elements are shown to both genders, different parts of the brain of both genders get activated. For instance, positive pictures activate frontal lobe more in males than females and females show more powerful activation in the anterior and medial cingulate gyrus when they see negative pictures (Wrase et al., 2003). This difference in men and women also has a vital role in terms of perceiving design, color perception and preferences on a website.

Along with gender differences, another demographic element that affects perception is age as previous studies present. These thoughts came up with an example explaining that the elderly need more time to identify a visual element than young adults; hereby, we can understand visual perception also depends on age (Eriksen et al., 1970). It is very important to analyze demographic information, Internet usage habits and shopping motivation of customers in order to determine segmentation in the Internet environment of them. The use of these segments is important to anticipate a customer's interest in online advertising and online shopping, and their expectation from a website (Rodgers, Moore, and et al., 2007). For example, today, a lot of studies stated that gender has crucial effect on customers' buying behavior (e.g. Fon and Miao, 2010). First of all, men and women are totally different in terms of rationalization, motivation and attitude towards shopping (Hasan, 2010). It can be stated that females and males show differences in not only every aspect of consumption but also in product preferences and attitudes towards advertisements. Secondly, Acturan (2011) stated that, consumer behavior changes according to gender in terms of expectations, wants, needs, products, attributes and other factors. Women care more about shopping as emotional and psychological duration compared to men (Noble, 2006). Women prefer shopping to

satisfy themselves with longer time than men (Mitchell and Walsh, 2004). According to Slama and Tashchian(1985); buying arrangement is more important for women and they also want to see more information and spend more time in shopping compared to men(Zeithaml, 1985). Therefore, women shop more carefully and spend more time at steps of shelves more often to revise all available product information (Haeusel 2008; Wintinger, 2009).

On the other hand, men have tendency to stop within minimum time and effort (Kuruwillajeshi and Shah, 2009). So, men look for less information and are less worried about variety of products, so men take less effort (Mitchell and Uvalsh, 2004). Female shoppers have a tendency to plan their shopping; however, male shoppers have tendency to shop using their impulses (Wang, Chen, Chang, and Yang, 2007). This makes us understand why there's a difference between the durations of online shopping of males and females (Van Slyke et al.,).

Thirdly, various types of products are preferred by male and female consumers. Males tend to buy search products, but females tend to buy experience products (Van Slyke et al.; Zhou et al., 2007). Electronic products, hardware and software which are search products are usually chosen by men; whereas food and beverage and clothes which are experience products preferred by women (Zhou et al., 2007).

Fourthly, the differences in hormones also affect shopping habits in males and females, because hormones play crucial roles in the activation of brain. We can say that there are two main theories about this brain activation of the genders, which are selectivity theory and gender scheme. The first one states that women and men process any type of information and analyses by using different hemispheres of the brain. This proves that there's an important difference of the recognition of a visual between the genders. Women tend to make more detailed analyses of the pictures because they are using their left-hemisphere. That's why more informative contents would be more appealing for women. On the contrary, men who are using right-hemisphere tend to recognize more remarkable information to make any judgments instead of analyzing the details. The second theory focuses on how cognitive structures are processed and how this affects the way of perception. Because

cognitive process differs, also ordering, organization and memorization differ in males and females.

On the other hand, consumer motivation is seriously affected by gender. Seock and Bailey's (2008) suggested that women have higher hedonic motivation tendency because of their high level of enjoyment, brand consciousness, price consciousness and shopping confidence than men. The shopping enjoyment and shopping confidence are linked to feelings and also are signs of hedonic motivation. However, men care about time saving more than women. That's why it can be inferred that time saving as a functional concern, related with shopping process can help state men as utilitarian. Based on this information, males tend to have utilitarian motivation in online shopping.

"Given that the Internet is used differently by different individuals (Rodgers and Sheldon, 2002), research on segmentation may be useful for understanding how segments think and act differently from each other and they should be approached using different promotional strategies" (Rodger, Moore, and Cannon, 2007). In this field, there're limited researches studied to be consult on addressing gender differences. Internet sellers should examine how to push female consumers' "buy button for clothing shopping online (Van Slayke et al) because originally, online shopping was intended on men (Rodgers and Harris, 2003). So we can say that's why this area of study's been chosen for this article. Embracing all these ideas, we end up with the idea that gender differences is a crucial issue in e-commerce area. In the meantime, preferences of consumer should be taken into consideration by online retailers (Erginand Akbay, 2015).

Culture is also one of the most important thing affecting create a target market plan. When identifying a cultural group, you aim, their shopping behaviors and lifestyle. The visual design space contains many topics to keep in mind, ranging from differences in cultural interpretations of red color to the correct use of white space, universal taboos, such as adjusting red elements against blue backgrounds. Colors can have different meanings through mappings, shadows, context, content, vitality, culture, location, tone and many more should be taken into account. Blue is often a color that feels respected and appreciated in many different cultures (Marcus and Gould, 2000). The meaning of blue is often defined as a color

associated with security, wealth, and trust (Lichtle, 2007). Therefore, it is important to know how color affects people from different countries. Some authors argue that gender differences claims that there is a difference in color preferences between cultures (Hurlbert and Ling, 2007). Some authors claim that there are no such differences (Taylor, Clifford, and Franklin, 2012).

Smith et al. defines cultural design elements as "cultural attractors "and lists them as: Colors, color combinations, banner ads, trust signs, use of metaphors, language cues and navigation controls (Smith et al, 2014). Sun focuses on only four major categories of cultural markers: language, images, colors and page layout (Sun and H., 2001)

The marker selection of websites can be defined from a web design that meets the preferences of a particular group of users. Moreover, being a combination of culture and usability in web design, "acculturability" (Barber and Badre, 1998) affects the user's perception of reliability and credibility of websites (Cyr et al., 2004) and (Fogg and B.J.,2002).

1.3.2. Types of Product

Product presentation and aesthetic design play a crucial role for consumers in their decision making process. However due to differences in products, the way each type of a product should be presented might differ. As it is known from the previous studies, utilitarian and hedonic type of products might need different marketing strategies and different presentation techniques in the print advertisements as previous research also suggests (Batra and Ahtola, 1991).

As mentioned above, products could be stated as hedonic or utilitarian. Hedonic products can be defined as dealing with sensory attributes and focuses on emotional satisfaction towards the consumer. Utilitarian products can be defined as the component relates to functional and non-sensory qualities (Batra and Ahtola, 1991).

Giving pleasure to the customer with clothing and jewelry products can be seen as emotional satisfaction in hedonic terms. Regarding that, these are examples of

hedonic type of products which make people feel pleased (T. Kushwaha and V. Shankar, 2013). On the contrary, electronic products and grocery are the examples of utilitarian products because of their benefits and their functionality (M.Z. Azhari and A.Z. Afiff, 2015).

Thus, it would be concluded that, usage of images as visual element of the web design should be differentiated according to product type being advertised. The aesthetic perception of the images is formed according to the type of product requested by the customers. For example, while utilitarian products need more informative texts, in hedonic products; the image must be put forward. Moreover, as a selling strategy, website can be shaped on the concept of utilitarian and hedonic product presentation. Both product types and types of shopping are determinative factors for visual design of a website. So, the utilitarian and hedonic shoppers may also have different expectations from website designs.

1.3.3. Hedonic and Utilitarian Types of Shopping

As well as hedonic and utilitarian products, there can be hedonic or utilitarian type of shopping. In other words, consumer's shopping experience also could be examined as hedonic and/or utilitarian. Schechter (1984) told that: There are some values for the shopping experience, for customers, that is, "all factors, quantitative and qualitative, subjective and objective." This idea defines utilitarian as conscious and planned attitude, but hedonic type of shopping as more random and less conscious (Babin, Darden and Griffin 1994).

Shoppers could be categorized into two different groups which are utilitarian and hedonic resulted in via previous researches. Based on this information we can say that shoppers mostly have different attitudes for purchasing process (Kang and Park-Poaps, 2010). Once more, Bobin, Darden and Griffin (1994) recommended that shoppers' interpretation of shopping experience could be determined on two vital aspects; hedonic and utilitarian ones.

"Hedonic" and "utilitarian" type of shopping concepts have been studied commonly. Usage of these concepts to measure, depend on what aspect of a brand visually we analyze. Benefit of a product, brand attitude or the shopping value could

be measured via these two concepts; hedonic and utilitarian. As hedonic shopping can be described as a shopping value, which is about the pleasure being formed during shopping, it raises the emotional value.

Furthermore, hedonic shopping can be described as a shopping value, which is about the pleasure formed during shopping, it raises the emotional value. Hedonic buyers find the clothing important, so they show interest in fashion according to Choi. This type of buyers perceive expensive products as high quality as they have certain level of aspect and confidence. This type of shopping value is more personal than utilitarian because it's about the joy caused during shopping (Choi,1997). We can give apparel as an example, that is one of the category for hedonic product type, including clothing, shoes, accessories, handbags and other fashion related products (Y. Ha and L. Stoel, 2004).

Sentimental attitude is valid for hedonic motivation. In this case, online buyers are motivated by emotions and feelings owing to the fact that they are excited and want to have a good time during Internet shopping. It is also known that buying behavior does not matter, for the hedonic and/ or utilitarian motivation is affected by emotion (Bhatnaga and Ghosh, 2004; as cited in Sarkar, 2011; Seock and Bailey, 2008; Topaloglu 2012).

Hedonic consumer's behavior differs from utilitarian consumers. Their purchases are exclusively based on emotion, rather than function especially the feeling of joy. These consumers seek more products after a purchase. They have a feeling of immediate satisfaction. Let's say, for a hedonic consumer: what they purchase does not appear too important rather, it is more about the experience and the emotions that they feel while shopping (Wertenbroch and Dhar, 2000; Arnold and Reynolds, 2003; Kim, 2006; Cardoso and Pinto, 2010; Ballantine et al., 2010).

Moreover, Ryu et al., (2010) stated that there is a significant relationship between future purchasing goals of consumers with perceived hedonic and utilitarian values of products and the atmosphere the products are in websites. This relationship therefore, influences satisfaction of consumers and future possible purchasing of them

Taking the value types in consideration, Ryu et al., (2010) mentioned that most of the researchers have figured out the high relation of consumer's taken

utilitarian and hedonic values and significant consumption variables, as an example customers' behavioral objectives, fulfillment of their demands directly affected preferences and results (Overby and Lee, 2006).

Recent studies have showed that utilitarian and hedonic sides of an online shopping have big effect on purchasing process. Utilitarian aspect of shopping contains specific product and/or service demand, but hedonic aspects involve several specific shopping wants that are associated with looking for pleasure (Kang and Park-Poaps, 2010).

Hedonic buyers find the clothing important, so they show interest in fashion according to Choi. These type of buyers view expensive products as high quality, as they have certain level of aspect and confidence. This type of shopping value is more personal than utilitarian because it's about the joy and pleasure it gives during shopping (Choi,1997).

As usual; buyers who act logical for process of purchasing in online can be classified as utilitarian people. As quoted already, gain of Internet buying (e.g preventing time waste, detailed data related with product, look for great offer and inexpensive price) can be seen as utilitarian motivation because the buyer makes reasonable shop from the Internet (Gayathiri, Balachandran and Usha, 2014; Sarkar, 2011; Veronika, 2013). To give an example for this type of shopping motivation, electronics which are utilitarian type of products cover all the types of products beginning from small ones to large appliances like televisions and fridge and others (J.M Carpenter and V. Baliya, 2010).

An advantage of the product can be hedonic and/or utilitarian. These products offer gain to the customer. Hedonic products make consumers feel excited and enjoyed, but utilitarian ones give people a sense like consumer is getting utility and usefulness about the product (Betra and Ahtola 1990, Hirschman and Holbrook 1982, Mano and Oliver 1993).

Lastly, it is not necessarily that the product should be absolutely hedonic or utilitarian. Level of product attribution can change depending on the product, in terms of being hedonic and utilitarian. It means that a product can be hedonic and utilitarian at the same time. Moreover, hedonic product can be seen as utilitarian for

the other person, depending on his product attribution (Crowley, Spnzenberg and Hughes 1992).



CHAPTER TWO

NEUROMARKETING AND APPLICATION IN WEB DESIGN

2.1. NEUROMARKETING

Today, traditional market research methods are insufficient to understand the consumer and determine their needs. For this reason, neuromarketing is a helpful technique for supporting and complementing the traditional methods of market research thus, aiding in the development of marketing strategies by examining the depths of the human brain. The concept of neuromarketing has emerged to meet this gap. Neuromarketing is expressed as the biggest improvement that helps to understand the reason behind consumer behavior. (Erdemir and Yavuz, 2016).

Neuromarketing is defined as “the science that investigates how the human brain works, how it decides, and the level of exposure to emotional, cognitive, and sensory stimuli in the decisions it makes, and ensures that research is proven in the field of marketing” (Yücel and Çubuk, 2013). According to another definition, it is expressed-as a field of study that can be defined as the application of neuroscientific methods to analyze and understand human behavior in relation to markets and market changes (Lee et al, 2007).

Measuring the change of activities occurring in different parts of the human brain; It shows not only why consumers prefer this good or service, but also which part of the brain plays an active role in this choice (Ural, 2008).

As a result, neuromarketing can be defined as neurological examination of the reactions and mental activities of individuals when they encounter a marketing message (Özdoğan et al., 2008). In other words, it is possible to define the use of neuroscience techniques in determining the responses of the human brain to marketing stimuli (Aytekin and Kahraman, 2014).

2.2. THE IMPORTANCE of NEUROMARKETING

Today, marketing should move focus groups and other traditional marketing techniques forward. If companies want to get any feedback about a product or an advertisement or message, they should get into the minds of consumers. While the signals from the brain are more likely to show what subjects think and feel in reality, the information obtained during the focus groups may not be accurate. In today's visual pollution, getting out of the clutter is very hard. For this it is very important to understand what your consumers are actually feeling about your messages or advertisements. By just asking them it might not be possible to reach a correct answer. However, neuromarketing provides a much deeper understanding for marketers. Getting to know the audience and understanding their behavior means also understanding what your advertising campaigns look like from the perspective of the consumer. Thus, neuromarketing presents a way of fulfilling these demands to improve products and campaigns. It will provide more accurate results than traditional techniques. For this purpose, neuromarketing uses special devices to measure consumer responses.

Neuromarketing concept has emerged as a new marketing field (Aytekin and Kahraman, 2014), enabling marketers to have formation about the subconscious feelings and decision-making processes of the consumers (Ural, 2008). Neuromarketing can analyze issues that cannot be fully measured by traditional research methods such as brand trust, pricing strategies, advertising, and sales techniques (Ural, 2008).

Usage of neuromarketing techniques enables marketers to understand the consumer behaviors and the process of decision making. Thus it could be said that neuromarketing might open a window for marketers that are looking for a "buy button" (Kühn, et al., 2016) or a way to enter the "black box" of consumers (Singh and Sharma, 2010). While previous studies on neuromarketing have focused only on brands (Khushaba et al. 2013), neuromarketing has also been applied in various environments such as packaging design (Khushaba et al. 2013), advertisement (Hae Won Ju and Johnson, 2010; Uva, Freitas and Paiva, 2015), eating behavior (Khushaba et al., 2013) and online research (Tejkl, 2012).

The importance of neuromarketing is increasing. While marketing tries to understand the psychology of human behavior, neuromarketing tries to understand the biology of human behavior (Butler, 2008). In fact, neuropsychology examines the cognitive and psychological interactions between the brain and the individual, while neuromarketing explores consumer behavior from the perspective of the brain (Morin, 2011). It also gains importance revealing consumers' needs and what they think about products and services. A neuroscience study indicates that peoples' mind can process hidden data and response can be shaped about the stimuli unconsciously (Cohen, Cavanagh et al., 2012). Therefore, the use of these new methods, called neuromarketing, has started to become common (Giray and Girişken, 2013). In the later sections, techniques / devices used in neuromarketing studies will be discussed.

2.3. NEUROMARKETING RESEARCH TECHNIQUES

In neuromarketing research, people's physical and cognitive reactions towards every stimulant can be measured by specific devices. There are mainly two types of measurements: Neurometric and Biometric. Neurometric is a technique that monitors metabolic and electrical activity in the brain. Important measurement methods used in neuromarketing research are; nerve muscles activity, heart rhythm, electrical voltage on the skin, biometric responses in respiratory and sweating functions, subliminal responses of the face with signals sent to the body by the brain (Erdemir, 2015).

Biometric is a measurement which try to discover the physiological reactions of the body to stimuli which include of visual, sound, odor, shape or words that are out of control the people. Further, they use different tools like Functional Magnetic Resonance Imaging (fMRI), Positron Emission Tomography (PET), Electroencephalogram EEG, Steady State Typography (SST), Transcranial Magnetic Stimulation (TMU), Magnetoencephalography (MEG), Eye Tracking (ET), Faction Action Coding System (FACS) and Galvanic Skin Response (GSR) which would be explained in the following parts in more detail (Akan, 2018).

2.3.1. Neurometric Measurement

Neurometric measurement is a technique which can detect our brain's cognitive and emotional responses. It is used to measure neural activities in our brain. By the use of these techniques, the thoughts of consumers about products can be interpreted more coherently. Which is very important because, unconscious effects play an important role in purchasing decision of consumers' (Newell, B., et al., 2014).

At the same time, using neurometric measurement helps the ones who want to develop a strategy and is more practical than biometrics types of measurement (Akan, 2018). Neuroimaging methods, which are based on the measurement of neural activity in the brain, are considered to be costlier methods than biometric measurement methods. However, by the accuracy of the neurometric analysis' results, these types of measurement started to be preferred more. These types are going to be explained below (Gedik and Kesek, 2017). Neurometric measurements use different tools like; Functional Magnetic Resonance Imaging (fMRI), PET, Electro Brain Radiography (EEG), Steady State Typography (SST), Transcranial Magnetic Stimulation (TMU) and Magnetoencephalography (MEG) which are explained in below (Akan, 2018).

2.3.1.1. Functional Marketing Resonance Imaging (fMRI)

fMRI was introduced in 1990 with the help of magnetic resonance imaging, which measures the density of the blood in the brain. The regions where the amount of oxygen is increased indicate that the communication of neurons with each other increases and consumes energy. The regions, in which the brain is active, require more energy and consume oxygen and glucose in the blood in order to meet this energy need. This method provides important clues about the discovery of the brain (Lindstrom, 2008).

In this method, emotional reactions of the subjects can be detected in real time (Zynch and Laursen, 2009; Erdemir, 2015). Brain imaging covers of the duration of transferring the movement of the central nervous system, which is the

key player of the brain, ranging from digital to graphical data via various devices and cables. Therefore, it is foreseen that behavior of consumers will now be more measurable via data gathered from them (Tuzel, 2010). Moreover, by using fMRI method memory coding and sensory cognition tests can be executed. At the same time emotional attachment, consumer needs and expectations, trust level, brand loyalty, brand preference, brand recalling can be measured. It is generally used to analyze the new products, campaigns, advertisements, and the packaging design as well as to spot the important parts of an advertisement or a video. GSR will be beneficial in the studies where sensory analysis needs to be done. The biggest advantage is that it provides a deep, detailed, high resolution display on the variations on the brain activity (Zurawicki, 2010; Plassmann et al., 2011). Sensory and perceptive reactions can be measured precisely (Plassmann et al., 2011). As a disadvantage needs to be mentioned this method is expensive in cost and requires a pre-condition that experiment subjects must be steady and restricted in body movements during the process. Also the data collected has a high level complexity for analysis and is not convenient for evaluation (Savoy, 2005; Kenning et al., 2007; Plassmann et al., 2011). (O'Connell et al., 2011).

According to the studies conducted, the data gathered by old methods are verbal answers. People sometimes don't answer the questions properly that are asked to them for various reasons. Because people may not be able to put words into what they really feel. This problem in consumer research is expected to be solved by using brain imaging studies (McClure, 2004; Kenning et al., 2007).

2.3.1.2. Positron Emission Tomography (PET)

Positron Emission Tomography (PET) is one of the most high-tech nuclear medicine imaging techniques. PET is a high cost technique. It is often used in clinical trials. It is not a technique used in marketing research since radioactive material is used during the analysis. However, since it has brain imaging features that can be used in experimental applications, it is ranked among neuroimaging techniques (Çubuk, 2012; Akin, 2014).

In addition, the information about emotional loyalties, sensory cognition can be obtained by PET method which is used in new product analysis, advertisement analysis and packaging design analysis. It includes high spacial resolution (Kenning et al., 2007; Zurawicki, 2010). This method makes it possible to measure sensory and cognitive reactions in a safe and proper way (Wang et al., 2008). As a drawback biochemical changes may cause to obtain wrong results (Kenning et al., 2007). Also it has low timewise resolution. Additionally there are some ethical obstacles in application like interference in private life (Wang et al., 2008).

2.3.1.3. Electroencephalogram (EEG)

EEG method developed by Berger (1929) measures electrical activity in the brain. At the same time, the method is a very accurate measurement of the electrical communication of close to 100 billion neuron cells in the brain. To apply this method, small electrodes are placed on the scalp and potential changes between the two electrodes are recorded to the computer and then interpreted by the expert (Erdemir, 2015).

EEG can be used for; commercial analysis and development, new promotion analysis, web site design analysis. Also can be used for shopping experience analysis and product/service slogans analysis. Parameters such as level of attention, level of concern, level of excitement, level of perception, memory-coding and brand recognition can be measured by EEG which is a main cause for the preferability of EEG (O'Connel vd, 2011). Main advantage of EEG is its User-friendly design. EEG includes high temporal-resolution. This is how it can provide full-perception of brain activities which are related to rapidly changing stimulators (Ohme vd., 2011). Also can provide comparison of left and right brain lobes. There is a strong corelation between EEG assymetry and personality characteristics. Also has softwares which can provide statistical analysis (Plassmann vd., 2011). Plus EEG is a mobile device. As a disadvantage since the personal electricity conductivity differs from individual to individual recorded signals can not be located precisely (Kenning vd., 2007; Zurawicki, 2010). Emotions can only be defined as positive or negative (O'Connel vd., 2011). Complexity is mid-leveled (Plassmann vd., 2011).

2.3.1.4. Steady State Typography (SST)

The Steady State Typography (SST) device was developed by Professor Richard Sillberstein. SST is a device that records the differences in electrical potential between the various areas of the brain. It is the most advanced version of EEG that has the advantage of instant response measurement, measures the electrical activity inside the brain. Therefore, SST is an ideal tool for recording the brain activities of people looking at any visual stimulus in real time (Varinli, 2012). At the same time, with the SST technique, which half of the brain works more intensely and the right and left brain differences can be determined (Rossiter et al., 2001).

Attention level can be used as measurement for visual and olfactory stimulants, interest levels and consumer behaviors. Analysis of printed and visual materials is preferred when analyzing in brand communications, advertisements, movies and trailers. The most important advantage of SST is that it allows tracking of rapid changes in different parts of the brain (Bercea, 2013). In fact, long-term monitoring of fast and continuous brain activities is possible (Silberstein, 1995). It is also preferred because of its ability to provide data collection by ignoring factors such as head movements, muscle tension, eye movements and noise (Silberstein, 1995; Gray et al., 2003). Providing low spatial resolution data is an important constraint of SST (Bercea, 2013).

2.3.1.5. Transcranial Magnetic Stimulation (TMU)

Transcranial Magnetic Stimulation (TMU) technique is used in the detection of electrical activities occurring in brain regions in the process of perception and thinking. This technique, which is less costly than fMRI and PET has disadvantage as it cannot go beyond the neocortex, the hearing and vision region of the brain. This situation prevents the use of the device to become widespread. It is used with EEG and MEG techniques to obtain more reliable and consistent data (Bercea, 2013).

In summary, it's defined that method of TMU measures attention levels, cognition levels and behavioral changes in neuromarketing researches. The areas of study of this method are analysis of new products, analysis of advertisements,

analysis of packaging design, the analysis related to marketing stimuli. There are some advantages and disadvantages of this method; being able to be mobile, getting results related to behavioral changes analysing the brain activity are from the advantages (Plassmann et al., 2011). Also by the help of this system the causes and behavioral reactions can be assessed together (Perrachione et al., 2008). Furthermore this method is able to be used in causality studies for mental processes and the parts of the brain (Plassmann et al., 2011). One of the drawbacks is its high cost. And the parts of the brain cannot be stimulated directly (Bercea, 2013).

2.3.1.6. Magnetoencephalography (MEG)

The level of perception, attention and memory can be measured with MEG. New product analysis, analysis of advertisements, analysis of packaging design, determination of consumer needs and sensory analysis are common areas of use. Another advantage of MEG is being able to detect changes in chemical composition or the fluctuations in the fluid flow of the brain. (Wang et al., 2008). It provides a reliable and valid measurement of emotional and perceptual responses (Wang et al., 2008). It also has high temporal resolution (Kenning et al., 2007; Ariely and Berns, 2010). Requiring a special place for conducting experiments is an important constraint (Zurawicki, 2010). If we talk about other disadvantages; the data obtained are complex (Kenning et al., 2007). There are ethical obstacles in practice such as violation of private life (Bercea, 2013).

MEG depicts activity in deep brain structures compared to EEG results. It is one of the techniques with the best imaging quality due to its three-dimensional and time dependent resolution. It is a similar technique to EEG. However, it is a very costly technique compared to EEG. MEG device provides higher resolution data than EEG device (Akin, 2014).

2.3.2. Biometric Measurement

Biometric measurement is a technique used for the measurement of biological and physiological responses. Subconscious responses, involuntary contractions in the facial muscles with the signals sent by the brain to the body through the nerves,

electrical dissipation in the skin, pulse, biometric responses such as pupil movements, sweating, and breathing. The appliances to be used are easier to find compared to devices used for neurometric measurement. Biometric measurement methods can be categorized into; eye tracking(ET), facial coding(FACS) and galvanic skin permeability (GSR) (West and Erdem 2015).

2.3.2.1. Eye Tracking (ET)

Eye tracking method is the method that measures the movements of the eye. In the analyses the focus points of the eye and the duration of the focus is analyzed. In this eye tracking process, pupil movements and degrees of growth and contraction are recorded, the system is used to track and note pupils with a minimum infrared speed of 60 Hz (Georges et al., 2014; Erdemir, 2015). Besides, the eye tracking technique is a method of measuring the pupil's response to objects shown to individuals and the electrical fluctuation around the eye. At the same time, it can be determined by observing eye movements, such as: how long it follows visual stimuli and which points they look for longer. The data gathered in this way provide the opportunity to make useful changes in the product design (Giray and Girişken, 2013).

Also, the eye tracking method presents data on which point the individual is looking at on the screen and gives a lot of information regarding the point of attention (Nakatani and Pollatsek, 2004, as cited in Yeniad et al., 2011). With this information, it can be said that the data collected by eye tracking technique can be combined with quantitative or qualitative research to reach more precise results. Quantitative data and eye tracking together can complement each other in describing users' experience rather than qualitative data (Hoffmann, Remus et al., 2013).

Visuals are mainly used in eye tracking studies. Researchers are mainly interested to find out whether the main message of the advertisement is noticed or not. Therefore, the relationship between “seen” and “perceived” is established and the effectiveness of the marketing tools is interpreted (Joel et al., 2012).

The metrics of eye tracking method mostly depends on the on fixations and/or saccades. Saccades are described as movements of eyes between fixations. There are

metrics which includes: number of fixations, number of fixations on each area of interest, total number of fixations, fixation duration, total fixation duration, time to first fixation on target, fixation density and repeat fixations. These metrics can be used to measure planned studies for a research. Metrics based on saccades are important because it can show the specific areas of interest of the customers. Scanpath is combination of saccades and fixations (Wei et al., 2011).

Eyes are in constant movement. While some of these movements are conscious, most of them are reflexive. For example, it has movements like fixations on each word and saccades on the next words. These little waits before saccades take minimum 100 milliseconds. As long as it is not consciously focused, eyes can fix on a specific area for maximum 200-300 milliseconds (Batı and Erdem, 2016).

Furthermore, Area of Interest (AOI) is an important technique to get results where consumers focus on specifically. It means, AOI is a technical choosing of the parts that are particularly demanded to be measured and presented to the customers' eye. In an eye tracking analysis determining of AOI can be altered before, after or during the experiment's process. The common metrics about AOI is basically the movement between two areas and also the number transitions between two areas and the time spent in AOI (Lupu and Ungreanu, 2013).

Discovering of images or multimedia items belong to the tasks of AOI. Also, time based tasks are applied with AOI (Lupu and Ungreanu, 2013). In this study time based task is not used, but multimedia task is applied. Pictures are analyzed for the use of AOI, which measures presence of human pictures with product presentation. Specific points are chosen for getting numerical results of consumer's spending time on this point.

Furthermore, it is possible to get various results thanks to eye-tracking system. Heat maps are the maps (charts) showing how long and where the users are looking at for each stimulus. They are the visual data in which areas one or more users focus on are showed in the order of density with the colors of green, yellow, orange and red: while green is least looked, red areas are the most looked areas according to visual data (Khachatryan and Rihn, 2014).

2.3.2.2. Facial Action Coding System (FACS)

It is a technique of gathering data by interpreting facial muscles through different physiological responses by Paul Ekman's system of coding facial movements in the 70s. People react differently to their basic emotions such as pain, sadness and excitement (Giray and Girişken, 2013). The involuntary mimic movements are called micro mimic, which are automatically reflected beyond the control of individuals. For example, it is possible to differentiate between a real smile and a forced smile by involuntary muscular action (Giray and Girişken, 2013).

The essence of this method, which was discovered by the researcher Paul Ekman (1978), is to discover the real feelings of people. It is possible to perceive any event or object occurring around them in 40 milliseconds and to make it possible to read the expressions at the moment when the facial muscles and basic facial muscles are combined. Paul Ekman, on the other hand, found that there are six basic facial expressions of people: anger, disgust, disgust, fear, pleasure, sadness and surprise. Ekman has developed a classification system called the Facial Action Coding System. The aim of this method is to classify all expressions that can be created by human face by giving some known codes (Ekman, 1992).

The facial reading system can capture 9 types of emotion and neutral-positive-negative emotion values such as fear, happiness, confusion, sadness, disgust, frustration, humiliation, surprise, confusion at a rate of 65 milliseconds depending on the 22 muscle groups in the face and thus involuntarily. The emotional reactions of the subconscious can be determined, and thus, it can be made possible to identify specific emotions by means of this stimulus (Genco et al., 2013, Erdemir, 2015).

In conclusion, FACS method can measure unconscious reactions on people's face. All the muscles on face, movement units can be tested together with feelings such as anger or sadness. This method can be executed in analysis of movie trailers or advertisements. By the help of these, it is possible to evaluate true, natural reactions. Not being objective can be called as a disadvantage as the decisions are made during the action.

2.3.2.3. Galvanic Skin Response (GSR)

Galvanic Skin Response measurement technique is a method applied by analyzing reactions that occur on the surface of the skin because of feelings such as excitement, fear, and pain. For instance, electrical reactions such as acceleration of heartbeats during fear, sweating after various emotions occur (Roberts and Hoetzel, 2007). GSR, which is used to measure the moment and intensity of stimulus, is used for estimation of marketing performance and sensory perception tests.

GSR has many important advantages. The software can distinguish between noise and real stimuli (Bercea, 2013). - The degree of stimuli can be measured (Bercea, 2013). With skin conductivity, marketing performance can be predicted more accurately than individual reports (Bercea, 2013). It is a cheap, simple and portable complementary method. This method expresses the response of the skin according to the electrical permeability, the electrical permeability value of the skin differs when the individual is excited and this situation can be measured with galvanic skin permeability sensors (Giray and Girişken, 2013). However, measured emotional responses are indistinguishable (excitement and stress are similar) (Bercea, 2013)

2.4. RESEARCHES RELATED TO NEUROMARKETING IN TURKEY AND THE WORLD

Since 1990, the internet revolution, technological and digital developments and the media field have expanded, and there has been a serious increase in neuromarketing and eye tracking studies in the world. Neuromarketing research began in Turkey since 2010, compared with neuromarketing study in the world, Turkey has remained fairly late (Aly 2018). Some of the universities that owns neuromarketing labs were established. Some of these are METU, Boğaziçi University, Hacettepe University, Istanbul University, Üsküdar University, Koç University, Fırat University, Hitit University. The thinkneuro addition, Neuron-Mer, leadneuro, Neuron Discover are among the companies engaged in large-scale commercial size neuromarketing research institutions in consultation with Turkey.

In our country, theoretical and practical studies have been carried out in this field. Some of the theoretical studies on neuromarketing are Özdoğan et al. (2008), Ural (2008), Tüzel (2010), Eser et al. (2011), Yücel and Çubuk (2013), Yücel and Çubuk (2014), Aytekin and Kahraman (2014).), Akın and Sütütimiz (2014), Ceylan and Ceylan (2015), Ustaahmetoğlu (2015). Most recently, Özlem Hür (2019), Hamide Karaaslan (2019), Merve Gizem Özdeş (2018), Ali Toker (2019), Serenay Palabıyık (2019) and Gizem Tokmak (2020) are examples. The number of neuromarketing studies for the practice in our country is also gradually increasing. Some of the comprehensive studies that contain applications are detailed below.

According to Gray and Girişken (2013) even though a human eye can't see an image which moves faster than 40 milliseconds present experiment shows that humans showed sensual reaction to the image shown faster than the perception speed.

Girişken and Bulut (2014) conducted a study on 9 advertisements from different sectors and 24 participants (12 men, 12 women) in order to understand how consumers perceive emblems / logos in pack shot advertisements. In the study aiming to determine the best position in the advertisement for the emblem / logo positioned at different points, the ads were shown to the participants for 5 seconds and an eye tracking map was drawn showing which regions were focused on. According to the research findings, emblems, logos and messages were noticed by all participants, but the focus was on logos and messages rather than emblems. It is stated that positioning the emblem above the logo gives better results than its positioning on the right and left sides. In addition, the relationship between stimuli, focus points, emblems, logos, and focus points of the messages are investigated.

Velioğlu and Argan (2007) state that product placements in the movies are recalled by 86,6 percent of customers and there's a relation between the likeability of the movie and the possibility to remember the product.

Başev (2015) investigated the effectiveness of 5 different brands of chocolate commercials on 44 children (22 girls - 22 boys). In the research, traditional advertising effectiveness research methods (questionnaire, face-to-face interview and focus group) and new methods (EEG and ET) were used, and the effectiveness of advertisements in determining the intentions, perceptions, attitudes, likes and

recommendations of children were compared. According to the results of the research, EEG's Eye tracking method, which is one of the new methods, has been observed to give better and more reliable results than traditional methods. However, it was stated that both neuromarketing methods were not able to determine the children's recommendation decisions and were insufficient in the measurement of brand loyalty. It is stated that traditional methods have very low reliability rates, but they are more suitable for determining the causes of attitudes such as selection and taste.

In his study with 23 participants, Kurnaz (2018) asked the participants to buy a book they want on 3 websites selling online books, and the visual activation, eye movements, screen recording of the participants while shopping on their websites were examined using eye tracking method. Thus, it was determined which 80 fields on the web page were taken into account, paid attention or not paid attention to by the users. It was seen that most of the participants turned directly to the search engine without being interested in the items on the homepage. The time for most attention and focus was on book images and prices. The packaging designs of the products and the colors used in the packaging are very effective in attracting consumers' attention and creating intention to purchase. So much so that they can be a reason for preference by avoiding the price, which is one of the most important reasons for preference.

Argan et al., (2007), the rate of recall of the brands used in product placements in the cinema sector has been determined. As a result of the research, 86.6% of consumers remembered at least one of the product placements correctly. With the level of liking the movie, brand recall level was found to be proportional. There is no meaningful difference for other variables.

Göker (2018), in his research on the attractiveness of the images used in advertising posters with aid campaigns, applied eye tracking studies on 5 different images and 30 participants. It is aimed to determine which regions the participants are looking at, where they focus more, and to reveal the effectiveness of the visuals. The posters were found to be effective in attracting participants and creating emotional interactions. It was determined that the attention of the participants focused on the visuals and there was not much focus on the parts of the charity.

In the study conducted by Yücel and Çubuk (2013); the concepts of subliminal advertising and neuromarketing have been explained and compared with various examples. Thus, the differences between these two areas are tried to be revealed.

The study by Baş and Tüzün (2016); covers how to use eye tracking to analyze users and their product usage. This study proposes the use of eye tracking method in Market-Consumer Research based on user observation and aims to create the necessary infrastructure related to this. The main questions expected to be answered at the end of this study are what eye tracking method is, how it is used, how it will contribute to Market-Consumer Research and what to do and what should be paid attention to using this method in Market-Consumer Research.

Numerous neuromarketing researches are carried out in the world. Some of the researches with visual content will be mentioned below.

One of the most important study related with website design and human visual usage with usage of eye tracking analysis is Cyr et al., 2009 study, in which . Questionnaire, interview and eye tracking study are used as data collection method. It was found that the use of the human face on the website was expected by the consumer to perceive the website as more attractive, warm or social presence and more reliable. Also, higher levels of visual appeal and perceived social presence was predicted to result in trust towards website. According to eye tracking data, users spend a lot of time on human pictures without paying attention to facial features. General impact of human images seems universal across country groups. However, no direct relationship was found between human image and trust in the website.

Another important study by Schiessl and his friends in 2003 which has been applied on 120 applicants (who are 60 women and 60 men). The respondents were shown visual and textural pictures and symbols.. It was found that women focus on textural elements more than men, while men focus on visual elements more. Men reads text less, but give attention to photos generally. Additionally, the users are asked if the picture or the text on website is important for them. Most of the men state that they don't need the pictures on the website, however eye-tracking method shows that the men's first appeal on the website is on pictures while the women's is on the text.

According to Lindstorm the warnings on cigarettes showing how dangerous they are in fact show positive impacts on buying intention in contrary to its aim. FMRI research on the “social” smokers who smoke two packets a day were the sample of the study. The neuromarketing research shows that these warnings activate the pleasure part of the brain which makes the person wants to smoke more even though the survey applied on the attendants before the research shows the opposite (Lindstrom, 2009).

In addition, effects of background complexity on consumer visual processing is researched via an eye tracking study by Wang et al., 2020. Effect of the background complexity of a product image on consumer attention, information processing and purchase intention are measured with the usage of eye tracking and questionnaire methods. The results show that product images with higher background complexity receive more attention, but most of the attention is focused on the background.

One of the current studies, "Gender-based eye movement differences in passive indoor picture viewing: An eye tracking-study" is a sample study that classifies eye tracking results according to gender. Eye tracking parameters such as fixation duration were measured with 25 male and 20 female participants. A significant difference was found between these measured values according to gender. At the same time, women exhibited more explorative gaze behavior. Females inspect the images faster than males. It has been observed that men and women perceive the environment differently, even if they are from the same culture (Sargezeh et al., 2019).

There is also a current study focusing on the role played by the images used by hotels on their websites. The effect of the main image used on the hotel page on the first impression was investigated. And it has been checked whether this effect has a positive effect on increasing the reservation demand. It was observed that the visuals in the upper area were more effective and there was a difference between the groups in terms of visual attention. Goal-oriented users showed less interest in the main image, while those in the Millennial generation group took less time to focus (Jurado et al., 2020). All the relevant research in Turkey have been summarized in Table1.

Table 1: Scientific Studies in Neuromarketing in Turkey

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
A Conceptual Study on Neuromarketing	2008	Özdoğan, Tolon ve Eser	Third Sector Cooperative Journal	A conceptual Study on Neuromarketing	It was concluded that neuromarketing would form a routine part of marketing strategies in 5-10 years.
The Experimental Travel of a Neuromarketing Research and the First Tips of the Research	2014	Yücel and Çubuk	Fırat University Journal of Social Science	Solving Usage of EEG Mistakes	This study reveals that demographic characteristics affect the experimental results.
According to the market researcher perspective of neuromarketing: An exploratory research	2014	Akın	Sakarya University	Reveals the reasons of why people are appealing neuromarketing why appeal neuromarketing and evaluates it's ethical perspective	Neuromarketing is ethics according to the principles of "intent" and "community benefit".

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
A Research on Green Marketing Application in Terms of Consumer Perception with Neuromarketing Technique	2015	Tayfun ve Öçlü	Uludağ Journal of Economy and Society	Identify role of green marketing applications to get customers attention in a commercial	Mentioning green marketing practices in the commercial film has a great role in attracting the attention of the consumer.
Neuromarketing for an Effective Advertisement	2016	Kömürcüoğlu and Fırat	Journal of Social Sciences And Humanities Researches	How should an effective advertisement be and the importance of neuromarketing in advertisement efficiency	Using a celebrity, women and sexual items in the advertisement wouldn't make the advertisement effective.
An Eye Tracker Analysis of the Influence of Applicant Attractiveness on Employee Recruitment Process: A Neuromarketing Study	2016	Boz and Yılmaz	Ecoforum Journal	Explore to what extent managers act rationally or under the influence of Pavlovian conditioning in making their recruitment decisions	"Hotel managers are more concerned with candidates' work experience rather than their attractiveness."

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
Measurement of effect of the smell on the decision process of the informed users in terms of neuromarketing	2016	Demirtaş	Doğuş University	The measurement of the effect of the sense of smell as brand identification component on the decision process with EEG	The relationship between smell and emotion and decision-making mechanism has been revealed.
Research on the effect of advertising on consumer through behavioral experiments in neuromarketing	2016	Köylüoğlu	Selçuk University	Revaling effects of hidden advertising messages on consumers	The use of star in the advertisement was not at the expected level in terms of participant's attention.
Investigation of the effect of creating awareness of the visuals used in advertising in terms of neuro marketing	2017	Tunç	Firat University	Measuring the effect of creating awareness of the images used in toothpaste advertisements	They reacted differently to each toothpaste ad. The importance of brand perception has emerged.

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
The Role of Entrepreneurial Women in Regional Development: An Analysis of Successful Woman Entrepreneur Model with Eeg Analysis Method	2017	Yücel and Gündüz	Munzur University IV. International Regional Development Conference	Measurement of Volunteer participants will be made to watch a public spot on the theme of “Women Entrepreneurship”	Measuring reactions of the public service advertisements have been determined using the EEG analysis method.
Usability Analysis of E-Government Portal: Eye Tracking Method	2017	Bayır, Yücel and Gündüz	International Conference on Multidisciplinary, Science, Engineering and Technology (IMESET’17 Bitlis	Research about usability and functionality of the e-Government Portal	The number of focusing and focusing areas of the participants were determined
Neuromarketing as Real Action: The Application of Consumer Behavior	2016	Bayassova and Kazan	International Journal of Social and Educational Sciences	Are there any relationship between neuromarketing factors and decision to buy?	There is a relation between neuromarketing factors and the characteristics of consumers, consumers reactions, the process of deciding to buy.

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
Is it Possible for the Brain to Perceive the Stimuli that the Eye Cannot Sens at the Level of Consciousness? An Experimental Design on Measurement with Neuromarketing Method ”	2013	Giray and Girişken	Kafkas University Faculty of Economics and Administrative Sciences, 18th National Marketing Congress, (19-22 June 2013 Kars / Sarıkamış),	Analyzing human eye movement	Humans showed sensual reaction to the image shown faster than the perception speed

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
How do consumers perceive a/an logotype/emblem in the advertisements: an eye tracking study	2014	Girişken and Bulut	Researchgate	Determine the best position in the advertisement for the emblem / logo	Emblems, logos and messages were noticed by all participants, but the focus was on logos and messages rather than emblems
Analysis of the Effect of Famous Use of Fuse Tea Ads with Neuromarketing Eye Tracking Method	2015	Başev	Journal of International Scientific Research	Measurement of effectiveness of 5 different brands of chocolate commercials on 44 children	Neuromarketing methods were not able to determine the children's recommendation decisions and were insufficient in the measurement of brand loyalty
Measuring Of The Consumer Attention Activation Toward Web Pages Component Of Online Store	2018	Kurnaz	Afyon Kocatepe University	Analyzing the visual activation, eye movements, screen recording of the participants while shopping	Most attention and focus was on book images and prices

Name of the Study	Year	Authors	Journal/Type Of The Study	Aim Of The Study	Findings
The Effect of Brand Placement Strategies on Recall: Research on 'GORA' Movie	2007	Velioğlu and Argan	Electronic Journal of Social Sciences	Determining of product placement in cinema sector	There is relation between the likeability of the movie and the possibility to remember the product
Investigation of Social Assists Poster with Eye-Tracking Method: Kızılay Sample	2018	Göker	Firat University	Attractiveness of the images used in advertising posters with aid campaigns	Attention of the participants focused on the visuals and there was not much focus on the parts of the charity.

CHAPTER THREE

METHODOLOGY AND THE FINDINGS

3.1. AIM OF THE STUDY

The aim of this thesis is to ascertain if the usage of human image in advertisements together with the main products makes any difference for the customer. Specifically, it is aimed to uncover if presenting a product in website advertisements, with a human image appearance takes the attention of the customer more compared to advertisements just showing the product itself. Another purpose of the study is to explore if level of attention of the respondents' changes depending on their gender and the type of product (Utilitarian or hedonic) used in the website advertisements.

3.2. SAMPLE OF THE STUDY

Data collection of this research was conducted between 29th of April and 22nd of May. This study consists of two surveys and an eye tracking analysis. One of the surveys were applied to the respondents before and the other after the eye tracking analysis. First, questionnaire was developed to filter if the volunteer respondents were eligible for the eye tracking analyses that would be undertaken in a laboratory. After that, all the respondents were invited for the eye tracking analysis by giving separate meeting times.

The analysis was conducted by using the resources of the laboratory of Anadolu University, which is located in Eskişehir. Thus, respondents were selected among residents of Eskişehir by convenience sampling method. Aga Bojko, (2013) recommends to target 30 participants for eye tracking studies. However, considering that some of the analysis might not be used. A preliminary survey to 82 respondents was applied. However, in the second phase of the study 50 out of 82 respondents came to the laboratory and participated in the eye tracking study. After the analyses of the eye tracking results 8 of them was found not to be eligible resulting with 42

analyses that met the criteria for evaluation. Thus, all those 42 respondents were also asked to fill in the second questionnaire.

3.3. METHODOLOGY

There are limited number of studies that have examined the attention levels of customers to the usage of human images on website advertisements (Cyr et al. 2009; Seo, Chae, and Lee, 2012 and Qiuzhen et al. 2014). While, there are previous studies that conducted research on effects of human image, the effect of human usage for product images on consumer attention according to product type and gender factors have not been studied before.

Thus, the main aim of this study is to understand whether the response of the consumers' changes according to the usage of human pictures with product images or not. This study investigated the attention levels of respondents using the method of eye-tracking. At the same time, structured-interview questions as survey technique was used to provide supportive data for the study. Use of multiple research methods with eye tracking analysis is the most important difference of this research from other studies (Cyr et al. 2009, Seo, Chae and Lee 2012).

In order to determine the style of presentation in terms of its order of showed/assigned materials and timing, a pre-test was applied to a volunteer respondent in April 30th. As results of pre-test; conduction materials, placement of visuals and the right timing for each visual used were re-arranged and later on the practice was ready to be applied

As mentioned above, this research composed of three different analyses methods which are; two questionnaires and eye-tracking analysis. First, a pre survey was applied to respondents. This questionnaire was formed of two parts. First part composes of four questions regarding demographic information related to the respondents. Second part consists of four questions related to online shopping habits of the respondents.

As a first step of the eye screening analyses a pre-study was conducted to identify the right timing about showing the pictures for the eye tracking analysis. A person who completed the first survey, attended to this part. Then results of this parts

suggested to re-arrange timing since it was observed that sparing too much time caused a distraction led by focusing on other area and glancing through the whole page again. Thus, Pre-eye tracking analysis showed that 5-second duration was optimum for this analysis.

The eye screening analyses was undertaken showing the respondents' different version of advertisements regarding six different products. The products were chosen to represent both utilitarian and hedonic type of products. 3 hedonic products were shoes, perfume and sun glasses and, 3 utilitarian products were television, mobile phone and headphone. Those advertisements were adopted from Trendyol. Six products were used in the eye tracking analysis because they are commonly categorized as hedonic and utilitarian in the literature (Y. Ha and L. Stoel, 2004, J.M Carpenter and V. Balijs, 2010).

Six main advertisements were shown to respondents in three versions. The first version consisted of advertisements that only showed products. The second version consisted of advertisements that consisted of both the product and a human figure. Lastly both of the advertisements (the one with the human image and without the human image) were shown at the same time. However, the order of showing the advertisements was chosen randomly.

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There were 18 versions of advertisements, all the advertisements were similar but not identical. After the selection of the eye tracking test material (advertisements that have been shown to the respondents) all of the 18 pictures were shown to respondents for 5 seconds and their reaction was tested using eye tracking method. In conclusion, the results were evaluated with 120 hz eye tracker.

Third part of the analysis consists of a post analyses survey. This questionnaire consists of three parts and 26 questions. First part of the post analyses covers consumption type questions and it has 12 items to evaluate consumption

habits of respondents'. These items are adapted from Kim (2009). Totally, 12 statements are asked to participants. First six statements contain utilitarian shopping tendency questions. Rest of the six statements emphasize hedonic consumption attitude. Responses of them were gathered through five-point Likert-scales (Strongly disagree: 1, disagree: 2, neither disagree nor agree: 3, agree: 4, and strongly agree: 5). General average of the answers by respondents for both hedonic and utilitarian questions have been compared. The answers of respondents were then categorized related to the highest sum score among the two sets of six questions showing if the respondents scored high on utilitarian shopping tendency or hedonic shopping tendency. If the calculated scores for each six questions were the same, the data regarding that respondent was not taken into consideration. Second part of post analysis survey consists of image appeal questions. Nine questions are adapted from Cyr et al (2009). These questions are useful to point out usage of human images directly as supportive data. The last part of the study consists of 5 structured-interview questions. The structured-interview questions are intended to support eye tracking analyses results. Previous research have shown that short interviews with participants can help clarify the data and draw more accurate conclusions (Nils and Helena, 2012). For this reason, each participant was asked to answer some structured-interview questions to make sense of the results of eye tracking analysis and to support individuals with verbal sharing. Structured-interview questions were taken from Cyr et al. (2009). This structured-interview consisted of 5 questions. These questions are mentioned below

1. Are there any images that stand out in your mind?
2. How did these images make you feel?
3. Were there any images that made the site look positive?
4. Were there any images that made the site look negative?
5. Are there any other impressions you would like to share?

It aimed to understand the responses of respondents to visuals that were used and the feelings and thoughts in respect with the analysis. 42 of participants attended this structured-interview. Participants' responses were recorded using an audio digital recorder. The data are classified themes using the content analysis method. It is difficult to make a clear definition of content analysis. However, "*content analysis*

is “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff, 2004). Therefore, in this study, the data were grouped according to their meanings with an objective approach. Content analyses was utilized by Nvivo program. This software program provides effective means to analyze qualitative data such as interview transcriptions (Graphs and charts). The process of using Nvivo software program has following pavements: First step is data preparation; the noting of respondents’ answers. Secondly the answers of the questions were coded with the help of two main categories which are the product pictures including human or pictures not including human. At the same time, these main categories were sub-categorized in three ways. A basic categorization was made according to men and women for the answers given to each question. At the same time, some questions were categorized by product type. In addition, a categorization is made between products with or without human images. To sum up; the responses of the participants to the questions were categorized under these three main headings and data was entered into the program. This helped us to conduct interpretation of other quantitative researches in order for us to support the hypotheses.

Finally the last method used that eye-tracking method is a useful method especially for understanding where people concentrate on while they are watching, looking at something or reading. Thus it is a method that has the potential to provide fruitful insights to marketers about their consumers and effectiveness and attractiveness of the advertisements, and websites they design. There is some eye tracking metrics like time to first fixation, total fixation and fixation count which helps to measure visual attention of customers. Fixation is one of the most important metrics of it. It has been proved that the rise of fixation duration shows that cognitive work load increases. In other words, brain’s troubleshooting and reasoning level increases (Bati and Erdem, 2016). The most important advantage of this method is that it enables us to understand where exactly the respondents are looking. Second is fixation duration, which is about processing information. Longer fixation shows that the buyer tries to combine the concepts and components and their internal components pattern. According to J. Hoffman, (2017), longer fixing times might indicate that the stimulus is not understood or it is found interesting by the user.

Thus, the long duration of fixation has two causes. The first reason can be that customers try to understand the thing presented to them, and the second one can be that they are interested in the presented stimulus. However, it can't be clearly said whether they are interested or not depending on just the time they spent. That's why, the results of eye tracking should be supported with other research method, such as; questionnaire, interview and also, if possible, other neuromarketing methods.

3.4. HYPOTHESES DEVELOPMENT

Previous studies in the field of e-retail have shown that online consumers' focus points to the web advertisements may vary depending on product types advertised (Hsich, Chiu and Chiang 2005, Weathers, Sharma and Wood). For example, while consumer pays more attention to the visual diversity in hedonic product advertisements, they pay more attention to the satisfactory information about the features of product in utilitarian product advertisements (Hsich, Chiu and Chiang 2005, Weathers, Sharma and Wood). For this reason, the places that the consumer focuses on in the image and the content they are looking might vary. Thus, following hypotheses are proposed:

H1: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' gaze points.

H1a: Hedonic products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' gaze points.

H1b: Utilitarian products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' gaze points.

H2: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' duration of attention.

H2a: Hedonic products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' duration of attention.

H2b: Utilitarian products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' duration of attention.

Gender is also considered as one of the main variables to be influential in customer's eye gazes as stated in extend literature (Bing Pan et al, 2004). Thus, it is

expected that customers will have different eye tracking values and also they will point different areas for different product type depending on their gender. From the moment they log in to the website, attention levels can be measured against the pages and images they encounter. For example, women may pay more attention to more colorful images, while men may find colors more attractive (Radeloff, 1990).

Furthermore, Darley and Smith (1993) said that females tended to be more emotional since they do more care-taking jobs in families while males tended to be more rational. Gur et al (2002) conducted a test on tempore-limbic and prefrontal structures by quantitate MRI, indicating that females had larger frontal cortices than males, which made the ratio of orbital gray to amygdala volume different. Therefore, according to their social responsibility and brain characteristics it was obvious to see that males and females were different in some ways. Previous research had demonstrated that males and females responded differently to visual stimulus (Darley and Smith, 1995; Lee et al., 2002; Karama et al 2002; Wrase et al 2003; Montagne et al 2005). Hence, it can be concluded that gender plays a crucial role in the perception of visual representations. Thus, the present study proposes following set of hypothesis:

H3a: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' gaze points for men.

H3b: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' gaze points for women.

H4a: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' duration of attention for men.

H4b: Products presented in a web advertisement with the inclusion of human image, creates a difference in consumers' duration of attention for women.

3.5. DATA ANALYSIS

Data collected through online survey and eye tracking analysis were analyzed by using SPSS 21.0. In addition, a structured interview was applied as supportive data. Data analysis started with descriptive statistics, after that, reliability tests of these measures were done by using SPSS 21.0

3.5.1. Questionnaire Findings

Table 2: Participants Demographics

		N	%
Gender	Male	21	50,0
	Female	21	50,0
Age Group	Under 21	1	2,4
	21-29 Age	31	73,8
	30-39 Age	10	23,8
Marital Status	Single	37	88,1
	Married	5	11,9
Education Level	Bachelor's degree	32	76,2
	Associate's Degree	8	19,0
	PhD Degree	2	4,8

Half of the respondents are male. Most of the respondents are in 21-29 age group. Majority of the respondents are single and a few of the respondents are married.

Table 3: Online Shopping Habits of Respondents

		N	%
How long have you been using internet for online shopping?	6-12 Months	2	4,8
	1-2 Years	10	23,8
	2-3 Years	10	23,8
	3-5 Years	10	23,8
	More than 5 years	10	23,8
How many times have you bought something online in previous 6 months?	No Shopping	2	4,8
	1-2 Times	11	26,2
	3-5 Times	14	33,4
	6-10 Times	8	19,0
	11-20 Times	3	7,1
	More than 21 times	4	9,5
Please rate your internet use	Beginner	6	14,3
	Pre Intermediate	10	23,8

		N	%
	Advanced	26	61,9
Online shopping makes my shopping easy	Strongly disagree	11	26,2
	Disagree	9	21,4
	Neutral	11	26,2
	Agree	5	11,9
	Strongly Agree	6	14,3

The percentage of the respondents stating that they were using internet for online shopping for 1-2 years, 2-3 years, 3-5 years and more than 5 years is equal to 23,8%. 33,4% of the respondents stated that they bought something online for 3-5 times and 26,2% of the respondents stated that they bought something online for 1-2 times in previous 6 months. 14,3% of the respondents define themselves as beginner internet user, 23,8% of the respondents define themselves as pre intermediate internet user and 61,9% of the respondents think that they are advanced internet users. 26,2% of the respondents strongly disagree and 21,4% of the respondents disagree with the expression “Online shopping makes my shopping easy.”

In conclusion, almost half of the respondents think online shopping makes their shopping experience easy. Most of the respondents have been using Internet for online shopping for more than a year. 33% and of all respondents stated that they bought something online in previous 6 months. More than 60% of all respondents believe that they are advanced in Internet use.

Table 4: Shopping Tendency for All Respondents

Shopping Tendency	N	%	Cronbach's Alpha
Utilitarian	35	89,7	0.548
Hedonic	4	10,3	0.666
Total	39	100	0,657

Reliability analysis was also done for both utilitarian and hedonic scales; consistency between questions is not very high. Total cronbach alpha is 0,657 which is enough to mention shopping tendency of respondents. 89,7% of the respondents

are defined as having utilitarian shopping tendency and 10,3% of the respondents are defined as having hedonic shopping tendency.

Table 5: Descriptive Statistics for Shopping Tendency of Respondents

Consumption Type	Items	Total		Male		Female	
		Mean	St Dev	Mean	St Dev	Mean	St Dev
Utilitarian Shopping Tendency	When purchasing a product, price and quality is more important than the current trend	4,17	,99	4,24	,83	4,10	1,14
	Satisfaction while using the product is more important than just possessing the product	3,71	1,38	3,71	1,45	3,71	1,38
	When you purchase a product, its functionality is more important than its appearance	3,50	,99	3,52	1,08	3,48	,93
	When you shop for products, you check the price information on the internet	4,52	,83	4,81	,40	4,24	1,04
	You make a list when you need to buy necessities	3,40	1,29	3,19	1,36	3,62	1,20
	When purchasing a product, you tend to consider the opinion of others	3,71	1,02	4,05	,92	3,38	1,02
Hedonic Shopping Tendency	When purchasing a new product, you prefer the trendier option	2,60	,80	2,71	,78	2,48	,81

		Total		Male		Female	
Consumption Type	Items	Mean	St Dev	Mean	St Dev	Mean	St Dev
	You want to buy a product that nobody has, to look different	3,05	1,34	3,33	1,24	2,76	1,41
	You can buy a product because of its design and color, despite the low quality	2,64	1,32	2,90	1,18	2,38	1,43
	The atmosphere of the shop, for example music or scent, greatly affects what you purchase	3,36	1,38	3,29	1,49	3,43	1,29
	You shop depending on my mood instead of making plans beforehand	3,31	1,44	3,33	1,49	3,29	1,42
	You prefer buying a single piece of expensive designer clothes instead of buying several cheap ones	2,29	1,09	2,33	1,28	2,24	,89

There are six items in each of these two sections, which include shopping tendency questions for hedonic and utilitarian. If the total mean score of any of these two section questions is higher than the other, the respondent is interpreted as showing a tendency to shop in that direction. In this table descriptive statistics for the whole population has provided that majority of respondents have utilitarian shopping tendency.

Table 6: Cronbach's Alpha for Image Appeal Scale

	Cronbach's Alpha
Image Appeal	0,778

Cronbach's Alpha is 0,778 which is between $.8 \geq .7$. It is acceptable result for this scale.

Table 7: Evaluation of the Respondents Regarding Image Appeals in the Websites

	Total		Male		Female	
Items	Mean	St Dev	Mean	St Dev	Mean	St Dev
The images used in the website appeal to me emotionally	2,69	,92	2,57	,93	2,81	0,93
The images used in the website are appropriate	3,71	,94	3,43	1,03	4,00	0,77
The images used in the website are satisfying	3,36	1,03	3,24	1,09	3,48	0,98
I prefer images of people using the products	3,55	1,21	3,38	1,27	3,71	1,16
I prefer images of products only	2,86	1,14	3,10	1,04	2,76	1,20
The images used in the website are not distracting	3,60	1,31	3,38	1,47	3,81	1,12
The images used in the website are exciting	2,57	1,19	2,29	1,27	2,86	1,06
The images used in the website are interesting	3,17	1,06	3,00	1,10	3,33	1,02
The images used in the website make the products look appealing	3,36	1,14	3,10	1,26	3,62	0,97

The highest mean values for the total of respondents are “The images used in the website are appropriate” (Mean: 3,71), “The images used in the website are not distracting” (Mean: 3,60) and “ I prefer images of people using the products “ (Mean: 3,55). Females also agree with the idea that the pictures shown to them were not distracting (Mean: 3,81). Females think that the images used in the website are

appropriate (Mean: 4.00). Females seems to prefer human images (Mean:3.71) more than male. Furthermore, all respondents said that usage of human images with product pictures are preferable for them (Mean:3,55). Women has higher score for this idea compare to men. (Women's Mean:3,71 and Men's Mean: 3,35)In addition, females think that visuals used in the website make the products attractive (Mean: 3,62). One of the highest

The lowest mean values for the total of respondents are “The images used in the website appeal to me emotionally (Mean: 2,57)and The images used in the website are exciting (Mean:2,57). Males do not think that the pictures have emotional touch to them (Mean:2,57) compare to women. All respondents do not find the pictures are exciting as general opinion about the web site shown to them as banner advertisement (Mean: 2,57).

However, even though there is a difference in the means the following table shows that that difference does not resemble a statistical significance.

Table 8: Mann-Whitney U Test Results for the Comparison of “Image Appeal (Total)” Mean Values According to Gender

	Gender		Mean	Std. Dev.	Z	Asymp. Sig. (2-sided)
Image Appeal (Total)	Male	1	27,48	6,33	-1,641	0,101
	Female	1	30,24	5,47		

There is not a statistically significant difference between the “Gender” groups in terms of the “Image Appeal (Total)” score ($p>0,05$).

3.5.2. Results of the Eye Tracking Analysis

Table 9: Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Time to first fixation (with human)	,191	42	,001***	,722	42	,000***
Time to first fixation (without human)	,191	42	,001***	,722	42	,000***
Time to first fixation (hedonic - with human)	,191	42	,001***	,722	42	,000***

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Time to first fixation (hedonic - without human)	,191	42	,001***	,722	42	,000***
Time to first fixation (utilitarian - with human)	,191	42	,001***	,722	42	,000***
Time to first fixation (utilitarian - without human)	,191	42	,001***	,722	42	,000***
Fixation count (with human)	,074	42	,200*	,963	42	,187
Fixation count (without human)	,075	42	,200*	,962	42	,175
Fixation count (hedonic - with human)	,089	42	,200*	,979	42	,608
Fixation count (hedonic - without human)	,093	42	,200*	,955	42	,096
Fixation count (utilitarian - with human)	,126	42	,089	,961	42	,160
Fixation count (utilitarian - without human)	,131	42	,058	,949	42	,057
Total fixation duration (with human)	,182	42	,001***	,876	42	,000***
Total fixation duration (without human)	,187	42	,001***	,877	42	,000***
Total fixation duration (hedonic - with human)	,149	42	,020***	,904	42	,002***
Total fixation duration (hedonic - without human)	,198	42	,000***	,839	42	,000***
Total fixation duration (utilitarian - with human)	,135	42	,045***	,872	42	,000***
Total fixation duration (utilitarian - without human)	,158	42	,010***	,913	42	,004***
Image Appeal	,139	42	,039***	,966	42	,233***
I prefer images of people using the products	,198	42	,000***	,878	42	,000***
I prefer images of products only	,227	42	,000***	,886	42	,001***

*p<0.05 **p<0.01 ***p<0.001

Normality assumption is checked before deciding the statistical method that will be used for the analysis. At this stage we benefited from Kolmogorov-Smirnov and Shapiro-Wilk tests. The critical value is $p=0,05$. According to the normality test results, “time to first fixation”, “total fixation duration”, “image appeal”, variables are not distributed normally. Thus, Wilcoxon and Mann-Whitney U tests are used for the variables not distributed normally.

Table 10: Wilcoxon Test Results for the Comparison of “Time to First Fixation (With Human)” and “Time to First Fixation (Without Human)” Mean Values (All Respondents)

	n	Mean	Std. Dev.	Z	P	Hypothesis
Time to first fixation (with human)	42	746.184,45	489.962,35	-5,646	0,001***	<i>H₁ Accepted</i>
Time to first fixation (without human)	42	776.157,76	489.981,97			
Time to first fixation (hedonic - with human)	42	328.093,52	244.965,81	-5,646	0,001***	<i>H_{1a} Accepted</i>
Time to first fixation (hedonic - without human)	42	433.067,48	244.987,51			
Time to first fixation (utilitarian - with human)	2	418.090,93	244.996,61	5,646	0,001***	<i>H_{1b} Accepted</i>
Time to first fixation (utilitarian - without human)	42	343.090,29	244.994,52			

*p<0.05 **p<0.01 ***p<0.001

There is a statistically significant difference between with human and without human values of “Time to first fixation” variable for all products ($p < 0,01$). The mean of time to first fixation without human value (776.157,76) is statistically greater than the mean of time to first fixation with human value (746.184,45). Also, there is a

statistically significant difference between with human and without human values of “Time to first fixation” variable for hedonic products ($p < 0,01$). The mean of time to first fixation without human value (433.067,48) is statistically greater than the mean of “Time to first fixation” with human value (328.093,52). In addition, there is a statistically significant difference between with human and without “human values of “Time to first fixation” variable for utilitarian products ($p < 0,01$).

Measurement of time to first fixation defines the duration through a participant focused on Area of Interest (AOI). There is a crucial difference between “Time to first fixation” (TTF) of the pictures with and without human images. The pictures with human images are recognized faster than without human images. There is a statistically significant difference between with human (746.184,45) and without human values (746.184,45) of “Time to first fixation” variable for all products ($p < 0,01$) and ($\bar{x} = 776.157,76$; $S_s = 489.962,35$).

There is a significant difference between hedonic products with human images and hedonic products without human images ($p < 0,01$). The mean of time to first fixation with human value (328.093,52) is statistically less than the mean of time to first fixation without human value (433.067,48). Hedonic products with human images are recognized faster than hedonic product images without human images.

The mean of time to first fixation without human value (343.090,29) is statistically less than the mean of time to first fixation with human value (418.090,93). There is a significant difference between utilitarian products with human images and utilitarian product images without human images ($p < 0,01$). Utilitarian products without human images are recognized faster than utilitarian product images with human images.

Table 11: Wilcoxon Test Results for the Comparison of “Time to First Fixation (With Human)” and “Time to First Fixation (Without Human)” Mean Values (Male)

	N	Mean	Std. Dev.	Z	P	Hypothesis
Time to first fixation (with human)	21	732.131,10	368.732,47	-4,015	0,001***	<i>H_{3a} Accepted</i>
Time to first fixation (without human)	21	762.049,38	368.777,82			

*p<0.05 **p<0.01 ***p<0.001

When only male respondents are taken into account, there is a statistically significant difference between with human and without human values of “Time to first fixation” variable for all products ($p<0,01$). The mean of time to first fixation without human value (762.049,38) is statistically greater than the mean of time to first fixation with human value (732.131,10).

Table 12: Wilcoxon Test Results for the Comparison of “Time to First Fixation (With Human)” and “Time to First Fixation (Without Human)” Mean Values (Female)

FEMALE	N	Mean	Std. Dev.	Z	P	Hypothesis
Time to first fixation (with human)	21	760.237,81	596.448,65	-4,015	0,001***	<i>H_{3b} Accepted</i>
Time to first fixation (without human)	21	790.266,14	596.450,92			

*p<0.05 **p<0.01 ***p<0.001

It is found that when only female respondents are taken into account, there is a statistically significant difference between with human and without human values of “Time to first fixation” variable for all products ($p<0,01$). The mean of time to

first fixation without human value (790.266,14) is statistically greater than the mean of time to first fixation with human value (760.237,81).

Table 13: Wilcoxon Test Results for the Comparison of “Total Fixation Duration (With Human)” and “Total Fixation Duration (Without Human)” Mean Values (All Respondents)

	N	Mean	Std. Dev.	Z	P	Hypothesis
Total fixation duration (with human)	42	23.301,43	2.930,96	-1,444	0,149	<i>H₂ Rejected</i>
Total fixation duration (without human)	42	23.117,36	2.842,63			
Total fixation duration (hedonic - with human)	42	11.576,38	1.568,66	-1,244	0,213	<i>H_{2a} Rejected</i>
Total fixation duration (hedonic - without human)	42	11.452,19	1.652,18			
Total fixation duration (utilitarian -with human)	42	11.725,05	1.492,39	-1,032	0,302	<i>H_{2b} Rejected</i>
Total fixation duration (utilitarian -without human)	42	11.665,17	1.364,04			

There is no statistically significant difference between with human and without human values of “Total fixation duration” variable for all products ($p > 0,05$). In addition, there is not a statistically significant difference between with human and without human values of “Total fixation duration” variable for hedonic and utilitarian products ($p > 0,05$). In conclusion, TFD defines the total focusing duration same AOI in different environments. No difference has been observed for total fixation duration of AOI. No difference has been observed for total fixation duration of AOI depending on product type.

Table 14: Wilcoxon Test Results for the Comparison of “Total Fixation Duration (With Human)” and “Total Fixation Duration (Without Human)” Mean Values (Male)

MALE		Mean	Std. Dev.	Z	P	Hypothesis
Total fixation duration (with human)	1	23.643,14	2.847,05	1,651	0,099	<i>H_{4a} Rejected</i>
Total fixation duration (without human)	1	23.389,81	2.462,07			

According to Table 14 it is seen that when only male respondents are taken into account, there is not a statistically significant difference between with human and without human values of “Total fixation duration” variable for all products ($p > 0,05$).

Table 15: Wilcoxon Test Results for the Comparison of “Total Fixation Duration (With Human)” and “Total Fixation Duration (Without Human)” Mean Values (Female)

FEMALE	N	Mean	Std. Dev.	Z	P	Hypothesis
Total fixation duration (with human)	21	22.959,71	3.042,97	-0,574	0,566	<i>H_{4b} Rejected</i>
Total fixation duration (without human)	21	22.844,90	3.216,73			

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

When only female respondents are taken into account, there is not a statistically significant difference between with human and without human values of “Total fixation duration” variable for all products ($p > 0,05$). People show more interest in utilitarian product pictures without human images then the pictures of products with human images.

Table 16: Summary Table for Hypothesis

Hypothesis	Variable	P	Result
H1: Products presented with a human image, creates a difference in consumers' focus points.	Time to first fixation	0,001***	Accepted
H1a: Hedonic products presented with a human image, creates a difference in consumers' focus.	Time to first fixation	0,001***	Accepted
H1b: Utilitarian products presented with a human image, creates a difference in consumers' focus.	Time to first fixation	0,001***	Accepted
H2: Products presented with a human image, creates a difference in consumers' duration of attention.	Total fixation duration	0,149	Rejected
H2a: Hedonic products presented with a human image, creates a difference in consumers' duration of attention.	Total fixation duration	0,213	Rejected
H2b: Utilitarian products presented with a human image, creates a difference in consumers' duration of attention.	Total fixation duration	0,302	Rejected
H3a: Products presented with a human image, creates a difference in consumers' focus for men.	Time to first fixation	0,001***	Accepted
H3b: Products presented with a human image, creates a difference in consumers' focus for women.	Time to first fixation	0,001***	Accepted
H4a: Products presented with a human image, creates a difference in consumers' duration of attention for men	Total fixation duration	0,099	Rejected
H4b: Products presented with a human image, creates a difference in consumers' duration of attention for women	Total fixation duration	0,566	Rejected

*p<0.05 **p<0.01 ***p<0.001

Overall as could be seen from the summary table five of the hypothesis has been rejected and five of hypotheses have been accepted.

3.5.2.1. Heat Maps

Second part of the analysis consists of the eye tracking analysis. In this analysis, 18 pictures were used to evaluate respondent's reactions. The pictures were selected from a private shopping club which is Trendyol. However, at the end of eye tracking analysis, it is seen that the comparison of the participants' results between two pictures are more useful when we chose a picture which is combination of human image and salt-product image version of visual.

The heat maps obtained within the context of eye tracking analysis will be interpreted in this part. Two different images for each product types with and without human images were shown in the same image to the participants. Three different heat

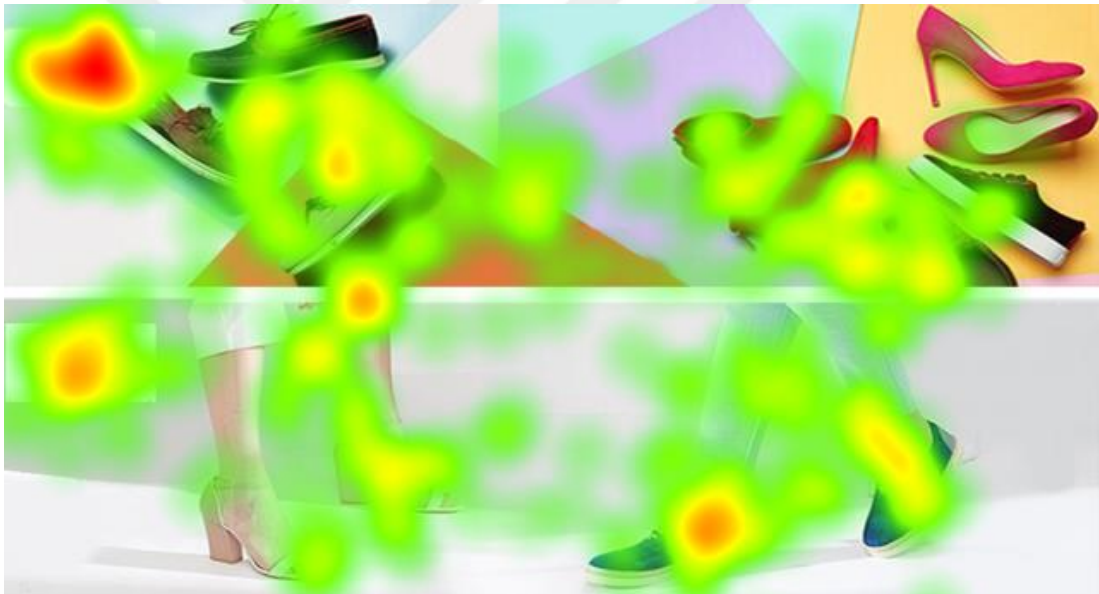
maps which are the results of the women eye tracking, results of the men eye tracking and the all participants' results will be presented. The heat maps play an important role to support quantitative data of the analysis.

The ads were presented to the respondents with some print information included in order to make it seem more realistic, order of density were shown with the colors of green, yellow, orange and red: whereby green represents the least looked and, red areas are the most looked areas according to visual data.

3.5.2.1.1. Heat Maps of Hedonic Products

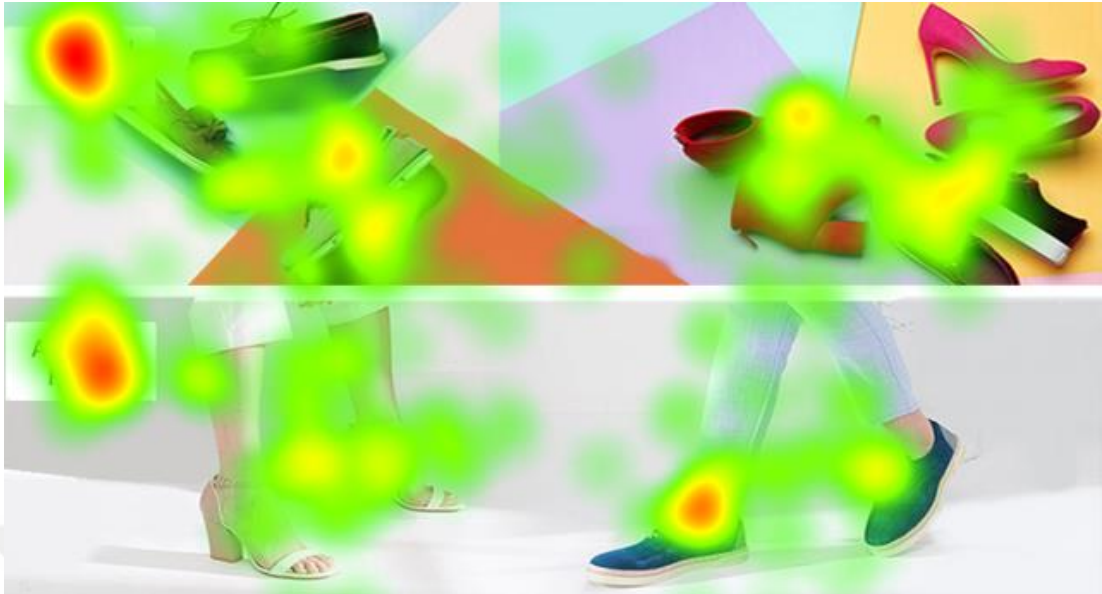
3.5.2.2.1.1. Heat Maps of Shoes

Figure 1: The Heat Map of Males for Shoes



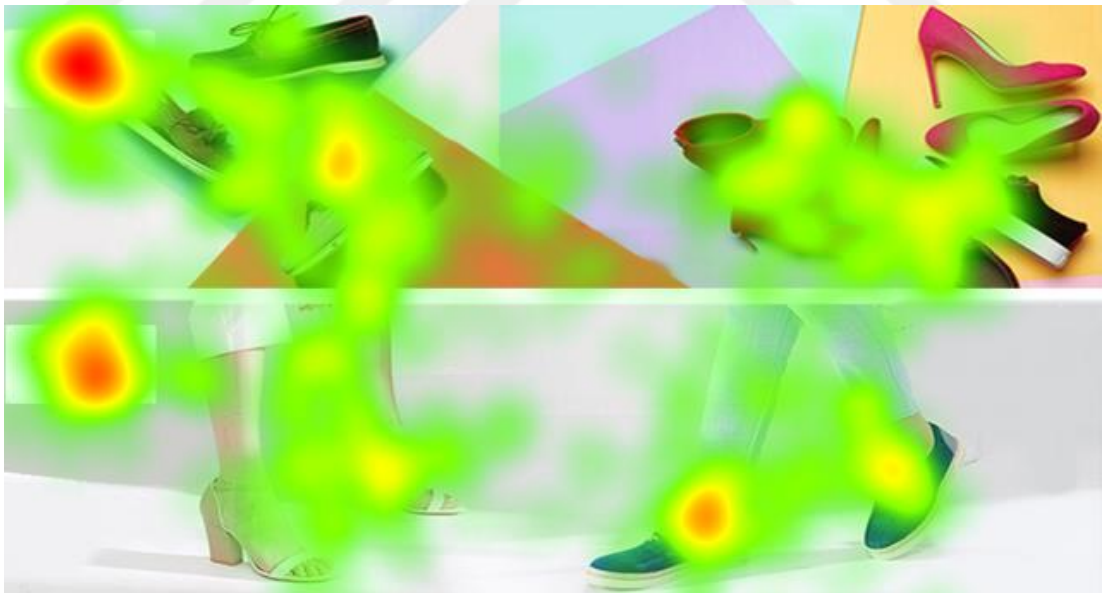
For males' heat map; it is observed that men focus on the “print information in the text” when they look at the shoes advertised “without a human image”. However, they focus on the “product” when they look at an “advertisement which has a human image”.

Figure 2: The Heat Map of Females for Shoes



For female's heat map it could be understood that the “products” were focused mostly on “men's shoes with the human picture”. Also, females focused on “informative text” on both images.

Figure 3: The Heat Map of All Attendants for Shoes

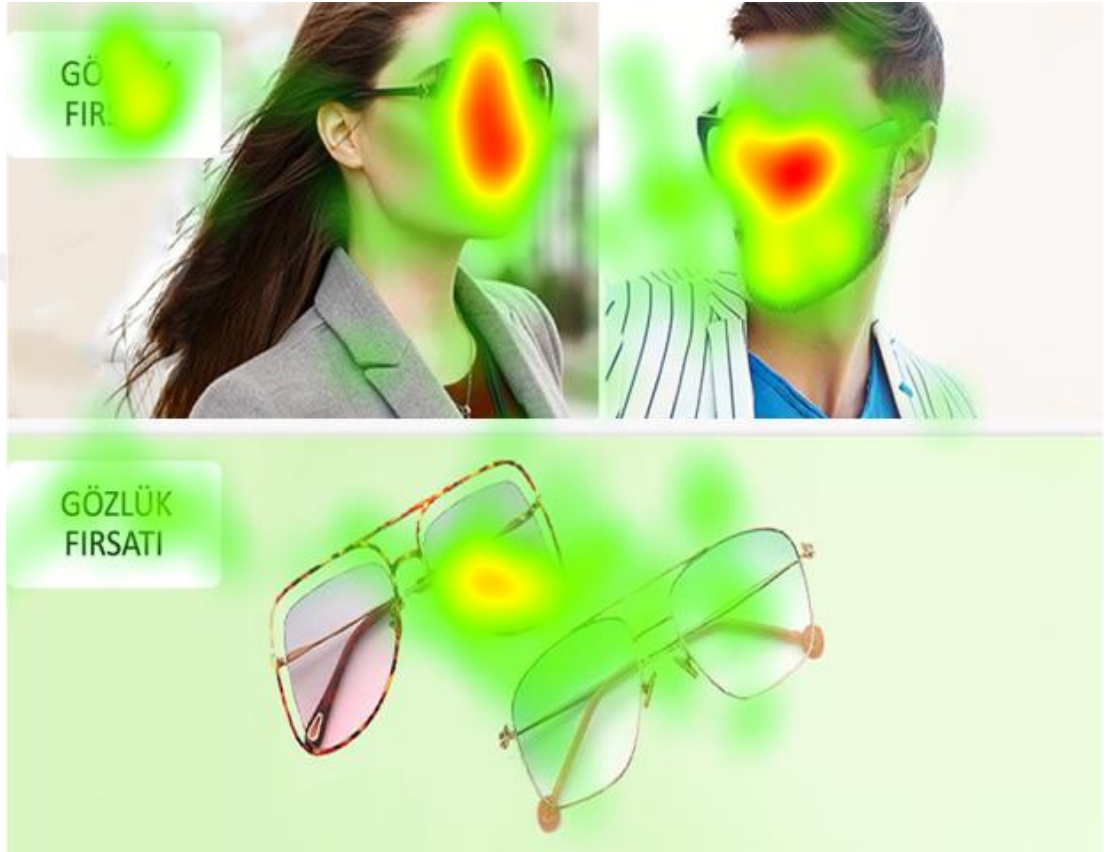


The heat maps shown in figures 1, 2 and 3 do not have a crucial difference within the context of gender. When we analyze the heat maps of all participants, we

can see the “informative text” got a dense interest. Also, the “shoes with human images” are more focused compared to others.

3.5.2.2.1.2. Heat Maps of Sunglasses

Figure 4: The Heat Map of Males for Sunglasses



For men’s heat map; it could be seen that “products showed with human images” and the “human faces” are much more attention taking.

Figure 5: The Heat Map of Females for Sunglasses



For female's heat map; it could be understood that the “sunglasses with human images” are the pictures that were focused mostly. Also, females focused on “informative text on these sunglasses” more than females. Furthermore, the “text in the image with human picture” is more attention taking than the text in the image without human picture.

Figure 6: The Heat Map of All Attendants for Shoes



For the heat map of all participants; we can see the participants are more focused on the “sunglasses presentation with the human picture” and also the “faces of human in the picture” compared to the ones without human images.

3.5.2.2.1.3. Heat Maps of Perfume

Figure 7: The Heat Map of Males for Perfume



For men's heat map it could be understood that the “face of the male” and “products” were focused mostly for both advertisements with human image. In other advertisement which is without human image the “products” were less focused.

Figure 8: The Heat Map of Females for Perfume



For female's heat map it could be understood that the “face of females”, “face of males” and “products” were focused mostly for advertisements with human images. Female's face” and the “product” are focused mostly; and female participants showed an interest in the “informative text on this perfume” for the product image “without a human picture. “

Figure 9: The Heat Map of All Attendants

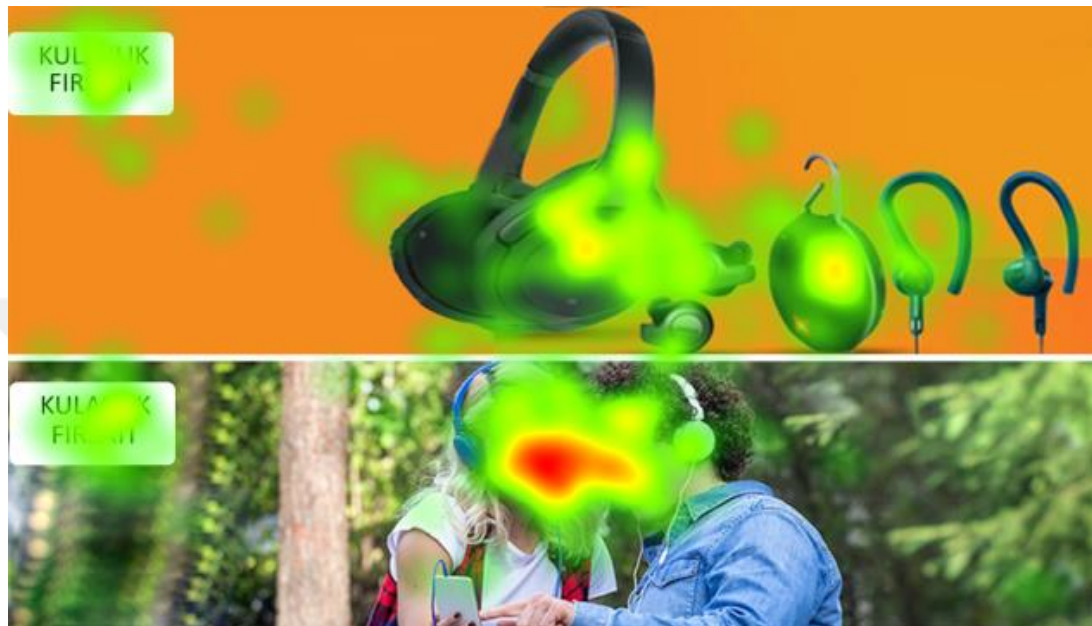


When we interpret the general map, firstly the “human faces” and secondly “informative text” in the image “without human picture”, and then the “products” in the images “without human pictures” are focused in turn.

3.5.2.2.2. Heat Maps of Utilitarian Products

3.5.2.2.2.1. Heat Maps of Headphone

Figure 10: The Heat Map of Males for Headphone



For men's heat map; it's observed that men are more focused on “products” in the images with human pictures.

Figure 11: The Heat Map of Females for Headphone



For females' heat map; it's understood that females are focused on "products" for both pictures with and without human images, and also they focused more on the "informative text" with human image more than "informative text ", "without human images."

Figure 12: The Heat Map of All Attendants for Headphone



When we analyze the all participant's heat map; we can see that the "informative text" on the headphones in the pictures" with human images" are focused and then the "products" are focused mostly in the images "without human pictures".

3.5.2.2.2. Heat Maps of Cellphone

Figure 13: The Heat Map of Males for Cellphone



When we look at the heat map of men we can state that the “human pictures” in the images and the “products” are the most focused ones in both pictures with and without human images. Also, the “products presented pictures without human images” are focused.

Figure 14: The Heat Map of Females for Cellphone



For men's heat map; it could be understood that the "informative text" were focused mostly for pictures "without human images". Also, the "human faces" and the "informative text" are densely focused for pictures with human images. The products in the pictured without human images got more attention the products in the pictures with human images.

Figure 15: The Heat Map of All Attendants for Cellphone



For all participants' general heat map, we can say that the “human faces” in the product pictures with human images, and the “product” for “both pictures” got almost the same interest.

3.5.2.2.2.3. Heat Maps of Television

Figure 16: The Heat Map of Males for Television



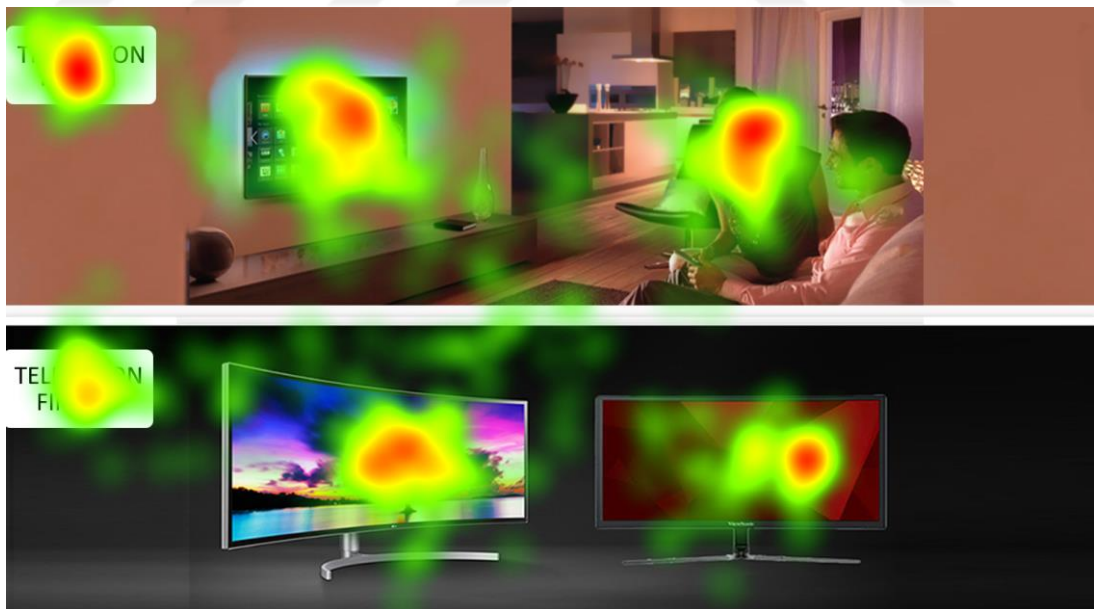
For men's heat map, it could be understood that the “products” were focused mostly for both advertisements “with and without human images”. Respondents focused more on the “products” rather than the human images.

Figure 17: The Heat Map of Females for Television



For females' heat map it's seen that participants focus on the “face of the human” and the “informative text for the pictures “with human images”. However, they focused on the “product” for the pictures “without human images”.

Figure 18: The Heatmap of All Attendants for Television



For both genders it can be stated that the “products” are focused on for both the pictures “with and without human images”.

3.5.3. Results of the Structured-Interview Questions

In order to support the findings of the eye tracking analysis and get more indebt information, a structured interview was undertaken with the respondents. In this structured interview 5 questions were asked to 42 respondents. Questions were designed to analyze the emotions and thoughts of the participants verbally about the visuals shown within the scope of eye tracking study. In summary, the participants were asked to describe the images that were in their mind either positively or negatively. To keep the names of the participants confidential, they were coded as M1, M2 etc. for men's analysis and F1, F2 for female's analysis. The questions asked in the interview, tables of analysis and some of the answers of respondents are as follows:

The values in the table below include the number of discourses, not the number of people. Participants mostly answered the questions as a product with or without a human picture no matter what the product is. In addition, there were participants who only talked about the product or talked only about images using human pictures. The products with human pictures are used as first item, the products without human pictures are used as second item and the product itself is used as third item. A value has been depending on the discourse number however some of the participants did not answer some questions. Therefore, the relevant line is left blank, no value has been entered. There were also the participants who said they had no idea for the questions.

Table 17: Question 1: Are there any images that stand out in your mind?

	Females	Males	Total
<u>Hedonic Products</u>			
Shoes Picture With Human Image	1	6	7
Shoes Picture Without Human Image	2	5	7
Shoes	0	1	1
Sunglasses Picture With Human Image	7	9	16
Sunglasses Picture Without Human Image	0	2	2
Sunglasses	2	1	3
Perfume Picture With Human Image	1	4	5
Perfume Picture Without Human Image	0	0	0
Perfume	4	0	5
Total: Hedonic Products With Human			28
Total: Hedonic Products Without Human			9
Total: Only Product			9
<u>Utilitarian Products</u>			
Headphone Picture With Human Image	3	5	8
Headphone Picture Without Human Image	3	3	6
Headphone	1	1	2
Cellphone Picture With Human Image	2	4	6
Cellphone Picture Without Human Image	3	2	5
Cellphone	1	1	2
Television Picture With Human Image	2	3	5
Television Picture Without Human Image	1	1	2
Television	4	7	11
Total: Utilitarian Products With Human			19
Total: Utilitarian Products Without Human			13
Total: Only Product			15
Total: All Products With Human			47
Total: All Products Without Human			22
Total: Only Products			24

When we examine the table 19, we can say that the visuals that the respondents remember the most are the products with human images (47). At the same time, when we compare hedonic (28) and utilitarian (19) products, we see that hedonic products that use human images are more remembered. Some of the answers related to the values of the table are shown below:

M1 *“I remember the shoes and sun glasses on the ground and on people.”*

M2 *“The colors and the kinds of headphones the order drew my attention. I remarked the product more than human figure.”*

F1 *“I like the females figure holding the perfume on her eye and the cellphones the most.”*

F2 *“There was a Picture of people who are wearing sunglasses, it was very effective.”*

When the answers to this question are analyzed, it is seen that the visuals are depicted by the respondents as they include human or not.

According to eye tracking analysis results, the effect of using human images together with products in website advertisements varies according to the product type. In other words when human pictures are used with hedonic type of products attention level of participants is increasing. When human pictures are used with utilitarian type of products participants do not find it attractive. There is also a difference between the discourse number of hedonic products (Hedonic: 28) and the number of utilitarian products (Utilitarian: 19).

Table 18: Question 2: How did these images make you feel?

	Females	Males	Total
I like both product images	4	1	5
I like product pictures with human images	12	9	21
I like product pictures without human image	1	5	6
It depends	1	5	6
Other	2	0	2

When we examine the table prepared for the second question, we see that the general expression of the participants is "I like product images with human images" (Total:21). There are also respondents who say whether or not they like the use of

human image changes according to product type (Total: 6). Some of the answers related to the values of the table are shown below:

F3 *“I like pictures with the human images more.”*

F4 *“I like pictures with the human images. This is more interesting.”*

M3 *“The pictures of human images more colorful and vivid. There are too many items to distract for the images which have human figures because the photos are too big.”*

M4 *“I think, I like both the images with and without human figures for television I like the one without human figure more, however for sunglasses the one with human image was better.”*

It is seen that most of the respondents liked and preferred products with human images.

According to the results of eye tracking analysis and survey results, it is seen that females prefer the advertisements that contains both the products and the human picture more than men. Also the structured interview results support this finding. It could be seen that mostly woman say that they preferred and liked the usage of human pictures. (Women: 12, Men: 9)

Table 19: Question 3: Were There any Images that Made the Website Look Positive?

		Females	Males	Total
Hedonic Products	With Human	3	1	4
	Without Human	1	1	2
Unclassified Products	With Human	4	3	7
	Without Human			
Utilitarian Products	With Human	1	4	5
	Without Human	1	2	3
Unclassified Products	With Human			
	Without Human			
Other				
Total With Human				9
Total Without Human				5
Total Only Product				7

Questions 3 and 4 were questions that the respondents answered less frequently and could not express themselves clearly. Despite to this, the respondents shared that the use of product images with human pictures affected them positively (9) towards the website. Some of the answers related to the values of the table are shown below:

M5 *“The pictures with human figures make the product more positive for me.”*

F5 *“The product of cellphone with human figures was positive for me.”*

F6 *“There were distracting things, but also this was supportive because it was a part of the advert.”*

M6 *“The Picture of two people listening to music for headphones makes me feel positive toward website.”*

They state that the images with human pictures have a positive effect on them. However, some state that these kinds of pictures may be distractive. However, while most of the participants find the product advertising images with human pictured positive, a few mention about the positivity of the images without human pictures.

Consequently, according to eye tracking analysis, awareness of the product picture used with human image for hedonic products faster than without human image ones. The reason for this can be that the participants evaluated the use of human images for the product advertisement positively (With Human:9 and Without Human:5). It also supports survey results related with image appeal questions.

Table 20: Question 4: Where there any images that made the site look negative?

		Females	Males	Total
Hedonic Products	With Human	1		1
	Without Human		1	1
Unclassified Products	With Human	1		
	Without Human			
Utilitarian Products	With Human	2	1	3
	Without Human	3		3
Unclassified Products	With Human			
	Without Human			

		Females	Males	Total
Other				
Total With Human				4
Total Without Human				4
Total Only Product				

When we examine the table, we can say that the answers are insufficient to generalize. However, interestingly, we can add that some females stated that they did not like the product images without human pictures in for utilitarian products. Some of the answers related to the values of the table are shown below:

M7 *“The pictures without human images make me feel negative toward the website.”*

F7 *“There was nothing to make me feel towards the websites. Everything looks nice.”*

F1 *“There were two sunglasses shared without human figures. It was unlikeable.”*

M8 *“The human pictures with sunglasses can be stated something negative for me.”*

Most of the respondents stated that there was nothing negative about the pictures that were shown. However, some of the male respondents found the product pictures with human figures negative.

The stated findings are also supported by survey results. There is no negative judgement about advertisements.

Table 21: Question 5: Are There any other Impressions You Would Like To Share?

	Females	Males	Total
Everything is good	2	2	4
The product images could also be photographed from different angles.	1		1
Product images with human pictures look better	7	7	14
I do not prefer product pictures with human image		2	2
Usage of human images depending on		2	2

	Females	Males	Total
product type			
Highlighting of the product is important / necessary	2	6	8

The expressions of the participants were categorized according to the answer given to the last question. Mostly, it was shared as "Product images with human pictures look better"(14). In addition, there have been those who talked about the importance and necessity of highlighting the product (8). Some of the answers related to the values of the table are shown below:

M8 *“Preferably watch human photos; they make the people feel warmer. You will also find me thinking about how the product will look in me.”*

F9 *“Human visuals should be used more. For example, it is more beautiful when a picture of a person is taken when shoes are shown.”*

M9 *“It is better for people to come to the fore instead of the products we will buy more.”*

F10 *“If the product was in the foreground, the product was small next to the human. Only those you put in the product were more successful.”*

Respondents generally stated that they liked the photos, but some of the respondents noticed other things such as distractions of human pictures. Respondents prefer to see human images because they are able to match themselves with model and the product. A just a few people think that usage of human pictures affects the priority of the presentation of a product negatively.

To conclude, the ideas of the respondents support the finding that the importance of change in attention level of customers depending on product type for product pictures used with human image. The interview questions also supports are main findings of the heat map analysis the most of the respondents stated that they would prefer to see hedonic type of products with human pictures, utilitarian type of products without human pictures. When we examine the heat maps, we see that human pictures are also the focal point as the participants also mentioned in the interview. Participants also mention that usage of human image might create distraction from the actual product.

CONCLUSIONS

With the increase of internet usage and consumers being more informed and included in online shopping, consumer purchasing behavior have also changed. Therefore, consumers have also developed different and higher expectations regarding the online store atmosphere. In order for the marketers to increase sales, they have to make the necessary arrangements considering these changing consumer expectations and habits. In this context, the visual and audio elements offered by online shopping sites should be designed primarily for the target audience and ease of use the website should be provided to consumers.

Thus, the purpose of this thesis is to determine whether the use of human image in advertisements with main products makes a difference for the customer. Basically, it is whether presenting a product with a human image in website ads attracts customer attention more than ads that only show the product itself. One of the important aims of the study is to reveal whether the interest level of the participants varies according to gender and the type of product used in website advertisements (utilitarian or hedonic).

The data were obtained by conducting two online surveys, an eye tracking analysis and a structured-interview. The first survey includes general information about the demographics and shopping habits of the participants. The second questionnaire was applied to the participants after the eye tracking analysis. It includes two parts. First part of questions related with shopping habits of respondents and the second part is type of shopping tendency questions and image appeal questions. A method used in neuromarketing is eye tracking analysis. Eye tracking technology helps researchers in areas where traditional marketing research is inadequate. It creates the opportunity to examine consumer responses to marketing and advertising tools with scientific steps (Maughan et al., 2007). In this thesis eye tracking method was used to measure changes in consumers' attention to shown pictures of different web advertisements. To complement the information from the eye tracking analyses also a structured interview was undertaken.

Heat maps obtained from the eye tracking analysis were determined and interpreted according Area of Interest (AOI). In the stage of eye tracking analysis, six

products, three of which are hedonic (shoes, sun glasses and perfume) and the other three utilitarian (cellphone, headphone and television) were selected for the study. Each product was shown to the participants in three different compositions. Along with the product image with human image, the product without human image and the display of these two images together. A total of 18 visuals were shown to the participants in eye tracking analysis. When we analyze the heat maps of the eye tracking analysis results of every participant in the research for the six products tested, it is seen that focused points on the product images with and without human pictures did not have a crucial difference. However, there are differences observed in the context of gender and product type as it is mentioned below.

The survey results, showed that majority of the respondents have utilitarian consumption tendency which has the possibility to affect the findings. The main findings of this thesis are that the informative text has also attracted the attention of the participants. The reason for this might be due to most of the respondents having utilitarian tendency that might lead them to search for more information. It is seen from the heat maps of the participants that; they focus commonly on texts in advertisements no matter if the product is hedonic or utilitarian type which is an interesting finding. One of the most important findings gathered via image appeal questions is that; females think that usage of human images make the products more preferable compared to men. This finding was also confirmed according to eye tracking analysis results. Also, considering the findings of interview, it can be said that females mention an increase of likeability level of the product if it is presented with the human image. Differently, men unconsciously categorize products by type and talk about their ideas about the use of human images for advertised products. Hedonic products the product presentations with human images are more focused. The products in the pictures without human images did not get significant interest. It is supported via structured-interview results people stated that they find pictures more attention taking when they presented with human for these products.

In addition, survey results, heat maps and interview findings showed that for hedonic products advertisement both men and females wanted to see human images which is an important finding especially for marketing practitioners. Females are more focused on the human pictures in the images with human compared to men.

While men focused on the human pictures they also showed interest in the product images. We can say that, the human pictures are focused on human images for both hedonic and utilitarian products. It is different for survey results for utilitarian products because there is no difference between total fixation duration of respondents (Total duration spent on an area), but there is difference between their time to first fixation on pictures (Duration until first noticed area).

There is a difference between usage of human image for hedonic and utilitarian type of product. People care about feelings and visually for hedonic products utilitarian products, the product images without human pictures are significantly focused irrespective of human figure. Therefore, in usage of human images marketers should be very careful because findings also showed that usage of human images may distract the attention of the customers from the main product. It is seen that products are much easily focused in the utilitarian type of product pictures without human images because of the fact that it takes time to examine product when there are other stimuli. According to heat maps, human pictures used in product advertisements are focused rather than products in the product pictures with human images. Although the survey results show that the use of utilitarian products with human images is not effective, heat maps showed us participants focused on human faces presented with utilitarian type of product pictures more than hedonic type of product pictures. It can prove that people mentioned in structured interview is the role of distraction of human figures. Because focusing on human faces do not mean that they focus on products presented with human image. That's why supporting eye tracking analysis results with other techniques is important. We can differentiate where the result actually points.

Also according to survey results it is seen that utilitarian types of products are realized later when they presented with human image for both gender.

The informative print text has not been analyzed descriptively, however the effectiveness of it has been observed via these heat maps. Also, respondents mention about these texts when they answered the interview questions. It is found as attractive to get information related with the banner advertisement what include is. For the future studies the text may be possible area of study as visual aide.

Structured-interview results helped us to be aware of some specific issues related with their change in level of attention. It is seen that majority of people who attend the study prefer product pictures with human image because of various factors. For instance, they seem product more friendly and warm. Second, they think that product can suitable for them because of the model is fit. The findings show same deduction with other analysis. Females prefer to see product with human image more compare to men. Men usually expect the see products alone to examine its specialties. Third one is that the promotion of the product with the human and the analysis of these images can be misleading. It cannot be said that the focus is on the product directly and the attention is positively developed.

People don't say as majority that "I prefer product images only" (Mean: 2,86) is just one of the lowest score given by respondents. However, they do not emphasize importance of usage human figures in product presentation. So, it can be commented as it depends on picture and also consumers' shopping will.

Marketing experts use neuromarketing practices to better identify consumer preferences, meet consumer expectations and ensure customer satisfaction. Marketers can establish marketing strategies and marketing campaigns in the light of the information obtained by neuromarketing and evaluate the effectiveness of advertising messages, and the attractiveness of product designs. (Solmaz, 2014; Ural, 2008)

The visual strategy begins with understanding who the audience is. Understanding the wishes and needs of the target market will also help to determine how a business should present its products visually in the website. For example, according to research findings usage of human image increases attractiveness of the hedonic products and affects how users feel about a product. Different visual advertisement elements produce different emotions in customers, so it is important to choose the right visual element for the target audience.

The point to be noted for a design aimed for females must be: the design should have more visual aids and the text of the product should be more detailed. However, the point to be noted for a design aimed for men must be differentiated according to product type. If the product is utilitarian ones, then they will want to focus on the product.

In conclusion, we can state that using a human figure can play a destructive role rather than something that makes it possible to focus on product more. An estimation may be possible to define the attitude and the behavior using a supportive neuromarketing analysis method such as EEG about the buying process sensible way.

Limitations of the Study

This thesis has a couple of limitations. Although multi-method approach helps deepen understanding of a complex issue, this study also raises many questions that make us feel the necessity of using other neuromarketing techniques such as EEG. However, application of EEG is more expensive than the eye tracking method. Also it is hard to find a lab which has EEG machine. That is why this research could not use EEG.

Size of the sample is another limitation. Although the sample size is adequate for the eye tracking analyses it makes it impossible for the generalization of the questionnaire results. The study is conducted in a laboratory setting. It was hard to bring people for the experiment. Treats, which are offered to the attendees, may increase the high motivation of them for the next research. In addition, it was difficult to apply all data gathering methods on one person in a limited time.

Lastly, in this study, 3 products were used to represent hedonic, and 3 were used to represent utilitarian. However for this selection no pre analyses were undertaken and the products were selected as to the suggestions of the literature. However for this selection no pre analyses were undertaken and the products were selected as to the suggestions of the literature.

REFERENCES

Abubaker Shaouf A, Kevin Lü A, Xiaoying Lib. (2016). The Effect of web Advertising Visual Design on Online Purchase Intention: An Examination Across Gender, *Computers in Human Behavior*, 60, 622-634.

Adomavičiūtė, Karina. (2014). Relationship Between Utilitarian And Hedonic Consumer Behavior and Socially Responsible Consumption. *Economics and Management*. 18(4): 754-760.

Aga Bojko, (2013). *Eye Tracking The User Experience: A Practical Guide to Research*. Book.

Akan, Şahap, (2018). Yeni Bir Disiplinlerarası Alan Olarak Nöropazarlama Üzerine Kavramsal Bir Değerlendirme. *Black Sea Journal of Public and Social Science*, 1(1): 0-25.

Akın, M. Selami. 2014, Pazarlama Araştırmacıları Perspektifinden Nöropazarlama: Keşifsel Bir Araştırma, Sakarya: Sakarya University , Master's Thesis.

Aladwani, A.M. and Palvia, P.C. (2002). Developing and Validating an Instrument for Measuring Userperceived Web Quality. *Information and Management*, 39: 467-476.

Allen, D. (2001). e-Marketer: women on the web. Retrieved from http://www.ebusinessforum.com/analysis/ecommerce_b2c/20010228_b2c.html.

Andrzej Szyökwowiak, Urszula Garczarek-Bak (2018). Gender Differences in E-Commerce. *Handel Wewnetrzny*. 4(375): 250-261.

Anu C. H. And Saju B. (2019). Motivational Factors for Product Category Based On Channels. *International Journal of Recent Technology and Engineering*, 8(1): 1561-1564.

Argan, Metin and Velioglu, Meltem and Tokay Argan, Mehpare. (2007). Marka Yerleştirme Stratejilerinin Hatırlama Üzerine Etkisi: 'GORA' Filmi Üzerine Araştırma. *Elektronik Sosyal Bilimler Dergisi*, 6(19): 159-178.

Armstrong, G., and Kotler, P. (2000). Marketing: An introduction, 5th ed. Upper Saddle River, NJ: Prentice Hall.

Ayn E. Crowley, Eric R. Spangenberg and Kevin R. Hughes (1992), “Measuring the Hedonic and Utilitarian Dimensions of Attitudes toward Product Categories”. *Marketing Letters*, 3(3): 239-249.

Babin, B. J., Dardfun, W.R. And Griffin, M. (1994). Work and/or Fun: Measuring Hedonic and Utilitarian Shopping Value. *The Journal of Consumer Research*, 20(4): 644-656.

Baggett, P. (1989). Understanding Visual and Verbal Messages. In H. Mandl and J. R. Levin (Eds.), Knowledge Acquisition from Text and Pictures. *Amsterdam: Elsevier Science Publishers*, 11-104.

Bailey, R.W. (1989). *Human Performance Engineering Using Human Factors/Ergonomics to Achieve Computer System Usability*, 2d ed., Prentice Hall, Englewood Cliffs, NJ.

Barber, W., Badre, A.N. (1998). Culturability: The Merging of Culture and Usability. In: Human Factors and the Web, Our Global Community. *Basking Ridge, New Jersey, USA. ATandT Labs*.

Batra Rajeev and Olli T. Ahtola., (1991). *Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes*, Marketing Letters, 2(2): 159-170.

Behrens, R. (1984). *Design in the Visual Arts*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Bektaş Sarı, Berkant Yılmaz, Ali Okan Ferik. (2019). Pazarlama Araştırmalarında Yeni Bir Eğilim Olarak Nöropazarlama: Türkiye’de Nöropazarlama Alanında Yapılan Akademik Çalışmalara Yönelik Bir İnceleme, *Selçuk İletişim*, 12 (2): 1127-1168.

Belizzi, J.A. and Hite, R.R., (1992). Environmental Color, Consumer Feelings, and Purchase Likelihood. *Psychology and Marketing*, 9: 347-363.

Bercea, M. Diana (2013). Anatomy of Methodologies for Measuring Consumer Behavior in Neuromarketing Research. *Romania: University of Iași, Master Thesis*.

Berleant, Arnold. (2016). The Way to Social Aesthetics. (Conference Paper), Given as Keynote Lecture at the Seminar of Social Aesthetics: Perspectives on Art and Engagement in São Paulo, Brazil 10-11 Nov 2016.

Bezgin, Leyla (2016). X, Y, Z Kuşağı Tüketicilerinin Yeniden Satın Alma Kararı Üzerinde Algılanan Marka Denkliği Öğelerinin Etki Düzeyi Farklılıklarının Nörogörüntüleme Tekniklerinden Elektroensefalografi(Eeg) ve Göz İzleme Yöntemleriyle Belirlenmesine Dair Deneysel Bir Çalışma, Çorum: Hitit University Social Sciences Institute, *Master Thesis*.

Bleier, Alexander, Harmeling, Colleen and Palmatier, Robert. (2018). Creating Effective Online Customer Experiences. *Journal of Marketing*, 1-22.

Bonnardel, Nathalie and Piolat, Annie and Le Bigot, Ludovic. (2011). The Impact of Colour on Website Appeal and Users' Cognitive Processes, *Displays*, 32, 69–80.

Bonnardel, Nathalie and Piolat, Annie and Le Bigot, Ludovic. (2011). The Impact of Colour on Website Appeal and Users' Cognitive Processes. *Displays*. 32, 69–80.

Braun-Latour, K.A., and Zaltman, G. (2006). Memory Change: An Intimate Measure of Persuasion. *Journal of Advertising Research*, 46(1): 57-72.

Camilleri, Mark. (2017). *Market Segmentation, Targeting and Positionin* , Book

Chatterjee P (2005) Changing Banner Ad Executions on the Web: Impact on Clickthroughs and Communications Outcomes. *Adv. Consumer Res.* 32(1):51–57.

Chen, P.T., and Hu H. H. (2010). The Effect of Relational Benefits on Perceived Value in Relation to Customer Loyalty: an Emprical Study in the Australian Coffee Outlets Industry. *International Journal of Hospitality Management*, 29: 405-412.

Cho, C.-H and Lee, Jung-Gyo and Tharp, Marye. (2001). Different Forced-Exposure Levels to Banner Advertisements. *Journal of Advertising Research*. 41(4): 45-56.

Cho, E., and Kim, Y.K. (2012). The Effects of Website Designs, Self-Congriuity, and Flow on Behavioral Intention. *International Journal of Design*, 6(2): 31-39.

Chou, S., Chen C. W. and Lin J. Y. (2015). Female Online Shoppers: Examining the Mediating Roles of E-Satisfaction and E-Trust on E-Loyalty Development. *Internet Research*, 25(4): 542-561.

Chu, H. Arco-Urriza, M., Cebollada-Calvo, J., and Chinyangunta, P. K. (2010). An Empirical Analysis of Shopping Behavior Across Online and Offline Channels For

Grocery Products: The Moderating Effects of Household And Product Charecteristics. *Journal of Interactive Marketing*, 24, 251-258.

Cober, R., Brown, D., and Levy, P. (2004). Form, Content, and Function: An Evaluative Methodology for Corporate Employment Web Sites. *Human Resource Management*, 43(2and3): 201–218.

Cohen, H.H. and Woodson, W.E. (2005). Principles of Forensic Human Factors/Ergonomics, *Lawyers and Judges Publishing Co., Tucson, AZ*.

Constantinides, Efthymios. (2004). Influencing the Online Consumer's Behavior: The Web experience. *Internet Research*. 14, 111-126.

Coşkun Pınar, Yücel Atilla .(2018).Nöropazarlama Literatür İncelemesi, *The Journal of International Social Sciences*, 28(2): 157-177.

Coulson, K. (1998). *Graphics: A New Zealand approach. Auckland, NZ: Addison Wesley Longman New Zealand Ltd, Book*.

Crivelli, Carlos and Russell, James and Jarillo, Sergio and Fernandez-Dols, José-Miguel. (2017). Recognizing Spontaneous Facial Expressions of Emotion in a Small-Scale Society of Papua New Guinea. *Emotion*. 17, 337-347.

Çubuk, Fatma. 2012, Pazarlamada Uygulamaya Yönelik Yeni Bir yYklşım: Nöropazarlama. İstanbul: Kadir Has University, Master’s Thesis.

Cyr, D., and Bonani, C. (2005). Gender and Website Design in Business. *International Journal Electric Business*, 3(6): 565-582.

Cyr, D., and Head, M. (2013). Website Design in E-Business. *International Journal of Electronic Business*, 3(6): 565-582.

Cyr, D., Bonanni, C., Ilsever, J. (2004): Design and E-Loyalty across Cultures in Electronic Commerce. *In: Proceedings of the 6th International Conference on Electronic Commerce Delft, the Netherlands*, 51–360.

Cyr. D., Head, H., Larios, H., Pan, B. (2009): Exploring Human Images in Website Design: A Mutli Method Approach. *Mis Quarterly*, 33(3): 539-566.

Dahiya Richa (2012). Impact Of Demographic Factors of Consumers on Online Shopping Behavior: A Study Of Consumers in India: Society for Science and Nature. *International Journal of Engineering And Management Sciences*, 3(1): 43-52.

Daniel S. Janal. (1995). *Online Marketing Handbook: How to Sell, Advertise, Publicize, and Promote Your Products and Service*. Mass Market Paperback.

Darley, W. K., And Smith, R. E. (1995). Gender Differences in Information Processing Strategies: An Empirical Test of the Selectivity Model in Advertising Response. *Journal of Advertising*, 24, 41-56.

Desmet, P.M.A. and Hekkert, P. (2007), “Framework of product experience”, *International Journal of 18 Design*. 1(1): 7-66.

Dion, K., Berscheid, E., Walster, E. (1972). What Is Beautiful Is Good. *Journal of Personality and Social Psychology*, 24(3): 285-290.

Drèze X, Hussherr F-X (2003) Internet Advertising: Is Anybody Watching? *J. Interactive Marketing* 17(4):8–23.

Dreze, X., Zuftrden, F. (1997). Testing website design and promotional content. *Journal of Advertising Research*, 37(2): 77-91.

Ducoffe, R. H. (1996). Advertising Value and Advertising on the Web. *Journal of Advertising Research*, 36(5): 21-36.

Duffett, R.G. (2015). Facebook Advertising's Influence on Intention-To-Purchase and Purchase Amongst Millennials, *Internet Research*, 25(4): 498-526.

Eagly, A.H., and Wood, W. (2013). The Nature-Nurture Debates: 25 Years of Challenges in Understanding the Psychology of Gender. *A Journal of the Association for Psychological Science*, 8(3): 340-57.

Ekman, P. (1992). An Argument for Basic Emotions. *Cognition and Emotion*, 6(3-4): 169-200.

Elisabeth Cuddihy, Jan H. Spyridakis (2012). The Effect of Visual Design and Placement of Intra-Article Navigation Schemes on Reading Comprehension and Website User Perceptions, *Computers in Human Behavior*, 28, 1399-1409.

Ergin, E. A., and Akbay, H. O. (2008). An Empirical Investigation of Turkish Consumers' Online Shopping Patterns. *Journal of Global Business and Technology*, 4(2): 54-59.

Eriksen, C.W., Hamunand, R. M., and Breitmeyer, R.G. (1970). Temporal Factors in Visual Perception as Related to Aging. *Psychonomic Journals*, 7, 354-356.

Eun-Ju Lee and Jefferey W. Overby (2004). Creating Value for Online Shoppers: Implications for Satisfaction and Loyalty. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 17: 54-67.

Fisk, A.D., Rogers, W.A., Charness, N., Czaja, S.J. and Sharit, J. (2004) Designing for Older Adults: Principles and Creative Human Factors Approaches. *CRC Press LLC, Boca Raton, FL*.

Flavián, C. and Gurrea, R. (2008). Reading Newspapers on the Internet: The Influence of Websites Attributes. *Internet Research*, 18(1): 26-45.

Fogg, B.J. (2002). *Persuasive Technology*. Morgan Kaufmann, San Francisco.

Francisco Espigares-Jurado, Francisco Muñoz-Leiva, Marisol B. Correia, Carlos M.R. Sousa, Célia M.Q. Ramos, Luís Faísca (2020). Visual Attention to the Main Image of a Hotel Website Based on Its Position, Type Of Navigation And Belonging To Millennial Generation: An eye tracking study, *Journal of Retailing and Consumer Services*, 52, 101906.

Garbarino, Ellen and Strahilevitz, Michal. (2004). Gender Differences in the Perceived Risk of Buying Online and the Effects of Receiving a Site Recommendation. *Journal of Business Research*, 57, 768-775.

Garrett, J. J. (2003). *The Elements of User Experience: User-Centered Design for the Web*. Berkeley, Ca: New Riders. Peachpit, 2.

Goldberg, J. H. (2014). Measuring Software Screen Complexity: Relating Eye Tracking, Emotional Valence, and Subjective Ratings. *International Journal of Human-Computer Interaction*, 30(7): 518-532.

Goodrich, K. (2011). Anarchy of effects? Exploring Attention to Online Advertising and Multiple Outcomes. *Psychology and Marketing*, 28, 417-440.

Grannis, K, Davis, E., and Sullivan, T. (2007). Online Clothing Sales Surpass Computers, According To Shop.Org/Forrester Research Study, *North Southeastern University, Master's Thesis*.

Griffiths, G. H., and Howard, A. (2008). Balancing Clicks and Bricks – Strategies for Multichannel Retailers. *Journal of Global Business Issues*, 2(1): 69-75.

Grohmann, Bianca and Giese, Joan and Parkman, Ian. (2012). Using Type Font Characteristics to Communicate Brand Personality of New Brands. *Journal of Brand Management*, 20(5): 389-43.

Grohmann, Bianca and Giese, Joan and Parkman, Ian. (2012). Using Type Font Characteristics to Communicate Brand Personality of New Brands. *Journal of Brand Management*. 20(5):389-403.

H. Khachatryan and A. L. Rihn (2014). Eye-Tracking Methodology and Applications in Methodology : Experimental Design, *Sampling , and Data*, 1–5.

Ha, Y. and Lennon, S.J. (2010a), “Effects of site design on consumer emotions: role of product involvement”, *Journal of Research in Interactive Marketing*, 4(2), 80-96.

Ha, Y. and Lennon, S.J. (2010b), “Online visual merchandising (VMD) cues and consumer pleasure and arousal: purchasing versus browsing situation”, *Psychology and Marketing*, 27(2), 141-65.

Haley, R. I., and Baldinger, A. L. (2000). The ARF Copy Research Validity Project. *Journal of Advertising Research*, 40(6), 114-135.

Harezlak K, Kasprowski P. (2018). Application of Eye Tracking In Medicine: A Survey, Research Issues and Challenges. *Comput Med Imaging Graph*, 65: 176-190.

Hasan B. (2010). Exploring Gender Differences in Online Shopping Attitude, *Computers in Human Behavior*, 26 (4): 597-601.

Hasan, B. (2010). Exploring Gender Differences in Online Shopping Attitude. *Computers in Human Behavior*, 26,597-601.

Heisz, J. J., Pottruff, M. M., and Shore, D. I. (2013). Females Scan More Than Males: A Potential Mechanism for Sex Differences in Recognition Memory. *Psychological Science*, 24(7): 1157-1163.

Hirschman E.C. (1987). People as Products: Analysis of a Complex Marketing Exchange. *Journal of Marketing*. 51(1): 98-108.

Hirschman, E.C. (1982). Symbolism and Technoogy as Sources for the Generation of Innovations. *Advances in Consumer Research*, .9(1): 1-22.

Hoffman, D.L., and Novak, T.P. (1996). Marketing in hypermedia computer-mediated environment: Conceptual foundations. *Journal of Marketing*, 60(3): 50-68.

Hoffman, Donna and Novak, Thomas. (1998). A New Marketing Paradigm for Electronic Commerce, *The Information Society*. 13, 1-23.

Hsin-Hui Lin and Shu-Fei Yang (2014). An Eye Movement Study of Attribute Framing In Online Shopping. *Journal of Marketing Analytics*. 2(2): 72-80.

Huang Hen-Hung and Yang, Y.C. (2010). Gender Differences in Adolescents' Online Shopping Motivations. *Journal of Business Management*.

Huang, P., Lurie, N.H., And Mitra, S. (2009). Searching for Experience on the Web: An Empirical Examination of for Search and Experience Goods, *Journal of Marketing*, 73(2): 55-69.

Huang, Z., and Benyoucef, M. (2013). From E-Commerce to Social Commerce: A Close Look at Design Features. *Electronic Commerce Research and Applications*, 12(4): 246-259.

Hurlbert, A. C., and Ling, Y. (2007). Biological Components of Sex Differences in Color Preference. *Current Biology*, 17(16): 623-625.

Int. J. Electronic Business, (2010). The Effects of Website Design on Purchase Intention in Online Shopping: The Mediating Role of Trust and The Moderating Role of Culture.

J.M. Carpenter and V. Balijs (2010). Retail Format Choice in the US Consumer Electronics Market, *International Journal of Retail and Distribution Management*, 38(4): 258-274.

Jacob, R.J.K. And Karn, K.S. (2003). Eye Tracking in Human-Computer Interaction and Usability Research: Ready to Deliver the Promises. *The Minds Eye: Cognitive and Applied Aspects of Eye Movement Research*, Elsevier, Amsterdam, 573-605.

Jarvenpaa, S.L. and Todd, P.A. (1997). Consumer Reactions to Electronic Shopping on the World Wide Web, *International Journal of Electronic Commerce*, 1(2): 59-88.

Jesper Clement and Maria Kokkoti (2014). Understanding the Influence from Web-Shop Design on Consumers' Visual Attention and Product Evaluation. *Conference: Eurass - 21st International Conference on Advances in Retailing and Services Science*.

Jing Luan, Zhong Yao, Futao Zhao and Hao Liu (2016). Search Product and Experience Product Online Reviews: An Eye Tracking Study on Consumers' Review Search Behavior. *Computers in Human Behavior*, 65, 420-430.

Josephson, S. (2004). *Eye Tracking Methodology and the Internet*. In: K. Smith, S. Moriarty, G. Barbatsis and K. Kenney (Eds). *Handbook of Visual Communication: Theory and Methods, and Media*. London Lawrence Erlbaum Associates.

K. Donelaicio (2012). The Relationship of Consumers Perceived Hedonic Value And Behavior, *Inzinerine Ekonomika-Engineering Economic*, 23(5): 532-540.

Kang, J., and Park-Poaps, H. (2010). Hedonic and Utilitarian Shopping Motivations of Hashion Leadership. *Journal of Shopping Center Research*, 13(1): 57-79.

Karanam, S., van Oostendorp, H., Puerta Melguizo, M. C., and Indurkhya, B. (2009). Integrating Graphical Information into Cognitive Modeling of Neb navigation. *In Cognitive Science Conference Proceedings*, Amsterdam, Netherlands, July 29–August 1.

Karim, Rashed. (2013). Customer Satisfaction in Online Shopping: A Study into the Reasons for Motivations and Inhibitions. *IOSR Journal of Business and Management (IOSR-JBM)*. 11(6): 13-20.

Keeney, R. (1999). The Value of Internet to the Customer. *Management Science*, 45(4): 533-542.

Keeney, R.L. (1999). The Value of Internet Commerce to the Customer. *Management Science*, 45 (4), 533-542.

Kenning, P., Plassmann, H., Ahlert, D (2007). Application of function magnetic resonance imaging for market research, *Qualitative Market Research-An International Journal*, 10 (2): 135-152.

Khattak, Ali and Shah, Khan and Ali, Haider and Khalil, Yasir and Shah, Mukharif. (2018). Color Psychology in Marketing, 4(1), 183-190.

Kim, H.S. (2006). Using Hedonic and Utilitarian Shopping Motivations to Profile Inner City Consumers. *Journal of Shopping Center Research*, 13(1): 57-79.

Kim, M. and Lennon, S.J. (2008), “The Effects of Visual and Verbal Information on Attitudes and purchase intentions in internet shopping”, *Psychology and Marketing*, 25(2): 146-78.

Kim, D.J., Ferrin D.L. and Rao, H.R. (2008). Trust-Based Consumer Decision-Making Model in Electronic Commerce: The Role of Trust, Perceived Risk, and Their Antecedents. *Decision Support Systems*, 44(2): 544-564.

Kimelfeld, Yaakov and Watt, James. (2001). The Pragmatic Value of On-line Transactional Advertising: A Predictor of Purchase Intention. *Journal of Marketing Communications*, 7, 137-157.

Kotler, P. (2003). *Marketing Management*, 11th ed. Upper Saddle River, NJ: Prentice-Hall, Inc .

Kotler, P., and Armstrong, G. (2008). *Principles of Marketing*, Upper Saddle River, NJ: Pearson Prentice Hall.

Kotler, P., Rath, A.G. (1984). Design A Powerful But Neglected Strategic Tool. *Journal of Business Strategy*, 5(2): 16–21.

Krippendorff, K. (2004). Content analysis: An introduction to its Methodology: Sage.

Kwak, H., Fox, R. J., and Zinkhan, G.M. (2002). What Products can be Successfully Promoted and Sold via the Internet? *Journal of Advertising Research*, 42, 23–38.

Lee, M. Y., Kim, Y. K., and Faithurst, A. (2009). Shopping Value in Online Auctions: Their Antecedents and Outcomes. *Journal of Retailing and Consumer Services*, 16, 75-82.

Li En, Breeze James, Horsley Mike and A. Donnel Briely Private and Public: Eye Movement and Eye Tracking in Marketing.

Li, Z., Zhang, L., and Ma, W.-Y. (2008). Delivering Online Advertisements inside Images. In Proceed-ing of the 16th ACM international conference on Multimedia, 1051-1060. New York: ACM.

Lichtle, M. (2007). The Effect of an Advertisement's Colour on Emotions Evoked By an Ad and Attitude towards the Ad. *International Journal of Advertising*, 26(1): 37.

Lim Pei Ling and Mr. Rashad Yazdanifard (2014). Does Gender Play A Role in Online Consumer Behavior? *Global Journal of Management and Business Research*, 14(7): 49-56.

Lindstrom, M (2008). Buyology: truth and lies about why we buy, Random House, Australia.

Liu, C. and Arnett, K. (2000), Exploring The Factors Associated With Web Site Success in the Context of 20 Electronic Commerce, *Information and Management*, 38, 23-33.

Liu, C., and Arnett, K.P. (2000). Exploring the Factors Associated with Web Site Success in the Context of Electronic Commerce. *Information Management*, 38(1): 23–33.

Liu, Chang and Arnett, Kirk. (2000). Exploring the factors associated with Web site success in the context of electronic commerce. *Information and Management*. 38. 23-33.

Loiacono, Eleanor and Djasasbi, Soussan and Kiryazov, Todor. (2013). Factors that Affect Visually Impaired Users' Acceptance of Audio and Music Websites. *International Journal of Human-Computer Studies*. 71(3): 1399-1409.

M.Z. Azhari and A.Z. Afiff, (2015). The Coherence and Congruence of Convergence in Consumer Electronics, *Journal of Product and Brand Management*, 24(4): 377-385.

Magdalena Borys, Malgorzata Plechawska-W. (2017). *European Journal of Medical Technologies*, 3(16): 11-23.

Marcus, A., and Gould, E. W. (2000). Crosscurrents: Cultural Dimensions and Global Web User- Interface Design. *Interactions*, 7(4): 32-46.

Markus J. Hofmann, Steffen. *Remus*, in *Cognitive Approach to Natural Language Processing*, ISTE Press- Elsevier, 234, Book.

Mero, Joel and Aarne, Töllinen and Karjaluo, Heikki and Jayawardhena, Chanaka. (2012). Digital and Social Media Marketing Usage in B2B Industrial Section. *Marketing Management Journal*. 22, 102-117.

Meyers-Levy, Joan and Loken, Barbara. (2014). Revisiting Gender Differences: What We Know and What Lies Ahead. *Journal of Consumer Psychology*, 25, 130-148.

Mitchell, A.A., Olson, J.C. (1981), "Are Product Attribute Beliefs the Only Mediator of Advertising Effects on Brand Attitude?" *Journal of Marketing Research*, 18(3): 318-332.

Ms. Pranita Ranade. (2015). Use of Eye Movement Tracking Technique in the Study of Layout and Composition Design of Medieval Indian Manuscripts, *Global Journal Interdisciplinary Social Sciences*, 4(2): 37-42.

Mullet, K. and Sano, D. (1995). *Designing Visual Interfaces: Communication Oriented Techniques*. Englewood Cliffs, NJ: Prentice Hall.

Murdock, V., Ciaramita, M., and Plachouras, V (2007). A Noisy Channel Approach to Contextual Advertising. In Proceedings of the 1st International Workshop on Data Mining and Audience Intelligence for Advertising, 21-27.

Nasar, J.L. (1988). *Environmental Aesthetics: Theory, Research, and Applications*. Cambridge: Cambridge University Press, 599.

Naumovska, Ljupka. (2017). Marketing Communication Strategies for Generation Y – Millennials. Macro think, *Institute Business Management and Strategy*. 8, 123.

Norman, D.A. (1981) 'The trouble with UNIX', *Datamation*, 27(12): 139–150.

Norman, D.A. (2002) *The Design of Everyday Things*, Basic Books, New York.

Norman, D.A. (2004). *Emotional Design: Why We Love (Or Hate) Everyday Things*. New York: Basic Books.

O'Connell, B., Walden, S., Pohlmann, A (2011). Marketing and Neuroscience-What drives customer decisions? American Marketing Association.

Paoletti, J.B. (1987). Clothing And Gender in American Children's Fashions 1890–1920. *Signs*, 13, 136–143.

Pelham, Brett and Swann, William. (1989). From Self-Conceptions to Self-Worth: On the Sources and Structure of Global Self-Esteem. *Journal of Personality and Social Psychology*, 57. 672-680.

Pelz, J.B. And Canosa, R. (2001). Oculomotor Behavior and Perceptual Strategies In Complex Tasks. *Vision Research*, 41(25-26):3587-96.

Petrtyl, J. (2012). Security and Trustworthiness as Drivers of E-Shop Competitiveness (Opinions of Young Customers). *Journal of Competitiveness*, 4(1): 83-89.

Pieters, R. (2007). A Review of Eye-Tracking Research in Marketing. *Review of Marketing Research*, 4(23): 123-147.

Pieters, Rik and Wedel, Michel. (2004). Attention Capture and Transfer in Advertising: Brand, Pictorial, and Text-Size Effects. *Journal of Marketing Journal of Marketing*. 68. 36-50.

Pieters. R. And Warlop, L. (2002). Recent Developments in Visual Attention Research. *Advances in Consumer Research*, 29(1): 89.

Plassmann, H., Kenning, P., and Ahlert, D (2007). Why companies should make their customers happy: The neural correlates of consumer loyalty, *Advances in Consumer Research*, 34: 735-739.

Plassmann, H., Ramsay, T.Z., Milosavljevic, M (2011). Faculty and Research Working Paper: Branding the Brain-A critical review, INSEAD-The Business School of the World.

Poole, A., Ball, L.J. and Phillips. (2004). In Search Of Salience: A Response-Time and Eye-Movement Analysis of Bookmark Recognition. *People and Computers Xviii-Design for Life: Proceedings of Hci 2004 Springer-Verlag, London*, 363-78.

Qiuzhen Wang, Yi Yang, Qi Wang and Qingguo Ma (2014). The Effect of Human Image in B2c Website Design: An Eye-Tracking Study. *Enterprise Information Systems*, 8(5): 582-605.

R. Lupu and F. Ungureanu. (2013). *A Survey of Eye Tracking Methods and Applications*, Bul Inst Polit Iasi.

Raney, A. A., L. M. Arpan, K. Pashupati, and D. A. Brill. 2003. "At the movies, on the web: An investigation of the effects of entertaining and interactive web content on site and brand evaluations." *Journal of Interactive Marketing* 17 (4): 38-53.

Ranganathan, C. and Ganapathy, S. (2002), Key Dimensions of B2C Web Sites Information and Management, 39, 457-465.

Ranganathan, C. and Ganapathy, Shobha. (2002). Key dimensions of business-to-consumer Web sites. *Information and Management*, 39, 457-465.

Riedl, R., Hubert, M., and Kenning, P. (2010). Are There Neural Gender Differences In Online Trust? An Fmri Study on the Perceived Trustworthiness of Ebay Offers. *Mis Quarterly*, 34(2): 397–428.

Rintamaki, T., Kanto, A., Kuusela H., and Spence, M.T. (2006). Decomposing the Value of Department Store Shopping Into Utilitarian, Hedonic and Social Dimensions. *International Journal of Retail and Distribution Management*, 34(1): 6-24.

Ripoll, H., Kerlirzin, Y., Stein J.-F and Reine, B. (1995). Analysis of Information Processing, Decision Making, and Visual Strategies in Complex Problem Solving Sport Situations, *Human Movement Science*, 14(3): 325-349.

Roberts and Hoetzel (2007). "Psychophysiological Responses to Visual Fear Stimuli" *Psi Chi, the National Honor Society in Psychology*, 12(1): 31–34.

Rodgers, S., and Harris, M. A. (2003). Gender and E-Commerce. An Exploratory Study. *Journal of Advertising Research*, 34(3): 322-329.

Rodriguez estrada, Fabiola and Davis, Lloyd. (2015). Improving Visual Communication of Science Through the Incorporation of Graphic Design Theories and Practices into Science Communication. *Science Communication*, 37(1): 140-148

Rosen, Deborah and Purinton, Elizabeth. (2004). Website design. *Journal of Business Research - J BUS RES*, 57, 787-794.

Rudkomva Daria. (2015). *Importance Of Social Media in Online Marketing and Use of Eye-Tracking Methods in Online Shopping*.

Russo, J.E. and Leclerc, F. (1994). An Eye-Fixation Analysis of Choice Processes for Consumer Nondurables, *Journal of Consumer Research*, 21(2): 274-90.

Sampo Nojonen, (2017). What Makes A Beautiful Website? Factors Influencing Perceived Website Aesthetics, University of Jyväskylä , *Thesis*, 31.

Sanjeev Prashar, T. Sai Vijay, and Chandan Parsad (2017). Effects of Online Shopping Values and Website Cues on Purchase Behavior: A Study Using S-O-R Framework. Vikalpa, *The Journal For Decision Makers*, 55(3): 829-837.

Sargezeh Abdi Bahman, Tavakoli Niloofar and Daliri Reze Mohammed (2019). Gender-Based Eye Movement Differences in Passive Indoor Picture Viewing: An Eye-Tracking Study, *Physiology & Behavior*, 206, 43-50.

Sarkar, A. (2011). Impact of Utilitarian and Hedonic Shopping Values on Individuals Perceived Benefits and Risks in Online Shopping. *International Management Review*, 7(1): 58-65.

Scott, L. M. (1994). Images in Advertising: The Need for a Theory of Visual Rhetoric. *Journal of Consumer Research*, 21(2): 252-273.

Seong Wook Chae and Kun Chang Lee (2012). Exploring the Effect of the Human Brand on Consumers' Decision Quality in Online Shopping, *Online Information Review*. 37(1): 83-100.

Shepard, R. N. (1967). Recognition memory for words, sentences, and pictures. *Journal of Verbal Learning and Verbal Behavior*, 6, 156-163.

Silberstein, R.B., Schier, M.A., Pipingas, A., Ciorciari, J., Wood, S.R., and Simpson, D (1990). Steady state visually evoked potential topography associated with a vigilance task, *Brain Topography*, 3: 337-347.

Singh, Satyendra. (2006). Impact of Color on Marketing. *Management Decision*. 44, 783-789

Singh. S. N., and Dalal, N.P. (1999). Web Home Pages as Advertisements, *Communications of the ACM*, 42(8): 91-98.

Smith, A., Dunckley, L., French, T., Minocha, S., Chang, Y. (2004). A Process Model for Developing Usable Cross-Cultural Websites. *Interacting With Computers*, 16(1): 69-91.

Sun, H. (2001). Building a Culturally-Competent Corporate Web Site: An Exploratory Study of Cultural Markers in Multilingual Web Design. In: *Proceedings*

19th annual international conference on computer documentation, SIGDOC 01, Santa Fe, New Mexico, USA, ACM Press, New York , 95-102

Swaminathan, V., Lepkowska-White, E., and Rao, B. P. (1999). Browsers or Buyers in Cyberspace? An Investigation of Factors Influencing Electronic Exchange. *Journal of Computer-Mediated Communication*, 5(2): 1-23.

Tariq, S. (2004). Design matters. Retrieved April 19 2004 from: <http://www.sheriftariq.org/design/fonts/>.

Tarun Kushwaha And Venkatesh Shankar(2013). Are Multichannel Customers Really More Valuable? The Moderating Role of Product Category Characteristics, *Journal of Marketing*. 77(4): 67-85.

Taylor, C., Clifford, A., and Franklin, A. (2012). Color Preferences Are Not Universal. *Journal of Experimental Psychology: General*.

Terwogt M. M., Hoeksma J.B. (1995). Colors and Emotions: Preferences and Combinations, *The Journal of General Psychology*, 122(1): 5-17.

Tobola Hanna Adela, (2019). Effects of Visual Design on Consumer Perceptions of E-Commerce Websites, Boğaziçi University, *Master Thesis*.

Torkzadeh, G., and Dhillon, G. (2002). Measuring Factors That Influence the Success of Internet Commerce. *Information Systems Research*, 13, 187–204.

Torkzadeh, Gholamreza and Dhillon, Gurpreet. (2002). Measuring Factors that Influence the Success of Internet Commerce. *Information Systems Research*. 13. 187-204.

Tullis, S.T., and Tullis, S.M. (2007). Statistical Analyses of E-Commerce Websites: Can A Site Be Usable And Beautiful? *Proceedings of the 2007 12th International Conference on Human-Computer Interaction*.

Van Den Stock, J., Peretz, I., Grezes, J., And De Gelder, B. (2009) Instrumental Music Influences Recognition of Emotional Body Language, *Brain Topography*, 21(3-4): 216–220.

Van Slyke, C., Comunale, C. L., and Belanger, F. (2002). Gender Differences in Perceptions of Web-Based Shopping. *Communications of the Acm*, 45(7): 82-86.

Varinli, İ. (2012). Pazarlamada Yeni Yaklaşımlar, Geliştirilmiş 3. Baskı, Detay Yayıncılık, Ankara, p.170, 175, 180- 181

Venkatesh, V., and Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Sciences*, 46(2): 186-204.

Venkatesh, V., and Morris, M. G. (2000). Why Don't Men Ever Stop to Ask For Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior, *Mis Quarterly*, 24(1): 115-139.

Venkatesh, V., Morris, M. G., and Ackerman, P. L. (2000). A Longitudinal Field Investigation of Gender Differences in Individual Technology Adoption Decisionmaking Processes. *Organizational Behavior and Human Decision Processes*, 83(1): 33-60.

Vincent-Wayne Mitchell, Walsh G (2004). Gender Differences in German Consumer Decision-Making Styles, *Journal of Consumer Behavior*, 3(4).

Wang Qiuzhen, Da Ma, Chen Hanyue, Ye Xuhong and Xu Qing (2020). *Journal of Business Research*, 111, 270-280.

Wang, L.C., Baker, J., Wagner, J.A. and Wakefield, K. (2007), Can A Retail Web Site Be Social?, *Journal of Marketing*, 71(3): 143-157.

Wang, Y.J., Hernandez, M.D. And Minor, M.S. (2010), Web Aesthetics Effects on Perceived Online Servicequality and Satisfaction in an E-Tail Environment: The Moderating Role of Purchase Task, *Journal of Business Research*, 63(9/10): 935-942.

Wang, Y.J., Minor, M.S. and Wei, J. (2011), Aesthetics and the Online Shopping Environment: Understanding Consumer Responses, *Journal of Retailing*, 87(1): 46-58.

Weathers, Sharma and Wood (2007) Effects of Online Communication Practices on Consumer Perceptions of Performance Uncertainty for Search And Experience Goods, *Journal of Retailing*, 83(4):393-401 .

Wedel, M., and Pieters, R. (2008). A Review of Eye-Tracking Research in Marketing, *Review of Marketing Reseach*, 4, 123-147.

Wei Wang. (2011). Simulating Human Saccadic Scanpaths on Natural Images, *Proceedings / CVPR, IEEE Computer Society Conference on Computer Vision and Pattern Recognition*. , Computer Vision and Pattern Recognition (CVPR)

Wei-Shang Fan and Ming-Chun Tsai .(2010). Factors Driving Website Success – The Key Role of Internet Customisation and the Influence of Website Design Quality and Internet Marketing Strategy, *Total Quality Management and Business Excellence*, 21(1): 1141-1159.

Wei-Shang Fan and Ming-Chun Tsai (2010) Factors Driving Website Success – The Key Role of Internet Customisation And The Influence of Website Design Quality And Internet Marketing Strategy, *Total Quality Management and Business Excellence*, 21(11): 1141-1159.

Wells, J.D., Valacich, J.S., Hess, T.J. (2011): What Signal Are You Sending? How Website Quality Influences Perceptions of Product Quality and Purchase Intentions, *Mis Quarterly*, 35(2): 373-396.

Wickens, C.D., Lee, J. and Liu, L. (2003). An Introduction to Human Factors Engineering, Pearson Publishers, New York, NY, USA.

Wrasea, J., Kleinb, S., Gruesserc, S.M., Hermannb, D., Florb, H., Mannb, K., Brausb, D.F., and Heinz, A. (2003). Gender Differences in the Processing of Standardized Emotional Visual Stimuli in Humans: A Functional Magnetic Resonance Imaging Study, *Neuroscience Letters*, 348, 41–45.

Wu, S., Lo, C. (2009): The Influence of Core-Brand Attitude and Consumer Perception on Purchase Intention towards Extended Product. *Asia Pacific Journal of Marketing and Logistics*, 21(1): 174-194.

Wyer, Jr. (2002). Language and Advertising Effectiveness: Mediating Influences of Comprehension and Cognitive Elaboration. *Psychology and Marketing*. 19, 693 - 712.

Xu, C., Peak, D. and Prybutok, V. (2015). A Customer Value, Satisfaction, and Loyalty Perspective of Mobile Application Recommendations, *Decision Support Systems*, 79, 171-183.

Y.Ha and L. Stoel (2004). Internet Apparel Shopping Behaviors: The Influence of General Innovativeness, *International Journal of Retail and Distribution Management* 32(8): 377-385.

Yang R.and Lester D. (2005). Gender Differences in E-Commerce, *Applied Economics*, 37(18): 2077-89.

Yeşilot, Fikriye and Dal, Nil. (2018). Duyuların Ötesinde:Bilinçaltı Etkiler ve Nöropazarlama. 5. 37-45.

Yoon Min Hwang and Kun Chang Lee (2017). Using an Eye Tracking Approach to Explore Gender Differences in Visual Attention and Shopping Attitudes in an Online Shopping Environment. *International Journal of Human-Computer Interaction*, 34(1): 15-24.

Young Wook Seo, Seong Wook Chae, and Kun Chang Lee. (2012). The Impact of Human Brand Image Appeal on Visual Attention and Purchase Intentions at E-Commerce Websites. *Intelligent Information and Database Systems*, 1-9.

Zeithaml, V.A. (1988), Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence, *Journal of Marketing*, 52(3): 2-22.

Zhang, Y.Yulin Fang, Kwokkee Wei, Elaine Ramsey, Patrick Mccole, Huaping Chen. 2011, Repurchase Intention in B2c E-Commerce- A Relationship Quality Perspective. *Information and Management*, 48: 192-200.

Zhou, Kevin and Li, Caroline. (2007). How Does Strategic Orientation Matter in Chinese Firms?. *Asia Pacific Journal of Management*. 24, 447-466.

Zhou, L., Dai, L., and Zhang, D. (2007). Online Shopping Acceptance Model – A Critical Survey of Consumer Factors in Online Shopping. *Journal of Electronic Commerce Research*, 8(1): 41-62.

Zurawicki, L (2010). Neuromarketing: Exploring the brain of the consumer, University of Massachusetts. Boston. <http://iiiiir.ir/press/upload-content/uploads/2012/08/Leon-Zurawicki-Neuromarketing-Exploring-the-Brain-of-the-consumer2010.pdf> Accessed 07 February 2017.

Zuroni Md Jusoh and Goh Hai Ling (2012). Factors Influencing Consumers Attitude towards E-Commerce Purchases Through Online Shopping. *International Journal of Humanities and Social Science*,2(4): 223-230.

Zviran, M., Glezer, C. and Avni, I. (2006), “User Satisfaction from Commercial Web sites: The Effect of Design and Use. *Information and Management*, 43, 157-178.

Zviran, M., Glezer, C. and Avni, I. (2006), “User Satisfaction from Commercial Web Sites: the Effect of Design and Use”, *Information and Management*, 43(1): 157-78.



APPENDICES

Appendix 1: First Survey

1. Communication Information

Name and Surname

Where do you live in?

Email Adresss Phone Number.....

2. How old are you?

- ☐ Under 21 Age
- ☐ 21-29 Age
- ☐ 30-39 Age
- ☐ 40-49 Age
- ☐ 50 and Over 50 Age

3. What is your gender?

- ☐ Female
- ☐ Male

4. What is your marital status?

- ☐ Single
- ☐ Married
- ☐ Widowed
- ☐ Divorced/Separated

5. What is your education level?

- ☐ Associate Degree
- ☐ Bachelor Degree
- ☐ Graduate
- ☐ PhD

6. How long you have been using Internet for shoppin?

- ☐ 6-12 Moths
- ☐ 1-2 Years
- ☐ 2-3 Years

- ☐ 3-5 Years
- ☐ More than 5 Years
- ☐ I don't use

7. How many times have you bought things on Internet (during the past six months)?

- ☐ No
- ☐ 1-2 times
- ☐ 3-5 times
- ☐ 6-10 times
- ☐ 11-20 times
- ☐ 21 times or more
- ☐ I'm not sure

8. Please rate your internet use?

- ☐ Beginner
- ☐ Pre Intermediate
- ☐ Upper Intermediate
- ☐ Advanced

Appendix 2: Second Survey

Section 1: In this section includes about the consumption type of shopping. Please answer these questions by rating them as agree or disagree. It will evaluate from 1 “Strongly Disagree” to 5 “Strongly Agree”.

	1	2	3	4	5
When purchasing a product, price and quality is more important than the current trend					
Satisfaction while using the product is more important than just possessing the product					
When you purchase a product, its functionality is more important than its appearance					
When you shop for products, you check the price information on the internet					
You make a list when you need to buy necessities					
When purchasing a product, you tend to consider the opinion of others					
When purchasing a new product, you prefer the trendier option					
You want to buy a product that nobody has, to look different					
You can buy a product because of its design and color, despite the low quality					
The atmosphere of the shop, for example music or scent, greatly affects what you purchase					
You shop depending on my mood instead of making plans beforehand					
You prefer buying a single piece of expensive designer clothes instead of buying several cheaper ones					

Section 2: In this section includes about the pictures used in the experiment. Please answer these questions by rating them as agree or disagree. It will evaluate from 1 “Strongly Disagree” to 5 “Strongly Agree”.

	1	2	3	4	5
The images used in the website appeal to me emotionally					
The images used in the website are appropriate					

The images used in the website are satisfying					
I prefer images of people using the products					
I prefer images of products only					
The images used in the website are not distracting					
The images used in the website are exciting					
The images used in the website are interesting					
The images used in the website make the products look appealing					



Appendix 3: Structured-Interview Questions

1. Are there any images that stand out in your mind?
2. How did these images make you feel?
3. Were there any images that made the site look positive?
4. Were there any images that made the site look negative?
5. Are there any other impressions you would like to share?

