

Strategic Placement of Branding Elements in Digital Marketing: Insights from Eye-Tracking Data

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Abstract: In today's media landscape, where consumers are overloaded with information and have shorter attention spans, digital marketers face significant difficulty in grabbing and holding customers' attention. This research examines how visual attention affects the processing of advertising stimuli. It does this by using eye-tracking technology to determine where branding components should be placed in digital ads to maximize processing efficiency and perceptual salience. The research shows that placing branding features strategically in the top central part of the advertisement can greatly increase visual attention and subsequent recall by analyzing fixation patterns and saccadic behavior. This result is consistent with well-known theories of visual attention, such as the zoom lens model, which holds that processing and memory can be enhanced by focused visual attention. The findings of the study provide marketers with important information on how to maximize the impact of their advertising campaigns by using the principles of visual attention to convey clear, powerful messages in a media landscape that is changing quickly.

1 INTRODUCTION

Digitalization has transformed both industrial and consumer marketing within the last 20 years (Herhausen et al., 2023). Digital marketing encompasses all activities, organizations, and procedures made possible by digital technologies for the creation, communication, and delivery of services to consumers (Homburg and Wielgos, 2022). This includes e-commerce, mobile devices, smart products, the Internet of Things (IoT), and artificial intelligence (AI). As more and more people connect to the internet, they are exposed to hundreds of marketing messages every day, speeding up the field of digital marketing (Helgesson and Stojkovic, 2023). This presents a specific challenge for marketers in developing a marketing segment that successfully captures the consumer's attention and delivers their message. As a result, their marketing efforts can be overlooked in the vast ocean of digital impressions that the average user is exposed to every day. Measuring advertising effectiveness is one of the highest importance to marketers as marketing spends increase (Rodgers, 2024).

Eye tracking is a neuromarketing technique that aids in both quantitative and qualitative analysis of

advertising materials to improve their efficacy (Lee and Ahn, 2012). Marketers may assess visual attention and use the results to create more engaging ads by measuring it with the eye-tracking methodology. With the use of eye-tracking technology, marketers can measure visual attention using metrics like fixation time, saccades, and gaze patterns, providing them with accurate insights into how consumers interact with commercials (Kim, 2024). These insights let advertisers know which parts of an advertisement draw in viewers, which parts are ignored, and how viewers interact with the digital ads. Keyzer et al. (2023) showed that ads that were successful in grabbing a lot of visual attention were more likely to make people feel good about the brand. This result emphasizes the significance of creating visually appealing advertisements that draw in and hold the attention of viewers. Marketers may improve visual engagement and overall ad success by optimizing their advertising strategy with the use of eye tracking data. Marketers can improve ad efficacy by using attention-grabbing cues like human faces and subtle animations, optimizing visual hierarchy, and simplifying messaging (Margariti et al., 2023). These strategies enhance message retention and engagement, which enhances consumer engagement.

Even though visual attention and processing fluency in digital marketing ads (Santoso et al., 2022) (Margariti et al., 2023) have been studied extensively, there are still a lot of significant gaps about how consumers' goal-driven attention and inherent visual behavior affect their expectations and perception of branding aspects in advertisements. Prior research frequently ignores how people's goals influence their visual search behavior, especially when it comes to finding brand identifiers, in favor of concentrating on general attention patterns and the efficacy of different ad components (Almourad et al., 2022; Toubia et al., 2012; Glöckner et al., 2012). Additionally, little research has been done on how consumers interpret visually difficult or blurry ads, which exposes a gap in knowledge of how to recognize brands in inadequate viewing scenarios (Kay et al., 2023). Although neuromarketing acknowledges processing fluency as a critical component in improving consumer perceptions of ads, most research so far has focused on the advantages of readily identifiable and intelligible stimuli (Genco et al., 2013). However, little is known about how consumers' automatic gaze patterns help them process information fluently, particularly when it comes to recognizing branding cues. Additionally, little research has been done on how easily branding information is processed in relation to pre-existing mental templates created by repeated exposure to advertisements (Malodia et al., 2022). Addressing these gaps is important for improving advertising effectiveness and aligning ad designs with consumer needs.

This research attempts to identify customer expectations regarding the positioning of branding elements in advertising to make them easier to understand and more consumer friendly. The present study is based on previous research that has demonstrated that people are more likely to pay attention to stimuli that are thought to be pertinent to their goals, highlighting the critical function of goal-driven attention in cognitive processes (Toubia et al., 2012; Glöckner et al., 2012). Individuals' goal-driven visual attention style can be used to determine where participants anticipate branding components to appear in an advertisement. The study aims to determine the visual locations consumers naturally seek out while looking for brand identification cues by assessing fixation time and fixation count on certain areas of interest (AOIs) in a purposefully blurred headphone advertisement. The results will help to clarify how visual attention patterns and expected brand element positioning in advertising stimuli interact with one another.

Section 2 outlines the literature review, which explores eye-tracking studies, consumer behavior, and visual attention in advertising. Section 3 presents the methodology details- participant demographics, experimental setup, and data collection techniques. Section 4 describes both qualitative and quantitative results, contextualizing them with existing literature. Section 5 concludes the findings of the research.

2 LITERATURE REVIEW

Eye-tracking methodologies have been instrumental in elucidating the intricate relationship between visual attention and consumer behavior within the advertising domain. Previous studies have highlighted the importance of visual attention metrics as indicators of advertising effectiveness (Lee & Ahn, 2012; Casado-Aranda et al., 2023) (Almourad et al., 2023) (Almourad et al., 2022). Research has shown a positive correlation between elevated levels of visual attention and favorable consumer attitudes toward advertisements (Keyzer et al., 2023). Another study grounded in the AIDA model suggests that attention is the first stage before a consumer takes action, playing a crucial role in decision-making (Gahlot et al., 2023). According to the AIDA framework, elements like a logo's aesthetic appeal and saliency influence consumer choices (Salarifar et al., 2020). For instance, an experiment by Gahlot et al. (2023) revealed that product and brand names received the most visual attention, highlighting the significance of capturing consumer focus early in the ad journey.

The ability to grab attention is critical as it triggers the cognitive processing capacity of consumers, transitioning them from the awareness phase to the consideration phase (Almourad et al., 2023; Salarifar et al., 2020; Felix & Hinck, 2016). Eye-tracking serves as a powerful tool to optimize the 'attention' stage of the consumer journey by linking visual attention metrics with cognitive responses (Fidelis et al., 2017; Riswanto et al., 2024). This study employs eye-tracking to explore how optimizing the placement of branding elements in advertisements can enhance overall effectiveness. Branding elements are essential for building long-term brand equity, leading to increased purchase intent and consumer trust (Foroudi, 2019; Hunt, 2019). More than just symbols or text, a brand logo conveys meaning and fosters a connection with consumers (Salarifar et al., 2020).



Figure 1: (a) Stimulus AOI (b) Stimulus (unblurred).

Studies have shown that brand elements attract significant visual attention, contributing to better advertisement recognition (Boerman et al., 2015) (Ji et al., 2023). Leveraging brand love, equity, and loyalty, marketers can expedite consumer decision-making processes by strategically optimizing brand element salience and visual accessibility. Research by Dogra & Kaushal (2023) concluded that attributes perceived as most favorable by consumers tend to attract greater attention, significantly influencing their purchase decisions. Damaskinidis et al. (2018) demonstrated that print advertisement layout influences visual attention patterns, suggesting that strategic manipulation of design elements can direct consumer focus to enhance ad impact.

Due to the mere exposure effect, consumers develop mental templates for where they expect certain elements to appear in advertisements. Marketers can leverage these templates to enhance processing fluency by aligning ad layouts with consumer preferences (Kotler, 2017). Research by Bastrygina et al. (2024) found a robust correlation between brand element prominence and subsequent brand recall, suggesting that optimizing the visibility and salience of brand elements can significantly impact advertising effectiveness.

The concept of processing fluency in neuromarketing explains the ease with which stimuli are identifiable and understandable, making them more appealing to the brain (Genco et al., 2013) (Lin et al., 2024). High processing fluency is linked to perceptions of truth, persuasiveness, and likability. However, there is a gap in understanding how natural

consumer visual behavior influences processing fluency, particularly concerning the identification of branding elements. Existing studies focus primarily on the benefits of easily processed stimuli but often overlook consumers' instinctive gaze patterns that drive processing fluency (Affonso & Janiszewski, 2023). This study aims to fill that gap by examining where consumers are naturally drawn when identifying branding elements in ads, leveraging fixation duration and fixation count metrics.

The proposed research aims to fill in current knowledge gaps in consumer visual behavior and how it affects the efficacy of advertising by concentrating on processing fluency. Prior research has thoroughly examined visual attention statistics and their impact on the efficacy of advertisements; however, little is known about how consumers' goal-driven attention and natural gaze patterns facilitate the processing of branding aspects in ads. This study intends to further our knowledge of the fundamental cognitive processes that underpin processing fluency by examining how consumers naturally concentrate on branding cues, particularly in a variety of visual contexts. This study not only fills in the knowledge gaps regarding how mental templates created by repeated exposure affect brand recognition, but it also offers practical advice on how to organize advertisements to increase consumer engagement.

3 METHODOLOGY

Neuroscientific methodology is used in the proposed study to address the research goal. Participants used a screen-based eye-tracking device to record visual metrics, which allowed behavioral and implicit data to be investigated. The use of an eye tracker reduced the possibility of response bias or confabulation mistakes, ensuring the neutrality of data gathering. All individuals gave their informed consent before participating, and the study complied with ethical standards. The experiment was conducted in Zayed University, Dubai's Human-Computer Interaction (HCI) Lab. The study involved 83 students in total, 34 of whom were male and 49 of whom were female. To ensure uniform exposure time across participants, each participant looked at and evaluated the stimuli images for a set amount of time—five seconds per image. After providing informed consent, participants were given on-screen instructions outlining the task requirements. The experimental stimuli were then shown for five seconds. After viewing the stimuli, participants were asked to answer a brief post-experiment questionnaire. This was done to preserve the experiment's legitimacy and ecological validity, even though the questionnaire's content had nothing to do with the major goals of the study. The current study does not address the questionnaire's results. A Tobii eye tracker was used to capture the participants' visual behavior, which was then examined using the Tobii Studio platform.

A blurred image of a fictional headphone advertisement was used as a stimulus for the experiment (see Figure 1(a)). Participants were given the task of finding the brand name/logo before being presented with the stimuli. The stimuli were designed to elicit heightened visual engagement and compel participants to actively search for the branded elements. The Areas of Interest (AOIs) were positioned according to the different areas the branding elements are positioned in an advertisement. Figure 1(b) illustrates the unblurred image used for experiment.

4 RESULTS AND DISCUSSION

The results section presents the study's findings based on qualitative and quantitative analyses of eye-tracking data. Qualitative insights include heat maps and eye gaze plots, while quantitative analysis examines key metrics such as fixation count, fixation duration, percentage fixated, and time to first fixation (TTFF).

4.1 Fixation Duration

This study employed total fixation duration within predefined AOIs as a key visual metric. The rationale behind this choice is the established link between extended fixation duration and heightened cognitive processing directed toward a specific location. In this research, increased fixation duration on an AOI indicates that participants are engaging in more focused visual exploration in that area. This extended dwell time suggests that participants may be associating a higher likelihood of encountering the brand name or logo within that specific AOI. Several studies have explored task-specific effects on attention (Gahlot, Wu, & Reingold, 2010; Glöckner et al., 2012; Toubia, de Jong, Stieger, & Füller, 2012), with results showing that people tend to pay more attention to goal-relevant stimuli. As shown in Figure 2, participants fixated the longest on the top central area of the stimuli when tasked with identifying the brand name or logo. The high fixation duration in this area indicated that participants expected to find the brand name/logo there. The second most fixated location was the top left area, followed by the top right area of the stimuli, which aligns with the findings of Peker et al. (2021). Their eye-tracking study found that central areas of banner advertisements were noticed first, followed by the left side, and then the right side, reflecting the Western style of reading and writing.

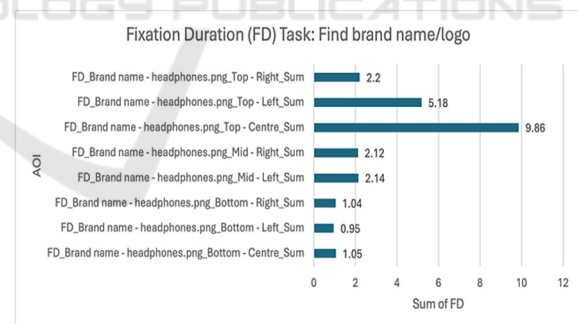


Figure 2: Sum of Fixation Duration when participants were tasked to identify the brand name/logo in stimuli 1.

4.2 Fixation Count

Fixation Count is an eye-tracking metric that helps gauge repetitive eye movement behavior. It refers to the number of times a participant fixates on an Area of Interest (AOI) (Tobii Studio User's Manual Version 3.4.6, 2015). Both Fixation Duration and Fixation Count were considered for this study, as they are widely recognized as effective indicators of visual attention (Gahlot et al., 2023; Wedel & Pieters, 2006).

Figure 3 illustrates the sum of the Fixation Count when participants were tasked with identifying the brand name/logo in Stimuli 1. The Fixation Count was highest in the top central area of the stimuli. Participants repeatedly fixated on this area of the advertisement, indicating that they expected the branding elements to be located there.

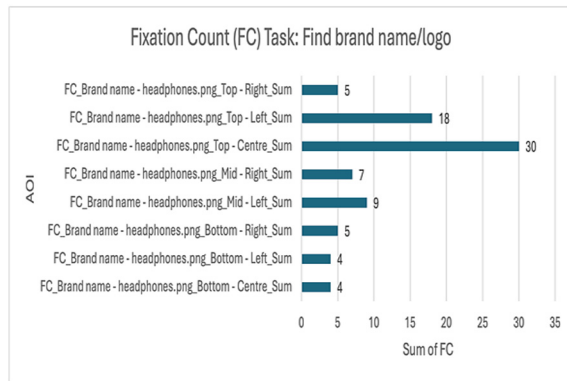


Figure 3: Sum of Fixation Count when participants were tasked to identify the brand name/logo in stimuli 1.

4.3 Percentage Fixated Mean

Percentage fixated, as defined in the Tobii Studio User's Manual (Version 3.4.6, 2015), quantifies the frequency with which participants' visual attention is directed towards a specific AOI during a given recording session. It is calculated as the ratio of fixations within the AOI to the total number of fixations recorded. Figure 4 shows the mean percentage fixated of visual attention of participants. The Top-Center AOI had the highest mean percentage fixated, indicating that most participants fixated on this AOI at least once. The high mean value suggests that most participants' fixations were concentrated in this area, implying that they anticipated the brand name/logo to be located there.

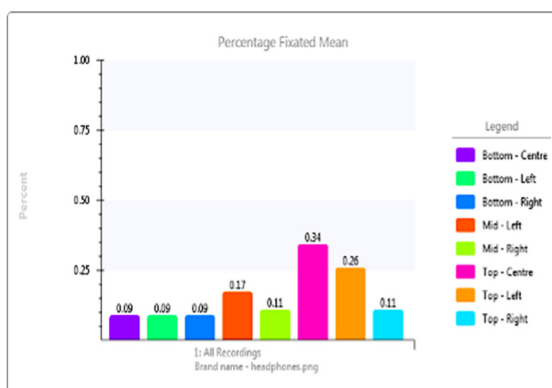


Figure 4: Percentage Fixated Mean.

4.4 Time to First Fixation Mean

Time to First Fixation (TTF) is a fundamental eye-tracking metric that quantifies the temporal interval between stimulus onset and the initiation of the participant's first fixation within a designated AOI (Tobii Studio User's Manual Version 3.4.6, 2015). Figure 5 illustrates the mean TTF across the AOIs. Given the alignment of the Mid-Left AOI with the participant's natural gaze trajectory, it is unsurprising that this region emerged as the initial focal point for visual attention, as evidenced by the comparatively lower TTF values recorded for both the Mid-Left and Mid-Right AOIs. Participants were quickly drawn to the left side of the stimuli and expected the brand name/logo to appear in the top-left area. This is further supported by the low TTF and high fixation duration (Figure 2) observed in the Top-Left AOI of the stimuli. These results are consistent with the findings of Peker et al (2021), who observed that participants noticed the left area first.

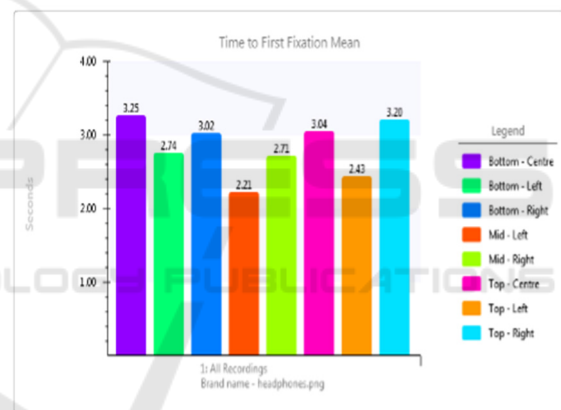


Figure 5: Time to First Fixation Mean – AOIs.

4.5 Time to First Fixation Mean

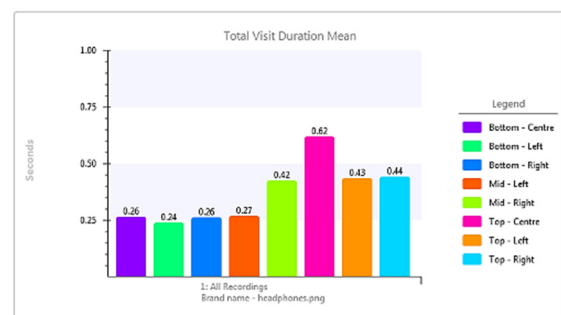


Figure 6: Total Visit Duration Mean – AOIs.

Figure 6 illustrates the average total visit duration of all participants in each AOI (Tobii Studio User's

Manual Version 3.4.6, 2015). The results closely align with those of the Fixation Duration metrics (Figure 2), with the Top-Center area being the most visually visited, followed by the Top-Right and Top-Left areas. These findings suggest that participants anticipated the brand name/logo elements to be positioned at the top of the advertisement. The high total visit duration and Fixation Duration (Figure 2) in the top areas further indicate that participants are primed to focus on the top of an advertisement when searching for branding elements.

5 CONCLUSIONS

In conclusion, this study provides empirical evidence supporting the strategic placement of branding elements within advertisements. The findings emphasize the importance of the top-central region as a prime location for capturing and sustaining visual attention. By aligning with natural viewing patterns and cognitive expectations, marketers can enhance the visibility and memorability of branding elements by placing them in the top-central area of an advertisement. Quantitative analysis of participants' eye-tracking data revealed a high density of fixations and prolonged gaze duration within this region. The results highlight the potential of eye-tracking technology to provide valuable insights into consumer behavior and inform the development of more effective advertising strategies.

However, there are several limitations to this study. First, the findings' generalizability may be limited by the sample size and participant demographics, which might not accurately reflect the diversity of consumer groups. Second, the study only looked at static ads, ignoring the effect of branding placement in interactive or dynamic media. Future research could explore the role of individual differences, such as visual acuity and attention span, in modulating the effectiveness of various ad placements, providing further insights into the complex interplay between visual attention and advertising effectiveness. Additionally, to account for cultural, age, and socioeconomic variations that may affect visual attention and advertising efficacy, future studies should build on these findings by integrating additional demographic groups. Furthermore, investigating branding placement across platforms—such as interactive environments and dynamic digital media—may provide a more profound understanding of cross-platform consumer behavior and enhance generalizable results across various advertising formats.

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