(Araştırma)

THE EFFECT OF HUMAN IMAGES IN ADVERTISEMENTS ON CONSUMER ATTENTION BY PRODUCT TYPE AND GENDER: AN EYE-TRACKING STUDY [1]

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ABSTRACT

In today's competitive marketing environment getting through the clutter to get the customer's attention is very important. It could be said that the first purpose of a successful advertisement is to get the attention of the consumer since it would not be possible to talk about purchase motivation without establishing the attention of the consumer. For this purpose, having a better understanding of the factors that have the potential to make advertisements more attractive is important. Thus, the purpose of this study was to identify if the usage of human images in advertisements changed areas of interest towards advertisements and if gender and the advertised product type (hedonic or utilitarian) influenced the findings. For this purpose, an eye-tracking technique was carried out on 42 volunteers. Findings suggested that the use of human images for hedonic product advertisements shorten the time to the first fixation; however, it has been determined that visual elements without human images for utilitarian product advertisements have been noticed more quickly for both female and male participants. Thus, it may be more effective to design hedonistic product advertisements by using human images and utilitarian product advertisements without human images. The usage of human image plays a distraction role for utilitarian product advertisements.

Keywords: Advertisement, human image, eye-tracking technique.

Doi: 10.15659/ppad.14.2.267

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Geliş Tarihi / Received: 04.12.2020, Kabul Tarihi / Accepted: 25.02.2021

REKLAMLARDA İNSAN GÖRSELİ KULLANIMININ ÜRÜN TÜRÜ VE CİNSİYETE GÖRE TÜKETİCİNİN DİKKATİNE ETKİSİ: BİR GÖZ TAKİP ÇALIŞMASI

ÖZ

Rekabetin çok yoğun olduğu günümüz koşullarında tüketicinin dikkatini çekebilmek çok büyük önem arz etmektedir. Başarılı bir reklamın da ilk kuralı, tüketicinin dikkatini çekebilmesidir. Tüketicinin dikkatini çekmeyen bir ürünün satın alma motivasyonu yaratmasında mümkün olmayacaktır. Bu nedenle reklamların dikkat çekici olmasını sağlayacak unsurların belirlenmesi önemli bir konudur. Bu çalışmanın amacı da insan görseli kullanılan ve kullanılmayan reklamların, reklama konu olan ürünün tüketici tarafından fark edilmesi ve reklam unsurlarının tüketicinin dikkatini çekme süresi üzerinde yarattığı değişime etkisini incelemektir. Bu amaçla 42 gönüllü denek üzerine göz izleme analizi uygulanmıştır. Sonuçlar; temsil edilen ürünün hazcı veya faydacı ürün olmasına göre insanlı ve insansız ürün görselleri arasında ilk fark edilme süresi açısından fark olduğunu göstermektedir. Hazcı ürünler için insanlı görsellerin kullanımının görselin tüketici tarafından ilk fark edilme süresini kısalttığı görülürken, faydacı ürünlerde insan resmi kullanılmayan görsellerin hem kadın hem de erkek katılımcı açısından daha çabuk fark edilme (ve ilk bakılan nokta olma) özelliğine sahip olduğu tespit edilmiştir. İnsan görseli kullanılarak hazcı ürün reklamlarını tasarlamak, faydacı ürün reklamlarında ise insan görselinin dikkat dağıtıcı bir unsur olabileceği hususuna dikkat etmek gerekir. Bu nedenle insan görseli kullanıp kullanılmaması kararının reklamda verilmek istenen mesaja ve ön plana çıkarılmak istenen ürün özelliklerini değerlendirerek verilmesi gerekmektedir.

Anahtar Kelimeler: Reklam, insan görseli, göz izleme tekniği.

1. Introduction

For years, pictures in advertising have been used to convey product and brand information and give consumers emotional impulses. From 1954 to 1999, the use of pictures in advertising has doubled (Phillips and McQuarrie 2002). However, research on the effectiveness of visual elements in advertising has been limited (Larsen et al. 2004; Peracchio and Meyers-Levy 2005; McQuarrie and Phillips, 2005). Previous research has shown that the use of pictures in advertising has a perceptual and persuasive advantage compared to textual systems (for example, Peracchio & Meyers-Levy, 2005; Scott, 1994; Sojka and Giese, 2006). Pictures have high attention-grabbing and quality-preserving qualities (McQuarrie, 2007). They are better remembered (Childers and Houston, 1984) and affect attitudes more than words alone (Kisielius and Sternthal, 1984). Due to their living nature, pictures are also effective with their imagination values (MacInnis and Price, 1987). Picture processing is "a mental event that involves the visualization of a concept or relationship" (Lutz and Lutz, 1977), and pictures have consistently been shown to improve consumers' attitudes towards advertising (e.g., Bolls and Muehling, 2007; Bone and Ellen, 1992; Rossiter and Percy, 1980). Accordingly, it is recommended to use concrete pictures (visuals that can be easily identified as a person, place, or object) to encourage picture processing and improve attitudes towards advertising (Babin and Burns, 1997). In online environments, pictures of people can induce emotional responses that can result in positive attitudes towards the site (Riegelsberger et al. 2003). Literature implies that the usage of the human image in advertisements can lead to positive emotional stimuli (Fiore et al. 2005). However, current research on human image rarely focuses on the impact that human image has on users' attention (Cyr et al., 2009; Seo, Chae, and Lee, 2012; Qiuzhen et al., 2014). Some studies focus only on the product type itself or studies that develop an advertising strategy in the context of gender (Eisend, 2009; Brunel and Nelson, 2003; Wolin and Korgaonkar, 2003). However, research regarding advertising design context in terms of the usage of human images for different product types and genders is very limited. Thus, this study is based on the use of human images in advertisements as an element that attracts the consumer's attention. Also, unlike other studies, the appearance of not only the face but also other parts of the body was considered. Thus, considering this gap in the literature and the importance of human image as a visual element that impacts consumers' level of attention, the main research question of this article is "do consumers react differently to the usage of human images in the advertisements of products". Also, it is known that the relationship between pictures and picture appeal can be affected by the usage of different product types (Cyr et al., 2009). As well, different genders can show different responses to the usage of human images in advertisements. Thus, it could be said that the impact of human images used in product advertisements can change according to product type and gender. This study will also investigate if gender reactions would differ in terms of human image usage and if this reaction changes depending on the type of product (hedonic

or utilitarian) advertised. For this purpose, an eye-tracking study was applied as an experimental study. This article consists of four sections: Introduction, literature review regarding usage of human images in advertising; hedonic and utilitarian types of products; advertising design regarding product design and gender, methodology, findings, and discussion.

2. Usage of Human Images in Advertising

Pictures, which are the best indicator of what is being promoted, are one of the main components of advertisements and banner advertisements. Pictures are important elements of the advertisement that can attract consumer attention and play a crucial role in creating effective advertising by making the advertisement more attractive to potential consumers (Taylor et al., 2012).

Literature suggests that the use of pictures in advertisements can affect consumer's attention (Finn, 1988), advertisement recall (Childers and Houston, 1984), and attitude towards advertising. Usage of human pictures could also lead to an increase in consumer's positive attitude towards products. Emotions can arise naturally when people see pictures (Shimp and Engle, 1987). According to the classical conditioning theory, pictures can be evaluated as an unconditioned response. The combined use of pictures and products can transfer emotions from a picture to a product. Thus, in this direction, human pictures may affect the consumer attitude towards the product. It has been stated that pictures can affect the brand attitude of consumers, and this effect may even be more dominant than other features of the product, such as its specialities (Rossiter and Percy, 1987).

Researchers think that positive attitudes towards advertising can be developed through concrete pictures (visuals easily identifiable as a person, place, or object) (Babin and Burns, 1997). Usage of a human image can be considered as a type of concrete picture, constituting an important factor that draws consumer attention. Even in the existence of distractions, the human figure is the most striking element in advertisements that attract attention (Wilkinson and Light, 2011). It has been suggested that human images encourage the audience to be fixed repeatedly in a visual information environment (Beh and Badni, 2010). Thus, based on the extant literature, it could also be said that using human pictures in banner advertisements has the potential to influence the area of interest (AOI) and time to the first fixation of consumers. Both AOI and TTFF are terms used in neuromarketing. AOI is a tool used to select regions of a displayed stimulus and extract measurements specifically for those regions, while Time to First Fixation (TTFF) shows the time it takes for a respondent (or, on average, all responders) to look at a particular AOI from stimulus onset (Tobii, 2016). Hence, the following hypothesis is suggested:

H1: *Inclusion of human image on banner advertisements creates a difference in terms of Time to First Fixation (TTFF) towards Area of Interest (AOI).*

3. Hedonic and Utilitarian Types of Products

Utilitarian type of products has functional advantages, and they deliver solutions for people's problems, on the other hand, hedonic products are mainly preferred for the pleasure they create, not for a functional solution (Hirschman and Holbrook, 1982). Utilitarian products can be defined as objective, and need-oriented concrete products (e.g., hairdryers, washing machines, and lawnmowers), and they essentially aim to solve problems (Babin, Dardfun and Griffin, 1994; Engel, Blackwell and Miniard, 1993). Products purchased with hedonic desires are expected to have subjective and abstract qualities. Hedonic products are usually associated with experiential needs. In this context, experience-based products such as diamonds, perfumes, chocolate, movies, holidays, and furniture are generally considered in the hedonistic product category (Baek and Choo, 2015; Chopra, 2014; Khan et al., 2005; Lu et al., 2016). Consumption of these products produces pleasure for the user. On the other hand, stationery materials, office furniture, printers, books, products used for sticking, calculators, glass and plastic items, alkaline batteries, detergents, toothpaste, and therapeutic products can be considered among the utilitarian product category (Hirschman and Holbrook, 1982; O'curry & Strahilevitz, 2001; Voss, Spangenberg and Grohmann, 2003). Products generally have both a hedonic and a utilitarian side (Voss et al., 2003). It is possible to distinguish between products as dominant either in hedonic or utilitarian dimensions (Dhar and Wertenbroch, 2000). However, hedonic products can be seen as utilitarian by some people, depending on his/their product attribution and vice versa (Crowley, et al., 1992).

Many researchers believe that usage of specific advertising pictures for different product categories is necessary (Rossiter and Persy, 1987; Dube, Chattopadhyay and Letarte, 1996). For example, in the advertisement of utilitarian type of products, a clear message regarding the product features and product benefits should be provided. When product features and benefits meet or match the needs or benefits of consumers, it can produce

more convincing effects. Rossiter and Percy (1987) referred to this situation as informative advertising. Studies are showing that logical and informative advertisements are suitable for functional and utilitarian products, but the use of emotional appeal should be used for products that are hedonic (Johar and Sirgy, 1991).

4. Advertising Design Based on Product Type

Advertising is the most common strategy used to sell products. Advertisements transmit information while creating positive attitudes towards the advertiser and ad content. In modern societies, products are not bought only for their functional aspects. Emotional aspects of the product and brand content can also be very influential in the purchase decision of the consumer. Logicalness is the source of

utilitarian needs as the source of social and psychological needs is emotions (Chu, 1995). Therefore, advertisements and messages can be developed considering the target audience on the axis of product type and product features. Advertisements that are based on a hedonistic approach are centered on the experience, aim to activate the emotions of consumers, and form pictures and meanings related to the business in their minds (Uztuğ, 2008). In hedonistic advertisements that focus on emotional and psychological expectations, the purchasing activity emphasizes the reward to be obtained by using the product promoted or the bad situations that will be exposed if it is not used (Elden and Bakır, 2010). On the other hand, utilitarian advertisements focusing on the functional benefits of products offer logical reasons for purchasing the products. The features of the products are emphasized in the advertising. The functional values that consumers will obtain with the purchase of the product are shown. In summary, this advertising style focuses on the performance, quality, and functional advantages of the product (Jovanović et al., 2016).

In summary, the appropriate presentation of the advertised hedonic and utilitarian types of products is crucial for marketers to create the intended attention. Due to differences in products, the way each type of product should be presented might differ. As it is known from the previous studies, utilitarian and hedonic types of products might need different marketing strategies and different presentation techniques in print advertisements (Batra and Ahtola, 1991). For example, for utilitarian products, the evaluation process tends to focus primarily on objective and cognitively driven product characteristics. In contrast, the evaluation process for hedonic products tends to be subjective and affect-based, with less emphasis on cognitive thought processes (Chang, Chen and Tan, 2012). In the light of this information, it could be said that more visual, fun, and emotional designs can be more appropriate for the hedonic product, while for utilitarian products, it would be appropriate to prepare informative advertisements. Thus, it would be concluded that the usage of pictures as a visual element in advertisements should be differentiated according to the product type being advertised. Previous studies in the field of e-retail have shown that online consumers' focus points to the banner advertisements may vary depending on product types advertised (Hsich et al., 2005, Weathers et al., 2007). For example, while the consumer pays more attention to the visual diversity in hedonic product advertisements, they pay more attention to the satisfactory information about the features of a product in utilitarian product advertisements (Hsich et al.,2005, Weathers et al., 2007). For this reason, the places that the consumer focuses on in the picture and the content they are looking at might vary. Thus, in the light of previous research findings, it could be said that the use of human images for the hedonic and utilitarian type of products can take the attention of the customer and create a difference in consumers' gaze points towards Area of Interest (AOI), however, there might be a difference among this attraction depending on the type of product advertised. Based on the above, the following hypotheses were proposed:

H1a: Inclusion of human image on hedonic product banner advertisements creates a difference in terms of Time to First Fixation (TTFF) towards Area of Interest (AOI).

H1b: Inclusion of human image on utilitarian banner advertisements creates a difference in terms of Time to First Fixation (TTFF) towards Area of Interest (AOI).

5. Advertising Design Based on Gender

Gender is considered to be influential in customer's eye gazes as stated in extend literature (Bing Pan et al, 2004). Thus, it is expected that customers would have different eye tracking values and, they would pay attention to different areas for different product types depending on their gender. For example, women pay more attention to multicolored images while men tend to find solid colors in images more attractive (Radeloff, 1990). Furthermore, gender has a crucial effect on customers' buying behavior (Fan and Miao, 2012). Men and women are different in terms of rationalization, motivation, and attitude towards shopping (Hasan, 2010). Darley and Smith's study 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. Thus, it is of vital importance to figure out the differences between the two genders' visual attention to create and develop online advertising strategies. Gender is also considered as one of the main variables to be influential in a customer's eye gazes, and some studies supported that gender is a factor that leads to differences in reaction time (Dane and Erzurumluoglu, 2003; Der and Deary, 2006; Riccio et al., 2001). Thus, the following hypotheses were proposed:

H2: *There is a difference between genders regarding Time to First Fixation (TTFF) to the Area of Interest (AOI) to advertisements including a human image.*

H3: *The type of product advertised creates a significant difference in Time to First Fixation (TTFF) to the Area of Interest (AOI) between genders.*

6. Methodology

This study consists of a pre-survey and an eye-tracking analysis. The pre-survey was implemented to identify the eligibility of participants. Heat maps obtained from the eye-tracking analysis were interpreted regarding the Area of Interest (AOI). For the eye-tracking analysis, six products, three of which are hedonic (shoes, sunglasses, and perfume), and the other three utilitarians (cellphone, headphone, and television) were selected. Each product was shown to the participants in three different compositions. The versions shown to the participants were product image with human image, the product without human image, and the display of these two versions together. A total of 18 visuals were shown to the participants in

the eye-tracking analysis. The human images used in the advertisements were of ordinary people that would appeal to the target market.

6.1. Purpose of The Research

As could be seen in the hypotheses of the research, the purpose of this research is to ascertain if the usage of the human image in advertisements together with the advertised products makes any difference for the customer. Specifically, it is aimed to uncover if presenting a product in website banner advertisements, with a human image appearance takes the attention of the customer more compared to advertisements just showing the product image. Another purpose of the study is to explore time to first fixation (TTFF) to the area of interest (AOI) of the respondents and identifying changes depending on respondents' gender and the type of product (Utilitarian or hedonic) used in the advertisements.

6.2. Data Collection Process and Sampling

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). Furthermore, it is a method that has the potential to provide fruitful insights to marketers about their consumers and the effectiveness and attractiveness of the advertisements and websites they design. There are some eye-tracking metrics like time to first fixation, total fixation, and fixation count, which helps to measure the visual attention of customers. Tracking eye gazes and determining their fixations have become a progressively prevalent tool for observing customer's attention and measuring their concentration (Burai et al., 2018). The most important advantage of this method is that it enables us to understand where exactly the respondents are looking. Thus, time to first fixation (TTFF) is an indicator of the visual stimulation effect on participants (Pieters and Wedel, 2004; Poole & Ball, 2005). Also, studies show that there is a significant direct relationship between TTFF and certain parts of the AOI. In other words, if the viewer looks at a visual material when first fixing it, it means that the stimulus is most prominent among other AOIs. Thus, in this research, the eye-tracking method was used to measure consumers' attention regarding time to first fixation towards shown advertisements.

Data collection of the research was conducted between the 29th of April and the 22nd of May 2019. This study consists of a pre-survey and an eye-tracking analysis. The survey was applied to the respondents before the eye-tracking analysis. This questionnaire was developed to filter the volunteer respondents that were eligible for the eye-tracking analyses. After the application of the questionnaire, all the respondents were invited for the eye-tracking analysis by giving separate meeting times. Before the actual eye-tracking analyses, a pilot test was applied to a volunteer respondent to determine the visuals to be used and the timing of the presentation. As a result of the pilot test, visual materials, placement of visuals, and the right timing for each visual used were re-arranged.

The eye-tracking analyses were undertaken to show the respondents' different versions of advertisements regarding six different products. The products were chosen to represent both utilitarian and hedonic types of products. Three hedonic products were shoes, perfume, and sunglasses and, three utilitarian products were television, mobile phone, and headphone. Those advertisements were adopted from Trendyol, which is an e-commerce platform. The products used in the eye-tracking analysis were specifically chosen since they are commonly categorized as hedonic and utilitarian in the literature (Ha and Stoel, 2004; Carpenter and Balija, 2010).

Six main advertisements were shown to subjects 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 image. The human images used were of ordinary people. The pictures were chosen randomly. Also, depending on the type of product, different parts of the human body were shown (for example, in sunglass advertisements face was shown; however, in some of the shoe advertisements, just legs were shown). At the same time, all texts, messages, and brand logos that appeared in the original advertisements were removed to eliminate distraction from the main focus of the study. Lastly, both advertisements (the one with the human image and without the human image) were shown at the same time. The order in which the advertisements were shown was chosen randomly. Overall, there were 18 versions of advertisements; all the advertisements were similar but not identical. A

ll the 18 pictures were shown to respondents for five seconds, and their reaction was tested using the eye-tracking method. In the literature, it has been pointed out that five seconds is an effective period for the first impression in human-computer interaction (Gronier, 2016). Before the eye-tracking analyses, the subjects were given brief information about the purpose of the research, and they were asked to fill out a voluntary participation form. Subjects were seated at a table in front of the computer screen. Sitting positions were adjusted to be centered at 70 cm in front of the monitor. Participants were instructed to look at the screen during the experiment. The eye tracker was positioned at the bottom of the monitor so that it would not attract the attention of the subjects. A calibration was performed to ensure that the eye tracker accurately recorded the subjects' eye movements. Also, Tobii Studio Software was used for this study to calibrate the eye tracker and record data on participant eye movements and fixation behavior. All the subjects saw all the advertisements within the scope of the study only once. The advertisements were not shown iteratively to the subjects. In conclusion, the results were evaluated with a 120 Hz eye tracker.

The analysis was conducted by using the resources of the laboratory of Anadolu University, which is in Eskişehir. Thus, subjects were selected among residents of Eskişehir by using a convenience sampling method. Aga Bojko, (2013) recommends targeting 30 participants for eye-tracking studies. However, considering that some of the analysis might not be used, a preliminary survey of 82 respondents was applied. 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, eight of them were found not to be eligible due to some technical problems in terms of recording during the eye test of subjects. Thus, 42 analyses that met the criteria for evaluation were taken into consideration as a sample of the study. Data collected through eye-tracking were analyzed by using SPSS 21.0.

6.3. Research Findings

The demographic profile of the participants could be seen in Table 1.

Table 1. Demographic Profile of Participants

Tables	Groups	N	%
Gender	Male	21	50.0
	Female	21	50.0
Age	Under 21	1	2.4
	21-29 Age	31	73.8
	29-39 Age	10	23.4
Marital Status	Married	37	88,1
	Single	5	11.9
Education Status	Bachelor's Degree	32	76.2
	Associate's Degree	8	19.0
	Ph.D. Degree	2	4.8
SUM		**42**	**100**

As could be seen from the table, the distribution of gender is equal. Most of the respondents are in the 21-29 age groups. The majority of the respondents are single and a few of the respondents are married.

Table 2. 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*** **
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*** **

***p<0.05 **p<0.01 ***p<0.001; Gaze data time stamp(ms):** ± 1

Normality assumption has been checked before deciding on the statistical method that will be used for the analysis. At this stage, Kolmogorov-Smirnov and Shapiro-Wilk tests were applied. According to the normality test results, the "time to first fixation" variable is not distributed normally. Thus, Wilcoxon and Mann-Whitney U tests are used for the variables that are not distributed normally.

Table 3. Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)"

	N	Mean	Std. Dev.	Z	p
Time to first fixation (with human)	42	**746.184,45**	489.962,35	**-5.646**	**0.001*** **
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*** **
Time to the first fixation (hedonic- without human)	42	**433.067,48**	244.987,51		
Time to first fixation (utilitarian- with human)	42	**418.090,93**	244.996,61	**-5.646**	**0.001*** **
Time to first fixation (utilitarian- without human)	42	**343.090,29**	244.994,52		

***p<0.05 **p<0.01 ***p<0.001; Gaze data time stamp(ms):** ± 1

Measurement of time to the first fixation defines the duration it takes for a participant to focus on Area of Interest (AOI). Findings suggest that there is a significant difference between "Time to the first fixation" (TTF) of the pictures with and without human images.

There is a statistically significant difference between advertisements with human images and no human image in terms of TTFF for all the products examined within the context of the research ($p<0.01$). The mean of time to the first fixation without human (Advertisements Without Human Images for All Products: 776.157,76) is statistically greater than the mean of time to the first fixation with human advertisements (Advertisements with Human Images for All Products: 746.184,45). The overall result suggests that inclusion of human image for all type of products influence the time to the first fixation of the participants. Thus, *Hypothesis 1* is supported.

In addition, there is a statistically significant difference between the means of advertisements with human images and advertisements without human images values of the "Time to the first fixation" variable for hedonic products ($p<0.01$). The mean of time to the first fixation without human image (Advertisements Without Human Images for Hedonic Products: 433.067,48) is statistically greater than the mean of the "Time to the first fixation" advertisement with the human image (Advertisements with Human Images for Hedonic Products: 328.093,52). Thus, *Hypothesis 1a* is also supported. Both male and female participants tend

to have different times of eye fixations to advertisements of hedonic products, including a human image. Also, suggesting that hedonic product advertisements with human images are recognized faster than hedonic product advertisements without human images.

Lastly, there is a statistically significant difference between advertisements with human images and advertisements without human images regarding the "Time to first fixation" variable for utilitarian products ($p<0.01$). The mean of time to the first fixation without human image (Advertisements Without Human Images for Utilitarian Products: 343.090,29) is statistically less than the mean of time to the first fixation with the human image (Advertisements with Human Images for Utilitarian Products: 418.090,93). There is a significant difference between utilitarian products with human images and utilitarian product pictures without human images in terms of the mean of time to first fixation ($p<0,01$). Utilitarian products without human images are recognized faster than utilitarian product pictures with human images. Therefore, *Hypothesis 1b* is also supported.

Table 4. Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)" Mean Values (Male) Regarding Product Type

MALE	N	Mean	Std. Dev.	Z	P
Time to first fixation (with human)	21	732.131,10	368.732,47	**-4.015**	**0.001***
Time to first fixation (without human)	21	762.049,38	368.777,82		
Time to first fixation (hedonic - with human)	21	321.058,29	184.361,83	**-4.017**	**0.001***
Time to first fixation (hedonic - without human)	21	426.006,57	184.401,60		
Time to first fixation (utilitarian - with human)	21	411.072,81	184.370,77	**-4.015**	**0.001***
Time to first fixation (utilitarian - without human)	21	336.042,81	184.376,24		

*p<0.05 **p<0.01 ***p<0.001; Gaze data time stamp(ms): ± 1

Hypothesis 2 is supported since when only male respondents are considered, there is a statistically significant difference between with human and without human values of "Time to the first fixation". The mean of time to the first fixation without human (Advertisements Without Human Images for All Products: 762.049,38) is statistically greater than the mean of time to the first fixation with human (Advertisements with Human Images for All Products: 732.131,10). It can conclude that the inclusion of human images helps to recognize the advertisement faster for all types of products for male subjects.

When we look at the time to first fixation values of hedonic product advertisements with the inclusion of human image, it is seen that hedonic products are realized

faster (Advertisements with Human Images for Hedonic Products: 321.058,29) when they are used with human images (Advertisements without Human Images for Hedonic Products: 426.006,57).

Considering the male participants, the mean of time to the first fixation without human (Advertisements Without Human Images for Utilitarian Products 336.042,81) is shorter than with human value (Advertisements with Human Images for Utilitarian Products 411.072,81). It proves that there is a difference regarding the inclusion of human image for men participants towards utilitarian product advertisements.

Table 5. Wilcoxon Test Results for the Comparison of "Time to First Fixation (With Human)" and "Time to First Fixation (Without Human)" Mean Values Regarding Product Type (Female)

FEMALE	N	Mean	Std. Dev.	Z	P
Time to first fixation (with human)	**21**	**760.237,81**	**596.448,65**	**-4.015**	**0.001***
Time to first fixation (without human)	**21**	**790.266,14**	**596.450,92**		
Time to first fixation (hedonic - with human)	**21**	**335.128,76**	**298.200,75**	**-4.015**	**0.001***
Time to first fixation (hedonic - without human)	**21**	**440.128,38**	**298.211,42**		
Time to first fixation (utilitarian - with human)	**21**	**425.109,05**	**298.247,93**	**-4.015**	**0.001***
Time to first fixation (utilitarian - without human)	**21**	**350.137,76**	**298.239,57**		

*p<0.05 **p<0.01 ***p<0.001; Gaze data time stamp(ms): ± 1

It is found that when only female respondents are considered, there is a statistically significant difference between with human and without human advertisements regarding "Time to the first fixation" variable for all products ($p<0.01$). The mean of time to the first fixation without human (Advertisements Without Human Images for All Products: 790.266,14) is statistically greater than the mean of time to the first fixation with human value (Advertisements with Human Images for All Products:760.237,81). In the light of this information, *Hypothesis 3* is accepted. Females' time to first fixation (TTFF) differ for advertisements when they are presented with a human image.

Considering the product type, the time to first fixation value varies according to the human image usage in hedonic product advertisements. Women realize hedonic products with the human image (Advertisements with Human Images for Hedonic Products: 335.128,76) more quickly than they do in the ads with no human images (Advertisements with Human Images for Hedonic Products: 440.128,38).

Surprisingly, like men's time to first fixation values, women also realize utilitarian products without human image (Advertisements Without Human Images for Utilitarian Products: 350.137,76) compared to utilitarian product ads with human images (Advertisements with Human Image for Utilitarian Products: 425.109,05).

Table 6. Summary Table for Hypothesis

Hypotheses	Result
H1: Inclusion of human image on banner advertisements creates a difference in terms of Time to First Fixation (TTFF) towards Area of Interest (AOI).	Cannot be Rejected
H1a: Time to First Fixation (TTFF) to Area of Interest (AOI) with the inclusion of human image would differ for hedonic product banner advertisements.	Cannot be Rejected
H1b: Time to First Fixation (TTFF) to Area of Interest (AOI) with the inclusion of human image would differ for utilitarian product banner advertisements.	Cannot be Rejected
H2: Gender creates a significant difference in Time to First Fixation (TTFF) to the Area of Interest (AOI) on advertisements including a human image.	Cannot be Rejected
H3: The product type of the banner advertisement creates a significant difference in the Time to First Fixation (TTFF) to the Area of Interest (AOI) of genders.	Cannot be Rejected

In summary, hypotheses were tested as briefed in Table 6. Overall, hypotheses have been supported.

7. Conclusion and Discussion

Theoretical Implications

The purpose of this study was to contribute to the literature regarding the usage of human images in banner advertisements and their effect on the attention of consumers. For this purpose, eye-tracking analyses on 42 participants were carried out. The metric used to evaluate the attention of customers was time to first fixation. These analyses were also undertaken to uncover if the time to first fixation (TTFF) changes depending on the type of product advertised and the gender of the respondent. According to Orquin et al. (2013), there is a strong relationship between eye movements and visual attention. With the help of eye movement analysis, it is possible to understand the salient and hidden attention of individuals objectively (Hoffman et al., 1995). The findings of this study revealed that participants fixed to the image area more quickly when human images were used. This finding supports previous research of (Huang,2018; Peker et al., 2021; Cyr, 2009), which have found that the visual interest given to banner ad increases with the inclusion of images, and customers fixated on image rather than writings and explanations (Rayner et al., 2008; Hernández-Méndez, 2015; Riegelsberger, 2003; Huang 2018).

Time to First Fixation towards Area of Interest for both genders have shown a significant difference between advertisements including human image and advertisements that does not include human image, showing that there is no

significant difference between genders in this respect. Thus, it could be concluded that human images were attention taking both for males and females, also supporting the work of Richard et al., 2010 and Shaouf, 2016.

Finally, it is known from extending literature that the relationship between images and image appeal can be affected by the usage of different product types (Cyr et al., 2009). Similarly, the results of the present study showed that the impact of human images used in product advertisement could change according to product type.

Practical Implications

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).

This study offers important implications for advertising, marketing agencies, and marketing professionals. For stakeholders, the findings reported here point to the role of the use of human images in advertisements, depending on product type and gender.

One important suggestion to practitioners would be to use human images carefully while designing advertisements or web pages. Usage of human images especially would be suggested with the hedonic type of products. For the utilitarian type of products usage of human images might rather be distracting the attention of the consumer. However, the usage of human images in a controlled manner might be an option. For example, the human image that is farther away or in the background can enable utilitarian products to stand out.

In some of the advertisements shown to the participants, the selected human figure was in direct eye contact with the audience in others only a part of the body (feet, etc.) was shown. The pictures used and heat maps of all advertising images used in the eye-tracking analysis are shared in appendix. Considering the heat maps, there is a difference in the attractiveness of the advertisement that contains a human figure with direct eye contact and a body part depending on the type of product advertised. Thus, the usage of human figures should be by the product advertised. For example, in advertisements where couple of images (Fig.4 and Fig.10 in the appendix) were used, the concentration of the respondents was mainly on the face. Thus, if the product is located somewhere near the face as a pair of sunglass on the face or a perfume bottle that is shown just near the face that would be beneficial, however, if the product is not located near the face it would capture less attention (Fig. 9)

Another implication of this study is the fact that the use of the human face in ads attracts more attention than the display of another part of the body (Fig. 4, Fig. 9, and Fig.10). Especially if the human face is positioned in a manner that he/she looks at the product, this could directly lead the customer to the product itself.

Another finding of the study that might be important for the practitioners is that; there is a difference between visual attention to shoe ads in which human images appear dynamically (shown as if they are walking) and advertisements in which they appear in a static form (motionless). Walking human images attracted more attention than static human images.

Limitations of The Study

The study has several limitations, one of which is the use of only the time to first fixation metric to measure consumer attention. In further studies, other metrics such as total fixation duration and fixation count could be used.

This study also raises many questions that make us feel the necessity of using other neuromarketing techniques such as EEG.

Finally, the 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.

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Appendix 1: Heat Maps of Product Advertisements

1. Heat Maps of Hedonic Products

Heat Maps of Shoes Advertisement

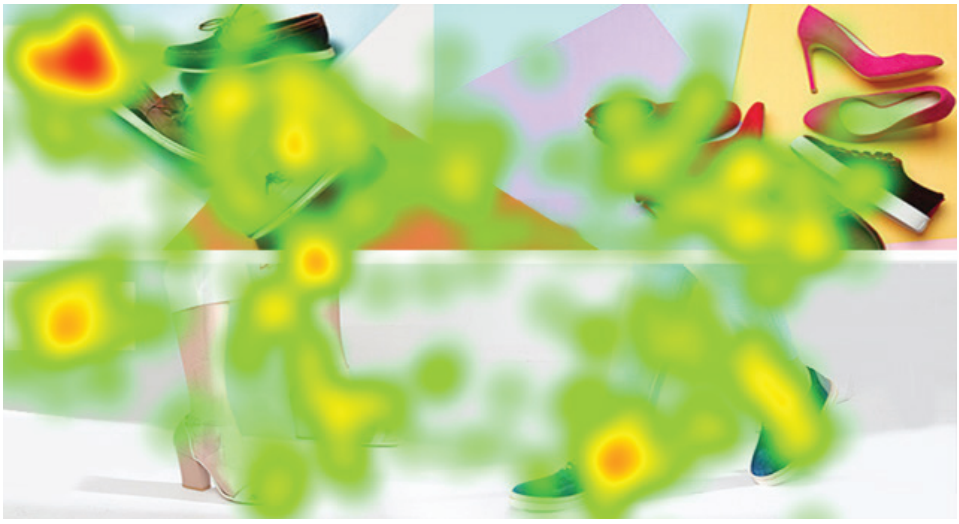

Figure 1: The Heat Map of Males for Shoes Advertisement

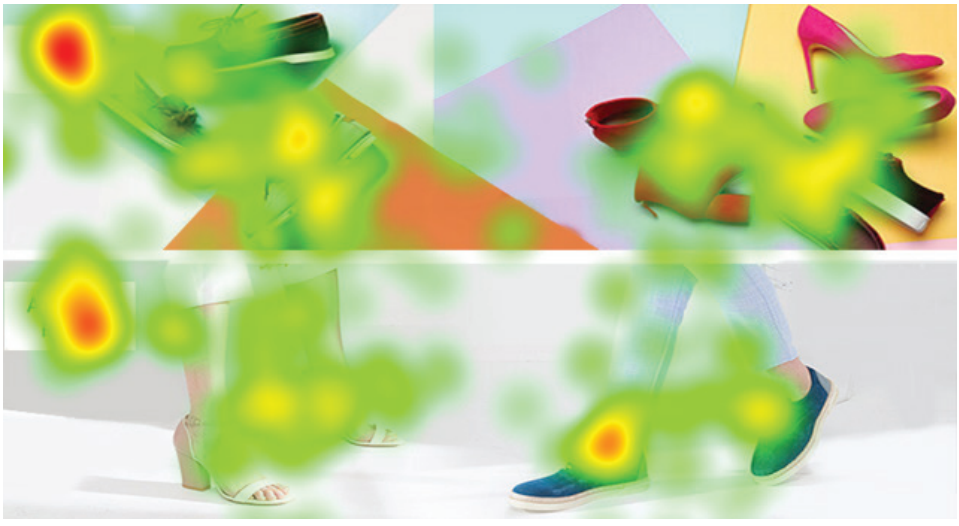

Figure 2. The Heat Map of Females for Shoes Advertisement

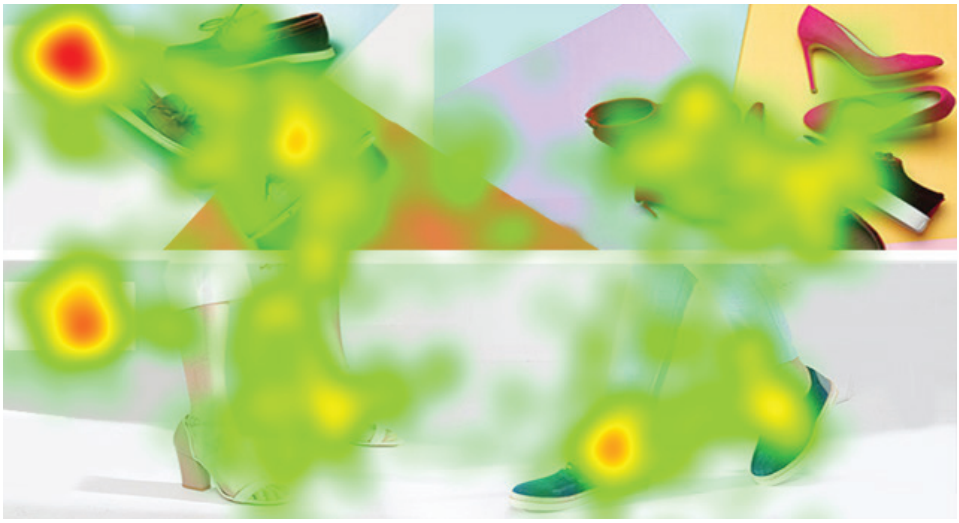

Figure 3. The Heat Map of All Attendants for Shoes Advertisement

Heat Maps of Sunglasses Advertisement

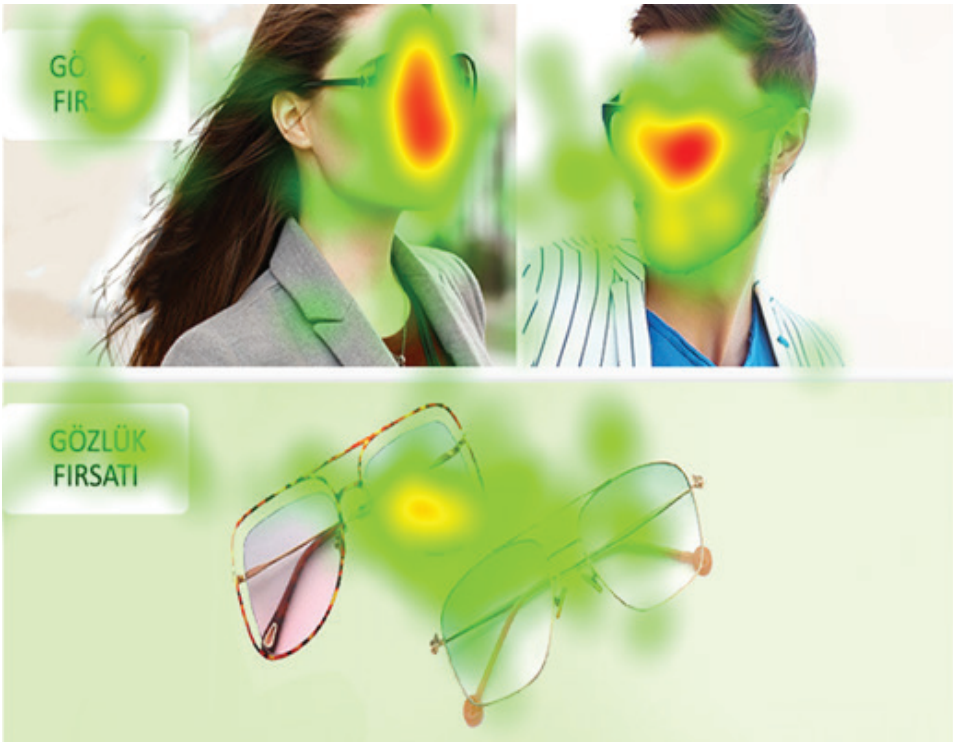

Figure 4. The Heat Map of Males for Sunglasses Advertisement

Figure 5. The Heat Map of Females for Sunglasses Advertisement

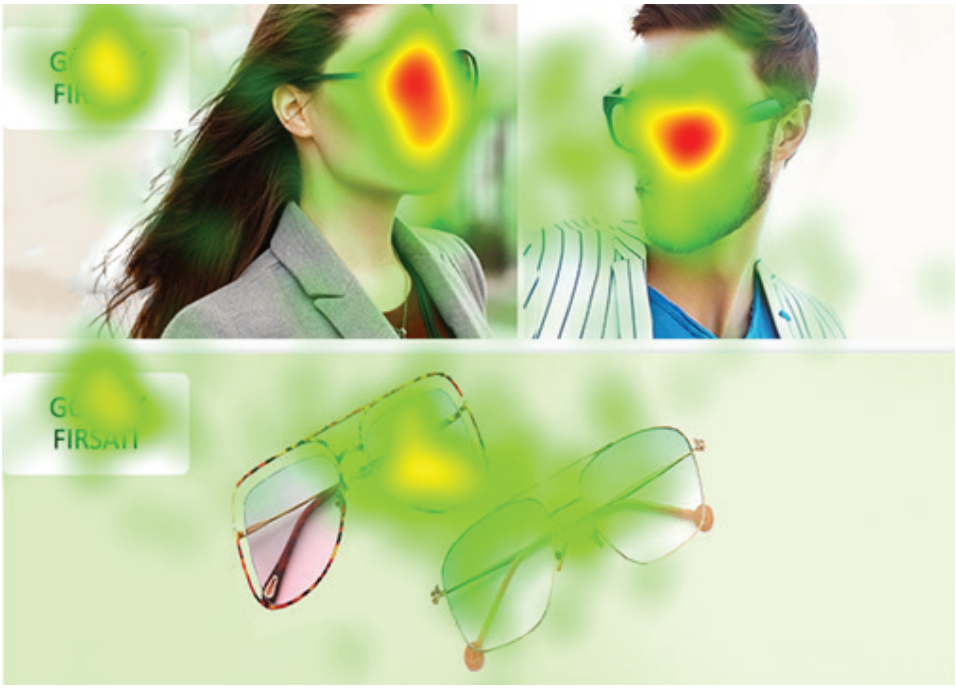

Figure 6. The Heat Map of All Attendants for Shoes Advertisement

Heat Maps of Perfume Advertisement

Figure 7. The Heat Map of Males for Perfume Advertisement

Figure 8: The Heat Map of Females for Perfume Advertisement

Figure 9. The Heat Map of All Attendants for Perfume Advertisement

2. Heat Maps of Utilitarian Product Advertisement

Heat Maps of Headphone Advertisemen

Figure 10. The Heat Map of Males for Headphone Advertisement

Figure 11. The Heat Map of Females for Headphone Advertisement

Figure 12. The Heat Map of All Attendants for Headphone Advertisement

Heat Maps of Cellphone Advertisement

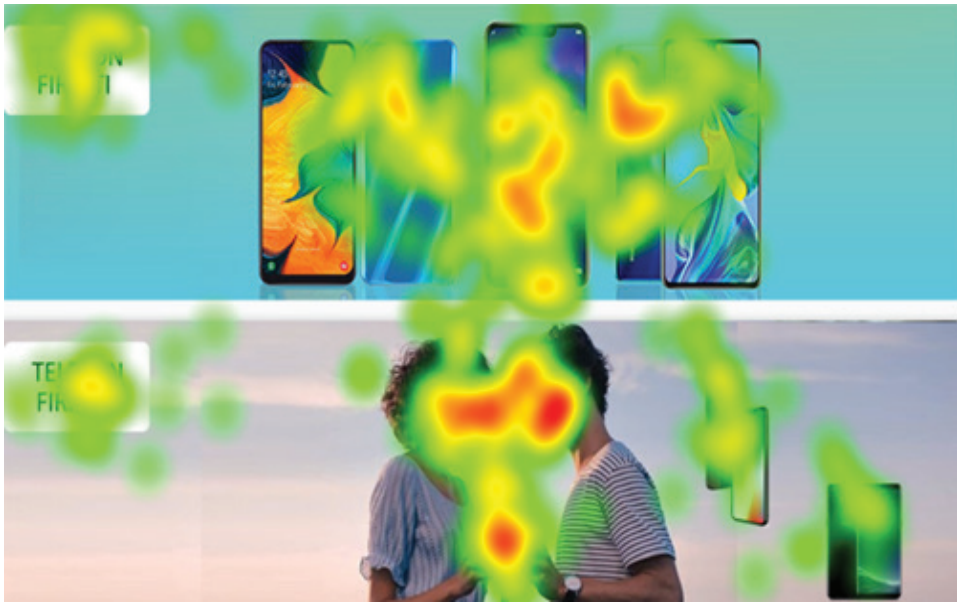

Figure 13. The Heat Map of Males for Cellphone Advertisement

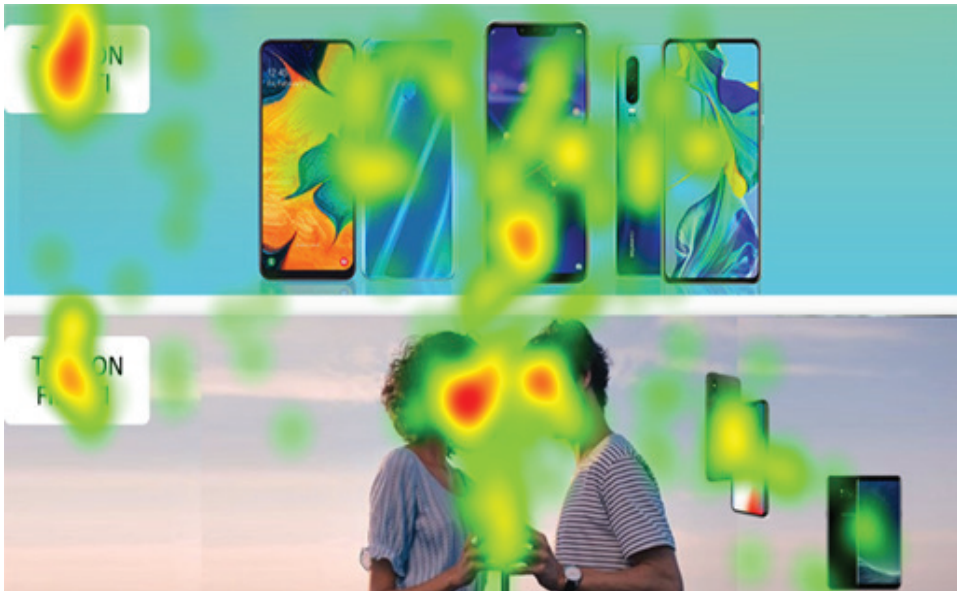

Figure 14. The Heat Map of Females for Cellphone Advertisement

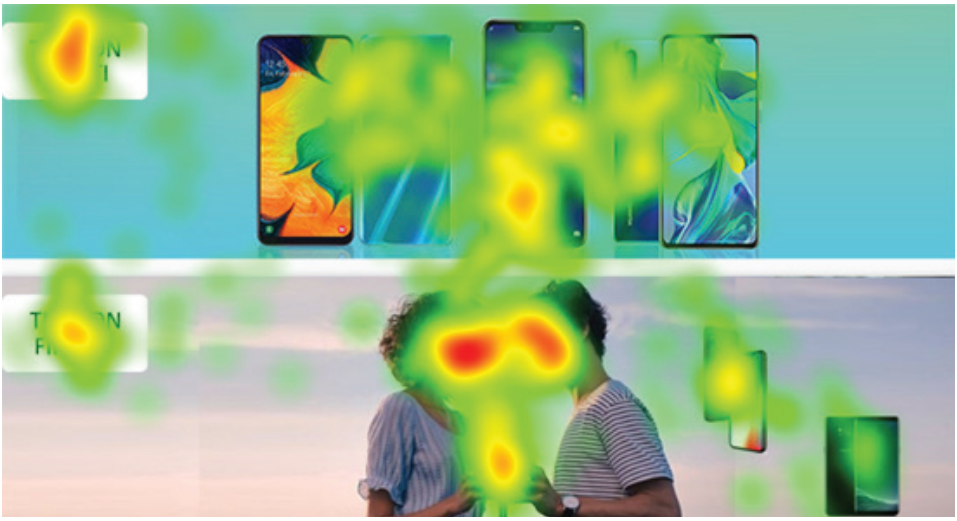

Figure 15. The Heat Map of All Attendants for Cellphone Advertisement

Heat Maps of Television Advertisement

Figure 16. The Heat Map of Males for Television Advertisement

Figure 17. The Heat Map of Females for Television Advertisement

Figure 18. The Heatmap of All Attendants for Television Advertisement