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**How do people react to advertisement in social media and
what are the implications for memory and attention**

João Duarte Mestre Dinis

Dissertation

presented as partial requirement for obtaining the Master's degree in Data Driven Marketing at Nova IMS, with
a specialization in Marketing Intelligence.

Advisor: Mijail Naranjo-Zolotov, PhD, Assistant Professor, NOVA IMS

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Instituto Superior de Estatística e Gestão de Informação
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Supervised by

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism, any form of undue use of information or falsification of results along the process leading to its elaboration. I further declare that I have fully acknowledged the Rules of Conduct and Code of Honor from the NOVA Information Management School.

Lisbon, 22/10/2023

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ABSTRACT

The present dissertation examines consumer behavior in the context of social media advertising with a particular emphasis on attention and memory. In the first section, it emphasizes the value of social media advertising in the current digital environment and also the broad reach of its effects on global audiences. The effects of advertising on attention and memory, social influence, banner blindness, among other factors, were all examined in an online survey that was conducted during this study. Specific research questions and hypotheses inspired the development of this topic. Additionally, the study showed how crucial ad attitude and ad irritation are in influencing user behavior, highlighting the significance of developing consumer-friendly advertising campaigns. The research also revealed an unexpected result, emotional advertisements caused more doubt than informative ads. The effectiveness of emotional triggers in advertising and their impact on consumer behavior and memory recall are intriguing issues that are raised by this unusual result. This study clarifies the complex nature of consumer reactions to social media advertising, where memory and attention are key factors. The unexpected findings regarding emotional triggers require additional study to thoroughly assess their efficacy and consequent influence on user behavior in order to improve advertising strategies in a constantly changing digital environment.

Keywords: *Online Advertising; Social Media; Attention; Memory; Consumer Behavior; Banner Blindness; Ad Intrusiveness; Ad Avoidance; Ad Irritation; Ad Overexposure; Social Influence*

Sustainable Development Goals (SDG):



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LIST OF ABBREVIATIONS AND ACRONYMS

AVE - Average Variance Extracted

CA - Cronbach's Alpha

CR - Composite Reliability

HTMT - Heterotrait-Monotrait Ratio

PLS-SEM - Partial Least Squares Structural Equation Modeling

PRT - Psychological Reactance Theory

VIF - Variance Inflation Factor

1. INTRODUCTION

Social media consists of a wide variety of platforms, such as Facebook, Instagram, Twitter, and YouTube, that let users share information, communicate online, and create communities. Today, these digital platforms have become a top priority for many business executives. According to the Data Reportal (2023), more than 4.7 billion people, or nearly 60% of the world's population, use social media. In fact, the usage of social media platforms for advertising has increased dramatically in recent years as they have assimilated into modern society.

According to Hurrell & Postatny (2015), social media advertising is any online content that aims to persuade and/or that is distributed via social media platforms that let Internet users access, share, contribute to, and co-create information. Advertising on social media sites can take many different forms, including sponsored content, advertisements, and apps that monitor and analyze user activity. However, advertisers are more likely to employ an organic presence strategy that involves sending content directly to their online followers. This way, customers add significant value to businesses by considering the goods or services and making a purchase when they are advertised on social media. In fact, businesses aggressively market on social media to persuade users to purchase and use their products as well as services (Kim et al., 2018). Therefore, it is crucial to comprehend how people react to advertisements so businesses can improve their advertising strategies to better engage with their target audience.

Therefore, the main purpose of this thesis is to investigate consumer behavior towards advertising on social networks and to examine how different factors affect people's memory and attention towards the advertised product or service. Firstly, several specific topics will be explored, including banner blindness, attention and memory towards advertisements, attitudes towards advertising and purchasing behavior, ad intrusiveness, irritation, and avoidance, in order to understand how these affect the way the consumer behaves and acts towards them.

To accomplish this goal, the primary research question will be discussed:

- What drives people to avoid social media advertisements?

By addressing this research question, this study hopes to advance knowledge of customer's perception and attitudes toward social media advertising and offer suggestions for how companies can enhance their advertising campaigns to more effectively reach their target market.

2. LITERATURE REVIEW

2.1. Banner Blindness and its challenge for advertisement

The users' ability to subconsciously ignore web advertisements is explained by the phenomena known as banner blindness. Banner Blindness was brought up by numerous users in a research that looked at user attitudes toward advertisements, with one stating: "I'm so used to seeing banner ads I tend to just ignore them" (Visuri et al., 2017). According to prior research, people rarely looked at advertising since they were so familiar, and as a result, their recall of the ads that had been displayed was very low. (Burke et al., 2005; Güner & İnal, 2015; Kuisma, 2015). There are a number of variables that may influence banner blindness, including the ad's placement (Güner & İnal, 2015; Huang, 2018; Resnick & Albert, 2014), intrusiveness (Bang et al., 2018), and task-relatedness (Boeuf et al., 2018), to name a few. However, both advertisers and marketers are well attentive to the negative effects that clutter in advertising may have. According to Lee & Cho (2010), users' ability to recognize ads drastically decreased when webpages featured 4 additional ads. A decline in ad memory was also observed when respondents perceived clutter to rise with increased ad salience (Kuisma, 2015). Because of this, marketers have spent decades trying to figure out how to get through the online clutter and get a user to pay attention to an ad (Becker-Olsen, 2003). Yet, it is unknown whether the adoption of more extreme methods to draw users' attention to advertisements, such as interactive advergames (Liu-Thompkins, 2019), results in more visual clutter for users.

Eye-tracking research has revealed that users continue to fixate on ads, and even when they are not in their direct field of vision, they can still be seen in the user's peripheral vision, which could negatively overload cognition. Because of this, bothersome ads have caught the attention of marketers, who are now investigating the potential financial and mental effects they may have. As summarized by Goldstein et al. (2014), irritating advertisements, for instance, might interfere with users' enjoyment of a webpage, raise concerns about viruses and malware, damage an advertiser's brand reputation, cause issues with publisher trust, and make users less likely to recall the website. In a more recent eye-tracking study on mobile devices, Alanazi et al. (2020) discovered that consumers indicated less happiness when advertisements were present. Given the numerous negative effects, it is not unexpected that consumers have developed means of avoiding advertisements by either physically blocking them out or simply ignoring them.

Even though research has already shown that users find it difficult to process websites that are overly visually complex (Tsurukawa et al., 2015), research has also shown that, on the other end of the spectrum, users may become bored if there are too few elements to process (Pengnate et al., 2019). If users are bored, they may become distracted by their surroundings or give up on their search altogether. In addition, users may experience less usability and workload as a result of increased visual complexity, but they may also report taking longer to accomplish tasks, missing crucial details, and having more trouble accessing pertinent papers. Images may drive engagement and improve interaction, which results in greater task accuracy. On the other hand, too little stimuli can also cause boredom. Furthermore, the phenomena of banner blindness may

be so powerful that consumers might ignore ads regardless of whether they are present or not in order to concentrate on the task at hand.

2.2. Effects of Advertising on Attention and Memory

The effects of advertising and cognitive processes both depend heavily on attention. Nowadays advertisers must compete for consumers' attention since they operate in an attention industry (Duff & Segijn, 2019). This can be particularly challenging in the crowded information environments modeled by social media, where advertisements compete with other kinds of content that viewers may perceive as more relevant or intriguing. According to Whiting and Williams (2013), users use social media for a variety of purposes, including communication, entertainment, relaxation, social contact and information searching. It could be challenging for advertisers to catch consumers' attention because their motivations tend to be driven by noncommercial goals.

Researchers in the early 20th century defined attention as the awareness of stimuli, which enhances memory retention. The connection between visual attention and eye movements has been used to further examine this idea (Hoffman, 1998; Posner, 1980). Though our eyes remain firmly concentrated on an object or scene, it is also possible to "see without looking," paying attention to anything else (Pashler, 1998). Advertising attention is affected by a variety of variables, such as the ad's content and qualities, the media used to deliver the message, and the willingness, capacity, and opportunity of the audience to fully absorb the information (Calder et al., 2009). In contrast to low-involvement conditions, which call for more intrusive visual indicators to grab attention, high motivation and involvement result in active information processing (Ha & McCann, 2008a; Newman et al., 2004; Van Rompay et al., 2010). With the growth of online advertising, advertisers now have more ways to use motion and sound in addition to visual and textual signals. To catch consumers' attention, strategies like animation, pop-ups, banners, and skyscrapers have been used (Cheon, 2004; Cho, 1999). Online advertising clutter, on the other hand, has the potential to overwhelm a consumer's sensory system, causing them to ignore advertisements and suffer from impaired memory function (Ha & McCann, 2008a).

Researchers in advertising and marketing have long recognized the significance of memory, particularly in the assessment of brands, and have made significant efforts to measure consumer memory. Knowing that many different memory frameworks have been created, explicit-implicit memory framework is one of them and it is dependent on the type of instruction and the task that the respondent must complete. Implicit memory is defined as the non-intentional, unconscious retrieval of prior information, whereas explicit memory is characterized by conscious recollection of the encoding episode (e.g., ad exposure) and intentional attempts to access the information that was presented (Duke & Carlson, 1994). Recall and recognition are common examples of explicit memory tests used in advertising studies since respondents are asked to reflect on prior ad exposures and remember target information (Richardson-Klavehn & Bjork, 1988).

According to research, people frequently have trouble remembering online commercials, and their chances of being recognized correspond to a chance (Burke et al., 2005; Hong et al., 2004). Memorization of ads can be impacted by a wide range of

elements, including content density, ad size, frequency of exposure, delay interval, level of consumer interaction, competence, and job relevance (Alba et al., 1991). Banner ads, for instance, might be easier for casual browsers to remember than for searchers who are focused on a specific job (Pagendarm & Schaumburg, 2001). To improve memory outcomes, advertisers should try to keep consumers' attention for longer periods of time (Radach et al., 2003). They should keep in mind, too, that traditional explicit memory tests might not be a reliable indicator of what customers have actually been viewing (Tavassoli, 2007).

Advertising clutter affects memory function in online contexts, emphasizing the significance of grabbing attention with effective visual cues and consistent information (Ha & McCann, 2008a). The cognitive processes that are most strongly associated with the effects of advertising include attention capture and recalling. Therefore, in order to enhance memory outcomes and advertising effectiveness, advertisers should consider the variables that affect attention to ads and use attention-grabbing strategies.

2.3. Psychological Reactance Theory

Psychological reactance, which develops when users are forcibly exposed to ads that are discreetly inserted on their own newsfeeds, is a potential idea to explain and contextualize ad avoidance on social media (Wojdyski, 2016). According to Brehm & Brehm (1981), psychological reactance is a state of motivation that pushes people to take action in response to threats to their freedom. When reactance happens in response to exposure to persuasive communication, people oppose or modify their attitudes or actions in the opposite direction recommended in the message to reclaim threatened or lost freedom (Kim et al., 2017).

The psychological reactance theory (PRT) explains why and how people reject or combat persuasive arguments (Brehm & Brehm, 1981). People experience psychological reactance, an aversive motivational condition, when they believe that persuasive messages are interfering with their freedom or autonomy to make choices. In order to preserve their autonomy, people are psychologically compelled to restore threatened or lost freedom (Quick & Kim, 2009; Quick & Stephenson, 2007). In order to regain their independence, people either hold onto their original attitudes or change them in ways that go against the goals of message makers (persuasive boomerang) (Kim et al., 2017; Quick & Stephenson, 2007).

According to Robertson & Rossiter (1974), perceptions of persuasion are associated with fewer favorable opinions toward the goods being marketed. Advertisements may cause a minor sort of reactance if consumers perceive them to be merely persuasive attempts. Even though they may not be as effective as other direct coercive methods, advertisements might be seen as an interruption and cause a comparable reaction. Forcing people to view adverts might not be a good tactic if they respond defensively to it. According to the reactance theory, forced exposure will have a negative impact on advertisers; nevertheless, not all forced advertising may be undesirable. Finding ways to reduce reactance could improve the effectiveness of advertising that might otherwise put viewers' feelings of freedom at risk.

This theory also explains how people react to perceived threats to their freedom, particularly in the context of persuasive communications and advertising, consists of a number of important characteristics or elements (Brehm & Brehm, 1981; Rosenberg & Siegel, 2018). To comprehend the mechanisms driving reactance within the PRT framework, it is essential to consider the following dimensions:

- **Perceived Interference with Freedom:** According to PRT, people react psychologically when they believe that commercials or other persuasive messages are interfering with their freedom or autonomy to make decisions. This interference inspires someone to reclaim their threatened or taken away freedom.
- **Aversive Motivational State:** Reactance appears as an unpleasant motivational state as a result of perceived interference. People feel bad emotions like rage and frustration, and they develop negative thoughts that try to give them back their independence.
- **Restoration of Freedom:** People's attempts to regain their sense of freedom are a crucial aspect of PRT. They may reject the persuasive message or alter their attitudes or behaviors in the opposite direction of the advised course in an effort to regain their liberty.
- **Cognitive and Behavioral Reactions:** PRT recognizes that individuals may react cognitively or behaviorally to perceived interference. People may critically assess the persuasive message (cognitive response) and actively refuse or act in opposition to the intended influence of the communication (behavioral response).

It is crucial to understand ad avoidance and consumer behavior in the context of social interactions to comprehend these dimensions within the psychological reactance theory, which highlights how people react and respond when they perceive persuasive attempts, like advertisements, as limiting their freedom.

2.4. Adverse Reactions to Social Media Ads: Impacts on Intrusiveness, Irritation, and Avoidance

Consumers have also been proven to actively interpret commercial communications and respond to persuasion threats in order to promote their own objectives. They are compelled to examine the advertising critically and attempt to deal with such manipulation by forming unfavorable thoughts or attitudes toward the commercials when they realize the manipulative goal of newsfeed ads that are subtly placed in their personal feeds (Van Reijmersdal et al., 2015). According to the PRT, people react when attempts at persuasion restrict their ability to engage in a particular action. By opposing or reacting to attempts at persuasion, people are motivated to restore the threatened freedom as a result of the arousal of such reactance (Brehm & Brehm, 1981).

Reactance is made up of angry feelings and negative thoughts as a motivating mood to restore the threatened freedom (Dillard & Shen, 2005). Because of their discrete characteristics and forced exposure circumstances, adverts placed in social media newsfeeds are particularly relevant in terms of reaction. Native in-feed adverts are thought to impede the objectives of social media users by interfering with their ability to use social media. In the interactive ad environment, ad intrusiveness leads to negative sensations of ad aggravation, which in turn heightens cognitive and behavioral ad avoidance (Li et al., 2002). Studying ad intrusiveness as an explanation for reactance and ad avoidance is important given that newsfeed ads that are subtly included into social media make consumers forcibly exposed to commercials.

Ad avoidance clearly lowers the capacity of commercial communications to reach their intended audiences, regardless of the methods consumers choose to do so. According to certain data, opinions regarding advertising in general may contribute to people avoiding advertisements. According to Cronin & Menelly (1992), viewers are more likely to stay away from an advertisement once they become aware of its presence than from any particular ad content. Users typically don't distinguish between advertising they watch and ads they don't; they just avoid all ads.

According to Bauer & Greyser (1968), modifications made to the advertisement's content, execution, or placement can cause irritation, as they have described it. Thus, the qualities of certain advertisements can have an impact on both annoyance and avoidance as outcome measures, or customer reactions. When advertisements obstruct consumers' goal-directed media-related activities, this is regarded as invasive (Cho & Cheon, 2004; Ha & McCann, 2008). Consequently, intrusive advertisements are more likely to cause unpleasant emotional responses like irritation or displeasure, affect how people think about them, and have behavioral effects like ad avoidance (Li et al., 2002; Morimoto & Macias, 2009; Ying et al., 2009).

Similarly, in accordance with PRT (Brehm & Brehm, 1981), social media users are more likely to consider ads as unsatisfying their demand for control over social media use if they perceive newsfeed advertisements as being obtrusive. Additionally, users who find newsfeed ads obtrusive have a tendency to feel resentful of their lack of freedom and judge ads adversely (negative cognitions), which leads to both cognitive and behavioral forms of ad avoidance. Taylor et al. (2011) discovered that the intrusiveness of social networking advertising (SNA) was inversely correlated with ad likability. Similar findings were made by Lee et al. (2016), who found that native ads' intrusiveness on social media negatively impacted consumers' attitudes toward advertisements and their intention to share them. Overall, these results are consistent with the idea that perceived intrusiveness of newsfeed advertisements threatens users' freedom to read their newsfeeds or view their postings, leads in negative cognitive reactions like rage, and influences both cognitive and behavioral ad avoidance.

Ad intrusiveness is the term for a cognitive response to advertisements that halts the flow of media consumption by consumers (Li et al., 2002). According to scholars (Edwards et al., 2002; Ha & McCann, 2008a; Ying et al., 2009), ad intrusiveness is explained by the interruption of an individual's goals, information overload, and less ad value. Because they interfere with users' intended uses of social media, newsfeed advertising is typically regarded as invasive in this context. This interference is made

worse when ads are forcibly exposed. Because of this, social media users would have more autonomy or freedom when using social media if they had the option to choose to skip adverts (Moller et al., 2006; Wottrich et al., 2017). Users' views of ad intrusiveness are lowered as a result of their ability to utilize social media at their leisure without being forced to view advertisements. Bauer & Greyser (1968) identified intrusiveness as a primary contributor to consumer frustration with advertising. Additionally, despite the fact that advertisers favor commercials that compete for customers' limited attention, consumers frequently develop negative opinions of such strategies. Ad avoidance can occasionally result from these unfavorable views (Abernethy, 1991; Clancey, 1994; Krugman & Johnson, 1991), which can then have an impact on brand perceptions and attitudes (MacKenzie & Lutz, 1989).

According to Aaker & Bruzzone (1985), an annoying advertisement is typically one that "provoking, causing displeasure and momentary impatience." The three main factors that contribute to ad annoyance are ad content, execution, and placement. First, according to Bauer & Greyser's (1968) research, advertisements are regarded as irritating if the content is false, exaggerated, perplexing, or demeaning to the intelligence of the audience. Second, because they are badly done, advertisements are thought to be annoying. Ads that are poorly done are perceived as obnoxious if they are too loud, too long, or too big (Aaker & Bruzzone, 1985; Bauer & Greyser, 1968). Third, too many advertisements or repeated appearances of the same advertisement are likely to upset customers (Bauer & Greyser, 1968). Advertisements that annoy customers are more likely to be avoided.

Ad avoidance is one of the difficult challenges for advertisers among the many ways that consumers react or oppose advertising since it prevents communication with customers (Fransen et al., 2015). According to Speck & Elliott (1997), "all actions by media users that differentially reduce their exposure to ad content" fall under the category of ad avoidance. One strategy used by marketers to counteract ad avoidance is to force customers to view advertisements. Customers use a variety of avoidance tactics in reaction to forced exposure (Fransen et al., 2015). Earlier research in the context of conventional media has revealed many forms of ad avoidance. Cho & Cheon (2004) created a cognitive, affective, and behavioral three-way approach to ad avoidance in the setting of online media. Affective avoidance refers to customers' emotional response to advertisements (such as loathing them), whereas cognitive avoidance refers to consumers' evaluative beliefs about advertisements (such as ignoring them). Consumers engage in behavioral avoidance when they take steps to avoid advertisements, such as leaving ad pages. The addition of emotive avoidance sets their method apart from past research.

Users may purposefully ignore ads (cognitive) or block them (behavioral) in order to enhance their Facebook usage if they feel that forced ad exposure is unjust. Additionally, consumers have the cognitive choice to ignore adverts if they are annoyed by being compelled to view them while interacting with the posts, they were initially interested in. In an effort to control their rage, they also block or conceal adverts as a more proactive approach of regaining their independence (behavioral). In addition, users are likely to pursue their freedom by ignoring or blocking adverts when they perceive a danger to their freedom of choice to be severe (Edwards et al., 2002; Ham & Nelson, 2016). This claim is consistent with other studies that found that when advertisements

interfere with consumers' plans to utilize media, the results can backfire and cause annoyance and ad avoidance (Cho & Cheon, 2004; Ham, 2017).

A crucial component of the modern internet is online display advertising, which supports websites that offer customers free material and services. Many ads also provide information about goods and services that consumers may be interested in. On the other hand, many users despise it and employ ad blockers to obstruct "bad" adverts. Online advertisements are disliked by many users of the internet because they are obtrusive, intrusive, and risk their security or privacy. Many users employ ad blockers in an effort to filter out these "bad" adverts (An, 2016). Recent data reveals that in addition to well-researched worries about privacy and intrusiveness, today's advertisements may also contain potentially harmful content. The types of ad content that people find unpleasant and negative to their browsing experience are not well understood, though. The reasons why people have bad opinions regarding online ads are varied. Many times related to their (perceived) increasing disruptive, intrusive, and/or irritating aspects (An, 2016) or their effect on page load times (Shellhammer, 2016), some users find the mere appearance of advertisements to be troublesome. Users are especially concerned about the privacy effects of ads since large ecosystems of tracking and targeted advertising, which are frequently perceived by users as being privacy-invasive, have been disclosed by studies in computer security and privacy. This has prompted users to avoid ads even more.

3. THEORETICAL FRAMEWORK

This conceptual model focuses on understanding the dynamics between consumers and advertising, particularly in relation to ad avoidance and ad recall. It aims to provide insights into the factors that influence consumers' attitudes and behaviors towards advertisements, assisting marketers in developing more compelling and effective commercials.

For the ad avoidance behavior, we divide the behavior into two types: active and passive. The first one, "Active Ad Avoidance Behavior" where the person has taken an action in order to avoid the ad. The actions that were investigated for "Active Behavior" were: "Mute or lower the volume" and "Exit the room". At the moment of interaction between the individual and the announcement, the former immediately acts to avoid it by absenting himself from his activity and the "Passive Ad Avoidance Behavior" where the person chose not to take any action to avoid the ad, taking in example: "Pay for the service 'YouTube Premium' " and "Watch the ad to the end", where the individual prefers pay for the service once so he doesn't have to take any action further in the future or letting the ad roll until the end even he is not paying attention to it.

The model explores key dimensions such as advertisement attitude, social influence, ad irritation, ad overexposure and banner blindness. Advertisement attitude focuses on consumers' overall attitudes and perceptions towards advertising and its impact on their responses. Social influence investigates how exposure to social influence in advertising can positively influence consumers' purchase intentions by observing

others using or endorsing products. Ad irritation delves into the relationship between ad irritation and ad avoidance behavior, highlighting the likelihood of individuals actively ignoring or blocking advertisements when experiencing higher levels of irritation. Ad overexposure investigates the impact of constant bombardment with advertisements on consumers' attitudes and behaviors. Realizing the effects of banner blindness can help marketers design ads that overcome the tendency to ignore banners.

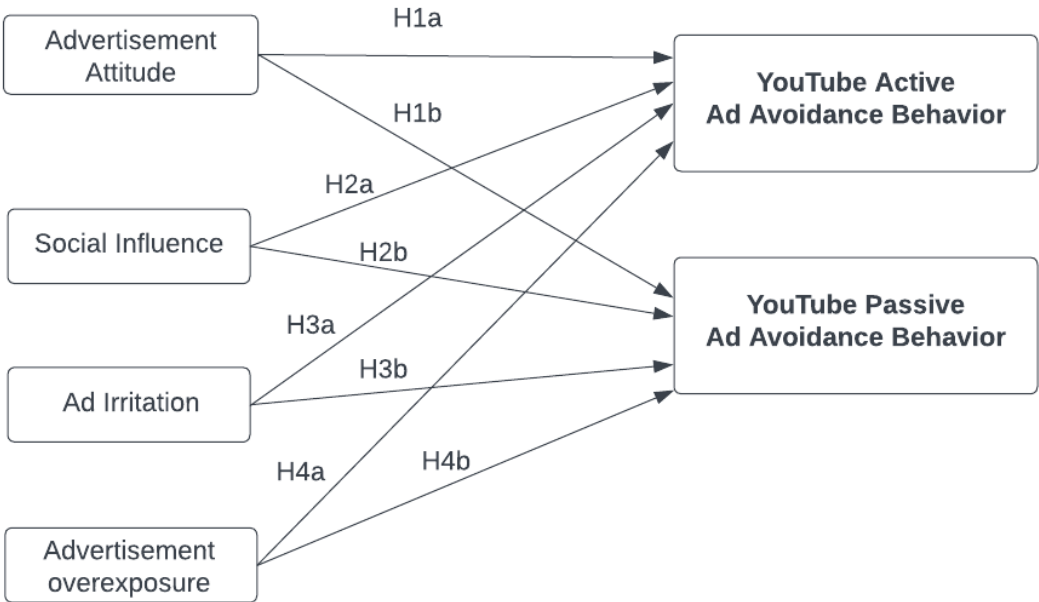


Figure 1. Research model.

Subsequently, an experiment was carried out exclusively to measure banner blindness. In this experiment, two types of ads were randomly presented at the start of the online survey, with a distraction factor. At the end of the survey, questions were asked about the participant's recall of the ad initially presented.

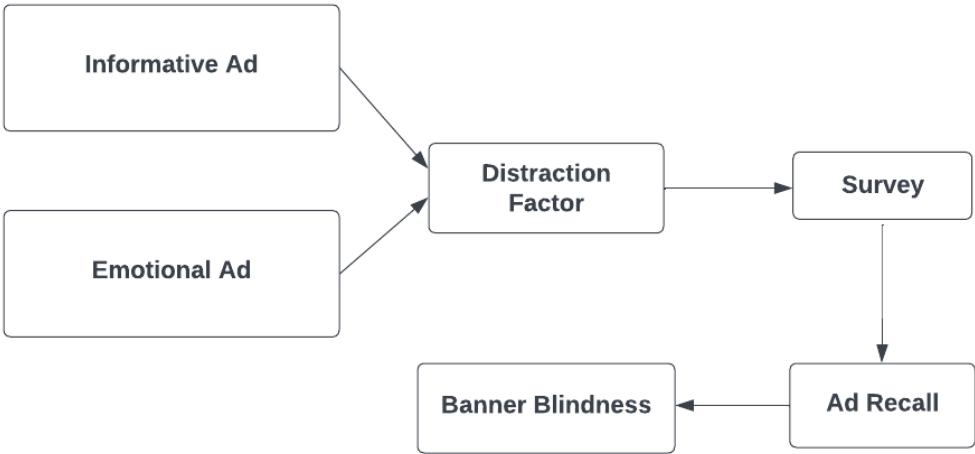


Figure 2. Experiment model.

3.1 Hypothesis Development

The way that consumers feel about advertising has a significant impact on their decisions. To capture consumers' attention and leave a lasting impression, emotional triggers are frequently used in advertising. Ad Attitude, which includes a consumer's overall feedback, emotional response, and perception of an advertisement, is crucial in determining how they respond with the advertisement. Customers' attitudes regarding advertisements can run anywhere from favorable to unfavorable, which affects how they interact and whether they actively or passively avoid the advertisement. A more open audience may result from a good attitude in the advertisement, but a negative attitude may cause avoidance. In this study, we want to investigate how advertisement attitude impacts memory recall of the ad.

This information leads to the following hypothesis:

H1a. Ad Attitude has an impact on YouTube active ad avoidance behavior.

H1b. Ad Attitude has an impact on YouTube passive ad avoidance behavior.

Understanding the role of social influence in advertising and its impact on consumers' purchase intentions is crucial, given the growing influence of social media and peer recommendations in shaping consumer behavior. In the context of advertising, the term "social influence" refers to the ability of recommendations, endorsements, and opinions from one's social network to affect decisions regarding purchases and attitudes toward advertisements. Consumer behavior can be strongly influenced by peer recommendations because consumers frequently trust their fellow customers. These hypotheses aim to investigate how exposure to social influence in advertising affects consumers' YouTube Behavior.

This information leads to the following hypothesis:

H2a. Social Influence affects YouTube active ad avoidance behavior.

H2b. Social Influence affects YouTube passive ad avoidance behavior.

Understanding the impact of ad irritation on consumers' behavior and attitudes towards advertisements is crucial in designing effective marketing strategies. Users' perceptions and responses to commercials are highly influenced by ad irritation, which frequently results from intrusive or disruptive ad content. Their general attitude toward the advertisement and, as a result, their avoidance inclinations can be affected by irritation, which may trigger strong negative emotional reactions. This study aims to investigate the relationship between ad irritation and ad avoidance behavior.

This information leads to the following hypothesis:

H3a. Irritation has an effect on active ad avoidance behavior towards YouTube.

H3b. Irritation has an effect on passive ad avoidance attitudes towards YouTube.

Understanding the impact of ad overexposure on consumers' attitudes and behaviors is crucial, considering its increasing prevalence in advertising. Ad Overexposure, or the excessive frequency of ads, has a substantial impact on how viewers respond to commercials. Users who are repeatedly exposed to advertisements may become ad-fatigued, which can affect their views and lead to avoidance behaviors. This study aims to investigate the effects of continuous exposure to advertisements on consumers' attitudes, including feelings of irritation and the tendency to avoid ads.

This information leads to the following hypothesis:

H4a. Ad Overexposure affects YouTube active ad avoidance behavior.

H4b. Ad Overexposure affects YouTube passive ad avoidance behavior.

4. METHODOLOGY

The present chapter provides a detailed explanation of the research methodology. An online survey will be conducted to respond to the research topics stated in the introduction chapter. To reach as many participants as possible, the survey will be promoted on different social media sites. The survey's multiple-choice and open-ended questions are intended to gather quantitative and qualitative information about respondents' views toward social media advertising, their retention of and attention to online advertisements, and their purchasing behavior.

The online survey will, overall, provide a rigorous methodology to address the research questions and learn more about the influences of different variables on consumers' retention of, focus on, and propensity for purchasing products and services after being in contact with social media ads.

4.1. Measurements and Data Collection

Ad attitudes, social influence, ad irritability, ad intrusiveness, and ad overexposure were among the variables covered in the first of the three sections of the online survey.

The second section of the survey addressed questions about various sorts of behavior on the social media platform studied, YouTube. Two distinct 7-point Likert scales (1 = strongly disagree, 7 = strongly agree) and (1 = never, 7 = always) were used to rate the responses to the questions. In Portugal, those who were 18 years of age or older were included in the survey. The platform used for the survey was QualtricsTM. The measuring elements for each construct are shown in Table 1. In total, 230 complete answers were collected.

To summarize and present the key features of the variables in the dataset, descriptive statistics will be used. This includes measures like mean, standard deviation, and frequency distributions, construct reliability and validity, discriminant validity,

collinearity statistics and distribution of the survey responses. We will be able to evaluate the relationships' strength and direction through this analysis, as well as point out the main variables having the most influence on the outcomes of interest. When analyzing complex interactions involving numerous variables, multiple regression analysis is especially helpful. Patterns, trends, and relationships can be efficiently communicated using visualizations, making it simpler for the audience to grasp and comprehend the results.

Overall, a thorough and rigorous knowledge of the survey data will be gained by using a variety of data analysis approaches, such as PLS-SEM and descriptive statistics, allowing for the development of insightful hypothesis and conclusions.

4.2. Sample Demographics

The survey questions will be answered by a minimum sample of 200 participants to ensure their validity and reliability. Additionally, this survey will be anonymous to encourage participants to provide honest answers. An extensive collection of informative data has been rigorously gathered and organized inside this analysis. Table 2's contents provide a complete overview of the study's 229 participants. The respondents' gender distribution has been carefully outlined, providing a clear picture of the complex demographic environment. In the sample, men make up 41.9% of the participants, while women account for a significant 55.9%. The ages of the participants are displayed in great detail. The age groupings are carefully divided into those between 18 and 22 years old, who make up 26.2%, and those 48 years and beyond, who make up 24.9%. This comprehensive breakdown provides a clear understanding of the study's generational representation. Additionally, the segmentation of the participants' educational journey emphasizes both the diversity within the group as well as the participants' instructional level. The survey shows a range of educational achievements, starting with those who have only completed high school (33.2%) and moving on to those who have earned a bachelor's degree (45.9%). Additionally, 20.5% of the sample's participants had postgraduate or master's degrees, demonstrating an important commitment to higher education.

The next table serves as a portal to a wealth of information by intricately tying together different aspects of participant characteristics, enabling a fuller understanding of the study's distinctive demographics.

Sample characteristics		
N = 229		
Gender	Frequency	Percentage
Male	96	41,9%
Female	128	55,9%
Non-binary/other	2	0,9%
Prefer not to say	3	1,3%
Age		
18-22	60	26,2%
23-27	82	35,8%
28-32	13	5,7%
33-37	6	2,6%
38-42	5	2,2%
32-47	6	2,6%
48+	57	24,9%
Instructional level		
Elementary school	1	0,4%
High school	76	33,2%
Bachelor	105	45,9%
Post graduate/Master	47	20,5%
PhD	0	0%

Table 1: *Participants' demographic data.*

Construct	Source	Questions
Social Influence	Awasthi & Choraria (2015)	I look at what my friends are buying and using before I buy
		The celebrity-based advertisements inspire me to purchase the particular endorsed product
	Eyob (2018)	Would you rather take the advice/buy a product from someone you know is an expert or from a recommendation?
Advertisement Attitude	Row (2006)	Advertising often provides useful information for consumers
		I prefer ads when they have detailed information about the product's benefits
Ad Intrusiveness	Xu (2006)	Mobile advertisements disturb my use of the mobile devices
Ad Irritation	Youn & Kim (2019)	I feel threatened when this ad got in the way of what I wanted
Ad overexposure	Row (2006)	I want advertisers to count how many times I've seen online ads, so I don't see the same ones over and over

Table 2. Measurement items.

Social Media Platform X Ad Avoidance Behavior	
Youtube	Using "Skip ad" button after a few seconds
	Using ad-blockers
	Using the "Not interested" option on ads
	Paying for service "YouTube Premium"
	Muting or lowering the volume
	Switching to another tab
	Leaving the room
	Ignore and do nothing
	Watch the commercial all the way through
	Engaging in other activities (e.g., scrolling through their phones)
	Quit watching the video

Table 3. Measurement items.

5. RESULTS

5.1. Measurement Model Assessment

PLS-SEM was suggested as the best alternative for this investigation because of the proposed model's complexity and exploratory nature and to gain comprehensive insights from the survey data.

The degree of correlation between constructs that ought not to be connected to one another is referred to as discriminant validity. The Heterotrait-Monotrait Ratio (HTMT) and Fornell-Larcker approaches were used to ensure discriminant validity in this model. With the help of the variance inflation factor (VIF), the collinearity was evaluated. According to Hair Jr et al. (2017), The VIF values should ideally be below or near to 3. Making higher-order models that have theoretical justification is a frequently employed solution when collinearity is an issue. However, this model has no collinearity difficulties ($VIF < 5$) as evidenced by the maximum outer VIF score of 2,406.

In order to evaluate the discriminant validity, the Fornell-Larcker criterion compares the correlation of latent constructs with the square root of the average variance extracted (AVE). The strongest correlation between AVE and other constructs (the items in the corresponding row and column) should not exceed the square root of AVE. The diagonal square roots of the AVE are displayed in Table 4.

Constructs	1	2	3	4
1. Ad Attitude	0.853			
2. Social Influence	0.219	0.751		
3. Ad Irritation	0.288	0.682	0.769	
4. Ad Overexposure	-0.068	-0.142	-0.022	0.819

Table 4. Fornell-Larcker discriminant validity.

Two latent variables representing various concepts are statistically different when they have discriminant validity. According to Henseler et al. (2015), the Heterotrait-Monotrait (HTMT) ratio must be smaller than 1.00. All HTMT assessment levels are below that threshold (Table 4). Since this model has a low discriminant validity value, this points to a strong correlation.

Constructs	1	2	3	4
1. Ad Attitude				
2. Social Influence	0.412			
3. Ad Irritation	0.451	0.728		
4. Ad Overexposure	0.115	0.138	0.046	

Table 5. Heterotrait-Monotrait ratio.

In the next Table (6), reliability and variability measures are structured, including Cronbach's Alpha (CA), Composite Reliability (CR), Average variance extracted (AVE), Mean, Standard Deviation. The variable loadings for the Partial Least Squares (PLS) were also examined and the range of constructor loadings was 0.675 to 0.975.

With regard to the above-mentioned measures, starting with Cronbach's Alpha, this is a measure of internal consistency, that is, it tells us how close a set of items are as a group. The model shows high CA values for each construct. Although the value of the "Ad Attitude" construct is lower than the others, it is still a moderate and acceptable value (0.629).

Concerning CR, this measure assesses how consistently indicator variables are loading onto the latent variable internally. If its value is higher than 0.7, the indicator variables that are loading on the latent variable share variation. As shown in the table below, the model has high CR values, this indicates that it is highly likely that all items accurately measure the same construct.

Lastly, AVE is a measurement of how much variance is captured by a construct in comparison to how much variance results from measurement error. For any measurement model, the AVE value must be at least 0.50. If it is less than 0.50, it means that items explain more errors than the variance in your constructs which is not recommended. That being said, this model has AVE values above the stipulated average, which indicates a higher level of reliability.

Construct	CA	CR	AVE	Item	Mean	Standard deviation	Loading
Ad Attitude	0.629	0.813	0.727	ATT1	0.933	0.120	0.965
				ATT2	0.634	0.229	0.675
Social Influence	0.827	0.848	0.671	INF1	0.874	0.040	0.878
				INF2	0.932	0.029	0.938
				INF3	0.750	0.064	0.751
Ad Irritation	0.789	0.793	0.564	IRR1	0.876	0.067	0.888
				IRR2	0.778	0.110	0.787
				IRR3	0.828	0.088	0.838
Ad Overexposure	0.811	0.809	0.592	EXP1	0.821	0.045	0.821
				EXP2	0.858	0.037	0.858
				EXP3	0.862	0.036	0.869

Table 6. Descriptive statistics (N=229).

5.2. Structural Model Assessment

5.2.1. Hypothesis testing

The findings in the path coefficients are shown in Figure 3 (Path * significant at $p < 0.05$; ** significant at $p < 0.01$; *** significant at $p < 0.001$).

For both YouTube behaviors, the majority of the hypotheses are theoretically and experimentally supported. The F^2 intervals are as follows: large effect ($F^2 > 0.350$), medium effect ($0.350 > F^2 > 0.150$), and small effect ($F^2 > 0.020$) and they represent the contribution of exogenous variables in endogenous variables. The following results are summarized in Table 6. The findings demonstrate that hypothesis H1a and H1b have different outcomes. Although each effect is significant and advantageous, they all have distinct characteristics. In the first hypothesis (H1a), the Ad Attitude has a very low significant influence on the YouTube Active Behavior ($p > 0.05$) and also has a very small effect to explain this association ($F^2 < 0.020$). The relationship between Ad Attitude and YouTube Passive Behavior (H1b) is weakly explanatory ($0.150 > F^2 > 0.020$) but highly significant ($p < 0.001$). Both hypotheses H2a and H2b have significant influence findings ($P < 0.05$), but they also have a minimal effect ($0.150 > F^2 > 0.020$) in explaining this association. It can also be stated that both of the hypotheses (H3a and H3b) that relate to irritation present a significant impact. H3a has a high significance ($P < 0.01$), and H3b has an even higher significance ($P < 0.001$). As for the effects, both hypotheses have an average effect ($0.150 > F^2 > 0.020$). Lastly, the information from this research permits to conclude that H4a presents interesting results with a medium effect ($0.350 > F^2 > 0.150$) and a high significance ($p < 0.001$). On the other hand, H4b has the least impact ($P > 0.05$) and also effect ($F^2 < 0.020$). Briefly, Ad Overexposure has a great influence on YouTube Active Behavior (H4a), but it has a negative impact on YouTube Passive Behavior (H4b).

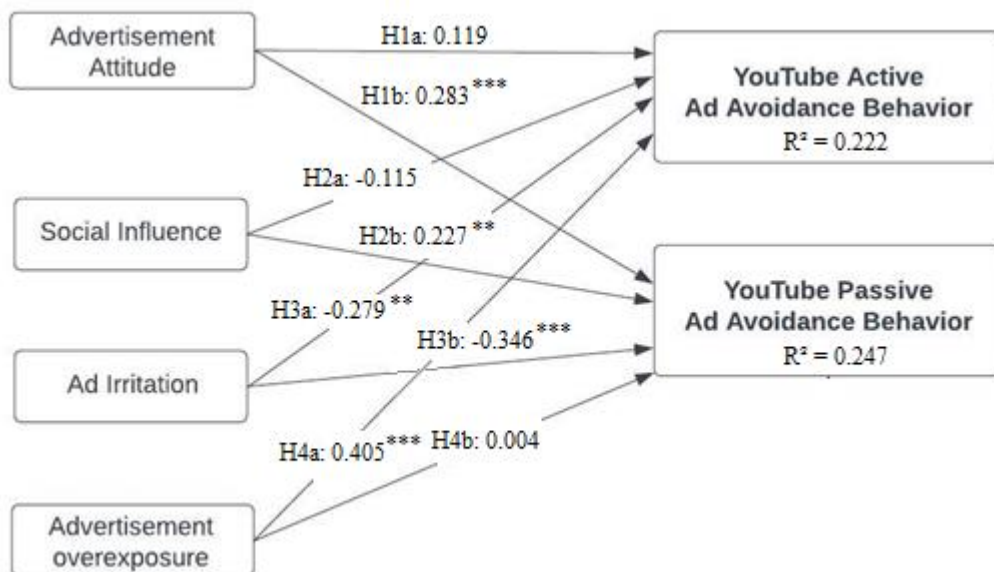


Figure 3. Structural model results.

Hypothesis	Path	β	p-Value	F ²	Result
H1a	Attitude → YouTube Active Behavior	0.119	0.121	0.010	Rejected
H1b	Attitude → YouTube Passive Behavior	0.283	0.000	0.085	Supported
H2a	Social Influence → YouTube Active Behavior	-0.115	0.133	0.026	Rejected
H2b	Social Influence → YouTube Passive Behavior	0.227	0.005	0.058	Supported
H3a	Irritation → YouTube Active Behavior	-0.279	0.003	0.142	Supported
H3b	Irritation → YouTube Passive Behavior	-0.346	0.000	0.141	Supported
H4a	Overexposure → YouTube Active Behavior	0.405	0.000	0.232	Supported
H4b	Overexposure → YouTube Passive Behavior	0.004	0.950	0.008	Rejected

Table 7. Hypothesis test results.

Results indicate that the most significant variable is Ad Irritation. After coming into contact with several ads, the person feels irritated, but is so used to being bombarded with them that don't take action. This behavior is similar to the phenomenon of banner blindness. The person remains attentive but is so familiar with what's going on around them that end up not remembering what was seen. However, Ad Overexposure has a stronger explanatory effect when related to active behavior on YouTube. From the results of this study, it is possible to conclude that the presence of ads increases the level of irritation experienced by the participant and the greater the number of ads at the moment of interaction, the greater the participant's inclination to show active behavior and take actions to avoid them. These results make relevant contributions not only to theory, but also to companies, so that they can improve their advertising campaigns to reach their target market more effectively.

5.3. Banner Blindness Experiment

This experiment was designed to provide more understanding on the relationship between irritation and ad avoidance. In this experiment, two different ads were created and displayed below: the first one being called as "Informative Ad," which promoted a fictional car-washing business, and the other was called the "Emotional Ad," which focused on a more sensible topic, suicide prevention. Distributed randomly to our participants, each advertising included a simple math problem that occupied half of the available area.



Figure 4: Informative Ad.

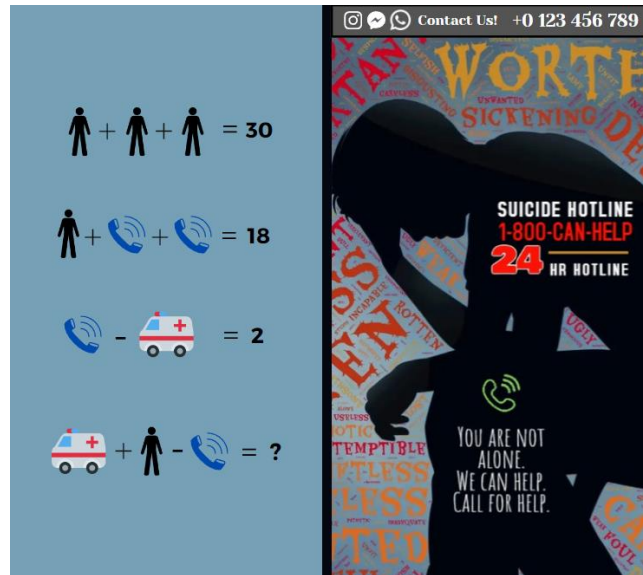


Figure 5: Emotional Ad.

To determine whether an emotional stimulation improves the retention of advertising content, the experiment was created to investigate the impact of emotional triggers on memory recall. The math problem was given as a unique challenge to the participants, while the advertisement acted as the background. The proposed approach aims to investigate the prevalence of "Banner Blindness," a phenomenon where consumers frequently exposed to online ads tend to overlook or disregard them. Participants were asked about their memories of both existing and non-existing objects shown in the advertisements after completing the online survey.

Did you see the existent object?	Informative Ad	Emotional Ad
Yes	80	88
No	8	7
Don't remember	20	27

Table 8: Ad Recall of the existent object.

Did you see the non-existent object?	Informative Ad	Emotional Ad
Yes	6	32
No	71	33
Don't remember	31	57

Table 9: Ad Recall of the non-existent object.

This study produced intriguing results. In the instance of the "Informative Ad," 37 out of 108 participants expressed a memory of or doubt about the existence of the non-existent object. In contrast, the "Emotional Ad" caused an unexpected response, with 89 out of 122 people indicating a similar remembrance or uncertainty.

In this experiment, it was also investigated whether there was a significant difference on recall between the ads using the two proportion z-test of statistical inference. For this test it is essential to have only two possible answer options, so it was necessary to merge two options ("No" and "I don't remember") into a single one that represented doubt or not remembering the object.

Z-score	Confidence level	Z-critical (two-tailed)	Remarks
- 4.45	95%	-1.96	Significant

Table 10: Z-test results.

In Table 10, there is presented the analysis of the z-test which revealed the performance of both informative and emotional ads. The critical z-value was set at 1.96, since an a priori alpha of 0.05 was used. This table shows that the z-test value was lower than the critical z-value, which means that the result was highly significant (e.g., z-test = -4.44 < critical z-value -1.96).

Therefore, the group that saw the emotional ad presented a higher level of uncertainty and forgetfulness. These results allow us to conclude that there are significant differences in results between these two types of ads. These findings also highlight the varied consumer reactions to commercials, especially when it comes to memory recall when emotional triggers are present but also adds to our knowledge of user behavior and memory recall by providing new information that may be applied to future studies and advertising strategies.

6. DISCUSSION AND IMPLICATIONS

This study deepens our knowledge of the well-known phenomenon of banner blindness, which poses a serious obstacle to the efficiency of online marketing (Visuri et al., 2017). But also helps by clarifying consumers' habitual indifference for banners because of familiarity, which raises questions concerning advertising memory (Burke et al., 2005; Güner & İnal, 2015; Kuisma, 2015). The placement, intrusiveness, and relevancy of advertisements are important characteristics that affect banner blindness (Güner & İnal, 2015; Huang, 2018; Resnick & Albert, 2014). In this context, this study is valuable because it explores the potential impacts on visual clutter and user attention of extreme attention-getting techniques (Liu-Thompkins, 2019).

The connection between advertising, cognitive functions, and attention is crucial (Calder et al., 2009). This research, which explores how internet advertising's dynamic nature competes for attention in a congested digital scene, is in keeping with this viewpoint. A review of attention-grabbing tactics is necessary in considering the expansion of online advertising, which has brought about new modalities such as animations and pop-ups (Cho, 1999; Cho & Cheon, 2004). This investigation on capturing and holding users' attention is guided by an understanding of how attention affects memory and the effectiveness of advertising.

Psychological reactance theory (PRT) provides insight into how users respond to persuasive communication, notably commercials (Brehm & Brehm, 1981). This research, which explores how users react to perceived restrictions on their freedom, finds correspondence with PRT. Ad avoidance on social media relies on this response, therefore it is important to understand how users react. We obtain insights into user behavior when adverts are seen as limiting their liberty by recognizing and comprehending these PRT aspects.

According to Van Reijmersdal et al. (2015), consumers actively evaluate and react to commercials, frequently developing negative opinions when they sense manipulation. This research supports this by emphasizing the negative impacts of ad intrusiveness and irritability and drawing comparisons to the observations made by Aaker & Bruzzone (1985) and Bauer & Greyser (1968). For advertisers looking to improve ad likability and lessen intrusiveness, understanding user reactions and their ensuing ad avoidance behaviors is crucial. It's critical for advertisers to comprehend user attitudes and behavior regarding online advertising.

According to this investigation, ad effectiveness may increase with tactics that attempt to lessen intrusiveness and aggravation while preserving users' autonomy. Given the changing nature of digital advertising and its effects on users, future studies may examine the interaction between ad content, execution, and placement in more detail. Future studies that aim to go deeper into this area will have a foundation built by this research.

For marketing managers and practitioners, the research's conclusions and insights regarding social media advertising have a number of significant implications. Advertising tactics can be informed and enhanced by having a better understanding of how people respond to ads in the digital age. Based on the study, the following are some important managerial implications:

1. Targeted Advertising Strategies: Marketers need to be aware of the phenomena known as "banner blindness," in which consumers tend to dismiss banner ads because they are so accustomed to seeing them. To combat this, making ads that are more interesting and visually appealing might effectively grab users' attention.

2. Emotional Appeal: Adding emotional stimuli to commercials will affect memory recall. Therefore, in order to increase brand memory, marketers should think about creating ad material that produces emotions associated with their product or service.

3. Attitude Matters: Consumer attitudes toward advertising have a significant impact on how they behave while making purchases. Marketers should work to make

people think positively about their advertisements since they are more inclined to base their purchases on the information they include.

4. Using Social Media: Companies should give social media platforms top priority in their advertising strategy given the impact of social media adverts on consumers' intentions to make purchases. Effectively utilizing these channels might enhance consumers' desire to buy promoted goods or services.

5. Constant Monitoring: Managers should keep track of consumer responses and evolving internet habits in order to continuously monitor and modify their advertising strategies. Being aware of consumer preferences and attitudes is crucial for long-term success in the evolving digital market.

6. Data-Driven Decision Making: It is essential to use data analytics and customer insights while choosing advertising methods. Campaigns can be improved for better results by gathering and evaluating data on consumer behavior and interactions with advertisements.

7. Ethical Considerations: It is critical to follow moral principles when pursuing successful advertising methods. In addition to being morally right, avoiding intrusive or dishonest advertising tactics supports brand integrity and consumer confidence.

7. LIMITATIONS AND FUTURE RESEARCH

Although this study offers some important new insights, there are some limitations in this study that should be addressed in future research. Firstly, it was always necessary to take into account the small representation of elderly consumers in the sample, making the demography of the study unbalanced. This age gap, with almost 25% of the sample population being over 48 years old, implies less use and exploitation of social networks by these people. Therefore, it is known that some of the answers collected came from people with less experience and knowledge of using social networks.

Secondly, anonymous responses from participants were the primary source of data. Therefore, there is a chance of self-report bias, in which participants might not always give precise or unbiased information, especially when it comes to sensitive topics like ad attitudes or irritation. The reliability of some outcomes could be impacted by this intrinsic limitation.

Another limitation was the absence of an assessment regarding the specific emotions evoked by the Emotional Ads. The research did not include inquiries into the feelings or emotional states experienced by participants when exposed to these advertisements. As a result, it remains uncertain whether the Emotional Ads truly elicited the intended emotional impact on individuals. This limitation restricts the study's ability to comprehensively evaluate the effectiveness of emotional triggers in advertising and their subsequent influence on user behavior and memory recall. Future research should

consider incorporating emotional impact assessments to provide a more in-depth understanding of the emotional dimensions of user responses to advertising in the context of social media.

The limitations of this study emphasize the need for cautious interpretation and motivate further research to build on its important contributions to our understanding of how people react to social media advertising. Taking care of these issues will lead to a more thorough and detailed understanding of the complex interactions between people and advertising.

8. CONCLUSION

The purpose of this dissertation was to investigate the complex dynamics of consumer reactions to advertising on social media. The main goal was to understand more about how individuals respond to advertisements and, more particularly, to investigate the implications for attention and memory in this context.

Throughout the course of this research, a number of significant findings were discovered, each having a unique relevance in the field of online advertising. The role that Ad Attitude had in influencing user behavior, particularly in the context of YouTube, was one important insight. While the relationship between Ad Attitude and YouTube active behavior presented quite a weak influence, it took on a more significant impact when taken into account with YouTube passive behavior. This indicates that consumers' perceptions of advertisements have a significant impact on how passively they interact with YouTube ads. Ad Irritation, a factor that had a substantial impact on both active and passive behaviors on YouTube, was equally important in influencing user behavior. In general, user engagements with irritable ads led to noticeable changes in how they interacted with online content. This emphasizes how crucial it is to design ads that cause the least amount of annoyance possible, resulting in a better overall user experience. According to this research, social influence plays a lesser impact in the overall scheme of things. On social media platforms, social influences seemed to have less of an impact on user behavior. They had a median impact on YouTube passive behavior but had no statistically significant effect on active behavior. This insight requires a reconsideration of how much user decisions are influenced by external factors in social media. For Ad Overexposure, it showed a significant impact on YouTube Active Behavior, indicating that users' responses to an overabundance of advertisements can result in more proactive behaviors. And when it came to YouTube passive behavior, this influence diminished radically, suggesting that consumer responses in this matter will most likely not result in passive behavior. In this way, it may be claimed that consumers have a tendency to respond right away when they are bombarded by advertisements and feel overwhelmed.

Furthermore, an experiment using emotional ads revealed an unexpected result. In contrast to expectations that emotional triggers would improve memory recall, participants showed more uncertainty and doubt when recalling details from Emotional

Ads than from Informative Ads. The complexity of emotions and memory recall in the context of advertising is highlighted by this intriguing study. The fact that the nonexistent object in the emotional ad was remembered with a greater degree of hesitation or doubt may suggest that the emotional content may have triggered a more sophisticated cognitive reaction. The emotional content might have left participants confused about how it affected how they perceived or remembered the nonexistent object. This ambiguity may be due to how emotions affect memory encoding and cognitive processes. The implications of this finding for how emotions and memory recall interact in the context of advertising are intriguing. While emotions might improve memory, they can also cause ambiguity or uncertainty in the way that information is processed. Additional investigation and analysis of this phenomenon could provide important insights into the complex influences of emotional advertising on customer behavior.

In conclusion, this study has revealed the varied user reactions to advertising in social media, with a focus on attention, memory, and emotional triggers. The results also highlight the significance of Ad Attitude and Ad Irritation as key determinants of user behavior, emphasizing the need for advertisers to create campaigns that successfully connect with their target market. Additionally, further research and analysis of the complex role of social influence in advertising methods are necessary. Last but not least, the variable effects of Ad Overexposure highlight the necessity for advertisers to establish a careful balance in the frequency of ad exposure. This study emphasizes the intricate relationships between users and advertisements in the digital environment, offering insightful recommendations to direct future efforts in the dynamic field of online advertising which can be used by marketing managers to improve their advertising strategies, better engage consumers, and ultimately provide better results in the age of digital media. These discoveries add to the growing body of knowledge in this area by providing new perspectives along with new research opportunities.

9. BIBLIOGRAPHICAL REFERENCES

- Aaker, D. A., & Bruzzone, D. E. (1985). Causes of irritation in advertising. *Journal of Marketing*, 49(2), 47–57.
- Abernethy, A. M. (1991). Television exposure: Programs vs. advertising. *Current Issues and Research in Advertising*, 13(1–2), 61–77.
- Alanazi, A. O., Sanderson, M., Bao, Z., & Kim, J. (2020). The impact of ad quality and position on Mobile SERPs. *Proceedings of the 2020 Conference on Human Information Interaction and Retrieval*, 318–322.
- Alba, J. W., Lynch, J. G., & Hutchinson, J. W. (1991). Memory and decision making. *Handbook of Consumer Behavior*, 1–9.
- An, M. (2016). Why people block ads. *Hubspot Research*.
- Awasthi, A. K., & Choraria, S. (2015). Effectiveness of celebrity endorsement advertisements: The role of customer imitation behaviour. *Journal of Creative Communications*, 10(2), 215–234.
- Bang, H., Kim, J., & Choi, D. (2018). Exploring the effects of ad-task relevance and ad salience on ad avoidance: The moderating role of internet use motivation. *Computers in Human Behavior*, 89, 70–78.
- Bauer, R. A., & Greyser, S. A. (1968). *Advertising in America; the Consumer View*. Division of Research, Graduate School of Business Administration, Harvard University.
- Becker-Olsen, K. L. (2003). And now, a word from our sponsor—a look at the effects of sponsored content and banner advertising. *Journal of Advertising*, 32(2), 17–32.
- Boeuf, B., Carrillat, F. A., & d’Astous, A. (2018). Interference effects in competitive sponsorship clutter. *Psychology & Marketing*, 35(12), 968–979.

- Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. Academic Press.
- Burke, M., Hornof, A., Nilsen, E., & Gorman, N. (2005). High-cost banner blindness: Ads increase perceived workload, hinder visual search, and are forgotten. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 12(4), 423–445.
- Calder, B. J., Malthouse, E. C., & Schaedel, U. (2009). An experimental study of the relationship between online engagement and advertising effectiveness. *Journal of Interactive Marketing*, 23(4), 321–331.
- Cheon, H. J. (2004). Why do people avoid advertising on the internet? *Journal of Advertising*, 33(4), 89–97.
- Cho, C.-H. (1999). How advertising works on the WWW: Modified elaboration likelihood model. *Journal of Current Issues & Research in Advertising*, 21(1), 34–50.
- Cho, C.-H., & Cheon, H. J. (2004). Why do people avoid advertising on the internet? *Journal of Advertising*, 33(4), 89–97.
- Clancey, M. (1994). The television audience examined. *Journal of Advertising Research*, 34(4), S1–S1.
- Cronin, J. J., & Menelly, N. E. (1992). Discrimination vs. Avoidance: “Zipping” of television commercials. *Journal of Advertising*, 21(2), 1–7.
- DataReportal. (2023, January 26). DataReportal – Global Digital Insights. <https://datareportal.com/reports/digital-2023-global-overview-report>
- Dillard, J. P., & Shen, L. (2005). On the nature of reactance and its role in persuasive health communication. *Communication Monographs*, 72(2), 144–168.
- Duff, B. R., & Segijn, C. M. (2019). Advertising in a media multitasking era: Considerations and future directions. *Journal of Advertising*, 48(1), 27–37.

- Duke, C. R., & Carlson, L. (1994). Applying implicit memory measures: Word fragment completion in advertising tests. *Journal of Current Issues & Research in Advertising*, 16(2), 29–39.
- Edwards, S. M., Li, H., & Lee, J.-H. (2002). Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *Journal of Advertising*, 31(3), 83–95.
- Eyob, H. (2018). *How does expert endorsement affect consumer's perceived credibility?*
- Fransen, M. L., Verleghe, P. W., Kirmani, A., & Smit, E. G. (2015). A typology of consumer strategies for resisting advertising, and a review of mechanisms for countering them. *International Journal of Advertising*, 34(1), 6–16.
- Goldstein, D. G., Suri, S., McAfee, R. P., Ekstrand-Abueg, M., & Diaz, F. (2014). The economic and cognitive costs of annoying display advertisements. *Journal of Marketing Research*, 51(6), 742–752.
- Güner, H., & İnal, Y. (2015). The effect of banner location on banner recognition in a Turkish government website: An eye tracking study. *Human-Computer Interaction: Users and Contexts: 17th International Conference, HCI International 2015, Los Angeles, CA, USA, August 2-7, 2015, Proceedings, Part III* 17, 65–72.
- Ha, L., & McCann, K. (2008a). An integrated model of advertising clutter in offline and online media. *International Journal of Advertising*, 27(4), 569–592.
- Ha, L., & McCann, K. (2008b). An integrated model of advertising clutter in offline and online media. *International Journal of Advertising*, 27(4), 569–592.
- Hair Jr, J., Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

- Ham, C.-D. (2017). Exploring how consumers cope with online behavioral advertising. *International Journal of Advertising*, 36(4), 632–658.
- Ham, C.-D., & Nelson, M. R. (2016). The role of persuasion knowledge, assessment of benefit and harm, and third-person perception in coping with online behavioral advertising. *Computers in Human Behavior*, 62, 689–702.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115–135.
- Hoffman, J. E. (1998). Visual attention and eye movements. *Attention*, 31(2), 119–153.
- Hong, W., Thong, J. Y., & Tam, K. Y. (2004). Does animation attract online users' attention? The effects of flash on information search performance and perceptions. *Information Systems Research*, 15(1), 60–86.
- Huang, Y.-T. (2018). The female gaze: Content composition and slot position in personalized banner ads, and how they influence visual attention in online shoppers. *Computers in Human Behavior*, 82, 1–15.
- Hurrlé, D., & Postatny, J. (2015). *Social media for scientific institutions: How to attract young academics by using social media as a marketing tool*. Springer.
- Kim, S.-H., Huang, R., & Ha, S. (2018). Narrative persuasion in social media: An empirical study of luxury brand advertising. *Journal of Research in Interactive Marketing*.
- Kim, S.-Y., Levine, T. R., & Allen, M. (2017). The intertwined model of reactance for resistance and persuasive boomerang. *Communication Research*, 44(7), 931–951.
- Krugman, D. M., & Johnson, K. F. (1991). Differences in the consumption of traditional broadcast and VCR movie rentals. *Journal of Broadcasting & Electronic Media*, 35(2), 213–232.

- Kuisma, J. (2015). *Consumer perception of online advertising-the effects of animation, ad characteristics, repetition and task relevancy on attention and memory.*
- Lee, J., Kim, S., & Ham, C.-D. (2016). A double-edged sword? Predicting consumers' attitudes toward and sharing intention of native advertising on social media. *American Behavioral Scientist*, 60(12), 1425–1441.
- Lee, S. Y., & Cho, Y.-S. (2010). Do web users care about banner ads anymore? The effects of frequency and clutter in web advertising. *Journal of Promotion Management*, 16(3), 288–302.
- Li, H., Edwards, S. M., & Lee, J.-H. (2002). Measuring the intrusiveness of advertisements: Scale development and validation. *Journal of Advertising*, 31(2), 37–47.
- Liu-Thompkins, Y. (2019). A decade of online advertising research: What we learned and what we need to know. *Journal of Advertising*, 48(1), 1–13.
- MacKenzie, S. B., & Lutz, R. J. (1989). An empirical examination of the structural antecedents of attitude toward the ad in an advertising pretesting context. *Journal of Marketing*, 53(2), 48–65.
- Moller, A. C., Deci, E. L., & Ryan, R. M. (2006). Choice and ego-depletion: The moderating role of autonomy. *Personality and Social Psychology Bulletin*, 32(8), 1024–1036.
- Morimoto, M., & Macias, W. (2009). A conceptual framework for unsolicited commercial e-mail: Perceived intrusiveness and privacy concerns. *Journal of Internet Commerce*, 8(3–4), 137–160.
- Newman, E. J., Stem Jr, D. E., & Sprott, D. E. (2004). Banner advertisement and Web site congruity effects on consumer Web site perceptions. *Industrial Management & Data Systems*, 104(3), 273–281.

- Pagendarm, M., & Schaumburg, H. (2001). *Why are users banner-blind? The impact of navigation style on the perception of web banners.*
- Pashler, H. (1998). Contemporary attention theory. In *Attention*. Psychology Press
Hove, East Sussex.
- Pengnate, S., Sarathy, R., & Lee, J. (2019). The engagement of website initial aesthetic impressions: An experimental investigation. *International Journal of Human-Computer Interaction*, 35(16), 1517–1531.
- Posner, M. I. (1980). Orienting of attention. *Quarterly Journal of Experimental Psychology*, 32(1), 3–25.
- Quick, B. L., & Kim, D. K. (2009). Examining reactance and reactance restoration with South Korean adolescents: A test of psychological reactance within a collectivist culture. *Communication Research*, 36(6), 765–782.
- Quick, B. L., & Stephenson, M. T. (2007). Further evidence that psychological reactance can be modeled as a combination of anger and negative cognitions. *Communication Research*, 34(3), 255–276.
- Radach, R., Lemmer, S., Vorstius, C., Heller, D., & Radach, K. (2003). Eye movements in the processing of print advertisements. In *The mind's eye* (pp. 609–632). Elsevier.
- Resnick, M., & Albert, W. (2014). The impact of advertising location and user task on the emergence of banner ad blindness: An eye-tracking study. *International Journal of Human-Computer Interaction*, 30(3), 206–219.
- Richardson-Klavehn, A., & Bjork, R. A. (1988). Measures of memory. *Annual Review of Psychology*, 39(1), 475–543.
- Robertson, T. S., & Rossiter, J. R. (1974). Children and commercial persuasion: An attribution theory analysis. *Journal of Consumer Research*, 1(1), 13–20.

- Rosenberg, B. D., & Siegel, J. T. (2018). A 50-year review of psychological reactance theory: Do not read this article. *Motivation Science*, 4(4), 281.
- Row, H. (2006). Influencing the Influencers: How Online Advertising and Media Impact Word of Mouth. *Double Click Touchpoints IV Focus Report*.
- Shellhammer, A. (2016). *The need for mobile speed*. [Blog]. Google.
<https://blog.google/products/admanager/the-need-for-mobile-speed/>
- Speck, P. S., & Elliott, M. T. (1997). Predictors of advertising avoidance in print and broadcast media. *Journal of Advertising*, 26(3), 61–76.
- Tavassoli, N. T. (2007). The effect of selecting and ignoring on liking. In *Visual marketing* (pp. 85–102). Psychology Press.
- Taylor, D. G., Lewin, J. E., & Strutton, D. (2011). Friends, fans, and followers: Do ads work on social networks?: how gender and age shape receptivity. *Journal of Advertising Research*, 51(1), 258–275.
- Tsurukawa, J., Al-Sada, M., & Nakajima, T. (2015). Filtering visual information for reducing visual cognitive load. *Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2015 ACM International Symposium on Wearable Computers*, 33–36.
- Van Reijmersdal, E. A., Lammers, N., Rozendaal, E., & Buijzen, M. (2015). Disclosing the persuasive nature of advergames: Moderation effects of mood on brand responses via persuasion knowledge. *International Journal of Advertising*, 34(1), 70–84.
- Van Rompay, T. J., De Vries, P. W., & Van Venrooij, X. G. (2010). More than words: On the importance of picture–text congruence in the online environment. *Journal of Interactive Marketing*, 24(1), 22–30.

- Visuri, A., Hosio, S., & Ferreira, D. (2017). Exploring mobile ad formats to increase brand recollection and enhance user experience. *Proceedings of the 16th International Conference on Mobile and Ubiquitous Multimedia*, 311–319.
- Whiting, A., & Williams, D. (2013). Why people use social media: A uses and gratifications approach. *Qualitative Market Research: An International Journal*, 16(4), 362–369.
- Wojdyski, B. W. (2016). Native advertising: Engagement, deception, and implications for theory. *The New Advertising: Branding, Content and Consumer Relationships in a Data-Driven Social Media Era*, 203–236.
- Wottrich, V. M., Verlegh, P. W., & Smit, E. G. (2017). The role of customization, brand trust, and privacy concerns in advergaming. *International Journal of Advertising*, 36(1), 60–81.
- Xu, D. J. (2006). The influence of personalization in affecting consumer attitudes toward mobile advertising in China. *Journal of Computer Information Systems*, 47(2), 9–19.
- Ying, L., Korneliussen, T., & Grønhaug, K. (2009). The effect of ad value, ad placement and ad execution on the perceived intrusiveness of web advertisements. *International Journal of Advertising*, 28(4), 623–638.
- Youn, S., & Kim, S. (2019). Newsfeed native advertising on Facebook: Young millennials' knowledge, pet peeves, reactance and ad avoidance. *International Journal of Advertising*, 38(5), 651–683.

ANNEX 1

NOVA IMS ETHICS COMMITTEE EVALUATION

Project No.: **STAT2023-5-246494**

Project Title: **How do people react to the advertisement in social media and what are the implications for memory and attention**

Principal Researcher: **João Duarte Mestre Dinis**



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