ANALYSIS OF PREFERENCE CRITERIA OF POCARI SWEAT ADVERTISEMENT WITH EYE-TRACKING APPROACH

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AUTHENTICITY STATEMENT

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Yogyakarta, 24 September 2020

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THESIS

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DEDICATION PAGE

This undergraduate thesis which spent my lot of effort is dedicated to my family, Mama, Papa, and Teteh. Without my family, I am nothing. All my friends in International Program Industrial Engineering 2016, who accompany me since I didn't have any idea in university life. Also, my great friend and partner in DSK&E 2016.

MOTTO

"Success is the sum of small efforts – repeated day in and day out" – Robert Collier

PREFACE

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ABSTRACT

Pocari Sweat does advertising in many media such as television, billboard, and social media. One of social media that Pocari Sweat uses is Instagram. The photo of advertisement in 2019 is used human as model but most photos in the beginning of 2020 is use only product. From Top Brand Index, it is known that in 2020 there is the decreasing in Top Brand Index which one of factor is top of mind or related to the brand awareness. The human model utilization can gain more interest and direct to brand awareness, but in 2020 the photo only use product as object. This usage in 2020 can lead to the decreasing of Top of Mind. The solution can be use managed by employing a human as model, but the model usage spends more cost rather than only product. So, the researcher wants to explore how should be the advertisement with only uses product as object can gain most interest. In this research, Picture A, Picture B, Picture C, Picture D, and Picture E are selected by using AOI (Area of Interest) as the representation of Pocari Sweat. So, to get the result, the researcher uses eye tracking method in order to know the average fixation time and the heat map. After experiment is conducted by involving 40 respondents, the researcher found a result. The criteria attached in Picture E is 'The Pocari Sweat dominates in the picture'. The result is Picture E, which get the most interest with average fixation time is 5.08 and the red spot cover the AOI.

Keywords: Pocari Sweat, Eye Tracking, Average Fixation Time, Heat Map, AOI

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CHAPTER I

INTRODUCTION

1.1 Background

Business people never be tired of making innovation to compete with other business people. Many types of beverages as innovation of food and beverages. One of beverage business innovation is the isotonic beverage. Based on BSN (1998), the isotonic beverage is one of the carbonation or non-carbonated soft drink products to improve fitness, which contains sugar, citric acid, and minerals. In Indonesia, there is an isotonic beverage with several brands; one of them is Pocari Sweat.

Pocari Sweat is the product from PT Amerta Indah Otsuka. PT. Amerta Indah Otsuka is established as the result of joint investment between Otsuka Pharmaceutical Japan and PT Kapal Api. With the affiliation of Otsuka Pharmaceutical Japan, it is not surprising many investors from Japan making the stock investment in this company. The higher the sale of Pocari Sweat, the higher the investors are investing in shares of PT Amerta Indah Otsuka. The aim of higher sales not only to gain many investors but also to create profit as much as possible. Because of that, PT. Amerta Indah Otsuka spends a lot of effort to make customer has the intention to purchase Pocari Sweat. The sense of purchase begins with the brand awareness. The company affects the consumer awareness on the brand by advertising (Domet et al., 2017). According to Kartajaya (2010), differentiation is all the efforts made by the

company to create a difference between competitors with the aim of providing the best value for consumers.

Pocari Sweat does advertising in many media such as television, billboard, also in social media like the other company. Saravanakumar and Lakshmi (2012) declared that most companies now regularly use social media for advertising their products and building positive consumer relationships. One of much social media is Instagram. Instagram marketing is an effective way to promote a product, as it is said that a picture speaks a thousand words (Silva *et al.*, 2013). Moreover, Instagram claims that Instagrammer opens at least one business profile every day, and 23% from Indonesia Population use Instagram (Clement, 2020). Pocari Sweat is consistent in posting photos of its product in its Instagram Feed (main Instagram profile page and the pictures and videos where to post).

In 2019, most of the advertisements employ human as model. But in 2020, most of the advertisements only use the product or Pocari Sweat. Pocari Sweat advertisement in 2019 and 2020 can be seen in Figure 1.1.

2019　　　　　　　2020

Figure 1. 1 Instagram Feed of Pocari Sweat

Unfortunately, in 2020 also Pocari Sweat has decreased its value in the Top of Brand Index. Top Brand Index is the combination of Top of Mind, Last Usage, and Future Intention assessment. Top Brand Index from www.topbrand-award.com can be seen in table 1.1.

Table 1. 1. Top Brand Index of Isotonic Beverage

	Top Brand Index	
Isotonic Beverage	2019	2020
Pocari Sweat	68.3%	66.2%
Mizone	18.2%	22.1%
Fatigon Hydro	2.2%	4.0%

Based on Pasha and Masoom (2013), Top of Mind Awareness (TOMA) as the focus of the study is described as the customers' frame of mind that permits them to have a particular brand name on the tip of their tongue and might mean that they are aware of that particular brand. So, top of mind is one of the factors of brand awareness (Aaker, 1996). To increase brand awareness, more attention should be put to the advertisement. To gain more attention, a model could be employed in their advertisements as suggested by Djamasbi, et al. (2012), said heat maps from various eye-tracking experiments consistently and repeatedly show that people are drawn to faces, particularly when browsing a webpage. When human images are presented on the websites, viewers tend to focus mainly on faces. Yet, from the economic perspective, the usage of model has a higher cost than the picture of product.

Many Pocari Sweat Instagram advertisements in 2020 use product rather than using human as a model. As it is already declared that using model could gain more attention in the advertisement, so that the advertisement in 2020 has less attention rather than in 2019. This new advertisement can be one of factors the decreasing of Top of Mind Awareness of Pocari Sweat. The best solution is using human as model for its advertisement, but it is notified that using the product as an advertisement object will minimize the cost. So, it is important to

conduct further research related to the advertisement with a product as an advertisement object in order to improve brand awareness and minimize cost.

The researcher wants to find how the criteria of advertisement with the product by eye-tracking, which will create the most attention to increasing brand awareness but with less cost and also pay more attention to the logo or brand. Eye-tracking in marketing research demonstrated the importance of measuring customer attention to better understand how people view advertising scenes visually and assess the efficacy of visual marketing stimuli (Chandon et al., 2009). Also, another function of eye tracking can be demonstrated where customers concentrate their attention and brand awareness output by providing additional graphic presentations, including qualitative and quantitative results (Pretorius & Calitz, 2011). With eye-tracking, it will be identified how the design of Pocari Sweat advertisement could attract the interest towards the brand due to the brand awareness. By using eye-tracking the duration and the level of people's interest towards brand can be analyzed. So, the cost to make advertisement will not be spent useless, since the company can decide which advertisement that will get the highest interest. The high brand awareness from advertisement will lead to the high intention of purchase.

1.1 Problem Formulation

Based on the background above, the problem can formulate as below:

1. How are the criteria of each Pocari Sweat advertisement with only product as object?
2. Which Pocari Sweat Advertisement has the the highest interests?

1.2 Research Objective

From problem formulation, the objective of the research is:

1. To identify criteria of each Pocari Sweat advertisement.
2. To determine one Pocari Sweat advertisement with the highest interesting.

1.3 Scope of Research

In this research, there is scope such as:

1. It is assumed that the respondent is the target market of Pocari Sweat.
2. This research is conducted when the world is suffering from Covid-19, and the citizen should apply physical distancing. So, this experiment conducts remotely, and application of eye-tracking only based on online eye tracking with RealEye.io. The research materials are taken from Pocari Sweat Instagram.
3. The use of Pocari Sweat advertisement is only in the form of static images which is taken from Instagram. Because if it is a dynamic image, the focus will change and it is difficult to see how interested the respondent is.
4. People see Instagram through phone, but in this research the devices such as laptop for data collection are assumed provide no impacts.

1.4 Benefit of Research

The result of this research will give benefit to the company, researcher, and reader.

1. For the company, it will provide a reference on how to make the attractive advertisement for more attention.
2. For the researcher and reader, it will give new insight related to the usage of eye-tracking to the advertisement.

1.6 Systematical of Research

For this thesis to be more organized, systematic research is divided into six chapters, as follows:

Chapter 1 will discuss the background of this research, problem formulation, research objective, the scope of research, the benefit of research, and systematical research. These explanations will be further explained in the literature review, which will be further elaborated in the next chapter.

Then the concepts and principles are needed to solve research problems. So, those will be discussed in chapter 2. In addition, it also includes a description of the results of previous studies carried out by other researchers related to this research. Once the reviews have been described in detail, a method is needed to solve existing problems and the stages of their solution.

To make this research more organized, the researcher should make a description of the research framework, the framework and flow chart, the methods used, the data collection techniques, the materials, the tools, the research procedure, and the data to be studied and the methods of analysis to be used. This is followed by research and data processing, which will be discussed further in the next chapter. Those will be positioned in chapter 3.

After that, data collected during research and processed using the methods that have been selected will be discussed in chapter 4. This chapter is a reference for the discussion of the results to be discussed in chapter 5.

Next chapter discusses the results of the study and analyzes of theoretical explanations qualitatively, quantitatively and statistically based on the results of the research

and studies that are designed to meet the research objectives. Then, the answers are also expected based on the formulation of the problem in the introductory chapter.

Surely, the Then, it is absolutely some findings founded in the research and suggestions or proposals for the outcomes are nothing without proof of theories, answers and recommendations. The experience and consideration of researchers can be used for further development of research. So, chapter 6 is designated to discuss above matters.

CHAPTER II

LITERATURE REVIEW

2.1 Empirical Study

Bhavani (2015) conducted research entitled Gaze Pattern on Spontaneous Human Face, in which the patterns of facial gaze processing of young subjects were conducted on face viewing with neutral expression to recognize ways of spontaneous human face gazing. Twenty-two subjects, all right-handed, aged 25.5 ± 5.4 years (females =16), from visiting graduate students to NIOH and staffs of NIOH were recruited. On this eye-tracking experiment with spontaneous gazing of neutral face photography, the majority of subjects looked at the upper half of the face near the bilateral face area with a gaze plot study. The result of the study shows in the figure 2a, the pattern of the human facial gaze of a single subject with the directionality of gaze with a radius of the circle indicating the duration of gaze (foveation or visual focusing) and for figure 2b shows the pattern of the human facial gaze of all subjects with each of the color indicating the facial processing pattern of the individual subject. From this previous research, it is possible the result, because there are higher contrast areas in the top part of the face (such as eyebrow). Also, the respondents only consist of 22 peoples in practice; the central limit theorem can be applied to a minimum sample size of 30. Even stated for sample sizes greater than 20, the normal distribution can be used to approach the binomial distribution (Agung, 2006:83). Also, the researcher will adopt the gaze plot from this previous research improvement, such as give the number of each gaze to represent the sequence of gaze.
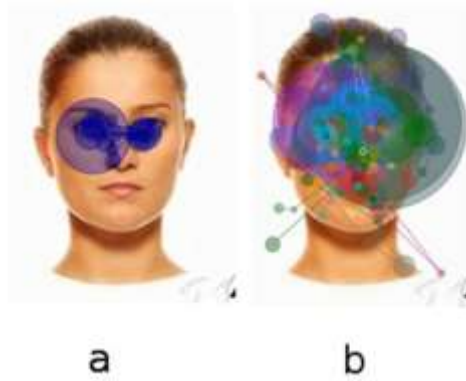
Figure 2. 1 Gaze Plot

Source: Bhavani (2015)

Drusch et al. (2015) did research entitled Analyzing eye-tracking data: From scan paths and heat maps to the dynamic visualization of areas of interest. This research involves 113 French participants, with an average of 23 years old. There is an equal proportion of the number of men and women, but data from 13 subjects were discarded because of the calibration problems. Most of the subjects (97,7%) have used the Internet for at least 3 years, and 88.6% of the participants indicated to be connected on the Web for at least one hour per day. In this research, they make another conclusion related to the heat map, which is the logo seems not very important as figure 5. In this previous research, the result of the heat map is already discussed, but the meaning of each gaze color.

Figure 2. 2 Heat map of the eye-tracking data from the experiment

Source: Drusch et al. (2015)

Djamasbi et al. (2014) carried out a research entitled "Can Fixation on Main Images Predict Visual Appeal of Homepages?", they were comparing the website with people image and without people image with regression analysis and t-test of the duration and visual appeal rating. Thirty-one employees of various business (16 female; 15 male) are recruited as a participant in this experiment. With regression analysis, it is proved that the hypothesis of fixation on main images could predict the visual appeal ratings of the homepage is supported. From t-test of fixation duration on main images shows fixation duration was significantly longer on main images that include people. In this research, a participant's overall aesthetic reaction to a page is measured with a survey. This survey is conducted with participant rate the visual appeal of the page on a 5-point Likert scale (1 = Not at all appealing; 5 = Very appealing). From t-tests comparing visual appeal of pages shows that visual appeal rating of homepages that have people in their main image are more positive than those pages that do not include people in their main images. In this previous study, the researcher only observes homepage. Therefore, care must be taken when generalizing the results.

Djamasbi et al., 2010 performed a research entitled "Efficiency, Trust, and Visual Appeal: Usability Testing through Eye-Tracking". They were comparing user's opinions on and reactions to two web pages with a visual appeal which are faces and logo. In this research,

there are two studies, which are online survey as the study I and eye-tracking as study II. Study I aims to examine whether user behaviour differed between the two web page prototypes with five hundred twenty-two employees of a leading financial company. That participant should complete all tasks and asked to rate the visual appeal of the web page they viewed. The result of t-test for visual appeal rate, faces prototype was rated as significantly more appealing than the logo prototype. The result of t-test for mean task time (in minutes), the completion time for Task 1 was significantly faster than for task 2. In study II, forty participants were recruited from the same leading company with participants in study II with age ranged from twenty to fifty years. These participants were randomly assigned to the logos or faces prototype. There is no significant difference between task completion times in Studies I and II based on t-test result. The duration and count heat map show fewer and shorter fixations on the text on the text on the faces prototype with the text on the logos prototype. This indicates that participants viewed the information required to complete the critical tasks for less time on the faces prototype. It means that the images of faces were more helpful to users in obtaining and processing the needed information. This research concludes that the images of faces were more effective than logos in delivering the intended message. The location of the images on the page may play a role in user behaviour and reactions as well, particularly in the context of eye-tracking.

Figure 2. 3 Count Heat Map for Faces and logos Prototype

Source: Djamasbi et al. (2014)

In a research conducted by Pretorius and Calitz (2011) entitled "The Contribution of Eye Tracking to Brand Awareness Studies" research is divided into two studies which are focusing on print advertisement by eye-tracking. In study I, the aim is to evaluate advertisements (beauty products) towards black females who are readers of a specific magazine. First, study I includes an advertisement with branding in the heading as figure 2.4. The result of this study is heading that is fixated faster than the main brand (except the five-second advert where the difference was 0.02 s). The heading had at least 90% of participants fixating on it every time. It also had more fixations than the main brand every time. It might happen because the heading has more words than the brand; however, the fastest time to fixation and number of participants who fixated on the heading, gives the heading the best chance of being viewed by participants.

Figure 2. 4 Advertisement with branding in the heading

Source: Pretorius and Calitz (2011)

This advertisement had the brand in the heading. Also, in study I, they observed on an advertisement without a brand in the heading as figure 6, and the result is the same, which is heading outperformed the brand.

Figure 2. 5 Advertisement without the brand in the heading

Source: Pretorius and Calitz (2011)

In study II, the objective that should be proven by eye tracking can offer and had to be conducted within a certain timeframe. First, in study II, advertisements with branding at the bottom. The Flora heat map shows fixations on the Flora mascot, the big words "OMEGA 3 & 6" as well as fixations on the brand. However, the brand did receive less attention than the other areas. The mean time was 1.95 seconds, a fairly slow time allocated for participants, which is only three seconds to view each advertisement. The Kellogg's advertisement heat map also shows that the brand at the bottom was poorly fixated as described by Figure 2.6.

Figure 2. 6 Flora (left) and Kellog's (right) advertisements

Source: Pretorius and Calitz (2011)

The second object in study II is advertisements with the branding at the top. The Bokomo heat map illustrated in figure 2.7 shows that participants are caught up into the big words "WIN", "CAPTURE", "NATURE". The brand name is also well fixated. The mean time to the first fixation on the brand was 0.3 seconds (s), a very fast time showing quick fixations on the brand name. The House of Coffees heat map shows the brand name being well fixated. Pictures were fixated too, but the small text received almost no fixations. The mean time to the branding at the top was 0.86 seconds. These times are very fast, showing quick fixations on the brand name.

Figure 2. 7 Bokomo (left) and House of Coffees (right) advertisements
Source: Pretorius and Calitz (2011)

The findings of the studies above demonstrate that eye-tracking could have a boost to brand awareness studies of advertisements. The main finding of study II reveals that participants fixated are more on the advertisements with branding at the top than the advertisements with branding at the bottom. These findings suggest the marketing professionals to have their branding at the top of an advertisement. In this previous study, the result is revealed without statistical test. Also, the result only identified by its position, hence it will be better if the size of branding also considered.

According to "Eye Tracking Application on Emotion Analysis for Marketing Strategy" from Zamani et al. (2016) for the past two decades, marketing researchers tended

to neglect the emotional part of consumer behaviour while much focusing on decision-oriented models of information processing, while all marketers hope to understand customers and their purchase decisions. However, when explicitly asked, most people cannot fully and sometimes, do not even want to explain their choices. Somehow, they are not aware of the inner processes that drive their reactions and decisions. This is because 95% of the decision-making process occurred subconsciously. The experiment was designed to happen under the most realistic conditions as if they were realistically shopping in the retail environment. Nine respondents participated in this study. The parameters are the position of the product on the shelf (shelf number), price, brand, advertising, design of packaging, and size. These parameters were defined as AOI. The eye tracker is collecting several metrics such fixation count (number of fixations), fixation duration (length of fixations in milliseconds), total fixation duration (fixation count times fixation duration), per cent fixated (per cent of the sample who fixated in the AOI), time to first fixation (in milliseconds), and scan path (chronological fixations and saccades) for each AOI. In the following, each different parameter explained briefly with figures of the corresponding result of response attention.

A. Size of products.

Figure 2.8 shows a comparison between a bottled Coca Cola and a canned Coca Cola to identify which size is more preferable by the respondent.
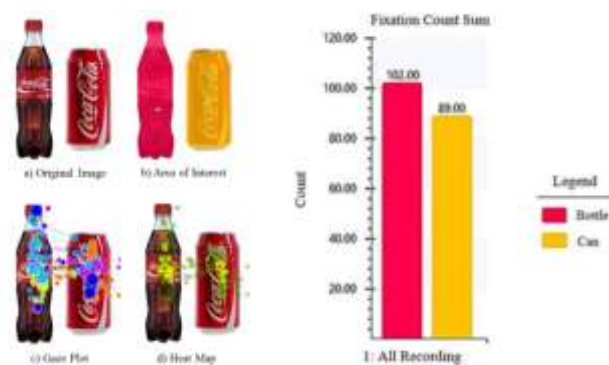
Figure 2. 8 Total Fixation Count for Each AOI's defined (1)

Source: Zamani et al. (2016)

B. Design of Packaging

The original image of Nutella spread in Figure 2.9 compares the three jars of Nutella in term of packaging's design. The bar chart in Figure 10 shows that fixation count sum is highest for the first jar (yellow AOI), followed by the second jar (green AOI), and third jar (blue AOI). The product and its packaging influence attention, evaluation, and ultimately, impact the consumer purchasing decision on the product.
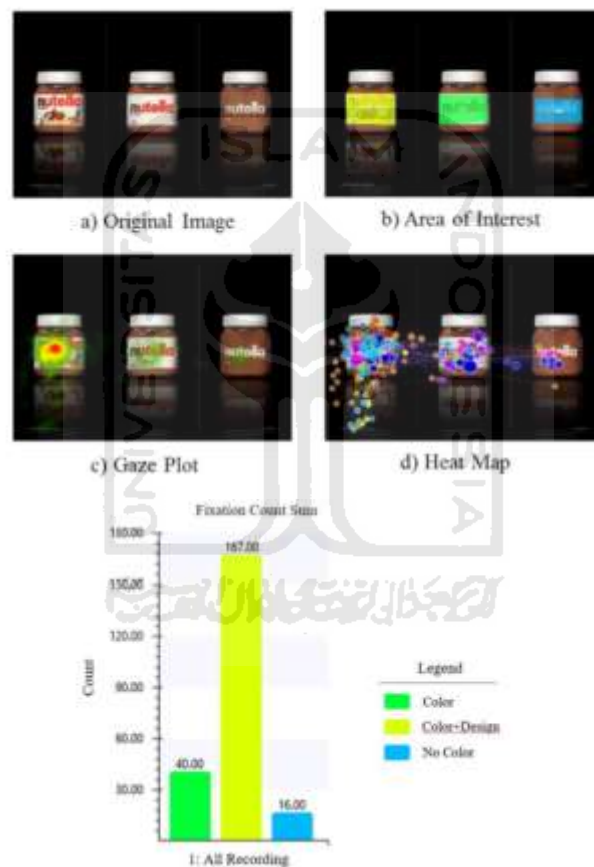
Figure 2. 9 Total Fixation Count for Each AOI's defined (2)

Source: Zamani et al. (2016)

C. Advertisement.

Three AOIs were defined for the KFC advertisement in Figure 2.10 The AOIs define the 'food' (blue), the 'price' (yellow), and the 'description' (turquoise). The number of fixations on the food setup recorded, as shown in Figure 2.10 as the highest at 202 counts, followed by 26 counts at a price and 13 counts at the description.

Figure 2. 10 Total Fixation Count for Each AOI's defined (3)

Source: Zamani et al. (2016)

Based on research entitled "Product versus Celebrity – An eye-tracking experiment for the determination of the attention-catcher in advertising" that studied by Nistoreanu et al. (2019) said that celebrity endorsement in advertising had been a common practice in the past years, but few studies have been preoccupied about their efficiency for the advertised brand. In order to determine the efficiency of celebrity endorsement and the most attractive elements for the attention of the consumer, an eye-tracking experiment has been carried out, analyzing four coffee advertisings. Two of the advertisings contain only product-related elements such

as the package containing the logo and a cup of coffee (advertising for product P1) and the logo and a cup of coffee (advertising for product P2). Two of the advertisings place a figure of a celebrity besides the product-related elements. For product P3, the advertising has shown an international average known celebrity drinking a cup of coffee and the logo of the product. For product P4, the advertising has shown a national celebrity drinking a cup of coffee and the package of the product containing the logo. The respondents have watched the advertising printouts for 10 seconds. The eye-tracking experiment has been carried out on a sample of 25 persons.

The results of the eye-tracking experiment showed that the participants definitely watch more the celebrity in the advertising than the logo or the product itself. In table 1, it can be observed that for the advertisings without a celebrity the average time the consumers have watched the product's logo is of 1157.9 ms = 1.1579 seconds (SD = 815.9) which represents 76.7% of the total time watching the advertising. Moreover, the hit ratio was 92%, which means that 23 out of 25 respondents have watched the logo. In the case of the two advertisings containing celebrities, most of the time has been spent watching them. The average time watching the celebrities was of 1294.5 ms = 1.2945 seconds (SD = 850.1), representing 78.7% of the total advertising watching time. The hit ratio for the logo was only 52%, meaning that only 13 of the respondents have watched the logo of the advertised product. The results of the research show that the presence of a celebrity in advertising can distract the attention of the consumer from the logo or the product itself. Consumers tend to focus their attention on analyzing the celebrity and less on the advertised product. For this reason, it is important to analyze carefully and develop wisely the advertising campaigns that endorse celebrities. Celebrity endorsement can be very efficient only if the placement of the logo, the product and the celebrity can make a differentiation for the advertised brand. In this previous study, the researcher already shows the gaze-plot and the heat map. But the researcher only discusses matters that related to the total fixation count.

Many previous researches related to eye-tracking of product and face in website and advertisement are visualized with heat map and scan path. Also, there is several researched related to the eye-tracking of advertisement. But it did not discuss the design and position in advertisement by using only product without a human model. Researcher sees the possibility of future research related eye-tracking on several advertisements of Pocari Sweat with the product as the object. So, this research will analyze how the criteria of advertisement should gain more interests from the audience. It will be visualized by average fixation time and heat map. The result will be a consideration for determination of the advertisement with the most interests.

2.2 Theoretical Study

2.2.1 Ergonomic

Ergonomics is the science of work: of the people who do it and the ways of it is done, of the tools and equipment they use, the places they work in, and the psychosocial aspects of the working situation.

The word 'ergonomics' comes from the Greek: ergos, work; nomos, natural law. The word was coined by the late Professor Hywell Murrell, as a result of a meeting of a working party, which was held in Room 1101 of the Admiralty building at Queen Anne's Mansions on July 8, 1949—at which it was resolved to form a society for 'the study of human beings in their working environment'. The members of this working party came from backgrounds in engineering, medicine and the human sciences. During the course of the war, which had just ended, they had all been involved with research of one sort or another into the efficiency of the fighting man. And they took the view that the sort of research they had been doing could have important applications under peacetime conditions. There did not seem to be a name for what they had been doing; however, so they had to invent one and finally settled on 'ergonomics' (Pheasant, 2003).

According to Tarwaka (2004), in general, the purpose of the application of ergonomics is:

a. Improving physical and mental well-being through prevention of work-related injuries and illnesses, decreasing physical and mental workload, seeking promotion and job satisfaction.

b. It is improving social welfare through improving the quality of social contacts, managing and coordinating the work appropriately and improving social security both during productive and after-productive periods.

c. Creating a rational balance between various aspects of the technical, economic, anthropological and cultural aspects of each system work done so as to create quality work and high quality of life.

Ergonomics can be defined simply as the study of work. More specifically, ergonomics is the science of designing the job to fit the worker, rather than physically forcing the worker's body to fit the job. Adapting tasks, work stations, tools, and equipment to fit the worker can help reduce physical stress on a worker's body and eliminate many potentially serious, disabling work-related musculoskeletal disorders (MSDs). (Ergonomics: The Study of Work, 2000)

2.2.2 Usability

ISO / IEC 25010 describes usability as the "degree to which the specified user may use the product or system to achieve the specified goals with efficiency, efficiency and satisfaction in the specified context of use." It considers usability to be a subset of quality in use consisting of 'effectiveness,' 'efficiency' and 'satisfaction.' This does not provide "freedom from risk" or "context reporting."

The ISO / IEC 25010 "product quality model" consists of eight characteristics: mechanical suitability, durability, consistency, efficiency, accessibility, protection,

flexibility, upkeep and portability. As a characteristic of a product quality model, usability consists of six sub-characteristics, described as the degree to which:

- Consumers may determine that the product or program is acceptable to their needs (appropriateness of recognition)

- The product or method should be used by identified consumers to meet the particular goals of learning how to use the product or program with efficacy, performance, risk-freeness and enjoyment in a given sense of usage (learnability);

- A device or program has features that allow it convenient to use and manage (operability)

- A framework defends users from malfunction (user malfunction protection)

- A user interface allows user experience (user interface aesthetics) that is appealing and rewarding.

- A product or system can be used by users with the widest set of features and skills to accomplish a specific target in a defined field of usage (accessibility)

  "Learnability" and "operability" are inherited of ISO / IEC 9126. "Understandability" has been replaced by "appropriateness awareness" and "attraction" has been replaced by "user interface aesthetics." "Usability enforcement" has been eliminated; "User error security" and "Accessibility" has now been implemented.

ISO / IEC 25010 suggests that the usability may either be defined or calculated as a commodity consistency characteristic in terms of its sub-characteristics or that it can be described or calculated explicitly by metrics that are subsets of in-use quality.

Nielsen & Loranger (2006) described usability as a consistency characteristic for how simple it is to use, more precisely how:

• Fast people will learn to use it (learnability),

• Effective they use it (efficiency),

• Unforgettable it is (memorability),

• Error-prone it is (errors)

 • Users enjoy using it (satisfaction)

Sharp, Rogers, & Preece (2007) concluded that the basic aim of usability is to ensure that digital goods are simple to understand, effective to use and enjoyable. They laid out six "usability goals": effectiveness, efficiency, safety, utility, training and memorability.

Usability.gov (2014) claims that usability is about effectiveness, efficiency, and overall user satisfaction, a combination of factors including responsive nature, ease of understanding, quality of usage, memorability, frequency and seriousness of errors, and subjective satisfaction.

Regardless of what is referred to as "attributes," "factors" or objectives, the usability aspect is recurring across both meanings. They are often related to in the ISO specifications. New model encounters, emerging technology and different forms of applications are persuasive reasons for evaluating the definition of usability, features, process, metrics and methodologies (Rusu et al., 2011, Wiberg et al., 2009)

2.2.3 User Experience

ISO 9241-210 standard (ISO 9241-210, 2010) defines User Experience (UX) As a person's perceptions and reactions resulting from the use and/or anticipated use of a product, system or service. It considers that UX "includes all user's feelings, values, desires, attitudes, physical and psychological responses, activities and accomplishments that exist before, after and after use."

One of the ISO 9241-210 standards notes clarifies that UX "is a consequence of brand image, presentation, functionality, system performance, interactive behaviour and assistive

capabilities of the interactive system, the user's internal and physical state resulting from prior experiences, attitudes, skills, and personality, and the context of use".

Sharp, Rogers, & Preece (2007) noticed that one can not design a user interface; one can not design a user experience, but just a user experience template; one can not template a user experience sensually; one can not design a sensual interaction, but only the product elements that will invoke it. They list a wide range of UX qualities:

• Positive qualities: pleasant, relaxing, interesting, thrilling, amusing, beneficial inspiring, aesthetically appealing, innovative, cognitively stimulating, encouraging, fun, provocative, shocking, emotionally fulfilling, demanding, sociable and sweet.

• Negative qualities: boring, frustrating, annoying;

Kuniavsky (2003) admitted that defining UX is difficult since it can apply to almost anything in someone's relationship with a company. As it is difficult to deal with the whole UX at once, he proposed to divide UX into manageable "chunks":

• Information architecture: the method of developing the fundamental structure framework for the information the company is attempting to convey;
• Interaction design: the manner in which the system is communicated to the consumer,
• Identity design: improves the charm and appeal of the company, rendering it unforgettable and special.

UXPA.org (2014) defines UX as any parts of the user's experience with a commodity, service or business that makes up the user's impression of the whole. It notes that UX design is concerned with all the components that make up the app together, including architecture, graphic design, audio, model sound and interaction. UX aims to integrate all components so that consumers can communicate as much as possible.

The UX concept is still under review. The "User Experience White Paper" (Roto et al., 2011) aims to "bring clarity to the UX concept". This demonstrates the multidisciplinary complexity of UX, which has contributed to a variety of UX interpretations and viewpoints, each presenting the term from a particular point of view: from a psychological point of view to a market point of view, and from a consistency point of view to a value-centric point of view.

2.2.4 Human-Computer Interaction

According to Kim (2015), Human-computer interaction (HCI) is a cross-disciplinary field (e.g. architecture, psychology, ergonomics, design) concerned with the philosophy of design, application and evaluation of human usage and engagement of computing devices. Interaction is a word that needs to be differentiated from another related phrase, interface. Roughly speaking, interaction refers to the abstract model by which humans interact with the computing device for a given task, and the interface is a choice of the technical realization (hardware or software) of such an interaction model. Thus, the letter I in HCI refers both to contact and design, to the theoretical paradigm and to the technical system.

HCI has become much more important in recent years as computers (and embedded devices) have become commonplace in almost all the facts of our lives. Aside from simply making available the necessary computational functionalities, HCI's early focus was on how to design interactions and implement high usability interfaces. The phrase "strong usability" implies that the resulting interfaces are simple to use, effective for the job, maintain protection and contribute to the proper completion of the function. Usable and efficient interaction with the computing device, in turn, results in higher productivity.

The basic esthetic appeal of interfaces (while meeting the need for usability) is now also a vital added condition for commercial success. The family of distinctly designed Apple products is a good example of this. Apple products are attractive and have created a multitude of loyal followers, even though their functionality may be virtually equal to that of their

competitors. In this context, the concept of user experience (UX) has become a buzzword, a notion that encompasses not only the functional completeness, high usability and esthetic appeal of the interactive artefact but also its seamless integration into one's lifestyle or even the creation of a new one around it.

The less well-known fact is that HCI has had a huge impact on the history of computing and has changed our daily lives. It was probably the invention (or rediscovery) of the mouse that was the linchpin in the personal computer revolution, making the computer revolution, making the operation of the computer intuitive and much easier than the previous keyboard command system. The spreadsheet design has rendered market programming a big success. The Internet trend should not have existed without the webserver GUI. Smartphones, with their touch-oriented interfaces, have almost replaced the previous generation of feature phones. Body-based and action-oriented technologies are also developing innovative ways to play and experience video games. HCI continues to redefine how we view, absorb, exchange, create and manipulate information to our advantage.

2.2.5 Visual Attention

Visual attention has been studied for more than a hundred years. The psychologist William James gave a good qualitative definition of visual attention: everyone knows what attention is. It is the taking control by the consciousness, in a simple and vibrant manner, of one out of which many items or trains of thought exist concurrently. Focalization, attention, awareness is the core. It requires separating from certain issues in order to cope successfully with others. When things are apprehended by the senses, the number of them that can be attended at once is small, 'Pluribus intentus, minor est ad singula sensus.'

James (1981) believed attention to be a more internally concealed process, including creativity, expectation, or, in general, awareness. James identified attention primarily in terms of the "what" or identification, purpose or belief correlated with the object of attention.

James preferred the constructive and voluntary dimensions of focus, but he also acknowledged its passive, reflexive, non-voluntary and effortless attributes.

A complete visual attention model involves high-level visual and cognitive functions. In other words, visual attention cannot simply be explained by the mere consideration of visual features. Higher levels of intentional factors are involved (e.g. related to potentially voluntary, pre-conceived cognitive factors that attract attention).

An eye tracker can only track the open movements of the eyes but cannot track the hidden movements of visual attention. Thus, in all eye-tracking research, an implicit yet rather significant premise is generally accepted: we believe that focus is related to the path of the foveal look, yet we understand that it might not always be so.

2.2.6 Visual System

In order to "see" an object, light must reflect the object and travel to our eyes. The light energy detected by our eyes is transformed into electrical (neural) impulses and then sent to our brain for further processing. Thus, the first step in seeing an object is to register the light reflected from that object with our retina, a light-sensitive layer at the back of our eyes. There are two types of visual sensory receptors in the retina: rods and cones. Rods are involved in low-light-intensity conditions such as in a dark space or at dusk without artificial lighting. They specialize in the processing of black and white pictures. Cones, on the other hand, specialize in producing color vision, but are active only under well-lit conditions, such as in a well-lit room or in broad daylight. The retina has far fewer cones (about 7 million) than rods (about 120 million) (Duchowski, 2007). The bulk of the cones are found in the fovea, a narrow region in the middle of the retina (Figure 2.11). Due to its densely packed array of cones, fovea registers the outer world far more sharply than any other part of the retina. Therefore, in order to see an object with a 100 per cent acuity, we adjust our eyes so that the light reflected from the object falls on the fovea.
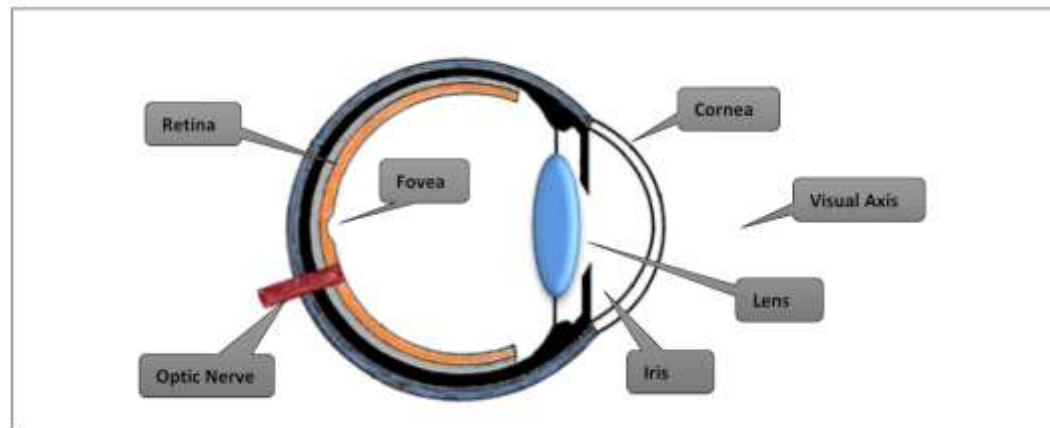
Figure 2. 11 The Eye

Source: Djamasbi (2014)

While our foveal vision is sharp and colorful, it only covers about 2 degrees of our visual field, a small area approximately the size of our thumbnail kept at arm's length from our body (Figure 2). Visual acuity is slipping rapidly from the middle of the eye. For starters, we can see only around 50 percent acuity at 5 degrees. Our "useful" sensory range is restricted to about 30 degrees, and after that our retina is mainly used to track motion (Duchowski, 2007; Solso, 1996).

In other words, vision can work in a cyclical process consisting of the following steps. First, given a stimulus, such as an image, the entire scene is first seen mostly in parallel through peripheral vision and thus mostly at low resolution. At this point, interesting features can "jump out" in the field of view, in a way that activates or guides attention to their position for a more thorough inspection. Second, attention is thus turned off or disconnected from the foveal location, and the eyes are quickly repositioned to the first region that attracted attention. Third, as soon as the eyes complete their movement, the fovea is now directed at the region of interest, and attention is now engaged in the perception of the feature under high-resolution inspection.
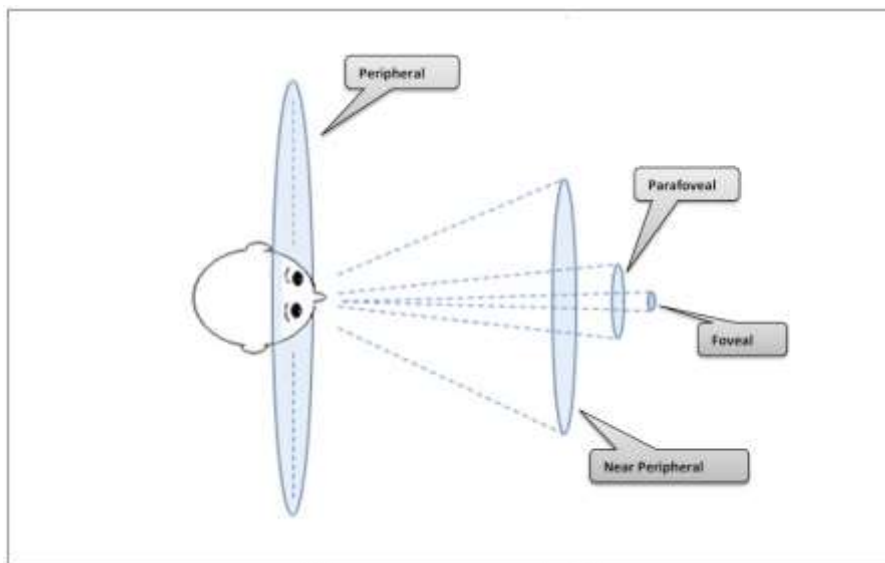
Figure 2. 12 Cone of Vision

Source: Djamasbi (2014)

a. Saccade

Saccades are rapid eye motions used to reposition fovea to a different spot in the visual context. To compensate for our narrow foveal vision, we constantly scan our visual field with fast ballistic eye movements called saccades. The term is derived from the old French word meaning "flick of a sail" (Gregory 1990). The Saccadic gestures are both voluntary and symbolic. Movements may be carried out on a voluntary basis or may be invoked as an optokinetic or vestibular corrective measure (see below). Saccades vary in length from 10 ms to 100 ms, which is fast enough to completely blind the executor during the transfer (Shebilske and Fisher 1983). There is some controversy regarding the fundamental neural mechanism controlling the saccades.

Saccades are found ballistic and stereotypical. The term stereotyping refers to the observation that particular patterns of movement can be evoked repeatedly. The word ballistic applies to the belief that saccade destinations are pre-

programmed. That is, once the saccadic movement to the next required fixing position has been determined (programming latencies of around 200 ms have been reported), the saccades cannot be modified. One explanation for this assumption is that there is insufficient room during the execution of the saccade for sensory input to direct the eye to its final location (Carpenter 1977). In the other side, a saccadic guidance mechanism is possible if it is believed that, instead of external input, an internal representation of the brain, eye and goal location is used to direct the eyes through the saccade (Laurutis and Robinson 1986; Fuchs et al . 1985). Due to their rapid velocity, saccades may only appear to be ballistic (Zee et al. 1976).

b. Fixation

Shortstops between saccades, which are called fasteners, take up most of our viewing time (about 90%) (Duchowski, 2007). Fixations are eye motions that focus the retina over a fixed point of interest. It seems obvious that fixations should be created by the same neuronal circuit regulating smooth pursuits, with fixings being a special case of goal travelling at zero velocity. This is probably wrong (Leigh and Zee, 1991, pp. 139–140). Fixations, on the other hand, are marked by microscopic eye movements: tremor, drift and microsaccades (Pritchard 1961; Martinez-Conde et al . 2004; Martinez-Conde and Macknik 2015).

This is a rather counterintuitive effect of the motion-sensitive single-cell structure of the visual system. Recall that microsaccades are caused by the sensibility of motion of the single-cell physiology of the visual system. Microsaccades are eye movement impulses that are more or less spatially spontaneous, ranging in magnitude across 1–2 min of arc. The counterintuitive truth of fixing is that if the picture becomes chemically fixed on the eye, the vision fades within a second and the sight is void. Miniature eye motions that

accurately define fixings could be perceived to be noise present in the control mechanism (possibly distinct from the smooth monitoring circuit) seeking to hold the focus steady. This noise appears to be a random fluctuation in the area of fixation, usually not greater than 5 (Carpenter 1977, p. 105)

2.2.7 Eye-tracking

Based on Nielsen & Pernice (2010), Eye-tracking clearly follows the direction where a person is looking. For new technologies, it's fairly easy to see when people are gazing at a computer screen. Eyetracking hardware can be installed into a computer monitor, so eye-tracking software can maintain track of what is reflected on the device as the consumer is viewing it.

Computer power improved in the 2000s to the extent that it is now possible to assign a separate video camera to the head of the user and calculate the position of the head in real-time. Other cameras are zoomed in to gather a close-up view of both eyes. Since almost everyone is looking in the same direction with both eyes, the eye tracker draws a conclusion as to where the user is looking by averaging the calculation for both eyes. Another clever technique that popular eye-trackers use to bounce the pulse of transparent infrared light off the user's forehead. This wavelength is reflected much better by the retina than by the rest of the eye, as the retina absorbs visible light but reflects infrared. This helps the eye-tracker to identify the position of the pupils without the need for intense image recognition.

With more sophisticated technologies, it is often possible to monitor where individuals look in written records, such as magazines, and where they look in the real world, but because there is no automatic way to recognize what the consumer is looking at, but for utilizing artificial intelligence to do image detection. Therefore, much of the analyzes of such eye-tracking experiments are performed through tiresome manual analyses of video recordings. These ventures are interesting, but we confine our debate here to the usage of an eye-tracking device.

Eye-tracking the concentration of the viewer's eye on the cue. Usually, this is achieved by monitoring the eye movements of the viewer. Today, most commercially accessible eye-can capture eye-tracking utilizing a covert technique known as corneal-reflective video (Duchowski, 2007). Most widely, focus measures are defined in eye-tracking studies as markers of focus, namely the frequency of fixation (density measurement) and the total length of fixation (period measurement). A number of fixations indicate the frequency of the fixations to the specific characteristics of the stimulus. The total duration of the fixing is indicated by fixing the total amount of time viewers to the stimulus or specific characteristics of the stimulus. A number of fixations indicate the frequency of the fixations to the specific characteristics of the stimulus. The total length of fixing is indicated by setting the cumulative amount of time viewers to a stimulus or a specific stimulus feature. (Puskarević et al., 2016).

2.2.8 AOI (Areas of Interest)

Establish all fixations to an object that fall within a certain distance of the object is the most common approach to determining object attention. This approach is acknowledged as classification by area of interest (AOIs; also known as regions of interest). There are at least two ways in which an AOI can be defined: either using software to draw the AOI physically or using scripts describing and assigning fixations or saccades to AOIs based on their visual plane coordinates. Both approaches are widely used to conduct decision taking (Schulte-Mecklenbeck et al., 2015).

Holmqvist and colleagues (2011) have offered a variety of suggestion. About the size of AOIs, it is recommending that AOIs require buffer space (margin) of 1° to 1.5° of visual angle around the object, an area approximately the size of the fovea. When accuracy is low, then margins should be further increased to ensure that all fixations belonging to a given object are included. For circumstances where the researcher is free to design the stimuli, it is recommended that sufficient distance be given around objects to allow the researcher can

increase AOI margins without causing duplication, reducing the risk of participants processing more than one stimulus at a time.

2.2.9 Heat Map

Fixation is described as a gaze longer than three hundred milliseconds (Djamasbi et al. 2007; Djamasbi et al. 2008) was advantageous in deciding which aspects of a web page attracted the attention of participants. It was visualized as heat maps; the heat maps were created based on the entire duration of participants viewed each page. As previously described, red spots imply high levels of fixation, with yellow and green indicating decreasing amounts of fixation. Areas without red, green, or yellow spots were not fixated upon. (Djamasbi et al. 2010).

According to Nielsen & Pernice (2010), in a heat map, screenshots are color-coded by the number of looks that each component attracts: the red areas represent where people looked the most, the yellow areas show fewer fixtures, and the blue areas show the least seen regions. If the field is dark, it does not draw any fixations. The Heat Map was called because the option of colors metaphorically shows hot areas and cold areas on the screen. Heat maps may be either the number of fixings or the length of the fixings. In reality, there is generally not much difference between these two methods, particularly when calculated over a wide variety of users. Thus, thermal maps show how many seconds users look at different screen elements, not how many times they look at them.
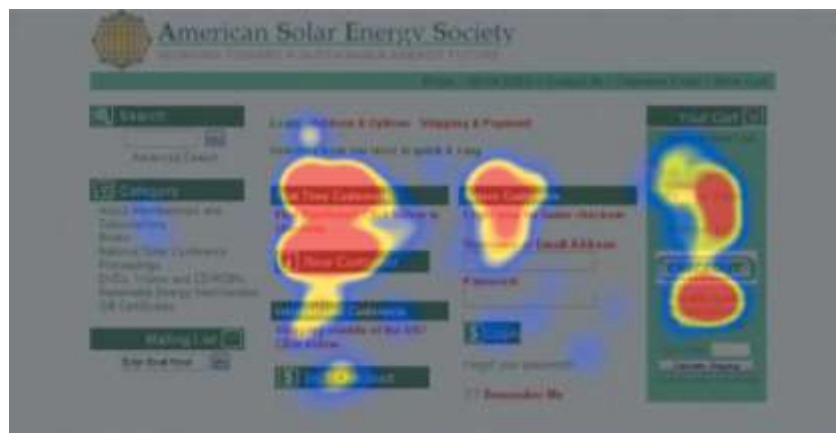
Figure 2. 13 Heat Map

Source: Nielsen & Pernice (2010)

2.2.10 Top of Mind

There is a range of awareness from aided recall to Top of the Mind Awareness. Reminiscent, a brand when a name is presented to them is known as aided recall (Kapferer, 1997). When consumers first mention a particular brand name when they are asked about the type of retailer, merchandise category or a type of service is known as TOMA. When a brand is included in a consumer's evoked set or considered during purchase evaluation, then the goal of advertising is met (Levy, 2012).

2.2.11 Brand Awareness

Brand awareness refers to how aware costumers are of a particular business and its goods (Gustafson and Chabot, 2007). Brand awareness is critical importance to marketers as consumers will not consider a brand if they are unaware of the products offered (Tan, 2010). Ultimately, achieving successful brand awareness means that your brand is well recognized and easily identifiable (Gustafson and Chabot, 2007). The importance of brand awareness in the customer's minds can be measured at various stages for example recognition, recall, top of mind, brand dominance (they only call that particular brand), brand knowledge (what brand means to you) (Aaker D., 1996). According to Dodds, Monroe and Grewal (1991), a higher level of brand awareness can affect the customer buying decision. According to

Macdonald and Sharp (2000), while customers are familiar with the product and willing to buy it, brand recognition is another aspect that still affects purchasing decision.

2.2.12 Advertising

Nizamuddin (n.d) stated that advertising is only one element of the promotion mix but is often seen as prominent in the overall design of the marketing mix. Its high profile and pervasiveness have rendered it a significant social and encomia problem in Indian society. Promotion may be defined as "the coordination of the efforts made by all sellers to set up channels of information and persuasion to facilitate the scale of a good or service." Promotion is most often intended to be a supporting component of a marketing mix. Promotion decisions must be synchronized and aligned with the remainder of the marketing mix, in specific product/brand decisions, so that they can successfully help the whole marketing mix approach. The advertising blend is made up of four fundamental components.

They are:

1. Advertising

2. Personal Selling

3. Sales Promotion, and

4. Publicity

1. Advertising is the dissemination of information by non-personal means through paid media where the sponsoring organization is the source.

2. Commercial sales are the distribution of information through non-governmental means, such as face-to-face communication with the public and employees of the supporting company. The sponsoring organization is the source of information.

3. Sales promotion is the dissemination of information through a broad range of activities, other than personal sales, advertisement, that stimulate customer purchasing and dealer performance.

4. Publicity is the distribution of knowledge through personal or non-governmental means that is not compensated explicitly by the company and is not the basis of the material.

What Advertisement Is?

Advertisement is a mass communication of information intended to convince buyers of products with a view to maximizing the profits of a company. The advertising elements are:

(i) mass communication to a large group of consumers.

(ii) Making mass production possible.

(iii) It is a non-personal communication, as it is not made available to the actual person or addressed to a specific person.

(iv) It is a commercial communication because it is used to help ensure that the advertiser has a long business life with profitable sales.

(v) Ads may be competitive, because it targets broad numbers of individuals. This keeps the cost of a message low.

(vi) The communication is quick, allowing the advertiser to speak to millions of buyers in a matter of a few hours.

(vii) Advertising shall be defined as correspondence. In order to publicize his identity, the advertiser signs his name in his advertisement.

2.2.13 Static and Dynamic Images

Based on Reed and Kazemi (2009) perception and behavior are also combined in the creation of complex pictures. We describe dynamic images as images that include motion and movement. Static pictures, by contrast, do not move. Although extensive research has shown that imaging is an efficient technique for encoding words in a recall mission, this research

(to the best of our knowledge) has not explicitly compared the relative effectiveness of static and dynamic images for retrieval of concrete nouns. This analogy was inspired by the important role dynamic images play in other memory tasks, such as remembering action phrases.

2.2.14 Instagram in Marketing

Instagram was founded in 2010 (Bergstrom & Backman, 2013). It is a mobile application, which allows users to share their photos and videos to their followers (Dubovik, 2013). Instagram can help a company to promote their products or services (Bevins, 2014). The point that makes Instagram different from other social media is that Instagram is applying a visual-based strategy (Hird, 2013). Everything about Instagram is about the photograph (Linaschke, 2011). Instagram marketing is an effective way to advertise a product, as it is said that a picture speaks a thousand words (Silva et al., 2013). Moreover, social media also provide marketers with an easier way to understand their customers. In the case of Instagram, leaving comments and receiving comments on the photo posts can gain more feedback from the customers on the product. Followers are often interested to see the interaction between the organization and the users, so being attentive to the comments would help in improving the relationship with customers (Dennis, 2014).

2.2.15 Normality Test

The normality test can be conducted using the Kolmogorov-Smirnov test, and the Kolmogorov-Smirnov test is considered to be a distribution test. The variables being evaluated are constant, so the data used in the test are not calculated on an ordinal scale. Principles of the Kolmogorov-Smirnov test is to measure the absolute difference between the cumulative probability function of the sample and the expected distribution function for each class interval (Daniel, 1989).

1. Hypothesis

   $H_0 : F(\theta) = F((\theta) =$ Data is normally distributed

$\text{H}_1 : \text{F}(\theta) \neq F((\theta) = $ Data is not normally distributed

2. Statistical Test : $\alpha = 5\%$

3. Criteria of Test: Reject H_0 if $sig < \alpha$

2.2.16 ANOVA One-Way Test

One-way analysis of variance is a parametric statistical technique used to test the difference between several groups of means, in which there is only one independent or independent variable divided into several groups and one dependent or dependent variable. In the one-way Anova technique, it is usually used in experimental or Ex-Post-Facto research (Widiyanto, 2013).

Hypotheses in ANOVA will compare means of several population represented by several sample groups together, so that the mathematical hypothesis is:

$\text{H}_0 : \mu1 = \mu2 \ldots = \mu k$

- All population means are the same
- No treatment effect (no variation in group means)

$\text{H}_1 :$ not all population means are equal

- There is at least 1 different population mean
- There is a treatment effect
- Not all population means differ (several pairs are possible same).

Basis for decision making to determine acceptance or rejection hypothesis seen from the significance of the One-Way ANOVA test with testing criteria the following:

- If the probability> 0.05, then Ho is accepted
- If the probability <0.05, then Ho is rejected

2.2.17 Kruskal-Wallis Test

To determine whether the k independent samples come from different populations, the Kruskal-Wallis one-way variant analysis focuses on the ranking of the data used (Siegel, 1997). The Kruskal-Wallis test tests the null hypothesis that the k samples come from the same population or identical populations, in terms of their means. This test assumes that the observed variables have a continuous distribution. This test requires measuring the variable at least on an ordinal scale.

Hypothesis for Kruskal-Wallis test is:

H_0 = There is difference median of population value ($\theta_1 = \theta_2 = \ldots = \theta_k$)

H_1 = Minimum there is one pair of unequal population medians

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Object

The object of this research is to discover which of each Pocari Sweat advertisement will be the most interesting. The most interesting advertising is represented by the highest average fixation time and red spot on the AOI in the heat map of the advertisement which assisted by eye-tracking technology. This eye-tracking technology can be obtained through an eye-tracking webcam platform which is RealEye.io. The results will be visualized through a number of average fixation time between each advertisement and heat map.

The number of average fixation time of respondent means how long the respondent sees the AOI (Area of Interest) of each advertisement. The AOI in this research is the Pocari Sweat itself. From each advertisement, the respondent's fixation time will be calculated and compared. The highest average fixation time of one advertisement means that advertisement will be considered as the most interesting one, since the respondent sees the Pocari Sweat longer rather than other advertisements. Heat map of each advertisement will be discussed and compared with each other. The color spot indicates the level of interest to the area which spread out by spot. The result of this research will be the reference to company on how to make advertisement that could obtain maximum interests from people.

3.2 Research Subject

In this research, 40 respondents are involved. The selection of 39 respondents was based on "How to Conduct Eye tracking Studies" from Pernice and Nielsen (2009). They assumed that researchers need good-quality eye-tracking results from 30 users. This means that researchers need to run about 39 users through the eye tracker to account for lost data with current eye-tracking technology. (About 23% of users tested do not generate sufficient high quality eye-tracking data, either because their eyes are calibrated poorly or because the equipment acts up. Thus, if we test 39 users, we will lose the data from 9 of them, leaving 30 good recordings). But, in this research, the author collects 40 respondents. Those 40 data can be reduced due to the integrity of the data.

The respondents who are selected in this research should fulfill the requirements, such as:
- The age of respondent should be in range from 20 – 25 years old.
- The respondent already known the Pocari Sweat.
- The respondent is Instagram user.
- The respondent has laptop that can access RealEye.io and with webcam.

3.3 Type of Research Data

There are two types of research data which are used in this research, which are primary and secondary data with an explanation as below:

1. Primary Data
   Primary data are data which collected directly from an object with an experiment. Primary data in this research is obtained from the eye-tracking test of each respondent in the form of a heat map and gaze plot.

2. Secondary Data

   Secondary data are collected indirectly from literature reviews such as book, journal, or report. Secondary data are incredibly supportive for the research in analyzing data and as the base of the study.

3.4 Method of Data Collection

In this research, eye-tracking is used as a method. Respondents will be tested by looking at several advertisements with a webcam eye-tracking platform. The fixation of the respondent will be measured and visualized by utilizing heat map. This research will use within-subject design, so the respondent of two advertisements are the same.

3.4.1 Research Instrument

This research uses RealEye.io as an online platform for eye-tracking. RealEye.io can collect data using eye-tracking remotely. Respondents only need to open the website RealEye.io. After completion, the researcher can see the results.

3.4.2 Experiment Design

This research was conducted remotely, researchers and respondents were in separate places and different times. The researcher set five pictures in RealEye.io which its criteria already identified and selected. Researchers will provide a link to respondents. This link will direct respondents to the RealEye.io website. On RealEye.io, respondents will be provided with instructions. Later, the respondent will see several Pocari Sweat advertisements with a duration of 8 seconds for each. Figure 3.1 shows the illustration of experimental design.

Figure 3. 1 Experiment Design

3.5 Method of Data Processing and Analysis

In RealEye.io, the result is presented in quantitative and qualitative. The quantitative data is the fixation time of AOI. Also, the qualitative data will be in the heat map.

3.5.1 Analysis of Statistical

The result will be tested by using the statistical analysis, which is independent normality test-Kolmogorov Smirnov to identify whether the data already normalized or not.

Normality Test-Kolmogorov Smirnov

Normality Test- Kolmogorov-Smirnov Data is a statistical test to find out and calculate whether the sample distribution is normal or can be done normally or can be considered normal (Santoso, 2001). The hypothesis used in the Kolmogorov-Smirnov data normality test is:

H_0: The distribution of sample data follows the normal distribution

H_1: The distribution of sample data does not follow the normal distribution

Decision making based on hypothesis is seen from the significance level. If the significance level ≥ 0.05, then H0 is accepted, which means that the distribution of sample data follows the normal distribution. Conversely, if the significance value <0.05, then H0 is rejected, which means the distribution of the sample data does not follow the normal distribution.

The data will be tested to know whether there is a difference between each advertisement or not. If the data are normal, the difference test will use ANOVA One Way Test.

ANOVA One Way test

One-way analysis of variance is the process of analyzing data obtained from an experiment with multiple factor levels, usually more than two-factor levels. The purpose of this analysis is to identify important independent variables and how they might influence response. (Wackerley, 2008)

H0: There is a difference between sample data

H1: There is no difference between sample data

But, if the data are not normal, the difference test will use the Kruskal-Wallis Test.

Kruskal-Wallis Test

The Kruskal-Wallis test (Kruskal-Wallis one-way analysis of variance by ranks) is a technique

Nonparametric statistics were used to test the initial hypothesis that multiple samples come from the same/identical population (Daniel, 1990)

H0: There is a difference between sample data

H1: There is no difference between sample data

3.5.2 Analysis of Heat map

From those several advertisements, the result of RealEye.io will be used to assess interest in AOI of each advertisement. From the color spot in the heat map, it will be known which part of the advertisement is most interesting based on the spot color that appears in the advertisement to strengthen the analysis of interest in the advertisement. The color code indicates the level of interest from the lowest to the highest, which are from purple, blue, green, yellow, and red respectively—those colors is illustrated in the figure below.
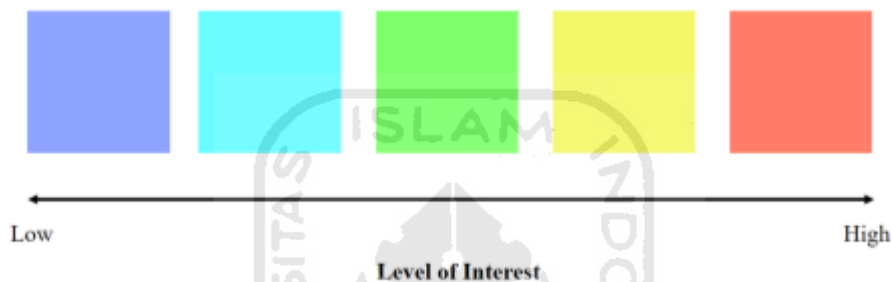
Figure 3. 2 Level of Interest

The color of the spot on AOI in each advertisement will be analyzed and compared to each other. To know whether the level of interest of AOI in each advertisement.

3.6 Flowchart of Research

```
                    ┌──────────┐
                    │  Start   │
                    └──────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │ Problem Identification │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │  Problem Formulation   │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │   Literature Review    │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │   Experiment Design    │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │    Data Collection     │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │  Grouping Categories   │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │    Identify Criteria   │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │       Clustering       │
              └────────────────────────┘
                         │
                         ▼
              ┌────────────────────────┐
              │  Making eye-tracking   │
              │      experiment        │
              └────────────────────────┘
                         │
                         ▼
                    ┌──────────┐
                    │    A     │
                    └──────────┘
```
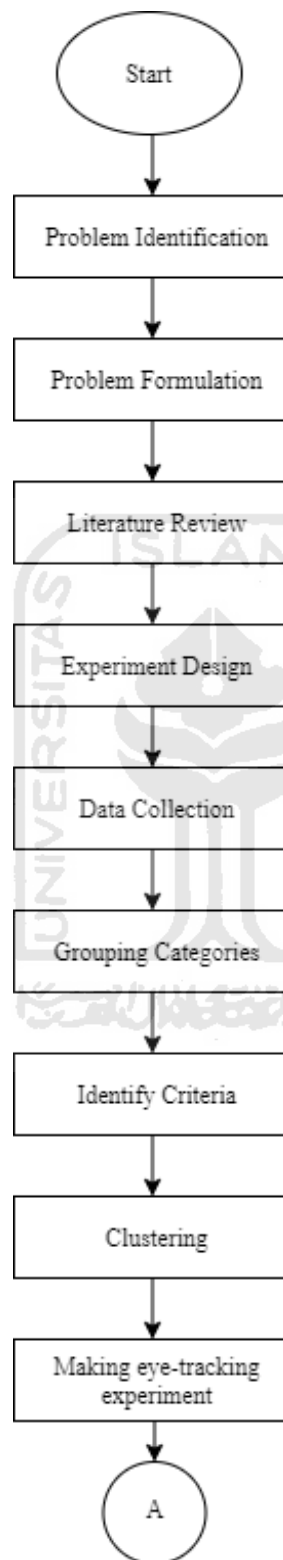
Figure 3. 3 Research Flowchart

Figure 3.3 shows the research flowchart. This research begins with problem identification. The identified problem is related to the decreasing of the top brand index of Pocari Sweat. The decrease is due to the brand awareness of Pocari Sweat through their advertisement.
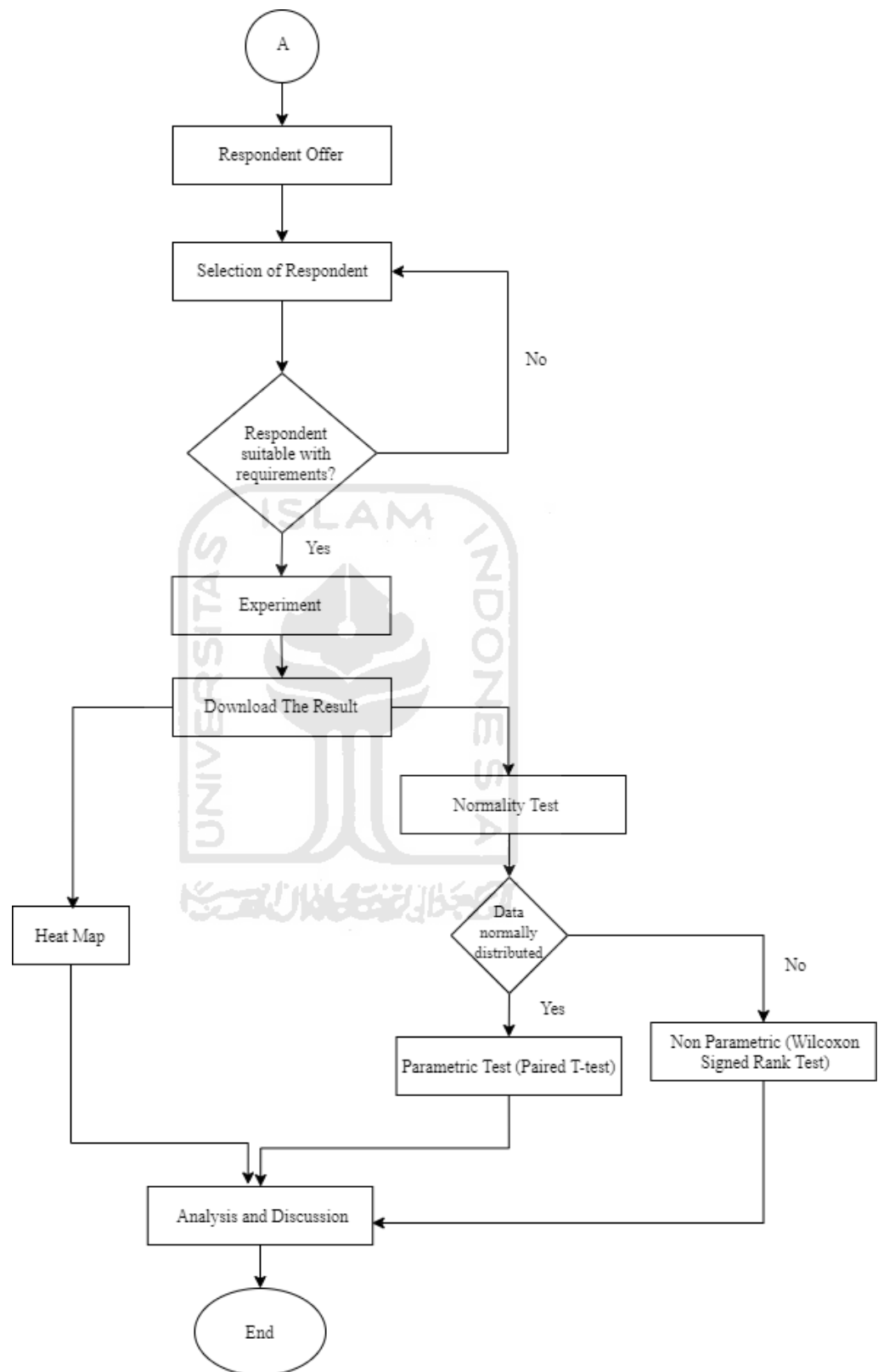
After the problem is identified, problem formulation and literature review are created. The literature review is conducted to obtain basic theory, methods used and supporting research from previous researches that share similar topic. The source of literature reviews are derived from journals and websites which support this research.

Then, the experiment is designed before it is executed in order to minimize the error and as the guideline. In this experiment, 40 respondents are required. All respondents should meet certain criteria. The criteria of respondent such as:

- The age of respondent should be in range of 20 – 25 years old
- The respondent already known the Pocari Sweat
- The respondent is Instagram user
- The respondent has laptop that can access RealEye.io with webcam

If the respondent does not meet those criteria, the researcher will find another respondent who fulfills those criteria until the number of respondent is 40. The researcher collects 40 respondents via online chatting. Researcher asks the respondents whether or not they available to become a participant. If the respondent agrees, then the researcher and respondent make schedule to have online meeting. through Zoom or Google Meet. The researcher instructs the respondent to locate bright place for observation purpose and prepare the laptop with webcam and stable internet access on appointment date. The respondent conducts share screen so the researcher can see and give the instruction to the respondent.

The next step is data collection, the experiment design is then executed. The respondent should access RealEye.io. Firstly, RealEye.io asked the respondent to do the eye calibration. After the respondent's eye already calibrated, then the respondent will see five pictures of Pocari Sweat advertisements. The AOI of each picture is Pocari Sweat. Those five pictures are shown with only 8 seconds and the sequence is set randomly. Then after the pictures is already seen one by one, then the respondent will fill the profile such as name, gender, and age.

After 40 respondents do the experiment, the researcher will collect the fixation time of each respondent of each picture while seeing the AOI from RealEye.io. Then data of fixation time will be tested by Normality Test-Kolmogorov Smirnov. This normality test is applied to identify whether the data already normal or not. If the data already normal, the researcher will ensure for data differences. If the data already normal, they are tested with Parametric Test which is ANOVA-One Way in order to identify the differences existed in those data. If not, the data are tested with Non-Parametric Test, which is Kruskal Wallis Test. Then both of them will show the average of fixation time for each picture. The highest average of fixation time will identify which advertisement that is classified as the most interesting. RealEye.io will provide the result in heat map. The researcher will discuss the difference of heat map of each picture between one to another. The result of both statistical test and heat map will be discussed and integrated. Based on the result, the researcher can make conclusion and recommendation for further research.

CHAPTER IV

DATA COLLECTION AND PROCESSING

4. 1 Data Collection

The data collected in this study include the respondent profile fixation time and heat map for each respondent. Data collection is conducted to gain the required data or information in order to achieve the research objective. On the other hand, data processing is arranged to transform data to be easier to understand.
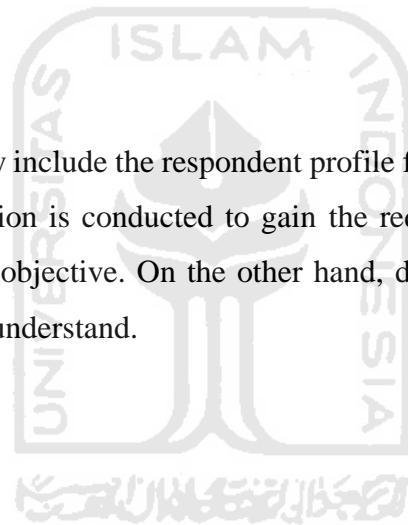
4.1.1 Criteria of Pocari Sweat Advertisement

From Instagram, there are 8 pictures of Pocari Sweat advertisements which only use product's picture on the beginning of 2020. The figure as below

Figure 4. 1 Pocari Sweat Advertisement Picture

Source: @pocariid (Instagram account)

Researcher performs the clustering based on criteria of the picture. There are five clusters as below:

a. Cluster 1: "There are text and the product in big size"

In this cluster, there are three pictures that meet its criteria. Those pictures are contained with a text and Pocari Sweat in big size. Those pictures are shown in Figure 4.2.

Figure 4. 2 Cluster 1

b. Cluster 2: 'Pocari Sweat around several goods.'

In this cluster, there is only one picture which appropriate with its criterion. In this picture, the Pocari Sweat is put around several goods. This picture is shown in Figure 4.3.

Figure 4. 3 Cluster 2

c. Cluster 3: 'There is more than one product of Pocari Sweat'

In this cluster, there is only one picture that represents this criterion. In this picture, the Pocari Sweat is placed more than one unit, as seen in the Figure 4.4.

Figure 4. 4 Cluster 3

d. Cluster 4: 'There are Pocari Sweat and goods side by side'

In this cluster, there is only one picture which shows Pocari Sweat and goods side by side. This picture is shown in Figure 4.5.

Figure 4. 5 Cluster 4

e. Cluster 5: 'Pocari Sweat dominates the picture'

In this cluster, there are two pictures which shows that Pocari Sweat dominates the area of the picture. Those pictures are shown in Figure 4.6.

Figure 4. 6 Cluster 5

To narrow it, one picture is selected to represent each cluster. It is shown which picture is represented its cluster. In order to easily define the AOI, which is Pocari Sweat. The AOI is more colorful rather than the background.

Cluster 1: "There are texts and the product in big size" as represented by figure 4.7. It is defined the Figure 4.7 as picture A.

Figure 4. 7 Picture A (Cluster 1)

Cluster 2: 'Pocari Sweat around several goods' is represented by Figure 4.8. It is defined the Figure 4.8 as Picture B.

Figure 4. 8 Picture B (Cluster 2)

Cluster 3: 'There are Pocari Sweat and goods side by side' is represented by Figure 4.9. It is defined the Figure 4.9 as Picture C.

Figure 4. 9 Picture C (Cluster 3)

Cluster 4: 'There are Pocari Sweat and goods side by side' is represented by Figure 4.10. It is defined the Figure 4.10 as Picture D.

Figure 4. 10 Picture D (Cluster 4)

Cluster 5: 'There are Pocari Sweat and goods side by side' is represented by Figure 4.11. It is defined the Figure 4.11 as Picture E.

Figure 4. 11 Picture E (Cluster 5)

4.1.2 Respondent Profile

In this research, 40 respondents are tested by eye-tracking. There are 6 respondents who are eliminated because of broken result. Table 4.1 shows the respondent profile with their demographic.

Table 4. 1. Respondent Profile

No	Characteristics		Number	Percentage
1	Number of Respondents		34	
2	Requirements	Familiar with Pocari Sweat	34	100%
		Instagram Users	34	100%
		Has laptop (can access RealEye.io and Webcam)	34	100%
3	Gender	Male	17	50%
		Female	17	50%
3	Age	20	15	44.12%
		21	7	20.59%
		22	9	26.47%
		23	2	5.88%
		24	1	2.94%

					21.02 ± 1.11
Average (Std. Deviation					

From the table above, it can be seen that there are 34 respondents. From 34 respondents, all of them are familiar with Pocari Sweat, Instagram user, and have laptop which can access RealEye.io and webcam. Among all, there are 17 males and 17 females. From all respondents, the minimum age is 20 and maximum age 24 with average 21.02. But this amount of data can be decreased due to the normality test.

4.1.2 Data of Fixation Time of AOI

Table 4.2 shows the fixation time of each respondent for each picture with a name that already elaborated in chapter 3.

Table 4. 2. Fixation Time of AOI from each picture

Respon dent	Picture									
	A		B		C		D		E	
	Fixat ion Time of AOI (s)	Percen tage of Total Time	Fixat ion Time of AOI (s)	Percen tage of Total Time	Fixat ion Time of AOI (s)	Percen tage of Total Time	Fixat ion Time of AOI (s)	Percen tage of Total Time	Fixat ion Time of AOI (s)	Percen tage of Total Time
1	2.97	40%	2.24	30%	0.4	5%	1.06	15%	5.58	75%
2	0.97	48%	0.81	11%	2.53	40%	0.75	12%	3.96	62%
3	1.88	26%	0	0	1.04	14%	2.82	39%	4.02	57%
4	2.43	35%	0.25	4%	1.27	23%	0	0%	5.29	73%
5	4.03	67%	0.49	7%	4.93	68%	0.95	13%	5.66	75%
6	3	45%	0.09	2%	2.77	32%	1.04	16%	1.91	29%
7	3.86	39%	0.02	1%	2.69	37%	1.02	15%	6.85	91%
8	2.75	43%	1.14	9%	2.26	34%	0	0%	6.63	88%
9	1.6	22%	2.83	38%	3.55	47%	2.19	30%	4.21	56%
10	0	0%	0	0%	2.78	39%	1.13	15%	1.28	32%
11	3.71	57%	0.43	6%	2.73	38%	1.3	16%	5.34	74%
12	4.32	57%	0.61	8%	3.23	44%	2.68	35%	5.89	100%
13	1.74	28%	0.54	7%	1.85	28%	1.66	22%	7.51	100%

14	1.7	24%	1.74	23%	2.68	40%	0.84	11%	7.27	97%
15	2.41	40%	1.4	19%	6.47	51%	1.87	25%	2.32	36%
16	4.64	67%	2.99	49%	5.71	76%	1.88	25%	6.84	91%
17	4.18	67%	1.6	24%	1.87	25%	0.25	4%	4.46	66%
18	6.06	81%	2.47	33%	4.07	55%	2.39	32%	7.5	100%
19	2.64	38%	2.51	35%	1.17	13%	0.59	9%	4.69	76%
20	2.28	40%	1.84	25%	1.38	18%	1.67	23%	6.54	96%
21	4.61	66%	0.35	5%	0.03	0%	1.4	19%	3.67	50%
22	0.24	10%	0.83	13%	2.62	45%	0.34	5%	3.16	48%
23	2.61	57%	0	0%	0.29	9%	1.63	22%	4.75	64%
24	3.33	58%	0.14	2%	4.07	56%	0.19	3%	3.33	78%
25	1.44	48%	1.21	17%	2.89	39%	0.59	9%	6.26	82%
26	3.29	45%	4.21	56%	2.09	29%	0	0	2.15	95%
27	0.12	10%	0.41	6%	1.51	68%	0.65	14%	5.64	79%
28	0.64	30%	2.15	30%	1.86	24%	1.14	17%	4.76	63%
29	0.48	8%	0.02	0%	0.99	18%	2.63	38%	3.53	63%
30	5.1	73%	0.33	6%	5.41	73%	0.94	12%	7.08	94%
31	5.08	70%	0.36	4%	3.9	54%	0.15	2%	5.41	82%
32	1.32	20%	0.58	8%	2.95	39%	1.45	25%	2.4	50%
33	2.21	31%	0.85	12%	1.66	23%	0.54	8%	3.56	56%
34	0.24	2.4%	1.89	18.9%	0.14	1.4%	0.97	0.97%	5.33	0.533

4.1.3 Normality Test

In this research, 34 data for five pictures are tested by normality data to know whether those data already normalized or not. The normality test utilizes SPSS 22. Several data are eliminated to get the highest significance value. Then, the result is only 30 data. Respondent 3, 23, and 26 are eliminated. The result is shown in figure 4.12

Table 4. 3 Normality Test Result

Test of Normality			
	Kolmogorov-Smirnov		
	Statistic	df	Sig.
Picture_A	.082	30	.200
Picture_B	.132	30	.192
Picture_C	.127	30	.200
Picture_D	.123	30	.200
Picture_E	.117	30	.200

There are 34 data of fixation time to the AOI which already been processed by Normality test in SPSS. There are two hypotheses in the Kolmogorov-Smirnov Normality Test which are:

H_0: The distribution of sample data follows the normal distribution

H_1: The distribution of sample data does not follow the normal distribution

The result of Kolmogorov-Smirnov Normality Test for picture A is 0.200, which means H_0 is accepted. The fixation time for picture A follows the normal distribution. The result of Kolmogorov-Smirnov Normality Test for picture B is 0.192, which means H_0 is accepted. The fixation time for picture B follows the normal distribution. The result of Kolmogorov-Smirnov Normality Test for picture C is 0.200, which means H_0 is accepted. The fixation time for picture C follows the normal distribution. The result of Kolmogorov-Smirnov Normality Test for picture D is 0.200, which means H_0 is accepted. The fixation time for picture D follows the normal distribution. The result of Kolmogorov-Smirnov Normality Test for picture E is 0.200, which means H_0 is accepted. The fixation time for picture E has been already normally distributed.

4.1.4 ANOVA test

Thirty data are tested by ANOVA to find whether the average fixation time of each picture has differences, 30. ANOVA test is conducted by SPSS. Time 1, 2, 3, 4, 5 indicate Picture A, Picture B, Picture C, Picture D, and Picture E sequentially. Table 4.4 shows the result of the descriptive data of each five figures. Table 4.5 shows the ANOVA result of the data.

Table 4. 4 Descriptive Data Result

Figure	N	Mean
1	30	2.6700
2	30	1.2277
3	30	2.6530
4	30	1.1043
5	30	5.0860
Total	150	2.5482

Table 4. 5 ANOVA Result

Figure	Sig.
Between Groups	.000
Within Groups	
Total	

From the normality test, it is known that all the respondents' data are normally distributed. Due to the result of the normality test, ANOVA One Way Test is used. There are two hypotheses in ANOVA One Way Test, which are:

H_0: There is a difference between sample data

H_1: There is no difference between sample data

The result of ANOVA One Way Test is 0.000. So, H_0 is accepted, which means there is a difference between sample data.

In the ANOVA result, there is a mean of each picture fixation time. It indicates the average of fixation time of each picture. For picture A, the average fixation time of the AOI is 2.67 seconds. For picture B, the average fixation time of the AOI is 1.23 seconds. For picture C, the average fixation time of the AOI is 2.65 seconds. For picture D, the average fixation time of the AOI is 1.1 seconds. And the last for picture E, the average fixation time of the AOI is 5.08 seconds. From the average, the highest fixation time to the lowest fixation time, which indicates the most to the lowest interest is picture E, picture A, picture C, picture D, and picture B respectively. So, the highest average fixation time is picture E.

4.1.5 Heat map

From RealEye.io, not only fixation time can be collected, but also heat map from each picture can be collected. Those heat maps that will be discussed represent the fixation from 34 respondents.
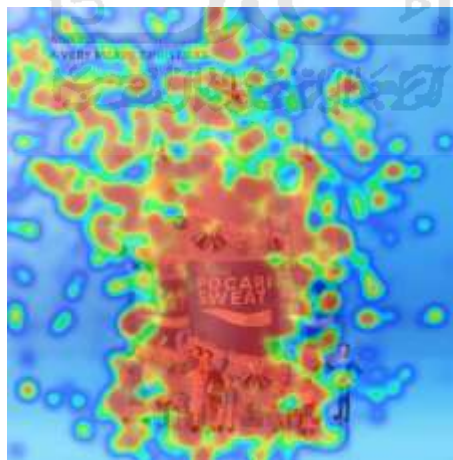

Figure 4. 12 Heat map of Picture A

The heat map of picture A is shown in figure 4.15. The criteria for picture A are 'There are texts and the product in big size'. It can be seen the red spot spread around the bottle

rather than around the text. The red spot almost follows the shape of the bottle. The red spot indicates the bottle is considered as the most interesting object for respondents.

The heat map of picture B is provided in figure 4.16. The criteria for picture B are 'there is Pocari Sweat around several goods'. In picture B, there are several goods in one picture. But, the AOI is Pocari Sweat. The red spot spread on the Pocari Sweat, which means in this picture, the AOI attracts the respondent. The red spot not only spread on the Pocari Sweat, but also to the other goods, such as phone, camera, notebook, and bag.
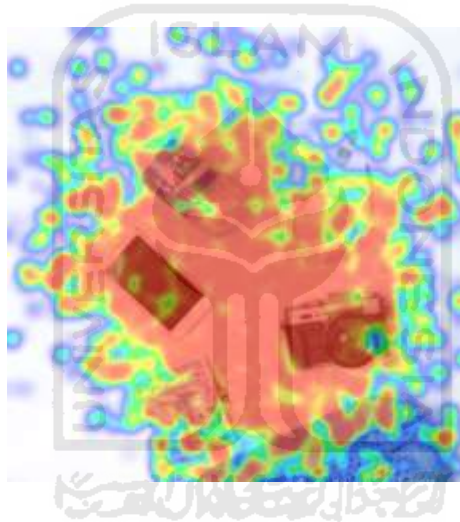
Figure 4. 13 Heat map of Picture B

Figure 4. 17 shows the heat map of Picture C. This picture's criteria is 'There are more than one product of Pocari Sweat'. Indeed, the Picture C describes, there is more than one product of Pocari Sweat. It can be seen; almost all the bottles got a red spot. It means all bottle of Pocari Sweat got high interest from the respondent. But, the red spot not only spread to the bottle. It is also covered up the text and some stuffs.
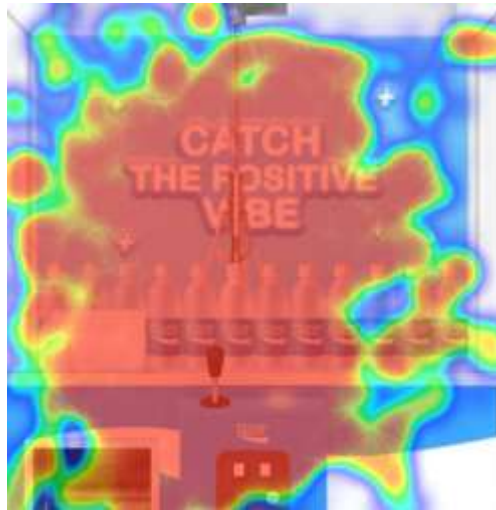
Figure 4. 14 Heat map of Picture C

The heat map of picture D is provided in figure 4.18. The criteria of this advertisement is 'There are Pocari Sweat and goods side by side'. It can be seen the red spot spread on Pocari Sweat. The red fixation not only spread on Pocari Sweat but also on the goods beside the Pocari Sweat. Also, it can be seen the red spot wider than on the AOI.
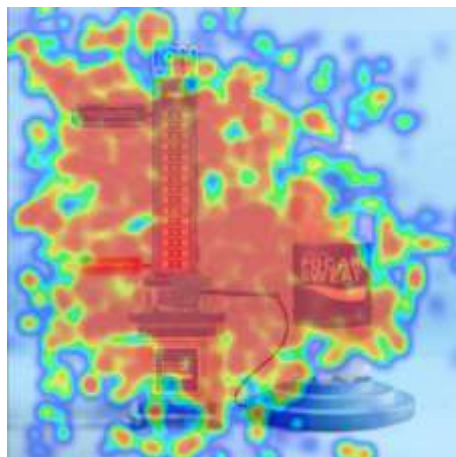

Figure 4. 15 Heat map of Picture D

The heat map of picture E is shown in figure 4.19. The criteria of this advertisement is 'Pocari Sweat dominate in this picture'. It can be seen in the picture, the red spot spread around Pocari Sweat. The area of red fixation is wide and every inched of the product in the area. So, it indicates the AOI has high interests.
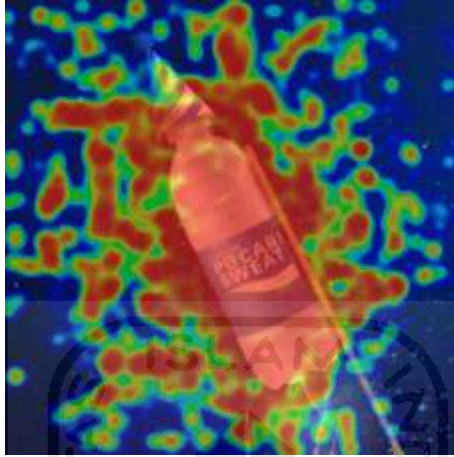

Figure 4. 16 Heat map of Picture E

From all heat map pictures, it can be seen that the AOI in the advertisement got the red spot. It means that there is high interest in the AOI for all advertisements. For the advertisement with Pocari Sweat and other goods in one picture, the red spot not only spread to the AOI but also to the goods. It will not impact the level of interest, but the average fixation time.

CHAPTER V

RESULT AND DISCUSSION

5.1 Analysis of Criteria

In this section, it will be discussed the reason of criteria determination for each picture made by the researcher. There are several aspects in the picture which are neglected and considered, which will be explained below.
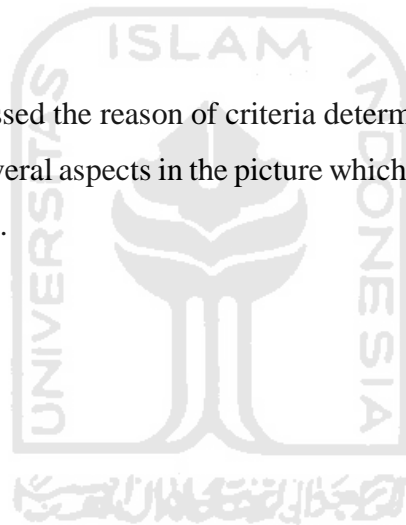
5.1.1 Analysis of Picture A's Criteria

The criteriona of picture A is 'There are texts and the product in big size'. It can be seen that figure 5.1, which shows Picture A, consists of text said 'WISH YOU A VERY MERRY CHRISMAS', three bottles of Pocari Sweat, and action figures. The two bottles behind in a blurry image. Also, the action figures are similar to model usage. As it already explained previously, the use of model will gain many interests. So, the blurry two bottles and text are neglected. Picture A discuss only one bottle on the front and the text. In this picture, the researcher wants to calculate how long the average fixation time for Pocari Sweat with the existence of text and to know people's preferences towards the text or bottle.

Figure 5. 1 Picture A

Source: @pocariid (Instagram account)

5.1.2 Analysis of Picture B's Criteria

The criterion of picture B is 'There is Pocari Sweat around several goods'. Figure 5.2 represents Picture B, it shows Pocari Sweat is around several goods. In this Picture B, researcher focuses on all the things in this picture, such as Pocari Sweat, earphone, handphone, camera, and bag. This picture can be considered as a complex layout because of the many features in one picture. In this Picture B, the researcher intends to know how long the average fixation time of Pocari Sweat in a complex layout. Also, the researcher wants to know how people interest to the Pocari Sweat if there are any other goods.

Figure 5. 2 Picture B

Source: @pocariid (Instagram account)

5.1.3 Analysis of Picture C's Criteria

The criterion of picture C is 'There is more than one product of Pocari Sweat'. It can be seen that there are 12 bottles. Also, there are texts and claw machine. The text and claw machine are neglected because in this picture, the bottles of Pocari Sweat becomes the focused object. The researcher wants to know whether the condition influences average of fixation time, if the number of Pocari Sweat more than one.

Figure 5. 3 Picture C

Source: @pocariid (Instagram account)

5.1.4 Analysis of Picture D's Criteria

The criterion of picture D is 'There are Pocari Sweat and good side by side'. Figure 5.4 represents picture D which shows that there are Pocari Sweat and King of Hammer Game Machine. This game machine more colorful than the Pocari Sweat. But, in this research, it will be focused on the position of Pocari Sweat and the good, in this case the game machine. It will be analyzed the average fixation time of Pocari Sweat, if there is another good is placed besides the Pocari Sweat.

Figure 5. 4 Picture D

Source: @pocariid (Instagram account)

5.1.5 Analysis of Picture E's Criteria

Figure 5.5 shows the picture E, in which the criterion is "Pocari Sweat dominate in the picture". Picture E is considered a simple picture because in this advertisement, the object only involves the Pocari Sweat bottle. Pocari Sweat in the big size and dominates the area of the picture. It can be seen that the background is designed with less elements, and make the background not considered as complex. In this advertisement, the researcher desires to know how the average fixation time of people when only see one big object with a simple background.

Figure 5. 5 Picture E

Source: @pocariid (Instagram account)

5.2 Analysis of Interesting Pocari Sweat Advertisement Level

In this part, the people's interest to each picture will be analyzed. It is conducted in order to identify the correlation of several aspects to the AOI in each advertisement by considering the average fixation time and heat map. Also, it will be discussed the most interesting picture over others.

5.2.1 Analysis of the Fifth Most Interested Advertisement

Figure 5.6 on the left side shows the original picture D without heat map. The fifth most interested or the lowest interesting picture is picture D. The criteria of picture D is 'There are Pocari Sweat and goods side by side'. The result of Normality Test-Kolmogorov Smirnov is 0.200. The result is more than 0.05, so H_0 is accepted. It means that the result is normal. Then, the data is tested by ANOVA One-Way Test. The average of fixation time is 1.1 s, the result makes this picture has the lowest interest.

This result is caused by the existence of another good besides Pocari Sweat. So, respondent sees Pocari Sweat for a while and their gazes diverted to the goods besides Pocari Sweat. It is seen that the good besides the Pocari Sweat has a bigger size and more colorful than Pocari Sweat. From heat map in figure 5.6 on the right side, it is shown that the Pocari Sweat is covered with the red spot, but the good besides the Pocari Sweat is also covered with the red spot. The good has red spot in wider area than a red spot on the Pocari Sweat.
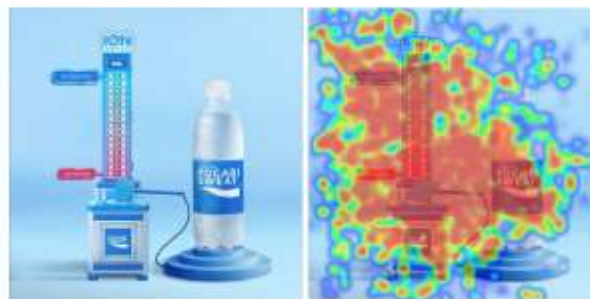

Figure 5. 6 Original Picture D (Left) and Heat Map Picture D (Right)

Also, the result indicates that respondent finds the good beside the bottle is more interesting than the Pocari Sweat.

5.2.2 Analysis of the Fourth Most Interesting Picture

The second-lowest picture is picture B. Picture B is shown in figure 5.7 on the left side. The criteria of picture B is 'There is Pocari Sweat around several goods'. The result of Normality Test-Kolmogorov Smirnov is 0.192. The result is more than 0.05, so H_0 is accepted. It means that the result is normal. Then, the data is tested by ANOVA One-Way Test. The average of fixation time is 1.2 s, this result made this picture to be the second-lowest interesting.

Basically, the difference number of fixation time from picture B and picture D is not too big with only 0.1 s. Also, it almost has same criteria with picture 1, there is a good around the Pocari Sweat. The difference only in the amount and size of good. In picture B, more than one good are placed around Pocari Sweat but in small size. Respondent sees Pocari Sweat for a while and their gazes diverted to the goods around of Pocari Sweat. From a heat map of picture B, which is shown in figure 5.7, it is known that the Pocari Sweat got the red spot. But the red spot is spread to several goods also. So, the fixation time is spent not only to the Pocari Sweat, but also for the goods around the Pocari Sweat. From 5.1.2, it is already mentioned that this advertisement has complexity. This complexity can affect the average fixation time. This statement is proved by Pileliene & Grigaliunaite (2016), it could be stated that when the aim of marketing communication is to enhance brand awareness or to form an attitude toward the brand, the lowest level of advertising layout complexity is appropriate to reach the aim of marketing communication.
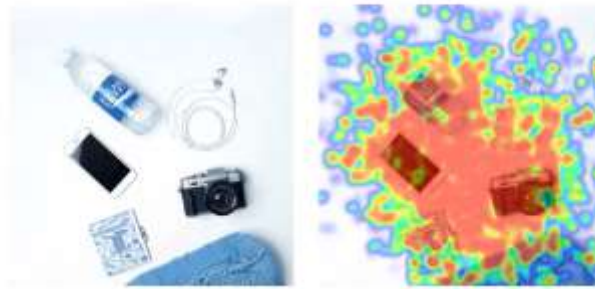
Figure 5. 7 Original Picture B (Left) and Heat Map Picture B (Right)

5.2.3 Analysis of the Third Most Interested Picture

The third lowest picture is picture C which is shown in figure 5.8 on the left side. The criteria of picture C is 'There is more than one product of Pocari Sweat'. The result of Normality Test-Kolmogorov Smirnov is 0.200. The result is more than 0.05, so H_0 is accepted. It means that the result is normal. Then, the data is tested by ANOVA One-Way Test. The average of fixation time is 2.65 s, this result made this picture to be the third-lowest interesting.

In this advertisement, there are more than one Pocari Sweat or 12 bottles to be exact. This advertisement is the third lowest or highest interesting. From a heat map on figure 5.8 on the right side, it can be seen that not all the bottles get the red spot or get a high interest of attention. It can be analyzed that the people get bored to see only Pocari Sweat, and without further consideration, people knew that the picture on the right side is Pocari Sweat.

Figure 5. 8 Original Picture B (Left) and Heat Map Picture B (Right)

5.2.4 Analysis of the Second Most Interested Picture

The second most interested picture is picture D which is shown in figure 5.9 on the left side. The criteria of picture D is 'There are text and the product in big size'. The result of Normality Test-Kolmogorov Smirnov is 0.200. The result > 0.05, so H_0 is accepted. It means that the result is normal. Then, the data is tested by ANOVA One-Way Test. The average of fixation time is 2.67 s, this result made this picture to be the fourth-lowest interesting or second-highest interesting.

It can be seen in picture D, there is text and Pocari Sweat with the big size and dominates the area of the picture. From a heat map of figure 5.9 on the right side, the red spot gathers around the bottle and less spot around the text. Sometimes, people distracted with the text, it can be based on the region. It is supported by previous research from Tayebi (2010), the consumer in Sweden find the text concept not very effective in attracting, but the Iranian consumers find it more effective to see the advertisement with the text. But the Pocari Sweat can distract the attention due to its big size. Based on Tayebi (2010), a big image has a stronger effect on customer's interest instead of smaller image size.
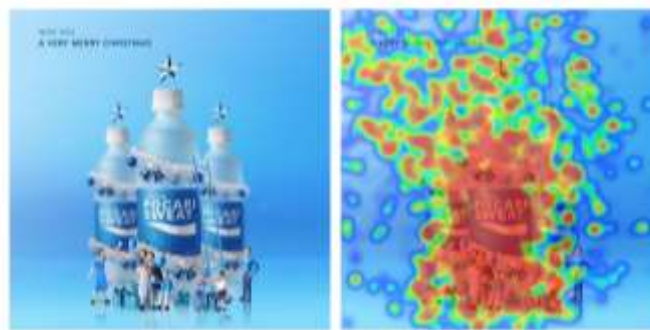
Figure 5. 9 Original Picture D (Left) and Heat Map Picture D (Right)

5.2.5 Analysis of The Most Interested Picture

The most interesting picture is Picture E which is shown in Figure 5.10. There are 30 data of the respondent's average fixation time which is normally distributed. It is known from Normality Test-Kolmogorov Smirnov, all the data is above 0.05. Because the data already normalized, the data is tested by ANOVA-One Way Test. The result of ANOVA-One Way Test is 0.000, it is above 0.05. It means there is a difference between sample data. ANOVA One-Way Test creates the descriptive value also. From the highest average of fixation time, it is identified that the picture E nominated as the most interesting image with 5.08 seconds. The criterion of this picture is 'Pocari Sweat dominate in the picture'.

It is supported by the heat map of picture E. It is shown in figure 5.10 on the right side, the red spot fulfils the AOI. It means that people see every single part of the Pocari Sweat in the advertisement. This advertisement has the highest average fixation time, it indicates that the Pocari Sweat has the most attention in this picture. It can be seen there is only one object in this figure which is Pocari Sweat. Then, this Pocari Sweat in a big size. It is already analyzed in picture A, the Pocari Sweat in big size makes people interested in the product. Similar with Tayebi, Lee & Ahn (2012) also confirmed that the size of an element is among the attention-grabbing tool to capture consumers' attention. The used of large size image may result to an effective way in getting consumers' attention. Also, it can be seen

there is only one object in this figure which is Pocari Sweat itself. So, people give more attention to the Pocari Sweat and cannot be distracted because there is no other object that emerges as a distraction. As mentioned by Pieters, Wedel, & Batra (2010), images with high complexity in features would have a negative impact on consumers' attention.
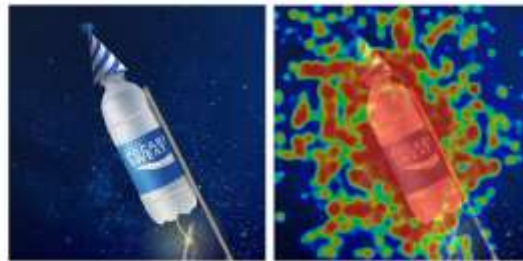

Figure 5. 10 Original Picture E (Left) and Heat Map Picture E (Right)

CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

6.1.1 The Criteria of Each Pocari Sweat Advertisement

In this research, there are five advertisements of Pocari Sweat used, and it adopts from Pocari Sweat's Instagram. Researcher labels the advertisement with Picture A, B, C, D, E with their own criteria as below,

1. Picture A

   Picture A is shown in figure 5.1 with criteria of 'There are text and product in big size'.

2. Picture B

   Figure 6.2 presents the Picture B with its criteria of 'There is Pocari Sweat around several goods'.

3. Picture C

   Picture C appears on Figure 6.3. The criterion of Picture C is 'There is more than one product of Pocari Sweat'.

4. Picture D

   Picture D is showed in Figure 6.4. The criterion of Picture D is 'There are Pocari Sweat and goods side by side'.

5. Picture E

Picture E is presented in Figure 6.5. The criterion of Picture E is 'Pocari Sweat dominates the picture.'

6.1.2 The Most Interesting Pocari Sweat Advertisement

From five pictures of Pocari Sweat Advertisement, picture E is concluded as the most interesting picture. Picture E is shown in figure 6.5. The criterion of Picture E is 'Pocari Sweat dominates in the picture'. The average fixation time is 5.08 seconds and the AOI get the red spot which covers it entirely.

The size of Pocari Sweat and complexity of background influences the results. Tayebi also said from Lee & Ahn (2012), the size of an element is among the attention-grabbing tool to capture consumers attention. The utilization of large size image may result in an effective way in getting consumers' attention. Also, it can be seen there is only one object in this figure which is Pocari Sweat itself. So, people give more attention to the Pocari Sweat only which cannot be distracted since there is no object available as a cause of distraction. As mentioned by Pieters, Wedel, & Batra (2010), images with high complexity in features would have a negative impact to consumers' attention.

6.2 Recommendation

It is suggested for further research the eye-tracking experiment that can be conducted by offline, which indicates the utilization of physical tools, not an online tool. So, the result will be more accurate. The research can be conducted not only for the static image but also can be applied to the dynamic image.

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ATTACHMENT