THE EFFECT OF PRODUCT FAMILIARITY ON CONSUMERS´ ATTENTION TO ONLINE ADVERTISEMENTS — AN EYE-TRACKING EXPERIMENT

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Abstract

Purpose - The purpose of this research was to study millennial consumers' attention to online advertisements published by streetwear companies on social media. The aim was to investigate differences between consumers' attention to familiar products and unfamiliar products. Three hypotheses were constructed to test whether product familiarity affects consumers’ attention to advertisements:

H1: Consumers who are familiar with the products are more likely to look at them in advertisements than consumers who are unfamiliar with the products.

H2: Consumers who are familiar with the products will spend more time looking at them in advertisements than consumers who are unfamiliar with the products.

H3: Consumers who are familiar with the products will find them faster from advertisements than consumers who are unfamiliar with the products.

Method - The study applied between-subjects design by dividing 40 participants in two matched groups based on their gender. Both groups had 10 male and 10 female participants. During the eye-tracking experiment, participants in Group 1 were shown three product photos for two seconds and three advertisements containing the same products for four seconds. Participants in Group 2 were only presented with three advertisements for four seconds. The results of the study are presented in two parts. Firstly, heatmaps give an illustrative overview of the findings and Statistical analysis presents the results of statistical tests. Chi-square test was performed to test the first hypothesis and independent-samples t-tests were performed to test the second and third hypotheses.

Results - The results of the study show that people who were familiar with the products were more likely to look at them in advertisements than consumers who were unfamiliar with the products. Also, people who were familiar with the products spent more time looking at them compared to people who were unfamiliar with the products. However, previous exposure to products did not result in faster identification of the products from advertisements.

Keywords: product familiarity, online advertisement, visual attention, eye movements, consumer behaviour, eye-tracking experiment.
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1 Introduction

1.1 Background

1.1.1 The role of advertisements

Advertising is the strongest source of brand identity with two main purposes (Meenaghan, 1995). Firstly, its aim is to introduce and position brand attributes in accord with customer expectations and secondly, attach brand with values that are symbolically appealing to the target group. Also, advertisements have a central role in the brand's image creation which enables customers to distinguish between competing products, especially, when the functional differences between products are minimal. Therefore, the purpose of advertising is to create a relationship between the brand and its customers by adding symbolism and imagery to the product (Meenaghan, 1995).

The role of advertisements has always been to influence and engage customers with products or brands through various types of paid media (Baines, Fill & Rosengren, 2017). However, the nature and forms of advertising have changed due to the development of technology and changes in cultural and societal values. For instance, the development of digital media has had a large impact on the communication between companies and customers. While traditional media communicates with customers one-way by sending out information without receiving feedback, digital media allows to interact with customers and establish two-way communications, where information moves between the receiver and source. The development of digital media technologies has also contributed to the advancement of digital marketing which uses various electronic technologies and channels for communication (Baines, Fill & Rosengren, 2017).

Online advertising is one form of digital marketing that creates advertisements for devices used to access the Internet (Baines, Fill & Rosengren, 2017). Online advertising differs from print advertising by the scope of advertisements, since online advertisements are able to reach unlimited number of customers anywhere in the world (Houston Chronicle, 2017,a). Most importantly, publishing advertisements online enables to measure the level of interest the advertisements create among customers through analysing statistics provided by websites and social media channels. Also, online advertisements can easily be modified or removed from the Internet when proving to be ineffective compared to print advertisements that take long time to change and need to be ready months before they are published on newspapers or magazines (Houston Chronicle, 2017,b).
According to the statistics available in 2014, clothing companies spend approximately 500 billion U.S. dollars a year on advertising worldwide (Not Just a Label, 2014). Textual information in advertisements for clothing and fragrances is often minimal and sometimes includes only the brand name (Schmitt, 1994, p.3). Hence, the main focus is on visual information. Contrary to the verbal information, visual information in advertisements tends to be more difficult to comprehend by offering various interpretations (Schmitt, 1994, p.4). Therefore, clothing brands publish advertisements full of visual information that have an important role in their image creation and product promotion.

1.1.2 The essence of streetwear

Streetwear combines surf culture, skateboarding, sportswear as well as luxury and non-luxury clothing and its definition has become broader and thereby incomplete without truly encapsulating the essence of it (Highsnobiety, 2016). Since most streetwear brands have started with producing T-shirts sold through selective channels, streetwear brands are mostly described by their distribution channels and image, which is a blend between sportswear and military looks and less related to specific art or design elements (Complex, 2011).

In recent years, the market share of streetwear companies has gained significance and their impact on other clothing brands targeting various consumer segments is increasingly large. The size of the clothing brand market in 2012 was 350 billion U.S. dollars in the European Union countries and 225 billion U.S. dollars in the United States (Statista, 2012). In 2011, the streetwear market was worth 60 billion U.S. dollars in the United States according to Reuters (2017). It is a significant market share, especially, when considering that streetwear brands, which date back to the 1960's and 70's skate and surf culture, started out as a niche subculture (The Guardian, 2016,a). Hypebeast is a web magazine covering topics related to streetwear and street art. They listed 15 global streetwear brands with the biggest impact on streetwear in 2016 in no particular order. British label Palace, American brands Noah, Anti Social Social Club and Supreme as well as a Japanese brand Mastermind Japan and French label F.A.M.T all made it to the list (Hypebeast, 2016).

Since streetwear brands emphasize the importance of subcultures and the cities from which they originate from, the brands connect themselves to authentic subcultures. Brand authenticity, on the other hand, is an effective marketing strategy to target millennials, because they react well to brand authenticity (The Guardian, 2016,b).

1.1.3 Millennials

Millennials are mostly defined as individuals born between the years 1980 and 2000 (Tanyel, Stuart & Griffin, 2013, p.657). Millennials are considered to be a group of diverse and
capable individuals. They have high technological skills and are eager to purchase and use products and services which make them attractive targets to fashion and retail companies (Kendall, 2009, pp.65-66). Streetwear brands, in particular, have successfully managed to create “a cult-like following” among millennial consumers (SCMP, 2016).

Although millennials are an important consumer group, companies have had difficulties with attracting their attention, since traditional advertising methods have proven to be unsuccessful. Instead of consuming traditional media, millennials tend to rely on social media for an authentic experience (Forbes, 2015). Furthermore, millennials may be the first age group to rely more on digital than traditional media (Reisenwitz & Iyer, 2009; Taken Smith, 2011). According to studies focusing on millennial behaviour, 38% of millennials consider brands that use social media instead of traditional media more reliable and approachable. This can be the reason, why 66% of millennials follow brands on social media (Adweek, 2014). In addition, millennials go online for news, entertainment, shopping and social communication. Thus, digital marketing that uses digital tools, such as smartphones and computers, to promote products is a useful practice to communicate with them (Taken Smith, 2012, p.86). Since millennials spend an average of 7.5 hours a day consuming digital media, advertisements have to attract their attention not just in the pages of a magazine, but also online (Business of Fashion, 2015).

Due to the changes in consumers’ media consumption, clothing brands are increasingly looking for ways to reach their target customers through the use of social media channels. For instance, Instagram has become a significant marketing tool for clothing brands. They have spent a combined billion U.S. dollars annually on sponsored posts since its launch in 2010 in addition to various behind the scenes images, product photos and teasers that brands are sharing daily with their followers (Highsnobiety, 2015). Also, social media has greatly contributed to the success of streetwear companies. Social media has enabled streetwear brands to grow out of the underground culture, reach mainstream and get in touch with new millennial consumers who are less bound to the fashion and culture norms (Digiday, 2016). Since the significance of streetwear companies is growing fast and their main target customers, millennials, spend a large proportion of their time consuming digital media, the study will focus on investigating millennials’ attention to online advertisements published by streetwear brands on social media. Although the present research will focus on studying attention to online advertisements, the aim is to draw more general conclusions that may apply to various types of advertisements, including print advertisements. Since clothing brands in general are increasingly using social media to reach potential customers (Highsnobiety, 2015), the study aims to provide insights that exceed streetwear brands and can be applicable to various kinds of clothing brands targeting different consumer segments.
1.2 Problem description

People are constantly surrounded by more advertising information than they are able to process. Consumers choose carefully which information to attend to in order to avoid overwhelmingness and information clutter (Solomon, et al., 2013, pp.134-135). Since people's attention is hard to attract, it is necessary to comprehend the factors that attract the attention of consumers and enable advertisements to break through the clutter.

People's memory is shaped by the information it receives while influencing the stimuli they attend to and the way information is interpreted (Hawkins & Mothersbaugh, 2013, p.273). Attention, on the other hand, enables to create associations related to products which are obtained through prior experiences and knowledge and determine the level of product familiarity (Marks and Olson, 1981). These associations are largely created by advertisements, since they affirm existing knowledge and strengthen memory for products (Okechuku, 1990, p.41). Product familiarity is important to marketers, because purchases are usually made after the initial exposure and attention to products. In order to influence purchasing decisions, it is necessary that consumers remember the associations attached to products at the time of purchase. It has been noted that memory, attention and product familiarity are closely related (Peter & Olson, 2010). However, the extent to which product familiarity affects attention allocation in advertisements has not been thoroughly investigated.

New products are often advertised in specific contexts to elicit emotions and relate these emotions to products (Peter & Olson, 2010). Additionally, marketers use emotional appeals to create positive attitudes towards brands and attract people's interest to advertisements (Khan, 2006). Advertisements enable to create emotional connections between brand and its customers which in turn, contribute to brand loyalty (Solomon, et al., 2013). Brand loyalty can be created when people are aware of the brand and have a positive image of it (Keller, 1993). Understanding how product familiarity influences consumers' attention to advertisements, enables to determine the amount of emotional appeals suitable to use in advertisements. When consumers are unfamiliar with products, they may notice products less in advertisements and be more likely to get distracted by visuals and objects surrounding them. Instead of contributing to brand loyalty, using too many emotional appeals with new products may distract consumers from noticing the actual products being advertised which hinders the development of product and brand awareness.

The AIDA model is widely used in marketing activities and lists four different levels - attention, interest, desire and action - necessary for product purchase to occur (Hassan, Nadzim & Shiratuddin, 2015, pp.262-265). In order to reach the final level where purchase takes place, people's attention first needs to be attained. The present research aims to study whether familiarity is an important factor triggering initial attention and encourages people to attend to the target product from a set of visual components presented in online advertisements. If familiarity has an impact on attention, marketers can use that knowledge to
tailor marketing strategies according to the specific product familiarity level of the consumers. It enables to strengthen product and brand awareness and build brand loyalty that results in increased product preference and sales.

1.3 Purpose

The purpose of this research is to study millennial consumers' attention to online advertisements published by streetwear companies on social media. The aim is to investigate differences between consumers' attention to familiar products and unfamiliar products.

1.3.1 Hypotheses

In order to investigate whether product familiarity affects consumers' attention to advertisements, three hypotheses were first constructed. The hypotheses were formulated based on prior theory and research on attention and familiarity (Paragraph 2.3).

$H1$: Consumers who are familiar with the products are more likely to look at them in advertisements than consumers who are unfamiliar with the products.

$H2$: Consumers who are familiar with the products will spend more time looking at them in advertisements than consumers who are unfamiliar with the products.

$H3$: Consumers who are familiar with the products will find them faster from advertisements than consumers who are unfamiliar with the products.

1.4 Research limitations

The present study will delimit its area of interest by investigating the attention of millennial consumers to online advertisements published by three lesser-known streetwear brands. The research will only focus on studying attention and not the processes following it in the perceptual process. In order to follow participants' attention path, an eye-tracking experiment will be conducted. Eye-tracking enables to monitor people's eye-movements and thereby study their actual behaviours. Therefore, the research will concentrate on studying attention from the behavioural perspective.
2 Theory and previous research

2.1 Theoretical framework

2.1.1 Attention

2.1.1.1 AIDA model

AIDA is a well-known attention model that is widely used in marketing activities and refers to attention, interest, desire and action. The AIDA model includes several different levels. Firstly, cognitive level, when consumers' attention is drawn. Secondly, affective level, when consumers develop interest towards the product, want to gain additional information and acquire the product and lastly, behavioural level, when the action occurs (Hassan, Nadzim & Shiratuddin, 2015, pp.262-265). The AIDA model enables marketers to create advertisements that generate attention and allow customers to develop views about products as well as create interest or positive feelings towards products which increase purchase intentions and possibly result in purchase decisions (Vargas & Yoon, 2004, pp.54-56). The AIDA model helps to understand the sequence of different levels consumers experience before purchasing products, but in order to reach the final behavioural level, it is important to comprehend the factors triggering initial attention.

2.1.1.2 Perceptual process

According to the authors of Consumer Behaviour - A European Perspective (Solomon, et al., 2013, p.121) perception is made up of exposure or sensation, attention and interpretation and refers to a process in which stimuli are “selected, organized and interpreted” (Figure 1). The present research focuses on studying the sensation process and thereby, attention to stimuli. Attention occurs after stimulus activates sensory receptor nerves and sensations are developed and processed in the brain (Hawkins & Mothersbaugh, 2013, p.277). However, the research delimits its area of interest by not investigating the processes when stimulus is interpreted and gains meaning.
People go through various phases of information processing by recognizing and storing stimuli. However, stimuli are not perceived in isolation, on the contrary, incoming sensations are connected to other relevant events or sensations already present in people's memory (Figure 2). Repetitive exposure to stimulus results in the increased and strengthened stimulus-response associations, which enable to keep the associations in memory (Solomon, et al., 2013). Memory influences what information people are exposed to and attend to as well as how the information is interpreted. Also, memory itself is developed by the information it receives (Hawkins & Mothersbaugh, 2013, p.273). When stimulus moves through the attentional gate in order to be processed more thoroughly, it is transferred from the sensory memory, that storages temporary sensory information, to short-term memory. However, short-term memory has also a limited capacity and stores information only for a short period of time (Solomon, et al., 2013, p.274). Because of the limited capacity of short-term memory, people must refresh information on a regular basis, otherwise, the information will be lost. Short-term memory is often referred to as working memory, since it analyses, categorises and interprets information (Hawkins & Mothersbaugh, 2013, pp.313-314). Therefore, memory and attention are closely related, since memory determines how and to what stimuli people attend to.
2.1.1.3 Attention in consumer behaviour

Consumers are often exposed to more information than they are able to process through various commercial sources. On average, adults are daily exposed to 3500 advertising information pieces. Since the brain's ability to process information is limited, consumers choose carefully what to pay attention to. Therefore, perceptual selection takes place in which people attend to just a small amount of stimuli of which they are exposed to in order to avoid overwhelmingness (Solomon, et al., 2013, pp.134-135).

Attention refers to the level of which people focus on stimuli surrounding them (Solomon, et al., 2013, p.134). Attention varies from automatic, unconscious levels to intense levels. At intense levels of attention people focus voluntarily and consciously on marketing stimuli relevant to their current needs and goals, while at low levels of attention stimuli is attended to unconsciously (Peter & Olson, 1994, pp.112-113). Involuntary, unconscious attention occurs for novel or unusual stimuli that capture people's attention even if not connected to their current goals (Loudon & Bitta, 1993).

However, consumers mostly tend to have higher awareness for stimuli that are relevant to their personal needs or can satisfy their goals, often explained by the term perceptual vigilance (Loudon & Bitta, 1993). Process in which attention is driven by the individual's...
goals and active tasks is referred to as top-down process of attention (Scholderer, 2010, p.238). Top-down factors that affect attention also include “memory, involvement, attitudes, processing states, emotions, goals and expertise” (Wedel & Pieters, 2007, p.142). When people are in a good mood, they have a tendency to focus on positive information, whereas people in a bad mood attend more to negative information. Furthermore, people who are highly involved with a marketing stimulus, because it is related to their specific needs, are more likely to pay attention to it (Peter & Olson, 1994, p.114).

Bottom-up process of attention refers to the degree to which a stimulus stands out from its background (Scholderer, 2010, p.238). In addition to previously mentioned cognitive aspects, characteristics of the stimulus itself have a central role in determining what stimuli attract attention (Solomon, et al., 2013, p.136). The size of the stimulus often influences attention, thus, larger stimulus tends to draw more attention. Also, people are more likely to notice more intense stimuli or stimuli that contrast with the background. People's eyes have a tendency to follow stimuli which suggest directionality, for instance, when an arrow points to a target object. Furthermore, presenting few stimuli in isolation surrounded by a large space enables to draw attention to these stimuli (Engel, Blackwell & Miniard, 1990, pp.370-373).

2.1.1.4 Visual attention

One of the reasons why only a small amount of stimuli are attended to is because people's eyes are only capable of focusing attention to a limited area in the visual field (Zhang & Lin, 2013). Therefore, visual attention enables humans to separate important information from infinite visual inputs. Visual attention stage occurs after pre-attention that is an automatic process providing salient information important for attention processing. Visual attention can be divided in two categories (Zhang & Lin, 2013). During overt attention, specific kinds of neural processing is selected by physically moving the eyes, while covert attention involves attention mechanisms that do not include eye movements (Geisler & Cormack, 2011, pp.439-440). According to eye-tracking literature, eye movements are closely connected to visual attention up to a point where it is argued that eye movements reflect visual attention (Wedel & Pieters, 2007, pp.124-126). Thus, it can be presumed that tracking people's eye movements enables to follow their attention path. However, eye-tracking can only observe overt attention. Hence, eye-tracking research makes an assumption that attention is connected to gaze direction and eye movements (Duchowski, 2007).

Eye movements are necessary for information processing, since people are not capable of processing the entire visual scene in just one single fixation. Although, it is possible to comprehend the essence of the scene from one fixation. During fixations, which occur between saccades, eyes stay relatively still for approximately 200-300 milliseconds (Rayner, 1998). New information is only obtained during fixations and not during the actual saccade, since the vision is restrained (Rayner & Castelhano, 2007, p.4). Because of the short durations of eye movements and their salient nature, people are not aware of the disruptions in their brain activity. Even though fixations are referred to as periods when eye-movements stop, the eyes are actually never completely still, because of the continuous tremor of the
eyes. It seems that eyes tend to drift and a small, but rapid microsaccade brings eyes back to their original location (Rayner, 1998, pp.373-374).

Eye-tracking literature often treats customers as a black box, meaning that, instead of investigating how consumers function, more attention is paid to measuring what actions they have actually performed (Duchowski, 2007, p.262). Since eye-tracking equipment studies people's non-verbal abilities (Banović, Rosa & Gamito, 2014, p.56) and leaves out the cognitive and verbal aspects, it allows to investigate participants from the behavioural perspective. Therefore, the present research studies visual attention with eye-tracking equipment, which enables to investigate attention from the behavioural perspective rather than rely on people's self-reported measures.

2.1.2 Behavioural perspective and classical conditioning

Behaviourists stress the importance of the environment and focus on observable events, i.e. visible behaviour (Nordfält, 2010, p.250), rather than people's internal thought processes that are a concern of cognitive research (Solomon, et al., 2013). Behaviourists treat the human mind as a black box by referring to stimuli and events as observable aspects going into the box and treating the responses and reactions to these stimuli as things that come out of the box (Solomon, et al., 2013, pp.261-262). Behaviourism is connected to learning research by relating environmental stimuli to response (O'Donohue & Kitchener, 1998, p.4). People's immediate response to stimuli is connected to what they have learned from the environment. Therefore, behavioural perspective refers to the effect of external stimuli on observable response, in other words, behaviour. Behaviourists claim that learning takes place through classical and operant conditioning (Nordfält, 2010, p.250).

Classical conditioning is a process in which neutral stimulus, when repeatedly paired with a stimulus that generates natural response, is able to evoke a response on its own (Peter & Olson, 2010, p.213). The phenomenon was first introduced by Ivan Pavlov, who paired a bell with dried meat powder known for causing salivation in dogs. Over time, the dogs learned to connect the sound of a bell with meat powder and started to salivate when hearing only the bell, because it was associated with feeding time (Solomon, et al., 2013, pp.262-263). Neutral stimulus which after repeated pairings causes response is referred to as conditioned stimulus, whereas the response of the stimulus is referred to as conditioned response. Behaviours occurring during classical conditioning are believed to be automatic and involuntary, thus, not controlled by a person's consciousness (Peter & Olson, 2010, p.213).

Classical conditioning is a common approach to use behavioural perspective in marketing strategies (Peter & Olson, 2010). Marketers use classical conditioning to generate preferences for products and brands among consumers and all in all motivate them to behave in a desirable way. For instance, new products, for which people do not have established feelings, are often repeatedly advertised together with exciting events or in exciting context in order
for the new product to eventually create excitement on its own. Consumers are more likely to attend to stimuli that elicit strong emotional responses and since product purchase depends on attending behaviour, classical conditioning influences purchasing decisions to a large extent (Peter & Olson, 2010). Classical conditioning benefits learning mostly in low-involvement situations where processing effort and awareness work at low levels. After frequent low-involvement gazes at advertisements, connections between products and emotions are formed and learned (Hawkins & Mothersbaugh, 2013, p.322). Therefore, in order to promote and sell low-involvement products, marketers use advertising to attach products to events and contexts that aim to automatically evoke emotions among consumers.

2.1.3 Emotional appeals and brand loyalty

Brands often create advertisements which have positive emotional appeals to evoke positive emotions, such as pride, security, happiness and confidence. Repeated exposure to positive emotions contributes to product and brand liking as well as attracts the attention of customers (Khan, 2006, p.99). Advertisements are created to elicit a personal response through the use of emotional appeals and personal connections that enable brands to differ from the competitors (Kim & Hall, 2014, p.29). Therefore, the aim of using emotional appeals in advertisements is to increase brand or product preference, differentiate a brand from its competitors as well as attract the attention of consumers.

Additionally, advertisements have a significant role in increasing brand loyalty by creating emotional attachments between the brand and its customers. Brand loyalty is created when consumers develop a pattern of repeat purchase together with positive attitudes towards the brand, instead of purchasing the same brand out of habit. When consumers have developed loyalty towards the brand, their commitment to the brand's products is much stronger (Solomon, et al., 2013, p.370). Brand loyalty can be developed when people have high brand awareness and positive image of the brand. Brand awareness refers to brand recognition by consumers and brand image refers to the set of associations connected to the brand in consumers' memory (Keller, 1993). In order to attach products to emotional appeals which increase product preference and brand loyalty, marketers need to find suitable connections between products and emotional appeals.

2.1.4 Familiarity

2.1.4.1 Familiarity in consumer behaviour

Product familiarity is defined by people's representations of prior experiences with products. These representations that are obtained through learning, experience, media and word of mouth are categorized in people's memory. The degree to which people have developed these
representations determines their familiarity with products (Marks & Olson, 1981). Hence, memory is shaped by the information it receives, while at the same time influencing attention which in turn has an impact on the level of product familiarity developed by knowledge, meanings and beliefs (Figure 3). Advertisements have a central role in creating associations between product attributes and cues already present in people’s memory, since they enable people to affirm existing knowledge as well as strengthen memory for products (Okechuku, 1990, p.41).

Exposure to a familiar product is a simple comprehension process in which relevant meanings related to the product from memory are automatically activated (Peter & Olson, 2010). Understanding less familiar products, on the other hand, is less automatic and demands more conscious processing of thoughts. For instance, recognizing familiar products, such as a Coca-Cola bottle, happens automatically and immediately after the exposure. Thus, conscious awareness is not included in the process of comprehension. Familiarity and people’s ability to remember meanings attached to products is important to marketers, since purchases are often made after consumers’ exposure and attention to products. It is important that consumers recall key product and brand attributes and meanings attached to them through advertising at the time of purchase (Peter & Olson, 2010).

2.1.4.2 Familiarity in visual search studies

Familiarity has mostly been studied in the context of visual search. Since people are often searching for specific objects or a set of objects in real-life situations, visual search is the most investigated overt attention task (Geisler & Cormack, 2011, p.443). Usually, when conducting visual search studies, participants look for a target object among distracting objects (Wolfe & Horowitz, 2004, p.1). All experiments where participants need to identify a
previously defined target object in a stimulus space are a type of visual search study (Holmqvist & Nyström, 2011, p.69).

Qin, Koutstaal and Engel (2014) studied “whether familiar product logos were searched for faster than unfamiliar ones” in visual search tasks. The study found that familiarity with brand logos emerging from passive and active advertising and experiences with products leads to a more efficient identification of logos in visual search tasks. Before conducting the study, the researchers stated that comprehending how familiarity speeds search enables to understand how mental representations for frequently seen objects change. However, the researchers recognised that the knowledge of understanding the amount and nature of exposure people need to detect familiar items faster is scarce. General hypothesis was formulated that laboratory-based familiarization could enhance search times. These suggestions were later confirmed by the research results of pre-experimentally familiar logos which were further familiarized during the study (Qin, Koutstaal & Engel, 2014).

Mruczek and Sheinberg (2005) investigated visual search and familiarity in a context where participants were less expert of the target items. Meaning, that the effect of familiarity on attention was studied among everyday, common objects that are not as overlearned as letters or faces mostly used in visual search tasks. The researchers concluded that target familiarity increases visual search performance and accepted their hypothesis that stimulus familiarity leads to more efficient identification of visual objects. Before conducting the study, the authors reasoned that search efficiency may be influenced and strengthened when people have previously been exposed to search objects. Also, it was suggested that changes in search efficiency may be connected to familiarity with the specific search images (Mruczek & Sheinberg, 2005).

2.1.4.3 The effect of priming on visual search

It is suggested that priming that refers to brief and uninformative exposure to objects may create significant familiarity effects (Qin, Koutstaal & Engel, 2014). Research on priming suggests that repeated exposure of an item results in faster identification of the same item (Kristjansson & Campana, 2010). Attention and gaze are automatically drawn to objects that people have recently attended to within the visual field. Priming is believed to be caused by people's primitive memory system that draws attention to items people have recently seen and are related to the task they are performing. Furthermore, priming influences significantly how people allocate their visual attention and detecting objects from the visual field becomes easier if the object is familiar to the viewer (Kristjansson & Campana, 2010).

Top-down guidance is assumed to have no effect over the impact of priming, since knowing the target has not improved search efficiency (Kristjansson, Wang & Nakayama, 2002, p.49). Furthermore, it is suggested that priming is not caused by “conscious effort or explicit knowledge” and occurs separately from top-down processes (Theeuwes, Reimann & Mortier, 2006, pp.485-488). Therefore, priming is believed to occur automatically without people's conscious control over it (Kristjansson & Campana, 2010).
2.2 Previous research on attention from the behavioural perspective

The effect of external stimuli on attention allocation has mostly been studied in the context of visual search by investigating how search targets influence people's attention in visual search. The following studies were chosen, since they investigate the aspects influencing attention allocation from the behavioural perspective similarly to the present study. Also, the studies conducted experiments in the laboratory settings to investigate the impact of search clue or stimulus familiarity on fixation duration or search efficiency.

The first study was selected, because it conducted an eye-tracking experiment to investigate how search tasks influence the duration and number of fixations. The study found that external visual clue guides people's attention during visual search and influences fixation durations. The latter two studies were chosen, since they demonstrate the impact of target familiarity on attention allocation by concluding that familiar visual targets are found faster.

2.2.1 The effect of search clue on visual search

Research conducted by Castelhano, Mack and Henderson (2009) aimed to study the influence of task instruction on people's eye movements. The researchers concluded that the number of fixations and gaze duration on certain areas during visual search was influenced by the search object. 20 participants were shown 35 colour photographs of natural indoor and outdoor scenes and were presented with visual search and memorization instructions. People's eye movements were monitored by using eye-tracking equipment.

During memorization task, participants were told to prepare for a following memory test when looking at the scene, which would study recall for specific objects in the scene. During visual search task, participants were presented with a word naming the search target for two seconds before showing them photographs containing the same target for 10 seconds. The word was naming everyday objects, like a bucket or a painting, and was written in black using Times New Roman font printed on a grey background. The participants were instructed to push a button when they had identified the target object. The results demonstrate that during visual search task, viewers concentrated their fixations on particular areas where the search target was most likely to be found. Whereas, during memorization task their fixations were more widely spread across the pictures, since they had not received an indication where to look (Castelhano, Mack & Henderson, 2009).
2.2.2 The effect of familiar logos on visual search

Qin, Koutstaal and Engel (2014) studied the effect of familiar product logos on attention allocation during visual search tasks. Participants were asked to distinguish a cued logo indicating to the search target amongst various distractors. Each logo was presented on a white computer screen for 1.5 seconds and participants were instructed to press the spacebar as soon as they had identified the logo.

Participants were presented with pre-experimentally familiar and unfamiliar logos as well as formerly unfamiliar logos that were familiarized in the laboratory during the experiment. First, the subjects were shown 10 familiar and 10 formerly unfamiliar logos and later, 10 familiar and 10 unfamiliar logos that participants had had no previous contact with. The results indicate that pre-experimentally familiar logos were detected faster and more systematically than unfamiliar brand logos. However, researchers noted that logos familiarized in the laboratory were not identified faster than unfamiliar logos. Thus, it may be that familiarity of logos only has an impact on visual search if it has evolved in various rich contexts and from different types of advertisements and interactions with products. The authors suggest that since familiarity has a large and noticeable effect on visual search, companies with unfamiliar logos should introduce them in diverse and contextually varied advertising campaigns (Qin, Koutstaal & Engel, 2014).

Although the effect of familiar logos on attention allocation during visual search was large and noticeable, the researchers argued that laboratory-based familiarization of previously unfamiliar logos did not provide sufficient learning. Hence, they rejected the impact of priming on generating the effect of familiarity when people have no previous visual expertise for the objects (Qin, Koutstaal & Engel, 2014). It may be that laboratory-based familiarization of previously unfamiliar logos did not cause familiarity effect, since unknown logos are abstract objects which people have no prior visual experience with. However, laboratory-based familiarization may occur when people are presented with everyday objects as demonstrated by the following study.

2.2.3 The effect of target and distractor familiarity on visual search

Mruczek and Sheinberg (2005) studied how familiarity of everyday search targets impacts attention allocation in visual search. Participants were presented with a large set of familiar and unfamiliar target and distractor images of furniture, cars, toys and butterflies over an extended period of time. The images were shown in isolation to avoid contextual cuing in which repeatedly pairing targets together with the same distractors may affect reaction times. The researchers observed people's behavioural changes over the course of few weeks and noticed that people's reaction times decreased significantly during the time period. The study demonstrates that familiarity had a large impact on visual search. Familiar visual distractors
were searched for faster than unfamiliar distractors. Also, familiar visual targets were found faster compared to unfamiliar targets. Researchers concluded that extended visual experience increases attention to target and distractor items in the visual search context (Mruczek & Sheinberg, 2005).

2.3 Construction of hypotheses

Based on prior theory and research on attention and familiarity, three hypotheses are constructed. Repeatedly exposing people to stimuli, enables to create and strengthen stimulus-response associations that are stored in people's memory (Solomon, et al., 2013). Memory, on the other hand, is formed by the information it receives while influencing what information people pay attention to (Hawkins & Mothersbaugh, 2013). When people have attended to a stimulus, it moves from the sensory memory to short-term memory to be further processed (Solomon, et al., 2013). Prior research on the effect of search clues on attention shows that viewers tend to look at areas where the search clue is most likely to be found (Castelhano, Mack & Henderson, 2009). It can be argued that the search object is stored in people's short-term memory. The associations connected to the object in people's memory guide their attention to areas most likely to contain the target.

In the context of advertising it can be assumed that when people have recently been exposed to a product, the product stays in people's short-term memory. Therefore, people's memory guides their gaze to the area in the advertisement most likely to contain the product. Since people tend to look at product areas, they are also more likely to notice the product in the advertisement. Based on these notions, the first hypothesis is formulated:

**H1:** Consumers who are familiar with the products are more likely to look at them in advertisements than consumers who are unfamiliar with the products.

Secondly, the results of the same study on search clues demonstrate that specific areas containing the search target are fixated longer. Also, viewers presented with a search clue have a more concentrated gaze on the search area (Castelhano, Mack & Henderson, 2009). It can be assumed that when previous exposure to a product guides people's attention to the target area their gaze is less spread across the advertisement and more concentrated on the product area. Therefore, they will spend more time looking at the product in the advertisement. The second hypothesis is formulated:

**H2:** Consumers who are familiar with the products will spend more time looking at them in advertisements than consumers who are unfamiliar with the products.

The level of product familiarity is developed by prior knowledge, meanings and beliefs connected to the products in people's memory. Since the relevant meanings related to the products are activated automatically, recognizing familiar products is a simple
comprehension process and happens immediately after exposure (Peter & Olson, 2010). In order to store the relevant associations in memory, people must refresh information regularly, otherwise, it will be lost (Hawkins & Mothersbaugh, 2013). Priming theory derives from these notions by suggesting that repeated exposure to an object results in more efficient and faster identification of the same object from the visual field. Also, attention is automatically drawn to objects people have recently been exposed to (Kristjansson & Campana, 2010). Since priming occurs through repetition, it is believed to create large familiarity effects (Qin, Koutstaal & Engel, 2014). Classical conditioning also uses repetition to pair neutral stimulus with stimulus which generates natural response. By doing so, the neutral stimulus eventually creates automatic and unconscious response on its own (Peter & Olson, 2010).

Prior studies investigating the effect of stimulus familiarity on attention during visual search have taken into consideration that familiarity benefits from repetition. The studies found that familiar search targets are found faster (Qin, Koutstaal & Engel, 2014; Mruczek & Sheinberg, 2005). In the context of advertising it can be assumed that when people have recently been exposed to the product they will find it faster from the advertisement. Hence, the third hypothesis is formulated:

**H3: Consumers who are familiar with the products will find them faster from advertisements than consumers who are unfamiliar with the products.**

The present study expects that people who are presented with product photos will look at products faster in advertisements since their gaze is automatically drawn to products they have recently been attended to (Kristjansson & Campana, 2010). When people fixate on products faster, they will most likely do it unconsciously since recognising familiar products is an automatic process (Peter & Olson, 2010). Although priming and familiarity in general are believed to occur after repetitive exposure, the present study investigates whether brief exposure to products also results in faster identification of products in advertisements. The associations related to products in people's memory may not be as strong after brief exposure, but may be enough to automatically draw attention to the target product first in advertisement.

Investigating how previous exposure to products influences attention in online advertisements enables to study how memory is shaped by the external stimuli. If previously exposed products are fixated more, it indicates that products are stored in people's short-term memory which guides their attention to them. Due to perceptual selection, people attend to just a small amount of stimuli surrounding them daily to avoid overwhelmingness (Solomon, et al., 2013). If previous exposure to products influences people's attention to advertisements, it can be argued that advertisements containing familiar products may break through the information clutter and attract the attention of people. The AIDA model lists four levels - attention, interest, desire and action - necessary for product purchase to take place (Hassan, Nadzim & Shiratuddin, 2015). If people are more likely to look at familiar products, it indicates that familiarity increases attention to advertisements. If people spend more time looking at products, they are likely to be more interested in products. Therefore, the study
contributes to the AIDA model by showing factors triggering initial attention and interest which may lead to other levels and finally result in product purchase.
3 Method

3.1 Research design

Eye-tracking equipment enables to collect non-verbal numerical data by observing people's eye movements. Thus, the research uses quantitative method in which hypotheses are deducted from theory and later tested. Deductive theory represents the relationship between theory and research in which hypotheses are constructed based on specific domains and theoretical considerations that need to undergo an empirical scrutiny (Bryman, 2012). The present study constructed three hypotheses based on theory and prior research. The articles on previous research were chosen from literature search by using keywords related to attention, familiarity and eye-tracking (Appendix A). Only peer-reviewed articles published in English were selected. The hypotheses were later tested by conducting an eye-tracking experiment.

Experimental nature of a study refers to investigating the effect of an independent variable that can be manipulated by the researcher on a dependent variable that refers to a measurable outcome, such as fixation duration in the context of eye-tracking (Holmqvist & Nyström, 2011). In order to investigate the influence of the independent variable that is being manipulated all other variables need to be held constant. The present experiment was conducted in an eye-tracking laboratory, since it enabled to better replicate the study and control the experimental conditions. Although, the results may lack generalizability, because the setting was artificial (Duchowski, 2007, p.160).

Experimental design gathers data from groups via within-subjects or between-subjects design. While within-subjects design tests one group of participants under all treatments, a between-subjects design uses different groups of participants and assigns them different treatments (Duchowski, 2007, p.162). The present study used between-subjects design by dividing participants in two matched groups based on their gender. Both groups had 10 male and 10 female participants. As mentioned previously, in order to design an experiment, it is necessary to manipulate an independent variable. Thus, participants in Group 1 were presented with a product photo before showing them the advertisement containing the same product, while participants in Group 2 were only shown the advertisement. By doing so, the product photo acted as an independent variable which was manipulated between groups and allowed to investigate the dependent variable which was the measurable outcome, in other words, duration of fixations. From here on, the independent variable will be referred to as external stimuli.
3.2 External stimuli

In order to investigate people's attention to online advertisements, the participants were presented with three advertisements (Appendix B) published on Instagram by three different streetwear brands. The brands were Bianca Chandôn, Han Kjøbenhavn and Vlone (Figure 4). The aim was to select brands that were potentially less familiar to individuals participating in the study to better investigate the effect of familiarity on attention generated by the product photo. However, the brands had to be established enough to have the financial means to produce advertisements.

Previous research (Kristjansson & Campana, 2010) has emphasized the effect of priming on visual search, claiming that frequently presenting an object results in faster identification of the same object in visual search tasks. Priming has a large impact on people's attention allocation. Also, object identification from the visual field is easier, when the object is familiar to the viewer (Kristjansson & Campana, 2010). Since it is suggested that priming may cause large familiarity effects (Qin, Koutstaal & Engel, 2014), the present study presented half of the participants with a product photo before showing an advertisement containing the same product and the other half were only shown advertisements. Therefore, half of the participants were presented with another external stimuli consisting of a single product on a white background (Figure 5).
Various aspects, mentioned in the eye-tracking literature (Holmqvist & Nyström, 2011), were considered when choosing advertisements. Firstly, people and faces draw attention. Since clothing brands mostly publish advertisements that use models, it was not reasonable to avoid advertisements that do not include people. However, it was possible to choose advertisements, where their faces are less dominant. Secondly, participants in the eye-tracking experiments tend to look at the centre of the monitor (Holmqvist & Nyström, 2011). Thus, the aim was to select advertisements, where the search target, i.e. familiar product, was not presented directly in the middle. Thirdly, people are less likely to look at the edges of the monitor (Holmqvist & Nyström, 2011). Hence, choosing advertisements which place target objects at the edges of advertisements was avoided.

Bianca Chandôn advertisement was chosen, because the product is surrounded by large objects and the brand name. Although the product is presented clearly and close to the centre of the advertisement, surrounding objects can possibly draw attention away from the product. Han Kjøbenhavn advertisement was used, since the product is placed in an unusual location, further from the centre of the advertisement. Lastly, Vlone advertisement was selected, because the product is surrounded by potentially disturbing visuals, i.e. drawings on the walls. Also, the product is less dominant and presented in a smaller scale.

In order to avoid the effect of stimuli’s quality or size on attention allocation, the advertisements and product photos were modified in Adobe Photoshop CS6. New dimensions are presented in pixels which measure the total number of image blocks along the width and height of an image. The higher the number of pixels, the better the quality of an image is (Adobe, 2017). New dimensions for product photos were 900x1150 pixels and the background of the products was changed to white, so that all photos would look similar. The shape and proportions of the advertisements were kept the same, because the aim was to present advertisements the way they were originally published. But the quality of the advertisements was changed to 143 pixels and the dimensions were modified. Bianca Chandôn advertisement's new dimensions were 899x1126 pixels, Han Kjøbenhavn advertisement's new dimensions were 1126x1052 pixels and Vlone advertisement's new dimensions were 901x1126 pixels.

### 3.3 Sampling

#### 3.3.1 Participants

Eye-tracking studies aim to reveal similarities and differences of viewing patterns between large groups of participants (Duchowski, 2007, p.160). Pernice and Nielsen (2009) have discovered by conducting numerous eye-tracking studies that approximately 23% of participants generate data that lacks quality due to equipment malfunction or poor calibration
of eye movements. Hence, they recommend testing at least 39 people for adequate data in case the data from 9 people is lost (Pernice and Nielsen, 2009). Since the present eye-tracking study used between-subjects design where participants were divided in two equal groups, 40 participants were selected. It enabled to divide 40 individuals in two groups of 20 of which 10 individuals were females and 10 were males to match the groups and avoid gender bias.

3.3.2 Convenience sample

Convenience sample refers to non-probability sample in which participants are chosen based on their accessibility and availability to the researcher (Bryman, 2012, p.201). Participants were recruited from Facebook and Tallinn University of Technology where the experiment took place (Table 1). Nine participants in Group 1, six females and three males, and 10 in Group 2, six females and four males, were recruited among acquaintances by sending out an invitation to participate in a private Facebook event. 11 participants in Group 1, four females and seven males, and 10 in Group 2, four females and six males, were recruited from the university. Invitation to participate was sent out to the student union and other student organisations working at the university. Also, some university students were approached at the university's common areas and were asked to take part in the experiment by directly sending them a link to the invitation.

Table 1

<table>
<thead>
<tr>
<th>Recruitment of Participants for Group 1 and Group 2</th>
<th>Group 1</th>
<th></th>
<th>Group 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females</td>
<td>Males</td>
<td>N</td>
<td>Females</td>
</tr>
<tr>
<td>Recruited from the Web (N)</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Recruited from the University (N)</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Total (N)</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

Since the present study aims to investigate the attention of millennials, i.e. people born between the ages of 1980 and 2000, the sample was chosen from female and male millennials. People's eye movements who wear certain types of glasses (i.e. bifocals and trifocals) often cannot be calibrated and monitored with eye-tracking (Pernice & Nielsen, 2009, p.87). Therefore, only people with normal or corrected to normal vision were asked to participate.

19 participants recruited from Facebook and 21 participants recruited from the university were asked to fill out a Google Form document with their name, age, gender and time of the day suitable to participate. Since the experiment was conducted during one day starting at 9 a.m. and ending at 7 p.m., people were given a chance to choose a suitable time period to
participate in the experiment. Afterwards, 10 females and 10 males who showed interest in participating in the morning, from 9 a.m. until 2 p.m., were signed to Group 1. 10 females and 10 males who preferred to participate in the evening, from 3 p.m. until 7 p.m., were signed to Group 2.

3.4 Research procedure

The eye-tracking experiment took place on the 6th of April 2017 at Mektory, which is an innovation and business centre part of the Tallinn University of Technology in Estonia. Tobii Studio eye-tracking version 3.2.3.336 was used for the experiment. Eye-tracking is computer-based equipment used to observe and follow people's eye movements. Eye-tracking software is installed into the computer monitor and it simultaneously tracks and records viewer's gaze together with objects displayed on the screen. Most people look at the same direction with both eyes. Thus, the eye-tracker calculates the average of both eyes to understand where the viewer's gaze is directed (Nielsen & Pernice, 2009).

During the recruitment process, individuals were informed about the procedure by explaining that they are asked to look at advertisements on a computer monitor for few seconds while their eye movements are tracked by eye-tracking technology. They were informed that the data gathered from the study will only be used for academic purposes, their personal information will be kept confidential and the experiment is voluntary. The participants were briefly informed of the research purpose by saying that the aim is to investigate, what people look at while looking at different advertisements. The same information was gone over again with each participant before starting the experiment.

Each participant entered the eye-tracking room (Figure 6) alone to avoid noise and other disturbing factors. When the participants sat down in front of the computer monitor, they were told that before the experiment starts, calibration procedure (Figure 6) takes place, during which they need to follow a black dot inside a bigger red dot moving across the computer screen. Before calibration, that was performed for each participant separately, the researcher conducting the experiment made sure that the distance from the participant's eyes to the equipment was approximately 60-65 cm which is a recommendation by Tobii, the producer of eye-trackers (Tobii Pro, 2017,a). Calibration type was regular, calibration speed was medium and the number of calibration points was set to five. When calibration was done, the participants were informed that after the test ends they are presented with a short questionnaire (Appendix C) with three questions.
When the test started, the first group of participants were first presented with a product photo for two seconds and then an advertisement containing the same product for four seconds. The second group of participants were only presented with an advertisement for four seconds. The time between each product photo and each advertisement was one second. All participants had one trial.

After the eye-tracking test was finished, the participants were presented with a questionnaire containing three questions. The purpose of the first two questions was to find out whether the participants had been familiar with the advertisements and the brands. The respondents could choose that the first, second, third advertisement and/or brand was familiar, or none of the advertisements and/or brands was familiar. The third question was presented to get an overview how interested the participants are in fashion on the scale of 1 to 7, where 1 is not at all interested and 7 is very interested.

### 3.5 Data analysis method

Results of the eye-tracking experiment are presented in two parts. Firstly, Illustration of the results for each advertisement separately is presented by showing heatmaps and descriptive statistics used for data analysis. Secondly, Statistical analysis presents the results of statistical tests for three previously constructed hypotheses. In this section, the variables are tested for all three advertisements together, so that one participant is represented by three advertisements ($N = 120$). It enables to test the results for a larger number of units, since the initial size of one group was small with only 20 participants.
3.5.1 Illustration of the results

Heatmaps are not suitable for gathering quantitative data of people's viewing patterns, because they do not provide numerical data. However, heatmaps are the best option for illustrating the results of eye-tracking studies (Nielsen & Pernice, 2009, pp.11-12). Heatmaps enable to demonstrate people's overall gaze allocation on the advertisements and areas which were fixated more intensely.

When creating the heatmaps, absolute fixation time instead of fixation count was chosen to present the results, since eye-tracking literature (Nielsen & Pernice, 2009, p.11) suggests that there is usually not much visible difference between the number or time of fixations in the heatmaps. Therefore, only heatmaps showing fixation durations were created. Hence, absolute duration of fixation with the radius of 50 pixels was chosen under settings in the eye-tracking software and colour scheme was set to green, yellow and red.

Descriptive statistics present the data gathered for each advertisement and group separately that was later analysed by performing statistical tests. Descriptive statistics give an overview of the percentages and total numbers of participants in Group 1 and Group 2 who fixated on products in advertisements. Also, it presents Means ($M$) and Standard Deviations ($SD$) for “Total Fixation Duration” and “Time to First Fixation” in seconds which enables to compare the differences between groups and advertisements.

3.5.2 Statistical analysis

3.5.2.1 Chi-square test and t-tests

Statistical tests were carried out using SPSS computer software to analyse the results of the eye-tracking experiment. SPSS is considered to be the most widely used software for analysing quantitative data (Bryman, 2012, p.354). All three hypotheses are presented separately and either accepted or not accepted based on the results of statistical tests. Chi-square test and independent-samples t-tests were performed for the statistical analysis, since the data of two groups was compared and tested (Abbott & McKinney, 2013). First hypothesis was tested by chi-square test which tests a relationship between two variables measured in a qualitative scale (Bryman, 2012, p.348). Chi-square test was selected, since categorical data was tested to determine whether the difference between variables is statistically significant ($p < .05$). The second and third hypotheses were measured on interval scale, thus, mean values were calculated for the dependent variables and t-tests were applied (Abbott & McKinney, 2013). T-test is used to test whether the difference between the means of variables is statistically significant ($p < .05$) (Duchowski, 2007, p.167).
3.5.2.2 Data gathering

In order to gather categorical and quantitative data, Areas of Interest (AOIs) were first defined on all three advertisements for each group separately. A rectangular box was drawn around the target products in the eye-tracking software and named after their product category, i.e. T-shirt, pants or sweatshirt. When the AOIs were defined, relevant variables were selected in the software for calculations and imported into an Excel spreadsheet for statistical analysis by the eye-tracking system.

The first hypothesis assumes that consumers who are familiar with the products are more likely to look at them in advertisements than consumers who are unfamiliar with the products. In order to test the first hypothesis, data about “Number of Participants” was gathered. “Number of Participants” shows how many participants out of 120 in total for both groups and all three advertisements fixated on the product at least once. Comparing the number of participants fixating on products between groups determines whether people who were first presented with product photos were more likely to look at the products in the advertisements.

The second hypothesis assumes that consumers who are familiar with the products will spend more time looking at them in advertisements than consumers who are unfamiliar with the products. In order to test the second hypothesis, data about “Number of Participants” and “Total Fixation Duration” was gathered. “Total Fixation Duration” describes the duration of all fixations on the product in seconds. Comparing the mean total fixation durations on the products between groups shows whether participants who were first presented with product photos spent more time looking at the products in advertisements.

The third hypothesis assumes that consumers who are familiar with the products will find them faster from advertisements than consumers who are unfamiliar with the products. Data about “Number of Participants” and “Time to First Fixation” was gathered to test the third hypothesis. “Time to First Fixation” describes the time in seconds from the start of the stimulus display until the participant fixated on the product for the first time. Comparing the mean times to first fixation on the products between groups shows whether participants who were first presented with product photos found the products faster from the advertisements.

3.6 Ethical considerations

3.6.1 Harm to participants

In order to avoid harm to participants, people’s identities and personal information should be kept confidential and it is important to ensure that participants are not identifiable when
publishing the results (Bryman, 2012, p.136). Before conducting the eye-tracking experiment, participants were informed that the data gathered will only be used for academic purposes and their personal data, including name, age and gender, will be kept anonymous. When reporting the results, each participant is treated as part of a group and their personal fixations and gaze directions are not published in the thesis.

Information about the participants in the Google Form document was only available to the researcher and kept hidden from other participants. Before the experiment started, couple of participants were asked if they would approve of being photographed during the procedure in order to document the experiment. Their faces were kept hidden to avoid uncovering their identities. After all participants had conducted the experiment, eye-tracking data was gathered from the computer for further analysis. Data, including eye-tracking information and questionnaire answers (Appendix D), is only available to the researcher.

3.6.2 Informed consent

Participants should be given sufficient amount of information so they can make an informed decision about participating in the study in order to avoid lack of informed consent (Bryman, 2012, p.138). Participants were first informed of the location, date and duration of the experiment and given a chance to choose a suitable time period to participate in the study. Participants were told that the experiment takes 1-2 minutes, but since there are a large number of participants, they may have to spend approximately 15-20 minutes of their time. The participants were informed of their task, by explaining that they are asked to look at advertisements on a computer monitor the way they usually do while their eye movements are being tracked by eye-tracking equipment. They were not asked to sign a consent form, since it may cause concerns about the experiment among participants rather than relieve distress (Bryman, 2012, p.140). Instead, people were told that by filling out the Google Form document they are showing interest in participating. People were later contacted by the researcher in person to give them additional information and answer any concerns.

Individuals willing to participate in the experiment sat down in front of the computer screen and were told to look at advertisements. The purpose of the study was kept hidden since it may influence the results. Afterwards, the participants were told that before the experiment starts, they will need to write down their name, age and gender in the eye-tracking software and go through calibration process which takes few seconds, but is necessary for the equipment to be able to track their eye movements. Also, the participants were informed that after the test, they are asked to fill out a short questionnaire containing three questions. Individuals were told that the experiment is voluntary and they can leave at any point. Therefore, the participants were given as much information before the study as possible to give them a chance to make an informed decision while not influencing the results.
Participants who wanted to learn more about the essence of the study after the experiment were informed about the purpose of the research in more detail. The ones interested in seeing their eye movements, were given a chance to look at their personal recordings.

3.7 Research quality

3.7.1 Reliability

Reliability refers to the replication of results, meaning whether or not the results of a research are repeatable (Bryman, 2012, p.46). Reliability in the context of the eye-tracking experiment is concerned with the selected measure's ability to repeatedly give the same value (Holmqvist & Nyström, 2011, p.76). In order to increase reliability in the present study, eye-tracking experiment was conducted in a laboratory which enables to better replicate the procedure and control the experimental conditions. Also, the process was documented and explained in detail by providing illustrative photos of the experiment and describing the eye-tracking software and calibration procedure. By doing so, future studies can repeat the eye-tracking experiment and generate results free from random error caused by differences in the research procedure.

3.7.2 Validity

Validity refers to the integrity of the research conclusions (Bryman, 2012, p.47). Validity in eye-tracking experiment is concerned with whether the dependent variable is measuring what it is expected to measure (Holmqvist & Nyström, 2011, p.76).

3.7.2.1 Internal validity

Internal validity refers to causality and whether there is a causal relationship between variables (Bryman, 2012, p.47). The present study was conducted in an eye-tracking laboratory. Hence, the internal validity of the study is strong, because of the better control of experimental conditions (Duchowski, 2007, p.160). In order to further increase internal validity, four participants from the results of two advertisements were excluded based on their questionnaire answers. One participant who was familiar with the Bianca Chandôn advertisement in Group 1 and one from Group 2 who was familiar with the Bianca Chandôn brand were excluded. Also, one participant from Group 1 who was familiar with the Han Kjøbenhavn advertisement and one from Group 2 who was familiar with the Han Kjøbenhavn brand were excluded to enable to investigate only the impact of external stimuli. Otherwise, the participants’ familiarity with the brands or advertisements could have
influenced their attention to advertisements and disabled to investigate the familiarity effect generated only by product photos.

3.7.2.2 Ecological and external validity

Ecological validity is concerned with whether the results of a study are applicable to everyday life (Bryman, 2012, p.55). In order to increase ecological validity, original advertisements published on Instagram by streetwear brands were used for the experiment. External validity refers to the study's generalizability beyond the research context (Bryman, 2012, p.47). Since the experiment was conducted in a laboratory, external validity is difficult to achieve, because the research setting is artificial and not related to real life context (Bryman, 2012, p.55). The purpose of the study was to investigate the impact of product familiarity on attention allocation of millennials. Since all participants were Estonian, the research results represent Estonian millennials, but are not generalizable to millennials of other nationalities. In order to determine whether the results of the presents study apply to other nationalities, similar studies testing the same hypotheses should be conducted in other countries. Also, the results cannot be generalizable to other generations beyond millennials and would require a new study with a different research purpose.
4 Results

4.1 Information about the participants

Before conducting the experiment, 40 participants were divided in two groups of 20 based on their gender and the time period suitable to take part in the study. After the eye-tracking study was conducted, the mean age of both groups was calculated (Table 2). The mean age of participants in Group 1 who saw product photos and advertisements was 23.5 years. Whereas, the mean age of participants in Group 2 who only saw advertisements was 23 years.

After the eye-tracking test, participants were asked to fill out a short questionnaire (Appendix C). The first two questions were concerned with finding out whether the advertisements and brands had been familiar to the participants. Based on the responses, two participants were excluded from the eye-tracking results of Bianca Chandôn and Han Kjøbenhavn advertisements, since they were familiar with either the brands or the advertisements which lowered the total number of responses by four (N = 116). The third question presented in the questionnaire asked how interested the participants are in fashion using Likert scale which measures the set of attitudes about a particular field of interest (Bryman, 2012, p.166). Scale of 1 to 7 was used, where 1 refers to not at all interested in fashion and 7 refers to very interested in fashion. The aim was to understand whether fashion interest between groups is different and could have influenced the results. The mean values for both groups were later calculated (Table 2). The mean fashion interest of participants in Group 1 was 3.80 out of 7 and 4.25 out of 7 for participants in Group 2.

<table>
<thead>
<tr>
<th>Age and Fashion Interest Means for Group 1 and Group 2</th>
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</thead>
<tbody>
<tr>
<td>Groups</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Fashion Interest</td>
</tr>
</tbody>
</table>
4.2 Illustration of the results

4.2.1 Heatmaps

Eye-tracking provides versatile data about the location and length of fixations which are areas in the visual scene where viewers have focused their attention (Scholderer, 2010, p.244). Gazeplots are used for analysing the location, duration and sequence of fixations of one participant. To get an overview of the viewing patterns of a large group of individuals, heatmaps are more commonly used (Pernice & Nielsen, 2009). Heatmaps present a summary of fixation durations and give an overview where people looked at in advertisements and which areas were fixated more intensely. Red parts in the heatmap refer to high density, yellow and green areas respectively to medium and low density, i.e. fewer fixations (Scholderer, 2010, p.244).

4.2.1.1 Heatmaps of Bianca Chandôn advertisement

The first advertisement presented to the viewers was from Bianca Chandôn. The participants in Group 1 were first shown a photo of the pink T-shirt and then the advertisement. When comparing the heatmaps of two groups (Figure 7), it is clearly visible that the participants presented with the product photo, spent more time looking at the T-shirt than the participants in Group 2, who only saw the advertisement. Both groups fixate intensely on the model's head. It is believed that faces often draw attention (Holmqvist & Nyström, 2011), but these heatmaps illustrate that the back of the model's head also attracts attention. Which, at the same time may be, because the model's head is in the middle of the advertisement. Both groups fixate on the brand name, but the participants in Group 2 look at it longer. Heatmaps show that large objects, such as the chandelier, mirror and lamps on the wall, attract the attention of both groups, but it is noticeably more intense for Group 2. All in all, heatmaps demonstrate that the gaze of Group 1 is less spread across the advertisement compared to Group 2 and more attention is allocated to the product area instead of objects surrounding the model.
4.2.1.2 Heatmaps of Han Kjøbenhavn advertisement

Unlike the advertisement of Bianca Chandôn, the target product in Han Kjøbenhavn advertisement is placed unusually further from the centre, which made it difficult for participants to locate it. Also, the advertisement of Han Kjøbenhavn is different from the other two, since it uses two models. The heatmaps (Figure 8) demonstrate that the attention of both groups is divided between the covered faces of two models and is more intense for the model sitting next to the dog, most likely because the dog also draws attention. Group 1 was first presented with a photo of the pants, but it is not visible from the heatmaps that they looked at the pants more intensely compared to Group 2.
4.2.1.3 Heatmaps of Vlone advertisement

Similarly to the Han Kjøbenhavn advertisement, the target product in the Vlone advertisement is less dominant and placed further from the centre of the advertisement. Heatmaps of Vlone advertisement (Figure 9) show that Group 1, who was first presented with a photo of the sweatshirt, focuses more attention on the target product and significantly less attention is allocated to the motorcycle and walls which contain a lot of visual information. Participants in Group 2 focus more on the model's face, motorcycle and the wall behind the model, however, the product attracts attention as well. It may be, because Vlone advertisement shows the model's face more unlike the other two advertisements and the model's gaze is directed towards the product which suggests directionality and directs people's gaze to it (Engel, Blackwell & Miniard, 1990). All in all, it is noticeable that the gaze of participants, who did not see the product photo first, is more spread across the advertisement and more attention is allocated to objects surrounding the product.

![Group 1 (participants saw the product and advertisement)](image1)
![Group 2 (participants saw only the advertisement)](image2)

Figure 9. Heatmaps of Vlone advertisement

4.2.2 Descriptive statistics

Table 3 presents descriptive statistics of participants in Group 1 and Group 2 provided by eye-tracking software for each advertisement separately. The data was later imported into an Excel spreadsheet for statistical analysis in SPSS to test previously constructed hypotheses.
4.3 Statistical analysis

Chi-square test was performed to test Hypothesis 1 and independent-samples t-tests were performed to test Hypothesis 2 and Hypothesis 3. Alpha level of .05 was used as a significance criterion and 95% of Confidence Interval of the Difference was selected for all statistical tests. The values of Means and Standard Deviations are presented in seconds for the second and third hypotheses in Table 5 and Table 6.
4.3.1 Accepting Hypothesis 1

Hypothesis 1 assumes that consumers who are familiar with the products are more likely to look at them in advertisements than consumers who are unfamiliar with the products. The results of chi-square test support the first hypothesis, $p = .036$ (Table 4). The data was gathered from participants in Group 1 ($N = 58$) and Group 2 ($N = 58$). The test results demonstrate that more than twice as many participants in Group 2 who only saw the advertisements did not fixate on the products compared to participants in Group 1. Chi-square test indicates that there is a significant ($p < .05$) difference in the proportions of people that looked at the products in Group 1 compared to Group 2. The results show that in 88% of cases, when products were presented before advertisements, fixations on products occurred. When products were not presented before advertisements, fixations on products occurred in 72% of cases.

| Table 4 |
|---------------------|---------------------|---------------------|
| **Grosstabulation of Groups and Fixations** | **Groups** |  |  |
| Fixations | Group 1 | Group 2 | $\chi^2$ |  |
| No Fixation | 7 | 16 | 4.39* |  |
|  | (12.1) | (27.6) |  |  |
| Fixation | 51 | 42 |  |  |
|  | (87.9) | (72.4) |  |  |

*Note. *$= p < .05$. Percentage within Group appear in parentheses below group frequencies.

4.3.2 Accepting Hypothesis 2

Hypothesis 2 assumes that consumers who are familiar with the products will spend more time looking at them in advertisements than consumers who are unfamiliar with the products. The results of independent-samples t-test support the second hypothesis, $p = .005$ (Table 5). The data was gathered from participants who fixated on products in Group 1 ($N = 51$) and Group 2 ($N = 42$). The results show that “Total Fixation Duration” on products was significantly ($p < .01$) longer for participants in Group 1 who were first presented with product photos compared to participants in Group 2 who only saw the advertisements.
4.3.3 Not accepting Hypothesis 3

Hypothesis 3 assumes that consumers who are familiar with the products will find them faster from advertisements than consumers who are unfamiliar with the products. The results of independent-samples t-test do not support the third hypothesis, $p = .849$ (Table 6). The data was gathered from participants who fixated on the products in Group 1 ($N = 51$) and Group 2 ($N = 42$). The results demonstrate that “Time to First Fixation” did not differ significantly between groups. Participants in Group 1 who were first presented with product photos did not find the products faster from advertisements compared to participants in Group 2 who were only shown the advertisements.

4.3.4 Conclusion of statistical analysis

Based on the statistical tests, the first and second hypotheses are accepted. Therefore,
consumers who are familiar with the products are more likely to look at them in advertisements and they will spend more time looking at the products compared to consumers who are unfamiliar with the products. However, the third hypothesis is not accepted. Consumers who are familiar with the products will not find them faster from advertisements than consumers who are unfamiliar with the products.
5 Discussion

5.1 Results related to previous research

5.1.1 Hypothesis 1 and Hypothesis 2

Data to test the first hypothesis was gathered from participants in Group 1 \((N = 58)\) and Group 2 \((N = 58)\). The results show that in 88% of cases, when products were presented before advertisements, fixations on products occurred (Table 4). When products were not presented before advertisements, fixations on products occurred in 72% of cases. To test the second hypothesis data from participants who fixated on products in Group 1 \((N = 51)\) and Group 2 \((N = 42)\) was collected. The results demonstrate that participants who were first presented with product photos fixated on products longer \((M = 1.00, SD = 0.96)\) than participants who were only shown advertisements \((M = 0.55, SD = 0.33)\) (Table 5). Consumers who are familiar with the products are more likely to notice them and spend more time looking at them in advertisements than consumers who are unfamiliar with the products.

The first and second hypotheses derived from the study of Castelhano, Mack and Henderson (2009), who investigated the effect of task instruction on attention (Paragraph 2.2.1). They monitored people's eye movements during memorization and visual search task by using eye-tracking equipment. During visual search task, the researchers showed participants a word naming the search object which guided viewers' attention to the area most likely to contain the target (Castelhano, Mack & Henderson, 2009). The present study presented participants with a photo of the product which generated similar results. Product photos also acted as search clues that guided people's attention to areas in advertisements containing the products. Presenting a photo instead of a word enabled to conduct the experiment in a more natural context, since people are usually exposed to the actual objects not words referring to them. To create even more natural conditions, online advertisements could have been presented on smartphones or tablets that people mostly use for looking through their newsfeeds on social media. People's eye movements could have been monitored by using eye-tracking glasses that monitor people’s natural viewing behaviour in a real-world setting (Tobii Pro, 2017,b).

Since the previous research was a visual search study, the researchers did not measure fixation durations on target products. Participants were asked to push a button once they had detected the objects after what the experiment ended (Castelhano, Mack & Henderson, 2009). The present study showed advertisements for four seconds whether participants had detected previously shown products from advertisements or not. It enabled to determine that people spend more time looking at products in addition to allocating their gaze to target areas as
proved by prior research. The previous study compared attention during memorization and visual search tasks (Castelhano, Mack & Henderson, 2009). Since the present study presented both groups with the same task to look at advertisements the way they usually do, it can be argued that previous exposure to an object influenced attention regardless of the task instruction.

Descriptive statistics for fixation durations on products for all three advertisements demonstrate that Standard Deviations are considerably different between participants presented with product photos and advertisements (Table 3). Differences in Standard Deviations indicate that some participants looked at the products for a long time, while others fixated for a short time. As suggested by attention theory, people's attention is largely influenced by top-down processes which draw their attention to stimuli related to individual goals or tasks (Scholderer, 2010). Even though previously exposed products were fixated longer in total, previous exposure only influenced the attention of some participants, but not everybody. The differences may have been caused due to dissimilarities in people's personal goals, needs or other cognitive aspects.

5.1.2 Hypothesis 3

Data to test the third hypothesis was gathered from participants who fixated on products in Group 1 ($N = 51$) and Group 2 ($N = 42$). The results show that participants who were first presented with product photos did not fixate on products faster ($M = 0.78, SD = 0.85$) compared to participants who were only shown advertisements ($M = 0.74, SD = 0.81$) (Table 6). Consumers who are familiar with the products will not find them faster from advertisements than consumers who are unfamiliar with the products.

Priming theory claims that repeated exposure to an object results in faster identification of the same object (Kristjansson & Campana, 2010). Research by Qin, Koutstaal and Engel (2014) on the effect of familiar logos on attention drew similar conclusions for pre-experimentally familiar logos (Paragraph 2.2.2). Pre-experimentally familiar logos which were primed by further familiarizing them during the experiment were identified faster. However, priming did not occur for formerly unfamiliar logos familiarized in a laboratory (Qin, Koutstaal & Engel, 2014). The study by Mruczek and Sheinberg (2005) observing the effect of familiar everyday objects on attention found that laboratory-based familiarization occurs when objects are familiarized over a course of few weeks (Paragraph 2.2.3). The research concluded that extended visual experience leads to faster identification of familiar items (Mruczek & Sheinberg, 2005).

The present study did not find that people who were recently exposed to products looked at the products first in advertisements. The reason why the third hypothesis is not accepted may be caused by methodological differences between the present and previous studies. The nature and duration of exposure differs significantly. Participants in the present study were
shown product photos only once for two seconds. Brief exposure to products may have caused familiarity to some extent, but was not enough to result in faster identification of the products from advertisements.

It was expected that showing advertisements immediately after exposure to products would automatically draw people's gaze to recently seen products. It is hard to explain why it did not occur. Perhaps more data would need to be gathered from a larger sample, since the present study acted more as a pilot study. Also, the selection of stimuli may have influenced the results. Whereas prior studies presented target objects in isolation (Qin, Koutstaal & Engel, 2014) or they were surrounded by few other everyday objects on white background (Mruczek & Sheinberg, 2005), the products in the present study were surrounded by a lot of visual information. The characteristics of stimuli have a large impact on attention (Solomon, et al., 2013). For instance, larger and more intense stimuli or stimuli which contrast with the background tend to draw attention (Engel, Blackwell & Miniard, 1990). During pre-attention when primary salient information from the advertisements was gathered (Zhang & Lin, 2013) people’s gaze may have been first drawn to visuals and objects surrounding the target products due to their salient nature. It can be speculated that the effect of stimulus characteristics on attention was larger than the effect of familiarity.

When comparing the level of fashion interest between Group 1 ($M = 3.80$) and Group 2 ($M = 4.25$), it is noticeable that participants in Group 2 are slightly more interested in fashion (Table 2). Data about fashion interest was gathered, because consumers tend to have higher awareness for stimuli relevant to their personal needs or goals, which is often explained by the term perceptual vigilance (Loudon & Bitta, 1993). It may be that when people are more interested in fashion they will direct their gaze to products faster compared to people less interested in fashion. However, since the difference between groups is small, no conclusions can be drawn that participants in Group 2 fixated on products faster, because they were more interested in fashion.

5.2 Research implications

5.2.1 Theoretical implications

The first and second hypotheses were based on the research studying the effect of task instructions on people's eye movements (Paragraph 2.3). The study aimed to investigate differences in attention allocation under memorization and visual search task. The theoretical framework was developed based on cognitive theories related to the effect of viewing tasks (Castelhano, Mack & Henderson, 2009). The present study applied the previous results to the context of consumer behaviour. The hypotheses were related to attention theory, more specifically how associations in people's memory are created and influence attention. It is
believed that repetitive exposure to stimuli creates and strengthens associations related to the stimuli in people's memory (Solomon, et al., 2013). Memory, on the other hand, influences attention based on these previously formed associations (Hawkins & Mothersbaugh, 2013).

The findings of the present study show that brief exposure to a product guides people's attention to it in the advertisement. It can be argued that the product is stored in people's short-term memory and people recall it when seeing it again in the advertisement. People had not seen the exact products before the first exposure. However, they had formed associations to similar products, since they knew where to find them and direct their gaze to areas most likely to contain the products. Therefore, the product which stayed in people's memory created interest towards it and resulted in longer fixations. It is believed that repetitive exposure to stimuli strengthens associations and increases recall for stimuli (Solomon, et al., 2013). Brief exposure to objects also influences memory and thereby attention to a large extent.

The AIDA model lists four levels necessary for product purchase to occur (Hassan, Nadzim & Shiratuddin, 2015). People's attention is hard to attract, because they are constantly surrounded by a bundle of advertising stimuli (Solomon, et al., 2013). Hence, it is important to recognise the factors influencing initial attention. Eye-tracking enables to investigate the numerous factors affecting attention by monitoring people's behaviour (Duchowski, 2007). Eye-tracking allows to gain additional insights about attention and investigate how people attend to stimuli. By doing so, the AIDA model can be adjusted to reflect consumers’ actual behaviour. The present study shows that product familiarity has a large impact on attention. People are more likely to look at familiar products and are more interested in familiar products by spending more time looking at them in advertisements. It can be suggested that the AIDA model should consider the effect of familiarity when discussing attention, since it has a significant impact on the first two levels in the model. Understanding attention enables to make predictions about other levels in the model and gain competitive advantages regarding factors influencing product purchases.

The third hypothesis was also constructed based on theories related to attention and familiarity in consumer behaviour (Paragraph 2.3). Priming theory suggests that repeated exposure to objects results in faster identification of the same objects and people's gaze is automatically drawn to items they have recently been exposed to (Kristjansson & Campana, 2010). The findings of the present study show that recent exposure to products does not automatically draw attention to them. Although the advertisements were presented immediately after the exposure to products, it did not influence the reaction times. Therefore, it can be argued that priming only takes place through repetition and recent exposure to products does not have an impact on priming.

Since the first two hypotheses are accepted, it shows that brief exposure to products stores them in people's short-term memory and familiarizes the products to some extent. It is believed that recognizing familiar products is a simple comprehension process and occurs immediately after exposure (Peter & Olson, 2010). The findings of the study show that brief
familiarization is not enough for people to look at products faster. Therefore, brief familiarization does not generate unconscious and automatic recognition of products to an extent which would result in faster identification of products. It may be that short-term memory influences the likelihood of fixations and fixation durations, but faster reaction time is an automatic process that is not affected by memory, but requires repetition. Similarly to behaviours occurring during classical conditioning that are believed to be automatic and involuntary (Peter & Olson, 2010).

The third hypothesis derived from the studies investigating the effect of familiar logos (Qin, Koutstaal & Engel, 2014) and familiar everyday objects (Mruczek & Sheinberg, 2005) on attention. The studies were constructed as visual search studies. Therefore, they presented participants with a task to find the search object and push a button once they had identified it. Eye-tracking enables to see whether people actually look at objects first in the visual scene when they are familiar with them. The previous studies can argue that familiar objects are detected faster, but they cannot make assumptions that familiarity automatically draws people’s gaze to previously seen objects. It may be that people only noticed the familiar objects faster, because they were given a task to find the objects. The results of the present study demonstrate that familiar products are not fixated faster when people are looking at advertisements without search tasks. It can be argued that the present study did not cause sufficient familiarization, but brief exposure to products also does not cause faster identification when people look at advertisements the way they usually do.

5.2.2 Practical implications

This research makes a contribution to the field of textile management by investigating the influence of product familiarity on consumers’ attention to online advertisements. Online advertisements can be changed or removed easily from the Internet when proving to be inefficient. Print advertisements, on the other hand, need to be created months before being published and take long time to change (Houston Chronicle, 2017, b). Therefore, it is even more important for print advertisements to catch the attention of customers, since they are more time consuming to change and need to be effective immediately. The study aims to generalize the results gathered from online advertisements to other types of advertising, including print advertisements, to provide insights how to attract people’s attention to advertisements according to different levels of product familiarity. The study focused on streetwear brands, since their market share is gaining significance (Reuters, 2017), especially among millennial consumers (SCMP, 2016). However, the results may be applicable to other clothing brands that use online advertisements and social media to promote products and reach potential customers.

Noticing products on advertisements is important, since they are created to strengthen people’s memory and knowledge for products (Okechuku, 1990, p.41). Associations related to products are necessary, because purchases are usually made after the initial exposure and
attention to products. These associations enable people to recall product attributes at the time of purchase (Peter & Olson, 2010). When people do not notice products on advertisements, these associations are hard to develop. The present study found that product photos which acted as search clues guided people's attention to areas containing the products. This notion can be used when publishing advertisements on social media. Descriptions written below online advertisements naming advertised products are likely to act as clues and direct people's attention to them.

Previous research suggests that companies with unfamiliar logos should introduce them in diverse and contextually varied advertising campaigns to increase familiarity (Qin, Koutstaal & Engel, 2014). The results of the present study show that unfamiliar products are less likely to be noticed in advertisements. Therefore, presenting new products and perhaps other unfamiliar objects, such as logos, first in complex advertisements does not benefit familiarity, since people pay less attention to them. It would be more useful to introduce new products without distracting visuals, since stimuli presented in isolation or surrounded by large space attract people's attention (Engel, Blackwell & Miniard, 1990). Prior research found that familiarization occurs over an extended period of time (Mruczek & Sheinberg, 2005). Social media enables to customize the amount of exposure products get before showing them in advertisements according to the target consumers' specific level of familiarity. Clothing companies who want to market new products should focus on introducing them over an extended period of time through various mediums and contexts.

Classical conditioning is often used in marketing by repeatedly advertising products in specific contexts that elicit emotions and connect them to products in consumers' minds (Peter & Olson, 2010). Emotional appeals are used in advertisements to create positive attitudes towards brands (Khan, 2006) which contribute to brand loyalty (Solomon, et al., 2013). When creating marketing campaigns for familiar products, the advertisements can contain more emotional appeals which contribute to brand loyalty. Products can be placed in unusual locations or surrounded by complex visuals, since people are likely to concentrate on familiar products and be less distracted by other information. Brand loyalty can be created when people are aware of the brand and have a positive image of it (Keller, 1993). When introducing new products through advertisements, less emotional appeals should be used. Since they may distract people's attention away from products which hinders the development of product or brand awareness and thereby brand loyalty.

5.3 Future research

Findings of the present study demonstrate that showing people product photos once for two seconds did not result in faster identification of products. Prior research and theory on familiarity claim that familiarization occurs over an extended period of time (Mruczek & Sheinberg, 2005) and is obtained through previous knowledge and experience (Marks & Olson, 1981). Consumers are daily exposed to approximately 3500 advertising information
pieces out of which only a small amount is attended to in order to avoid overwhelmingness (Solomon, et al., 2013). Therefore, it is important that products attract people’s attention quickly, especially in the context of online advertisements published on social media where people tend to look through their newsfeeds fast.

In addition to concentrating on the eye-tracking experiment, future research should focus more on theories related to consumer behaviour and familiarity to determine whether the theories are applicable in practice. To better investigate the effect of product familiarity on attention, future research should familiarize the products by showing them multiple times in more diverse contexts. For instance, products could be shown to participants first on a company’s website or social media channels as part of lookbook images where products are worn by models in various settings or as part of product images where they are presented in isolation on a white background. In order to achieve more natural conditions, the products and advertisements could be shown in the context of social media by using smartphones or tablets while people are wearing eye-tracking glasses.

The differences in fashion interest between participants in Group 1 ($M = 3.80$) and Group 2 ($M = 4.25$) were relatively small in the present study (Table 2). Therefore, no significant conclusions can be drawn that the level of fashion interest had an impact on the findings. However, future research could focus on studying whether people, who are significantly more interested in fashion allocate their attention to advertisements differently than people less interested in fashion. It could be speculated that people, who are more interested in fashion will look at familiar products more and for a longer time and perhaps fixate on products faster compared to people less interested in fashion.

Clothing companies often target the final level in the AIDA model when product purchase takes place. However, without catching people’s attention, the final level of action cannot be reached. The findings show that previous exposure increases attention and interest to products, because people are more likely to look at familiar products for a longer period of time. Therefore, the first two levels in the AIDA model are affected by product familiarity. In order to claim that looking at products more for a longer time would also increase desire and sales requires further research. Eye-tracking enables to study the model from the behavioural perspective and determine whether the theory holds in practice and familiarity, which affects attention, would also lead to product purchase. By doing so, the theory can be modified or rejected to reflect consumers’ actions and purchasing behaviours.

Although the present study had a small sample and used only three advertisements, the results are promising, since more people were likely to look at familiar products and for a longer period of time. Therefore, future research should gather more data from a larger sample to draw further conclusions why previous exposure affected the likelihood of fixations and fixation durations, but not faster identification. Also, the present study was conducted in Estonia among millennials. Future research could replicate the experiment and gathered data from other nationalities and generations to study whether similar results would occur.
6 Conclusion

The purpose of this research was to study millennial consumer's attention to online advertisements published by streetwear companies on social media. The aim was to investigate whether product familiarity influences consumer's attention to online advertisements. The results show that people who were first presented with product photos were more likely to look at them in advertisements and for a longer time. However, showing people product photos before advertisements did not result in faster identification of the products.

The findings demonstrate that product photos influenced people's attention by acting as visual clues. Products were stored in people's short-term memory which guided their attention to areas most likely to contain the products in advertisements. Additionally, previously presented products triggered interest towards the products which resulted in longer fixation times. The results make a contribution to the field of textile management, more specifically to the field of marketing and advertising. The findings give suggestions how to create advertisements when promoting familiar products and what notions to take into account when introducing new products.

Streetwear brands and perhaps clothing brands in general who are promoting familiar products can create visually complex advertisements that include more emotional appeals and focus less on presenting products, since people are likely to notice familiar products even if surrounded by a set of visual components. By doing so, products can be attached to emotions which lead to positive attitudes towards brands and contribute to product preference and brand loyalty. New products, on the contrary, should be presented in isolation or surrounded by less visual information that would distract people's attention and disable them from noticing products being advertised.

The results show that presenting people with products only once for two seconds is not enough to create large familiarity effects. Brief exposure does not draw people's gaze immediately to products and does not lead to faster identification of products. New products should be introduced over an extended period of time to strengthen people's memory for them and enable people to identify products fast from advertisements. Since people tend to look through social media newsfeeds quickly, it is important that products attract their attention fast and motivate them to focus on products being advertised. However, more research needs to be done to determine the amount and nature of exposure necessary to result in faster identification of products from advertisements.
References


# Appendix A: Databases and keywords

<table>
<thead>
<tr>
<th>Databases</th>
<th>Keywords</th>
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<tr>
<td>Google Scholar</td>
<td>attention; visual attention; familiarity; product familiarity; unknown product; product photo; external stimulus; visual stimulus; visual clue; memory; online advertisement; print advertisement; image; advertising; marketing; eye-tracking; experiment; eye movements; visual search; gaze; fixation; behavioural perspective; consumer behaviour; priming; repetition</td>
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<td>University of Borás Library (Primo by Ex Libris)</td>
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</table>
Appendix B: Advertisements

Bianca Chandôn advertisement
Vlone advertisement
Appendix C: Questionnaire

Original questionnaire in Estonian and translated questionnaire in English
Appendix D: Summary of responses

23 Translations of questions and answers to English appear in parentheses.

One participant who was familiar with the first advertisement and brand was not excluded from the results, since the participant did not fixate on the first and second advertisement and did not have an impact on the results.