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Impact of personalized advertising on consumers

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Master in Marketing

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Department of Marketing, Strategy and Operations

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Abstract

Nowadays, social media is an important part of people's daily life, making it one of the largest human interaction environments. In order to meet consumers' needs and engage with each one in a more personal and effective way, marketers try to implement personalized advertising strategies, based on consumers' personal preferences, purchase history, demographics and latest researches on the Internet.

This dissertation aims to evaluate the impact of personalized advertising on consumers, on their engagement and on their interaction with brands. First, the literature review provided knowledge about what has been done previously on social media marketing. Based on the literature research, a conceptual model was created to identify and study the impacts that personalized advertising strategies have on consumers. An online questionnaire with 429 respondents was undertaken to test the conceptual model.

According to the findings, consumer's perceived personalization of an ad has a positive impact on their engagement with the advertised brand. There is also a positive relationship between consumer's privacy concerns and their desire to avoid the ads. Furthermore, it was demonstrated that consumer's control over their personal information leads to a decrease in both privacy concerns and ad avoidance as well as to an increase of consumer engagement.

The results and conclusions of this dissertation may have future theoretical and practical implications.

Keyword: Social media marketing, personalized advertising, consumer engagement, data privacy

JEL Classification:

M 30 – General Marketing

M 31 – Marketing

M 37 – Advertising

Resumo

Perante a crescente importância das redes sociais no quotidiano das pessoas, as empresas têm aumentado os seus investimentos na área do Marketing Digital. De modo a ir ao encontro das necessidades dos consumidores e a se relacionarem com cada um de uma forma mais pessoal e eficaz, os marketeers tentam implementar estratégias de publicidade personalizadas, com base nas preferências pessoais dos consumidores, histórico de compras, dados demográficos e pesquisas mais recentes na Internet.

Esta investigação pretende assim avaliar o impacto da publicidade personalizada nos consumidores, no seu engajamento e interação com as marcas. Em primeiro lugar, a revisão da literatura forneceu conhecimento sobre o que foi feito anteriormente sobre marketing nas redes sociais. Com base na literatura, foi criado um modelo conceptual para identificar e estudar os impactos que as estratégias de publicidade personalizada têm sobre os consumidores. Um questionário online com 429 participantes foi realizado para testar este modelo conceptual.

De acordo com os resultados, a perceção da personalização de um anúncio pelo consumidor tem um impacto positivo no seu engajamento com a marca. Há também uma relação positiva entre as preocupações de privacidade do consumidor e o seu desejo de evitar estes anúncios, mas foi demonstrado que o controlo do consumidor sobre as suas informações pessoais leva a uma diminuição destas preocupações, a um menor desejo de os evitar, bem como a um aumento do engajamento com a marca.

Os resultados e conclusões desta dissertação poderão ter implicações teóricas e práticas futuras no âmbito do marketing digital.

Palavras-chave: Marketing nas redes sociais, publicidade personalizada, engajamento do consumidor, privacidade de dados

Classificação JEL:

M 30 – Marketing Geral

M 31 – Marketing

M 37 – Publicidade

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1.Introduction

Social media has fundamentally altered how we live, interact and communicate with each other (Jacobson, 2020). According to datareportal, there will be 4.70 billion social media users worldwide in 2022. The constant growth we are witnessing in the number of internet users has prompted businesses to investigate more effective methods of managing their online presence. As a result, for most organizations, having an online presence is now a critical success factor rather than a competitive advantage.

Companies all over the world have developed new business models to capitalize on the opportunities provided by the transition into the online environment (Wielki, 2010). Along with the growing number of internet users, we are seeing a fast and constant increase in social media popularity and, as a consequence, a significant increase in social media users around the world. However, when it comes to going online, most businesses face numerous challenges. The online environment, by being constantly changing, is forcing companies to keep up by adapting to this continuous evolving environment.

Firms and businesses, as a consequence of the evolution of social media platforms, have significantly expanded their spending in social media advertising, highlighting the importance of social media advertising in their success. Brands are able to personalize advertisements simultaneously to millions of people at the same time and, as a result, social media advertising has become crucial for most firm's success, making it a popular and cost-efficient way for brands to spread awareness and increase consumer engagement (cognitive, emotional, and behavioural activity of a consumer in response to specific consumer/brand interactions).

Nowadays, our personal data is easily available online since we exchange data everywhere at every moment, for example, when we browse websites, connect via social media, look for information on search engines, and talk near our phone. Algorithms assist marketers in creating personalized advertising strategies, targeting segments and individuals, engaging with them and also adjusting costs. Brands are now utilizing more complex and differentiated approaches such as psychographic segmentation, social media analytics, geofencing, IP matching, and 'listening' to what customers say, listen to, or watch in order to target diverse segments with distinct marketing messages utilize. As a result of companies' constant access to consumers' personal information, privacy concerns are raised which can impact consumer engagement and ad avoidance.

This research will explore the relation between consumer's perceived personalization of social media ads, information control and privacy concerns and analyse its impact on consumer engagement and ad avoidance.

1.1. Objectives and Research Question

The rapid expansion of social media worldwide has created an impetus for the transformation of a product-based electronic commerce (e-commerce) system into a social-based commerce (s-commerce) system (Wigand, 2008). Social commerce is a modern business model based on social media (i.e., Instagram) that allows people to purchase and sell things in online markets (Stephen & Toubia, 2010).

For social commerce businesses, personalized advertising may be a successful marketing technique. Personalization is used by social commerce firms to enable consumers to connect more effectively with a brand. By using this strategy to reach consumers in social media, which is a particularly interactive environment, it may lead to an improved consumer-brand relationship (Wallace et al., 2014).

With the increase in use of personalized advertising on social media, many concerns about this practice arose over the years, especially when it comes to privacy concerns, and, even though some research was conducted regarding this matter, there are still some answers that need to be answered.

As a result, the main research question of this dissertation is the following: What is the impact of social media personalized advertising on consumers? Consequently, we can define the following objectives:

Understand how consumer perceive personalized advertising. What effect does this perception have on their engagement with the brand?

1. Understand how consumers perceive personalized advertising. What effect does this perception have on their engagement with the brand. Determine whether personalized ads raise privacy concerns.
2. Verify if these concerns can influence engagement and lead to ad avoidance.
3. Determine whether the control of personal information affects other aspects such as privacy concerns, ad avoidance, or even consumer-brand engagement.

1.2. Thesis structure

This study is divided into six different chapters. Initially, the abstract and introduction aim to provide an overview of social media marketing and the role of personalized advertising on social media while also defining the study objectives and present the research question.

The second chapter is composed of the literature review which clarifies and explores the main concepts of this dissertation. In this chapter, the topic of social media marketing is presented, we also focus on understanding the use of personalization on this particular environment and define concepts important for this dissertation such as consumer engagement and data privacy.

In the third chapter, hypotheses were formulated, and a conceptual model is developed to summarize the relations between our main concepts.

Following that, the methodology was created for the purpose of planning the research process. In this chapter we describe the method used for this study and the formulation of an online survey (quantitative approach). The information collected from this online questionnaire was analysed later in the chapter in order to characterize the sample, retrieve insights and make conclusions such as which hypothesis were validated and rejected.

Finally, in the sixth and final chapter of this dissertation, a summary of conclusions is presented, as well as the implications of the study both academically and in the marketing/management areas. Then, we end up by presenting our research limitations and suggestions for future research.

2. Literature Review

2.1. Social Media Marketing

The term "social media marketing" is a combination of three words: "social," "media," and "marketing." In this sense, social refers to interactions between individuals who share a shared interest, a group, or even a community. Media are channels or platforms that allow for the development and distribution of user-generated content (Icha & Agwu, 2015). Kotler defines marketing as the process of determining which items or services may be of interest to clients. Marketing is also in charge of developing the strategy to be used in sales, communications, and company growth.

A company must comprehend every facet of social media before considering it as a marketing tool. As such, to better understand social media we need to start by defining Web 2.0: a concept that represents a new approach for end users to interact with the World Wide Web, a location where material is constantly amended by all operators in a sharing and collaborative manner (Kaplan & Haenlein 2010). "It is far more about what people do with technology than it is with the technology itself, since rather than simply obtaining information, users are now generating and consuming it, and so providing value to the websites that allow them to do so" (Campbell et al. 2011, p. 87). Web 2.0 has progressed beyond just retrieving information to interactivity, interoperability, and collaboration (Campbell et al. 2011).

Social media, according to Kaplan and Haenlein (2010, p.60), is "a series of Internet-based apps that build on the conceptual and technological underpinnings of Web 2.0 and allow the creation and exchange of user created content."Because social media is so interconnected, customers may produce, develop, and disseminate advertising material, which impacts their behavioural intentions (Lee & Cranage, 2014). Technological advancement has resulted in social media platforms that allow users to exchange material in a variety of formats, including text, graphics, audio-visuals, and web links.

2.2. Social Exchange Theory (SET)

Homans' (1958) social exchange theory is a sociological theory that aims to elucidate behaviours during tight, long-term partnerships in which resource exchange processes occur (Yan et al., 2016). According to this idea, all human actors are involved in the trade of physical (e.g., money) and intangible (e.g., social services, relationships) resources and rewards (Blau, 1964), which may mature through time into trustworthy and loyal commitments (Thaichon et

al., 2018). SET represents a two-actor interdependent connection based on reciprocity and rewarding behaviours from others (Cropanzano & Mitchell, 2005). Users participate in social media for utilitarian, hedonic, and social benefits (Wang et al., 2019). These transactions are accompanied by economic (e.g., core items or discounts) and social expectations in which each participant is expected to give back in a relationship that continues an exchange cycle that strengthens over time as more exchanges occur (Cortez & Johnston, 2020).

According to the social exchange hypothesis, a reciprocal connection is an important aspect in encouraging online interactions (Rosado-Pinto and Loureiro, 2020). Users communicate and participate regularly on social media with the hope that their sharing and exchanges would benefit them (Shiau & Luo, 2012). In general, individuals will be encouraged to engage in social interactions on social media if they sense a balance between information sharing and acquisition. In other words, people sharing their information may perceive it to be fair when others do the same thing, and this perception of fairness will lead to greater social interactions in the future. Many experts think that social interactions in social media will improve user information exchange.

As SET inherently requires exchanges, possible benefits in a social media sphere would be predominantly intangible. For instant, consumer engagement can lead to intrinsic advantages such as emotions of joy and fulfilment as well as extrinsic benefits such as include prizes or promotions (Yan et al., 2016).

2.3. Customer Engagement

In today's market, which is characterized by technological advancements and social media (Kumar & Pansari, 2016), brands can easily connect and interact with their customers outside of the purchasing context in offline stores (e.g., through social media) (So, 2016). This new marketing era has highlighted the importance of companies keeping their clients engaged (Kumar & Pansari, 2016).

Customer engagement refers to the process of customers' interacting with an organization, being a psychological state that comprises their cognitive, emotional, behavioural, sensorial and social responses (Lemon & Verhoef, 2016). Customer engagement occurs in many situations by interactive, co-creative customer experiences such as customer referrals, influencing, purchasing behaviour.

Customer engagement is, therefore, a type of co-creation between organizations and customers and it is a crucial element of marketing, particularly in the customer relationship management area (CRM) since it is regarded as a marketing strategy to attract customer purchase and increase satisfaction and loyalty (Hoyer, 2010; Brodie, 2011).

Being this a relatively recent concept, there are several theories for its drivers and outcomes. Focusing on the Van Doorn (2010) conceptual framework, this author specified the antecedents, components and consequences of customer engagement both from the customer and the firm viewpoint. Van Doorn (2010) mentions that customer-based antecedents can be customer attitudes (e.g., satisfaction, loyalty) as a consequence of the organization initiatives (e.g., organizational attributes and reputation). According to this framework, external factors can also be crucial for customer engagement (e.g., political, economic, social, technological, environmental and legal). The role of the organization is to attract customer engagement by providing positive and memorable customer experience and, as a consequence, increasing customer satisfaction and loyalty.

Customer engagement, in the social media environment, is defined as the extent to which the brand's essential consumers are interacting with the organization using social media technologies (Pansari & Kumar, 2017). Customer engagement may be measure and harnessed by customer referral value, customer social-influence value, and also customer knowledge value.

Current customers turning prospects in their social networks (both online and offline) into real customers for which they are compensated is the primary emphasis of customer referral value (Kumar, 2010). Consumer-generated social media material, online ratings, blogs, comments, and reviews are all examples of customer social-influence value (Hollebeek, 2013; Pansari & Kumar, 2017). Finally, customer knowledge value refers to the product and service comments, market insight, and ideas customers share with the seller (Kumar et al., 2010).

The interactive nature of social media makes it a facilitator in the process of establishing close relationships between an organization and a customer, since customer engagement is all about interacting with customers with the goal of building emotional bonds in relational exchanges with them (Sashi, 2012).

As a result, one issue for marketers is figuring out what individuals consider to be individualized. The purpose of online customized advertising is to tailor online material to meet

the demands of users; by doing so, customers generate good brand experiences (Tam & Ho, 2006).

2.4. Artificial Intelligence

Unlike human intelligence, artificial intelligence (AI) is the intelligence shown by the machines. AI applies, therefore, to any kind of machine, computer, robot, etc. that needs to think and behave as a human in order to keep learning and solving problems throughout the way (Ferreira, Loureiro, Ashfaq, & Pereira, 2022; Ajayi, Loureiro, & Langaro, 2022) . AI is, therefore, a subfield of computer science that may be characterized as the relationship between computation and cognition (Huang & Rust, 2018), as it involves the use of programming languages to solve patterns and symbols (Huang et al., 2021). There are three basic principles behind Artificial Intelligence: machine learning, deep learning and finally neural networks. Machine learning refers to the analysis, interpretation and reasoning of certain data which is used for achieving and completing prearranged goals and tasks (Russell & Norvig, 2009; Loureiro, Guerreiro, & Tussyadiah, 2021).

AI is a massive virtual warehouse that collects and stores visual, vocal, textual, or numerical information and utilizes this information to translate it into actions that provide the correct solution to a variety of queries (Nilsson, 2010). As a result, AI-based technology is able to perceive the environment by collecting, analysing and interpreting huge amounts of data so that it can achieve its goals (learn, do reasoning and execute the tasks from the simplest to the most complicated). According to the literature, AI describes machines (computers) that are able to mimic cognitive and affective functions of the human mind (Russel & Norvig, 2016). Russell and Norvig (2016) divide AI system definitions into four groups based on two dimensions: reasoning-behaviour and human performance-rationality. According to these authors, these are: systems that think like people, systems that behave like humans, rational thinking systems, and rational acting systems.

According to AI specialists there are four main types of artificial intelligence, being those mechanical, analytical, intuitive and empathetic (Huang & Rust, 2018). As a consequence, Artificial Intelligence does not need to be embodied within a machine/computer, it can also be shared in a system.

2.4.1. Artificial Intelligence in Marketing and Services

As it was already mentioned, Artificial Intelligence mimics human intelligence processes to automatically learn from experience and perform human-like tasks to improve task efficiency (Wang et al., 2015). AI is founded on the premise that human cognitive capabilities may be reproduced and automated, resulting in machines that can read, explore, and learn from databases (Huang & Rust, 2018; Tussyadiah, 2020). One of the most significant assets that a company may have is the increase desire for personalized content to create and develop relationships with customers and increase customer engagement.

AI is quickly spreading across a wide range of applications, allowing machine learning to be implemented in everything from chatbots to self-driving cars (Loureiro et al., 2020). As a result, Artificial Intelligence has been evolving and is now used in many areas and markets. Regarding the use of AI in services, organizations turn to this technology as part of the service offerings provided to customers to enhance decision making, reinvent business operations, facilitate transactions and, more importantly, improve customer experience by proving additional convenience and flexibility to the customers (Bolton et al., 2018). For instance, AI can be used in customer relationship management (CRM) by tracking and collecting vast quantities of customer information (purchases, habits, likings, etc.) and, consequently improve customer experience by offering a more personalized service (Netflix, Youtube). The focus for organizations in the service market is to optimize the use of resources and provide the best customer service possible. As in any commercial service, the value and quality of AI services is composed by customer perceptions and assessments of such services (Prentice & Weaven, 2020).

Programmatic or personalized advertising is a new and quickly expanding phenomena in the advertising world and has received a lot of attention, especially in the context of email and social media marketing (Celtra, 2015). Different sorts of tailoring tactics are referred to as personalisation. Personalization is described as incorporating recognized elements of a person in the content information (Dijkstra, 2008). These elements might include personally identifiable information, such as a person's name or photo, information generated from prior actions, such as websites visited or talks near the person's phone (cue-based personalization).

Typically, cue-based personalisation has little effect on a message's compelling content: A message that has been customised by adding personal cues contains generic text that is sent to all recipients. Several pathways are triggered by adding personal cues. Personal cues are first

employed to draw customers' attention (Hawkins & Dijkstra, 2008). People prioritize and pay greater attention to commercials that incorporate their own names compared to non-personalized ads, according to previous study (Bang & Wojdyski, 2016). Second, cue-based personalisation is thought to activate the self-referencing process, making the message more self-relevant (De Keyser & De Pelsmacker, 2015), which might improve customers' understanding of the message (Smit & van den Putte, 2016).

Consumers utilize social media to communicate and gather information. Personalized advertising may disrupt customers' experiences by diverting attention away from their primary aim (Maslowska et al., 2016), perhaps leading to unfavourable consumer responses (Edwards, Li, & Lee, 2002). Furthermore, because customization incorporates personal characteristics, it implies that the communication was designed specifically for the receiver, signalling to consumers that it was made to convince them, thereby activating consumers' persuasion knowledge and limiting persuasion (Pfiffelmann et al., 2020).

To conclude, cue-based customization relies on very fundamental information such as demographics and prior actions, which might backfire and lead to message rejection. Focusing on less visible types of message personalisation might help advertisers avoid unfavourable customer responses to individualized communications. Using personality features as an example of a more sophisticated method (i.e., trait-based personalization).

In the realm of advertising, digital and social media advertising is getting increasingly difficult and complex. Researchers discovered that digital technologies enable for new adaptive processes and innovations in advertising while discovering insights for digital and social media advertising. Digital and social media platforms are now incorporating new information and communication technologies including augmented reality, short video advertising, and user-generated content (UGC) that is customized to target customers' various levels of attention.

Consumers have increasingly reliant on social media platforms such as Twitter, Instagram, and Facebook. This rapid expansion of social media has fuelled the transition from a product-based electronic commerce (e-commerce) system to a social-based commerce (s-commerce) system, dubbed social commerce (Wigand et al., 2008). Social commerce is a newer platform of social media-based company that allows users to purchase and sell things in online markets (Stephen and Toubia, 2010). It enables the delivery of electronic commerce in a social media environment that is participatory. When social networking sites like Facebook allow for

advertising and commercial transactions, or when traditional e-commerce sites like Amazon.com allow for social networking, it's called social commerce.

For social commerce businesses, personalized advertising may be a successful marketing technique. According to the elaboration probability model (Petty & Cacioppo, 1986), tailored commercials attract greater attention, causing consumers to spend more time elaborating on the message of the advertisement (Rimer & Kreuter, 2006). Because of the accepted congruence between the brand and one's self-concept, consumers create more emotive attachments with the brand (Escalas, 2004).

Previous findings on the effectiveness of tailored advertising have been inconclusive. Ad personalisation has been shown to boost consumer attention (e.g., Malheiros et al. 2012; Bang & Wojdyski 2016), improve ad assessments (e.g., Hirsh, Kang, & Bodenhausen 2012), and elicit positive behaviours such as improved click-through rates (e.g., Tucker 2014). Ad messages that are tailored to consumer preferences (Li, Liu, and Hong 2019), personality traits (Hirsh, Kang & Bodenhausen 2012), and identities (Ahn, Phua & Shan 2017) can have a positive impact on reactions. In these articles it was shown that the virtual self in digital advertisements influenced the physical self and significantly inspired positive brand sentiments.

In contrast, another study stream has focused on unfavourable outcomes. The creation and distribution of more relevant tailored adverts need accurate personal information, which may elicit unfavourable customer responses. Earlier study discovered that consumers' privacy concerns had a direct impact on ad avoidance, which was mediated by scepticism (Baek & Morimoto 2012). Consumers' control over their personal information and marketers' access to information tend to impact their mobile commerce activity (Eastin et al. 2016). The desire for data privacy predicts the acceptance of tailored social media marketing (Wirtz, Gottel & Daiser, 2017). These findings highlight the relevance of consumer information management and the crucial role of privacy concerns in ad effectiveness. Tucker (2014) suggested that giving customers more control over their privacy enhances click-through rates for tailored advertising.

2.5. Data Privacy

With the growth and evolution of big data, privacy is becoming a central topic in business. Data privacy in business is the right a customer has to have control over the personal information collected and used by organizations. It refers to the practices that ensure that the data shared by

the customers is only used by the organizations for its intended purpose. Access to personal information is intrinsically tied to privacy in the online environment.

Prior study has showed that privacy issues are a key impediment to the creation of new media since many customers are concerned about their personal information when they use the internet (e.g., Wang et al., 2022).

Previous research has found that privacy concerns are a major motivator for online purchase intentions (e.g., Agag & Eid, 2019; Bansal & Nah, 2022). When people use social media, they are concerned about their personal information being taken. Despite the fact that more customers are concerned about privacy, there are no clear answers on how individuals respond to personalized advertising due to privacy concerns.

Researchers discovered that privacy concerns are essential to the efficiency of targeted advertising (e.g., Morimoto, 2021; Tucker, 2014). According to several surveys, consumers have unfavourable opinions of tailored advertising in general (Sheehan & Hoy, 1999). Some of these unfavourable opinions stem from the belief that such advertisements have violated or may violate their privacy.

Sharing personal information of an individual may cause a breach in an implicit "social contract" between the client and the company. (Miyazaki 2008; Kruikemeier, Boerman, & Bol 2020). In the context of online communication, the social contract is a fictional contract that consumers believe they have when they disclose personal information with online businesses (Kruikemeier et al., 2020).

The notion of social contracts can explain the success of tailored advertising (Song et al., 2021). Scholars have discovered that when customers agree to provide a business personal information, they are agreeing to an unwritten contract, a mutual agreement that forms and sustains the consumer-business connection (Dunfee et al., 1999; Okazaki et al., 2009). Although many services enable users to choose how much personal information they wish to disclose with a company, protecting one's online privacy takes significant cognitive work and time. As a result, even when customers are aware of the risk, they are exposed to personal data vulnerability. Many customers believe that their personal data is less safe, posing more risk than value, and that going about their everyday lives unnoticed is impossible. As a result, most consumers are skeptical of data collecting and fear that firms are misusing their information (Auxier et al., 2019).

3. Research Hypothesis and Proposed Model

3.1. Effects of perceived personalization

When a message's content is congruent with an individual's self-concept (Wheeler et al., 2005), group membership (Mackie, 1990), self-observing level (Lavine & Snyder, 1996), or customer-search conduct (Tran, 2017), it is regarded to be personalized. Personalization begins with the gathering of data about a person's preferences and inclinations, which is then followed by a personalization process depending on those preferences (Kramer, 2007).

Many firms use personalization to send individualized adverts to consumers based on their unique preferences (Li, 2016), and it is utilized by many organizations for successful advertising and relationship management through social media and email (Montgomery & Smith, 2009). As the connection develops, the consumer's attachment and loyalty to the brand should grow as well, eventually driving consumer purchase decisions (Hollebeek et al., 2014). Personalization can be effective, and is becoming increasingly important in the current online environment, because nowadays businesses have access to massive amounts of data on customer shopping and buying habits, website browsing, and tastes and preferences, all of which can be analysed and compared to create customer profiles. Personalization allows businesses to tailor their interactions with customers based on this information, such as highlighting a specific product that the user has investigated or highlighting brand qualities that the user is likely to find appealing.

To customize ads, businesses employ a number of different tactics. Contextualization, identification, and anticipation are three of the most prevalent techniques. Contextualization is a marketing method that involves structuring an advertisement using relevant contextual elements such as social identification, group membership, individual preference, or demographics (Brown, 2000). The identification approach entails using a person's name to achieve a favourable outcome. The expectation method involves creating phrases that tend to guarantee a personalized offer, such as "This deal is only for you!" (Hawkins, 2008).

Personalization benefits both businesses and customers. Personalize your brand in order to humanize it and make it simpler for customers to express themselves (Ansari & Mela, 2003). Personalized communications are more pertinent, pleasant, attention-getting, convincing, powerful and easily remembered by customers, and buyers are likely to spend more time thinking and digesting these messages (Hawkins, 2008; Noar, 2009). Consumer-brand

interaction boosts brand loyalty and leads to increased sales, profits, cost savings, productivity, and favourable word-of-mouth (Hollebeek, 2014).

Personalized ads improve a variety of consumer–brand connections. In a competitive market, each brand conveys traits that are unique to it (Stokburger-Sauer, 2012). Consumers build emotive associations with the intangible traits and values that each brand reflects and, as a result of this process, a consumer–brand relationship is formed. Congruence between one's self-concept and the brand's capacity to convey advantages that meet the consumer's self-concept is the foundation of a consumer-brand relationship. Personalization also enhances customer loyalty (Srinivasan, 2002) and creates a method for engaging with customers (Kuo & Feng, 2013). As a result, personalisation allows customers to interact with the brand. With this, the following theory is proposed:

H1. Perceived personalization is positively related to consumer engagement.

However, not all of personalization's impacts are favourable; some individuals react badly to advertising that they see as personal to the point of being intrusive (White et al., 2008). This is particularly true when consumers discover that their personal data has been gathered without their consent (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015). Consumers' privacy worries have grown as a result of the rising trend of targeted personal advertising. Consumer behaviour intention linked to privacy concerns was directly impacted by invasiveness, privacy control, perceived utility, and consumer innovativeness, according to Gironda (2018). As they construct their advertising tactics and cultivate long-term client connections, businesses should be mindful of privacy and consumer concerns (Mandal, 2019).

Consumers' privacy concerns may also influence whether these negative consequences materialize. The "personalisation-privacy conundrum" describes the relationship between personalization and privacy concerns (Awad & Krishnan, 2006). According to empirical studies, the more worried people are about their privacy, the less targeted advertising impacts them (Gurau, Ranchhod, & Gauzente, 2003). For this reason, we see a rise in message rejection, especially when privacy concerns are raised.

H2. Perceived personalization is positively related to privacy concerns.

According to previous research, potential results and consequences of having personalized advertising on social media platforms can include perceived intrusiveness, loss of control, privacy concerns, and ad avoidance.

3.2. Effects of information control

The capacity to manage information about oneself and select when and for what purpose such information can be accessible by others is characterized as information privacy (Belanger & Crossler, 2011; Westin, 2003).

Online privacy information control, particularly unpermitted personal information exposure, is connected with perceived intrusiveness. Consumers begin to worry about their privacy, according to Baek and Morimoto (2012), when they are concerned about "the possible violation of the right to restrict the exposure of personal information to others." Consumers may regard unauthorized usage of personal information in personalized advertising as intrusive.

Data-sharing activities, such as secondary usage of personal information, might create the need for information control. Individuals who are sensitive to third-party secondary information use are more concerned about privacy and sense a loss of privacy control when they discover third-party secondary information usage (Culnan, 1993). Furthermore, worries about unlawful access to personal information via mobile devices predict mobile commerce activity (Eastin et al. 2016). Because social media is frequently accessed via mobile devices, same problems apply to tailored marketing on social media.

Customers who believe they have limited control over their online privacy may see personalised marketing on a website or social media as creepy (Tucker, 2014). In these cases, consumers will be less likely to engage with the firms featured in those personalized advertisements and opt to ignore the advertisements.

Empirical data show a link between consumers' information control and privacy concerns, as well as the detrimental consequences of privacy worries on attitudes and actions. When customers have control over their information, they have less privacy concerns (Taylor, Lewin, & Strutton 2011) and a higher chance of purchasing (Phelps, Nowak, & Ferrell 2000).

Social media platforms attempt to alleviate consumers' anxieties by giving them the impression that they have more control over their privacy problems. Platforms provide clients the ability to pick how much privacy they want in the hopes that it would alleviate their concerns (Zhu & Kanjanamekanant, 2021).

A privacy concern arises when people feel an unwelcome intrusion into their private or a lack of control over their personal information (Gimpel et al., 2018; Lin et al., 2019; Yun et al., 2019). One of the most likely effects is an increase in privacy concerns as a result of social

media's capacity to track users' online behaviours such as purchase histories and send personalized ad messages.

Because of customers' privacy concerns, unlawful personal information access for ad personalization affects ad effectiveness (Kim, Barasz, & John 2019). As a result, information control and privacy issues are linked, and privacy concerns may act as a buffer between information control and personalized advertising outcomes.

In conclusion, better information management on social media lessens privacy concerns while increasing good sentiments toward tailored marketing. Controlling information can be done directly based on psychological reactance, influence felt ad intrusiveness and avoidance.

With all of this, the following hypothesis were created:

H3. Information Control is negatively correlated to privacy concerns.

H4. Information Control is positively correlated to consumer engagement.

H5. Information Control is negatively correlated to ad avoidance.

3.3. Effects of privacy concerns

Consumers' privacy concerns can be linked to their interactions with marketeers. Although information management is the most essential aspect in online privacy concerns, creating connections helps to alleviate such worries by increasing customer familiarity and trust prior to information transfers (Sheehan & Hoy 2000).

Scholars have discovered that when ad personalisation goes too far and consumers receive more targeted ads, they believe they are losing control of their data and, as a consequence, privacy concerns rise (Tucker, 2014). This emotion leads to skepticism and avoidance of advertising messages since consumers may perceive them as intrusive (Baek & Morimoto, 2012). In other words, privacy issues may indicate customers' lack of autonomy and control over personal information, thereby impacting ad outcomes and leading to a negative ad review (Jung, 2017).

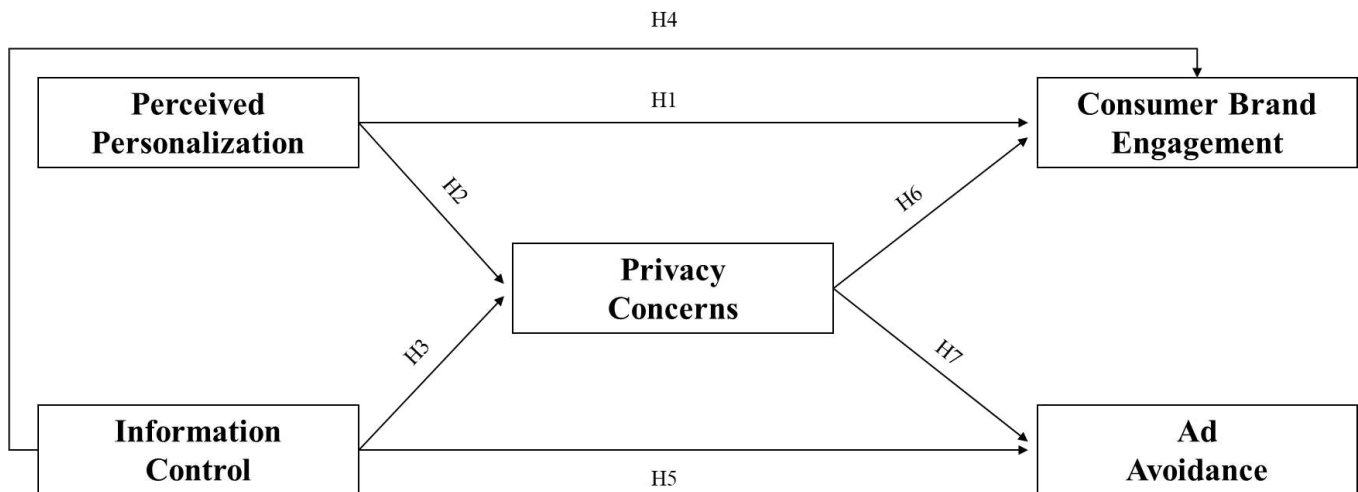
Personal information sharing and ad avoidance are also negatively influenced by privacy concerns (Li et al. 2017), but lessened privacy worries can promote ad clicks and consumer engagement (Tucker, 2014).

Therefore, the following hypotheses are proposed:

H6. Privacy Concerns are negatively correlated to consumer engagement.

H7. Privacy Concerns are positively correlated to ad avoidance.

Figure 3. Proposed model



Source: author's elaboration

4. Methodology

4.1. Research Design and Sampling

The overall approach employed in this study will be discussed in this section with the objective of answering the research questions and objectives of this study, as well as testing the previously created hypothesis. The goal of this study is, therefore, to help determine the consumer's relationship with personalized social media advertising and to test and prove the previously presented conceptual model and the hypothesis mentioned in this model.

In this thesis, the method used for data collection and analysis was a quantitative method (survey). An online survey in both Portuguese and English was used to allow both Portuguese and foreign people to answer. This survey was constructed in online software Google Forms. This software allows the creation of different sections of questions that can help organize the flow of the survey, to only advance in the section if certain conditions are met and finally to download all the answer to Microsoft Excel or SPSS to work the final data.

For this questionnaire, the target population had to be Instagram users since, according to Adobe, Instagram has topped well over 1 billion monthly users and has become one of the most popular social media platforms for teens and young adults.

During this survey, some examples of personalized advertisements were shown. The chosen brands were Spotify and Starbucks since these are both on the Forbes list for the most valuable and known brands around the world. Spotify being the world's largest music streaming service and Starbucks the largest coffeehouse chain in the world, these are both brand the respondents would recognize immediately.

This study used a technique known as convenience sampling. This approach falls under the category of non-probability sampling. This approach offers three advantages, according to Hill (2000). It is quick, cheap, and simple to implement. Despite the fact that it is a simple and routine practice, convenience sampling does not reflect the complete population and has thus been criticized by numerous authors and scholars over the years.

For the dissemination of the survey, several platforms (for example, Facebook, Instagram, and WhatsApp) were utilized to gather data, with the goal of encouraging people to share this survey with their friends and family in order to reach different targets and groups (age, genders and occupations).

4.2. Survey Structure

This survey was divided into six different sections. In the first section, respondents were asked if they use Instagram. If the respondents answered “No” on this question they would be redirected to the end on the survey since they didn’t meet the criteria.

To understand the respondents that met the criteria and to see if they knew what this dissertation was about, in the second section they were asked if they were aware of what personalized advertisements were and if they find this type of ads when they are using Instagram.

The third and fourth sections are focused on the concepts present in the conceptual model: Perceived personalization, privacy concerns and information control (section 3) and ad avoidance and consumer engagement (section 4).

In the fifth section, the Blue Colour Marker was used. According to Brian K. Miller, this marker variable is the ideal to determine if the data suffered from common method variance (CMV) which is a tendency for the correlations between variables obtained at the same time, from the same source, and using the same manner to be artificially inflated. Finally, the sixth section is the demographics and personal data of the respondents.

4.3. Measures

Every respondent that completed the survey answered the questions using a Likert-type scale 1-6 since all the questions were studied and answered through a 6-point Likert type scale. In the case of the examples of personalized ads it was presented as 1 being “completely general ads” and 6 “completely personalized ads”. In all the other questions, respondents answered as 1 being “completely disagree”; 2 “disagree”; 3 “somewhat disagree”; 4 “somewhat agree”; 5 “agree” and 6 “completely agree”.

In this survey, the scale used was a 6-point Likert type scale in order not to offer respondents a neutral option since this can give them an “easy out”. According to Christina Thompson (2018) and Rungson Chomeya (2010), our perceptions are rarely neutral and the 6-point scale helps account for this reality. Another reason for the use of the 6-point scale is that, by not offering the neutral option, respondents are encouraged to give the issue more thought before selecting an answer that leans favourably or negatively and, as a consequence, this scale

shows a higher trend of discrimination and reliability than the scales that present the neutral option (Chomeya, 2010).

Table 4.3.1. Variable Items measured by Likert-type scale

Dimension		Measurement items	Author
Perceived Personalization		PP1. This ad makes purchase recommendations that match my needs.	Srinivasan, 2002
		PP2. I think that this ad enables me to order products that are tailor-made for me.	
		PP3. Overall, this ad is tailored to my situation.	
		PP4. This ad makes me feel that I am a unique customer.	
		PP5. I believe that this ad is customized to my needs.	
Privacy Concerns		When I receive personalized advertising on Instagram...	Adapted from Dolnicar and Jordaan, 2007
		PC1. I feel uncomfortable when information is shared without permission	
		PC2. I am concerned about misuse of personal information.	
		PC3. It bothers me to receive too much advertising material of no interest.	
		PC4. I feel fear that information may not be safe while stored.	
		PC5. I believe that personal information is often misused.	
		PC6. I think companies share information without permission.	
Information Control		IC1. I can easily control the number of ad messages I receive.	Mothersbaugh, 2012
		IC2. I choose the ways in which my personal information may be used for personalized advertising.	
		IC3. I have complete power over how the information I provide will be used later for personalized advertising	
Ad Avoidance		AA1. I intentionally ignore any personalized advertising on Instagram.	Baek and Morimoto, 2012
		AA2. I hate any personalized advertising on Instagram.	
		AA3. It would be better if there were no personalized advertising on Instagram.	
		AA4. I discard personalized advertising on Instagram.	
Consumer Engagement	Cognitive Processing	CP1. Using (brand) gets me to think about (brand)	Hollebeek, 2014
		CP2. I think about (brand) a lot when I'm using it	
		CP3. Using (brand) stimulates my interest to learn more about (brand)	
	Affection	AF1. I feel very positive when I use (brand)	
		AF2. Using (brand) makes me happy	
		AF3. I feel good when I use (brand)	
		AF4. I'm proud to use (brand)	
	Activation	AC1. I spend a lot of time using (brand), compared to other (category) brands	
		AC2. Whenever I'm using (category), I usually use (brand)	
		AC3. (Brand) is one of the brands I usually use when I use (category)	

Source: author's elaboration.

4.4. Sample Characterization

From all the sample (n=556), 77.2% of the respondents have Instagram which means that only 429 respondents continued to answer the survey, while the other 127 ended the survey since they didn't meet the criteria for this study.

1. Do you use Instagram / Usa Instagram?
556 respostas

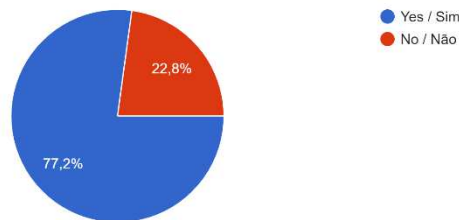


Figure 4.4.1. - Instagram usage by the respondents

Of those 429 respondents (sample taken into consideration for the rest of this analysis), most of them (71.8%) have already encountered personalized ads on Instagram based on their online searches and talks near the cell phone. 20.5% have already encountered at least one of these two scenarios in their Instagram feed.

2. An ad related to a subject I've been researching online or talked about close to my cell phone has already appeared on my Instagram. / Já me apa...quisar online ou do qual falei perto do telemóvel.
429 respostas

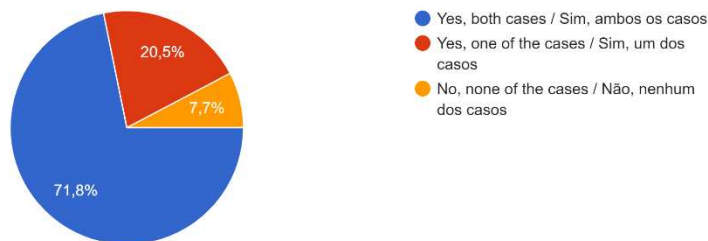


Figure 4.4.2. - Awareness of personalized ads by the respondents

Socio-demographic data helps to better understand the sample population. In the case of this dissertation, it can be necessary to recognize parameters such as gender, age, level of education, and occupation and level of technology expertise because they may have a significant impact on the variables that will be examined later on.

Regarding demographics, in terms of gender, the majority of the respondents (70.2%) are female.

Gender / Género
429 respostas

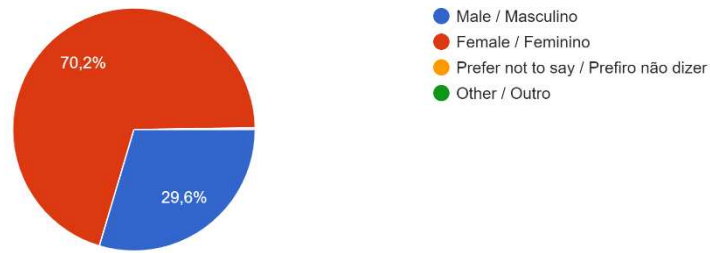


Figure 4.4.3. - Distribution of sample data by gender

Concerning age, a quarter of the respondent's ages are comprehended between 55-64 with 25.4% followed by 20.5% between 45-54 and 18.2% between 25-34.

Age / Idade
429 respostas

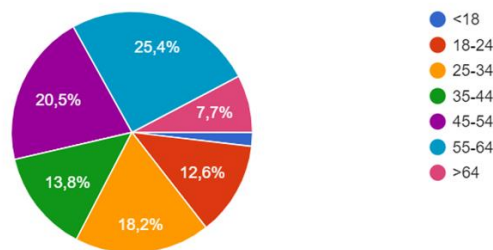


Figure 4.4.4. - Distribution of sample by age

Regarding the education of the respondents, almost half of the respondents have a bachelor's degree (49.2%). Other 28.9% of the respondents have a master's degree.

Education Level (highest achieved) / Habilitações Académicas (grau mais alto que alcançou)
429 respostas

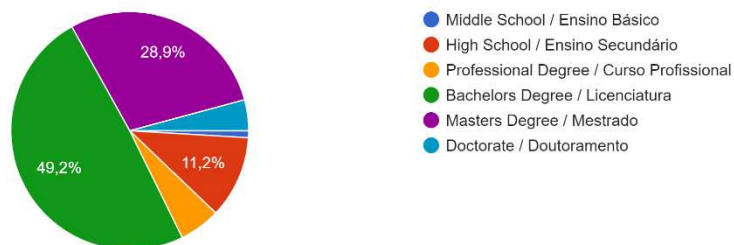


Figure 4.4.5. - Distribution of sample by education level

In terms of occupation, most of the respondents are employed (71.6%).

Occupation / Ocupação
429 respostas



Figure 4.4.6. - Distribution of sample by occupation

Finally, regarding technology expertise, the majority of the respondents consider themselves to be an average user (56.2%), while other 23.3% consider themselves to be experienced concerning technology.

Technology Expertise / Experiência em tecnologia
429 respostas

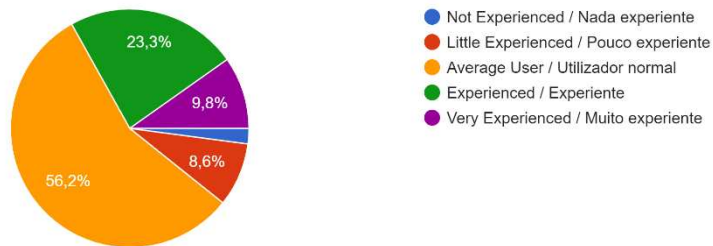


Figure 4.4.7. - Distribution of sample by technology expertise

5. Results and Discussion

Since the variables perceived personalization, information control, privacy concerns, consumer engagement and ad avoidance were constructed based on multiple items, it was necessary to compute scores for these variables before proceeding with the analysis.

A primary Pearson correlation analysis was performed to investigate the degree of linear association among the variables under consideration. This procedure will help confirm or deny the hypothesis being studied in this dissertation.

Then, an analysis to the different scatterplots will also be conducted to test the correlation between the variables being studied.

Finally, to further investigate the linearity between the variables under consideration, we must examine the assumptions required to use the simple linear regression once we want to test the impacts and relationships of the variables of the proposed model in order to prove the hypothesis. The model formulation already assumes one of the fundamental assumptions, which is the linearity of the connection between each of the X and Y variables. Furthermore, because the sample size is bigger than 30, the normal distribution is assumed.

5.1. Hypothesis testing

H1: Perceived personalization is positively related to consumer engagement.

We will start this analysis by looking at the Pearson correlation test.

Table 5.1.1. - Pearson correlation test between perceived personalization and consumer engagement

		Correlations	
		Perceived Personalization	Consumer Engagement
Perceived_Personalization	Pearson Correlation	1	0.662**
	Sig. (2-tailed)		<.001
	N	429	429
Consumer_Engagement	Pearson Correlation	0.662**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

By analysing these results, we can conclude that there is a significant and positive correlation between perceived personalization and consumer engagement since Sig= <0.001 which is lower than our $\alpha=0.05$ and the Pearson correlation factor between these two variables is 0.662.

The next step is to look at the scatterplot between these two variables in order to test the correlation between these two factors. After analysing the scatterplot, we can conclude that 43.9% (R^2 linear) of the consumer engagement variability is proven by perceived personalization.

The final stage for this hypothesis testing is to analyse the linear regression results. Once the assumptions for this model are met, we can ensure that the model is valid by analysing the outputs of the simple linear regression.

Table 5.1.2. – Linear regression test between perceived personalization and consumer engagement

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.662 ^a	0.439	0.437	0.67378	1.914

a. Predictors: (Constant), Perceived_Personalization

b. Dependent Variable: Consumer_Engagement

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	151.501	1	151.501	333.720	<.001 ^b
	Residual	193.848	427	.454		
	Total	345.349	428			

a. Dependent Variable: Consumer_Engagement

b. Predictors: (Constant), Perceived_Personalization

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.1702	4.2041	2.5317	.59496	429
Residual	-2.15459	2.42405	.00000	.67299	429
Std. Predicted Value	-2.288	2.811	.000	1.000	429
Std. Residual	-3.198	3.598	.000	.999	429

a. Dependent Variable: Consumer_Engagement

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.563	.113		5.006	<.001
	Perceived_Personalization	.607	.033	.662	18.268	<.001

a. Dependent Variable: Consumer_Engagement

Source: Author's elaboration

Starting with the analysis on our Durbin-Watson value, we can assume that the residuals are independent since this value is 1.914 which is very close to 2 and, therefore, proves that there is no correlation among residual terms.

Further examination of the model's quality reveals that the residuals have a normal distribution, as seen by the histogram of the residual distribution and the normal P-P plot. Also, the mean of the residual component of the model is very close to zero which indicated that this is a robust model capable of producing statistically meaningful outputs.

Finally, by further analysing the model and its coefficients it is possible to take conclusions on how perceived personalization impacts consumer engagement. Since the Sig of our ANOVA test is lower than our $\alpha=0.05$ (Sig= <0.001), we can conclude that perceived personalization is an important factor in explaining consumer engagement since we can reject the hypothesis that the slope of the equation is zero. Also, since our unstandardized B coefficient is positive (0.607) we can state that the higher the perceived personalization, the higher will be the consumer engagement. In conclusion, the relationship between these two variables can be translated into the following equation: Consumer engagement = $0.607 \times \text{Perceived personalization} + 0.563$.

With all of this, we can conclude that our H1 is valid which means there is a significant positive correlation between perceived personalization of social media ads and consumer engagement.

H2: Perceived personalization is positively related to privacy concerns.

Table 5.2.1. - Pearson correlation test between perceived personalization and privacy concerns

Correlations		Perceived Personalization	Privacy Concerns
Perceived_Personalization	Pearson Correlation	1	-.251**
	Sig. (2-tailed)		<.001
	N	429	429
Privacy_Concerns	Pearson Correlation	-.251**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

When looking at the Pearson correlation test results we can conclude that, unlike what we were expecting, there is a significant and negative correlation between perceived personalization and privacy concerns since Sig= <0.001 which is lower than our $\alpha=0.05$ and the Pearson correlation factor between these two variables is -0.251.

Then, by interpreting the scatterplot between these two variables we can state that 6.3% (R^2 linear) of the privacy concerns variability is proven by perceived personalization. This value is quite lower than in our first hypothesis and it proves that the correlation between perceived personalization and privacy concerns is not as significant as the relationship between the variables of our H1.

Table 5.2.2. – Linear regression test between perceived personalization and privacy concerns

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.251 ^a	.063	.061	.83809	2.127

a. Predictors: (Constant), Perceived_Personalization

b. Dependent Variable: Privacy_Concerns

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.102	1	20.102	28.619	<.001 ^b
	Residual	299.923	427	.702		
	Total	320.025	428			

a. Dependent Variable: Privacy_Concerns

b. Predictors: (Constant), Perceived_Personalization

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.4663	5.5714	5.0755	.21672	429
Residual	-3.08516	1.44529	.00000	.83711	429
Std. Predicted Value	-2.811	2.288	.000	1.000	429
Std. Residual	-3.681	1.724	.000	.999	429

a. Dependent Variable: Privacy_Concerns

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.792	.140		41.376	<.001
	Perceived_Personalization	-.221	.041	-.251	-5.350	<.001

a. Dependent Variable: Privacy_Concerns

Source: Author's elaboration

After performing a linear regression test for these variables, we can start by looking at the Durbin Watson value for this model which is 2.127. This means there is no correlation between the residual terms in this model. By looking at the residual's histogram, P-P plot and scatterplot, even though the residuals have a mean close to zero and a standard deviation of one, we can conclude that the residuals are not normally distributed. Despite this being a sign of an insufficient model since it means that the model's errors (residuals) are not consistent across variables and data (i.e. the errors are not random) and, as a consequence, the model is not valid, in our case, because we have a large sample size, this normality assumption is less important due to the central limit theory and, with this being said, we will continue with the analysis for our model.

When interpreting the ANOVA test for this model, it is put in evidence that perceived personalization is relevant when explaining the privacy concerns of a social media user ($\text{Sig} = <0.001 < \alpha$).

Then, we must analyse the other results and coefficients of the linear regression for this model in order to find the impact perceived personalization of social media ads has on the consumer's privacy concerns. Due to our Sig ($= <0.001$) being lower than our $\alpha=0.05$ we can state that perceived personalization can have a significant impact on the consumer's privacy concerns. Furthermore, in this case our unstandardized B coefficient has a negative value of -0.221 which means that the more personalized the social media ad is, the less concerns people have about their online privacy. Overall, we can translate the relationship between these two variables with the formula:

$$\text{Privacy concerns} = -0.221 * \text{Perceived Personalization} + 5.792.$$

Finally, even though one of the assumptions was not met (normally distributed residuals), our large sample size allowed us to still have a valid model to prove the meaningful negative impact that perceived personalization of ads has on consumer's privacy concerns. Although these were not the results we were expecting, these tests still allowed us to reject our hypothesis (H2) and conclude that there is actually a negative impact between perceived personalization of social media ads and privacy concerns.

H3: Information control is negatively related to privacy concerns.

Table 5.3.1. - Pearson correlation test between information control and privacy concerns

Correlations		Privacy Concerns	Information Control
Privacy_Concerns	Pearson Correlation	1	-.171**
	Sig. (2-tailed)		<.001
	N	429	429
Information_Control	Pearson Correlation	-.171**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

By analysing the result of our Pearson correlation test we can conclude that there is a significant and negative correlation between information control and privacy concerns since Sig= <0.001 which is lower than our $\alpha=0.05$ and the Pearson correlation factor between these two variables is -0.171.

After analysing the Pearson correlation results, we must look at the scatterplot that these variables form. By interpreting this scatterplot, we can conclude that only 2.9% (R^2 linear) of the privacy concerns variability is impacted by information control, which is quite a low value and means that the two variables demonstrate a low correlation.

Table 5.3.2. – Linear regression test between information control and privacy concerns

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.171 ^a	.029	.027	.85291	2.071

a. Predictors: (Constant), Information_Control

b. Dependent Variable: Privacy_Concerns

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.399	1	9.399	12.921	<.001 ^b
	Residual	310.626	427	.727		
	Total	320.025	428			

a. Dependent Variable: Privacy_Concerns

b. Predictors: (Constant), Information_Control

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.6664	5.2990	5.0755	.14819	429
Residual	-3.08865	1.33364	.00000	.85192	429
Std. Predicted Value	-2.761	1.508	.000	1.000	429
Std. Residual	-3.621	1.564	.000	.999	429

a. Dependent Variable: Privacy_Concerns

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.457	.114		47.916	<.001
	Information_Control	-.158	.044	-.171	-3.595	<.001

a. Dependent Variable: Privacy_Concerns

Source: Authors elaboration

By analysing these linear regression test results, we can state that this model is robust and able to generate statistically significant results. The Durbin Watson value for this model is 2.071 meaning that there is no correlation between residuals in this model. In this case, not all the assumptions were met for this model.

After looking at the residual's histogram, P-P plot and scatterplot, we can conclude that the residuals are not normally distributed which would mean that this model is not valid but, as in the previous hypothesis we will continue to analyse this model due to our large sample size.

With the ANOVA test we can conclude that user's information control has a relevant relationship with their privacy concerns since the Sig (= <0.001) for this test is lower than the α value.

In order to validate the model and take conclusions about the correlation between information control and privacy concerns, we must continue the analysis of the linear regression results. We can start by concluding that information control has a low yet significant negative impact on consumer's privacy concerns since $\text{Sig} < \alpha$ and the unstandardized B coefficient= -0.158 which can be translated into the growth of user's information control leads to a decrease in their privacy concerns. This relationship can be transformed into the following equation:

$$\text{Privacy concerns} = -0.158 * \text{Information Control} + 5.457$$

With all of this information we can conclude that the control the consumers have over their information on social media negatively affects their privacy concerns, which means H3 is valid. Consumers with more control over the information shared have, therefore, less privacy concerns.

H4. Information Control is positively correlated to consumer engagement.

Table 5.4.1. - Pearson correlation test between information control and consumer engagement

Correlations		Information Control	Consumer Engagement
Information_Control	Pearson Correlation	1	.415**
	Sig. (2-tailed)		<.001
	N	429	429
Consumer_Engagement	Pearson Correlation	.415**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors elaboration

With these results we can confirm that user's information control has a significant and positive correlation with consumer engagement since Sig ($= <0.001$) is lower than our $\alpha=0.05$ and the Pearson correlation factor between these two variables is 0.415.

Then, by interpreting the scatterplot, we come to the conclusion that 17.2% (R^2 linear) of the consumer engagement variability is proven by information control.

To finalize the analysis for this hypothesis we must consider the linear regression results for these two variables.

Table 5.4.2. – Linear regression test between information control and consumer engagement

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.415 ^a	.172	.170	.81831	1.763

a. Predictors: (Constant), Information_Control

b. Dependent Variable: Consumer_Engagement

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.417	1	59.417	88.732	<.001 ^b
	Residual	285.932	427	.670		
	Total	345.349	428			

a. Dependent Variable: Consumer_Engagement

b. Predictors: (Constant), Information_Control

Residuals Statistics^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.9697	3.5603	2.5317	.37259	429
Residual	-2.42910	2.79906	.00000	.81735	429
Std. Predicted Value	-1.508	2.761	.000	1.000	429
Std. Residual	-2.968	3.421	.000	.999	429

a. Dependent Variable: Consumer_Engagement

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	1.572	.109		<.001
	Information_Control	.398	.042	.415	<.001

a. Dependent Variable: Consumer_Engagement

Source: Author's elaboration

Starting with the ANOVA test analysis, we can conclude that the slope of the model's line is not zero since we can reject the null hypothesis due to having the Sig value $< \alpha$. Furthermore, we can conclude that the residuals have a small positive autocorrelation since the Durbin-Watson value is 1.763 but this number is still inside the acceptable range (1.50-2.50). Also, by analysing the residuals histogram and P-P plot we can conclude that this model is capable of producing statistically significant outputs since the residuals follow a normal distribution with mean of zero and standard deviation of 1.

Stepping to the linear regression analysis, by having a Sig value $< \alpha$ we can conclude that user's information control is an important factor in explaining consumer engagement. In this case, our unstandardized B coefficient is positive (0.398) we can state that the higher the consumer's control over the information shared, the higher will be the consumer engagement. As a result, we can summarize the relationship between these two variables in one simple equation:

$$\text{Consumer engagement} = 0.398 * \text{Information control} + 1.572$$

To finalize, after this analysis we come to the conclusion that H4 is valid which means that there is a significant positive correlation between consumer's control over information shared and consumer engagement.

H5. Information Control is negatively correlated to ad avoidance.

Table 5.5.1. - Pearson correlation test between information control and ad avoidance

		Correlations	
		Information Control	Ad Avoidance
Information_Control	Pearson Correlation	1	-.199**
	Sig. (2-tailed)		<.001
	N	429	429
Ad_Avoidance	Pearson Correlation	-.199**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

By analysing the results of our Pearson correlation test, we can conclude that there is a significant and negative correlation between information control and ad avoidance due to our Sig (≤ 0.001) being lower than α ($=0.05$) and the Pearson correlation factor between these two variables being -0.199.

Then, by interpreting the scatterplot formed between these two variables, we can confirm that only 4% (R^2 linear) of ad avoidance variability can be explained by user's information control. This means the correlation between these two variables is very small since the coefficient of determination is close to zero and there is a large collection of disperse data points.

Table 5.5.2. – Linear regression test between information control and avoidance

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.199 ^a	.040	.037	1.08364	1.889

a. Predictors: (Constant), Information_Control

b. Dependent Variable: Ad_Avoidance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.670	1	20.670	17.602	<.001 ^b
	Residual	501.419	427	1.174		
	Total	522.089	428			

a. Dependent Variable: Ad_Avoidance

b. Predictors: (Constant), Information_Control

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.7447	4.6829	4.3514	.21976	429
Residual	-3.04118	2.17790	.00000	1.08238	429
Std. Predicted Value	-2.761	1.508	.000	1.000	429
Std. Residual	-2.806	2.010	.000	.999	429

a. Dependent Variable: Ad_Avoidance

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.917	.145		33.984	<.001
	Information_Control	-.235	.056	-.199	-4.195	<.001

a. Dependent Variable: Ad_Avoidance

Source: Author's elaboration

To test how information control impacts ad avoidance a linear regression test was conducted. By analysing the results, we can conclude that the model is valid. First, the Durbin-Watson value is 1.889 which is relatively close to 2, meaning there is little to no correlation among residual terms. Second, by looking at the residual's histogram and normal P-P plot, we can confirm that residuals follow an overall normal distribution. Finally, the histogram also verified that the mean of the residual term is zero and the standard deviation is one. With all of this we can conclude that this model is able to produce statistical relevant data.

To better understand the relationship between the two variables, we start by analysing the ANOVA test results. This test demonstrates that information control is relevant when explaining ad avoidance since $\text{Sig} = <0.001 < 0.05$. Then, by looking at the unstandardized B ($= -0.235$) we may deduce that the greater the consumer's control over their personal information, the less likely they are to avoid advertisements. This relationship is also supported by the Pearson correlation results.

This linear regression test is able to produce statistically significant results since $\text{Sig} = <0.001 < 0.05$. The relationship between information control and ad avoidance can be measured through the following model:

$$\text{Ad avoidance} = -0.235 * \text{Information Control} + 4.917.$$

For all the reasons mentioned above, H5 is validated

H6. Privacy Concerns are negatively correlated to consumer engagement.

Table 5.6.1. – Pearson correlation test between privacy concerns and consumer engagement

Correlations		Privacy Concerns	Consumer Engagement
Privacy_Concerns	Pearson Correlation	1	-.232**
	Sig. (2-tailed)		<.001
	N	429	429
Consumer_Engagement	Pearson Correlation	-.232**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

First off, by evaluating our Pearson correlation test results we can confirm that there is a meaningful negative correlation between a consumer's privacy concerns and their engagement because of two reasons: 1) The $\text{Sig} = <0.001$ which is lower than our $\alpha = 0.05$ and 2) the Pearson correlation factor between these two variables is -0.232 .

Then, by studying the scatterplot created by the relationship between these two variables, we can conclude that 5.4% (R^2 linear) of the consumer engagement fluctuation can be explained by their privacy concerns which can be translated into a low impact correlation between these factors.

Table 5.6.2. – Linear regression test between privacy concerns and consumer engagement

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.232 ^a	.054	.052	.87469	1.785

a. Predictors: (Constant), Privacy_Concerns

b. Dependent Variable: Consumer_Engagement

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.658	1	18.658	24.387	<.001 ^b
	Residual	326.691	427	.765		
	Total	345.349	428			

a. Predictors: (Constant), Privacy_Concerns

b. Dependent Variable: Consumer_Engagement

Residuals Statistics^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.3085	3.3153	2.5317	.20879	429
Residual	-1.79138	3.59153	.00000	.87367	429
Std. Predicted Value	-1.069	3.753	.000	1.000	429
Std. Residual	-2.048	4.106	.000	.999	429

a. Dependent Variable: Consumer_Engagement

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.757	.252		14.925	<.001
	Privacy Concerns	-.241	.049	-.232	-4.938	<.001

a. Dependent Variable: Consumer_Engagement

Source: Author's elaboration

Beginning with the ANOVA test, we are able to prove that the slope of the model's line is not zero since we can reject the null hypothesis as a result of having a Sig value lower than our α (Sig= <0.001). This proves that privacy concerns are an important variable in explaining consumer engagement.

We can also assume that the residuals are independent since our Durbin-Watson value is 1.785 which is close to 2 and in the acceptable range which verifies that there is no correlation among residual terms.

The next step in assessing this model's quality is to look at the histogram of the residual distribution and the normal P-P plot. This analysis reveals that the residuals follow a normal distribution. We can also state that the mean of the residual component of this model is very close to zero and its standard deviation is one. Thus, with all of this information we can assume that this model will be able to produce crucial statistical results for this study.

To finalize this analysis, we must first interpret the results of our linear regression model. First, we can see that our unstandardized B coefficient has a negative value of -0.241, which proves that the growth of privacy concerns by the consumers leads to a decline in their engagement. Finally, we can summarize this model and the relation between these variables into a simple equation:

$$\text{Consumer engagement} = -0.241 * \text{Privacy concerns} + 3.757.$$

As a result, we can conclude that H6 is valid meaning that there is a considerable negative correlation between privacy concerns a consumer has with social media advertisements and its engagement with the advertised brands.

H7. Privacy Concerns are positively correlated to ad avoidance.

Table 5.7.1. – Pearson correlation test between privacy concerns and ad avoidance

Correlations			
		Privacy Concerns	Ad Avoidance
Privacy_Concerns	Pearson Correlation	1	.472**
	Sig. (2-tailed)		<.001
	N	429	429
Ad_Avoidance	Pearson Correlation	.472**	1
	Sig. (2-tailed)	<.001	
	N	429	429

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Author's elaboration

In the first place, by interpreting the results of this Pearson correlation test we can state that there is powerful positive correlation between privacy concerns and ad avoidance. The reasoning behind this conclusion is that the Sig value for this test is lower than our P-value ($\alpha=0.05$) and the Pearson correlation factor between these variables is 0.472.

In the second place, by analysing the scatterplot these variables form we can conclude that 22.3% (R^2 linear) of the ad avoidance volatility can be explained by the impact of privacy concerns.

Table 5.7.2. – Linear regression test between privacy concerns and ad avoidance

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.472 ^a	.223	.221	.97486	1.901

a. Predictors: (Constant), Privacy_Concerns

b. Dependent Variable: Ad_Avoidance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	116.291	1	116.291	122.366	<.001 ^b
	Residual	405.799	427	.950		
	Total	522.089	428			

a. Dependent Variable: Ad_Avoidance

b. Predictors: (Constant), Privacy_Concerns

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.3950	4.9087	4.3514	.52126	429
Residual	-3.10730	2.34832	.00000	.97372	429
Std. Predicted Value	-3.753	1.069	.000	1.000	429
Std. Residual	-3.187	2.409	.000	.999	429

a. Dependent Variable: Ad_Avoidance

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.292	.281		4.605	<.001
	Privacy_Concerns	.603	.054	.472	11.062	<.001

a. Dependent Variable: Ad_Avoidance

Source: Author's elaboration

By analysing these linear regression test results, we can state that this model is robust and able to generate statistically significant results because our Durbin-Watson value for this model is 1.901 which, by being close to 2, means that there is little to no correlation between residuals in this model.

Then, by interpreting the residual's histogram and P-P plot, we can conclude that the residuals are normally distributed with a mean very close to zero a standard deviation to one.

For the ANOVA test analysis, by looking at our Sig value ($= <0.001$) we can confirm that consumer's privacy concerns have a relevant relationship with their need for avoiding advertisements.

The next step for this analysis, in order to validate this model and take conclusions on the correlation between privacy concerns and ad avoidance, is to look at the linear regression results. We can start by concluding that privacy concerns have a significant positive impact with ad avoidance since $\text{Sig} < \alpha$ and the unstandardized B coefficient = 0.603. With all this information and results we can translate the relation between these two variables into the following model:

$$\text{Ad avoidance} = 0.603 * \text{Privacy concerns} + 1.292$$

In conclusion, we can establish that privacy concerns consumers have about social media advertisements might lead them to ignore and avoid them. The more concerned a consumer is about social media marketing, the more likely he is to avoid them. Finally, we can conclude that our H7 is valid.

Table 5.1. – Summary of hypothesis

Research Hypothesis	Conclusion
H1: Perceived personalization is positively related to consumer engagement.	VALIDATED
H2: Perceived personalization is positively related to privacy concerns.	REJECTED
H3: Information control is negatively related to privacy concerns.	VALIDATED
H4: Information control is positively correlated to consumer engagement.	VALIDATED
H5: Information control is negatively correlated to ad avoidance.	VALIDATED
H6: Privacy concerns are negatively correlated to consumer engagement.	VALIDATED
H7: Privacy concerns are positively correlated to ad avoidance.	VALIDATED

Source: Author's elaboration

According to Mariko Morimoto's study (2021), privacy concerns act as a buffer between information control and ad avoidance. Morimoto states that a person's confidence in handling personal information can lead to competence in information control and a reduction in privacy

concerns. In addition, privacy concerns predict the results of advertising, such as avoidance. This author concluded that information control has a significant impact on privacy concerns and responses, as well as personalized advertising perceptions on social media.

5.2. Final Results

To summarize our analysis and to better understand the variables we are studying and their relationships a final table we be presented. The following table contains the values for the correlations and unstandardized B between the variables of each hypothesis of this study.

Table 5.2. – Summary of results

Variables	Pearson Correlation	Unstandardized B (β)
H1: Perceived Personalization → Consumer Engagement	0.662	0.607
H2: Perceived Personalization → Privacy Concerns	REJECTED -0.251	REJECTED -0.221
H3: Information Control → Privacy Concerns	-0.171	-0.158
H4: Information Control → Consumer Engagement	0.415	0.398
H5: Information Control → Ad Avoidance	-0.199	-0.235
H6: Privacy Concerns → Consumer Engagement	-0.232	-0.241
H7: Privacy Concerns → Ad Avoidance	0.472	0.603

Source: Author's elaboration

By analysing this final table, even though all the hypothesis are relevant we must highlight the two main ones (higher Pearson correlation and unstandardized B): H1- Perceived personalization is positively related to consumer engagement and H7- Privacy concerns are positively correlated to ad avoidance. Firstly, consumer's perceived personalization of an ad has a strong and positive influence on their engagement with the advertised brand. Secondly, there is also a significant positive relationship between consumer's privacy concerns about social media advertisements and their desire to avoid and the ads. In conclusion, there is a

remarkably strong and positive impact between certain variables in both of this hypothesis which deserved to be emphasized clearly in order to better understand the results of this study.

6. Conclusions and Recommendations

In this last chapter we present the main conclusions and recommendations of this dissertation. Thus, the purpose of this chapter is to link the gap between the objectives that were initially mentioned and the study's conclusions, and to determine how valuable the findings are for the areas of marketing and management both in theory and in practice. The main aim for the present thesis is to better understand the multiple impacts that personalized advertising has on consumers nowadays, their perceptions of personalized advertising on social media.

With the recent emergence and evolution of social media advertising we are now exposed to personalized advertising in many different channels (Celtra, 2015), there for, it is important to study the diverse impacts this has on consumers. Personalization can be characterized by incorporating elements of a person in the content information (Dijkstra, 2008), for instance, simple aspects such as a person's name, photo, personal information or more complex aspects such as websites visited, recent online searches or even information mentioned near the phone (cue-based personalization).

According to Shanahan (2019), social media provides a rich environment for advertisers to connect with consumers on a more personalized level, which is an especially important conclusion considering the widespread use of social media among consumers and the rising use of the social media platform by businesses. This study also suggests that personalized advertising is more likely to be successful in this channel due to the interactive nature of social media making this a particular environment for personalized advertising to thrive.

This dissertation studies multiple aspects related to social media advertising such as perceived personalization, information control, privacy concerns, consumer engagement and, finally, ad avoidance.

First, our findings suggest that perceived personalization of social media advertising has, on the one hand, a positive impact consumer engagement and, on the other hand, a negative impact on privacy concerns. Personalized advertising can be seen as the perfect way to engage with consumers, especially in the social media environment. Thus, this marketing strategy leads to an increase of interaction and engagement on social media. However, perceived personalization was thought to lead to an increase of privacy concerns from the consumer. Other studies suggest that personalization of ads makes consumers feel their freedom is being threatened leading them to sometimes reject these ads to, in a way, regain their freedom. On the

contrary, our study concludes that perceived personalization of social media ads leads to a decrease on consumer's privacy concerns.

Second, this thesis also verifies that information control has a negative correlation with both privacy concerns and ad avoidance and a positive correlation with consumer engagement. With this, we can conclude that people with more control over their personal information are less worried about their privacy which can, therefore, improve their ad perceptions and, as a consequence, facilitate and increase their interactions with the advertised brands and decrease their need to avoid the ads.

6.1. Theoretical Implications

There can be several theoretical implications deriving from this dissertation. The present thesis can contribute to the advertising and branding world by offering a deeper knowledge of personalized advertising on social media.

As it was mentioned in the previous chapter, this research highlights the influence of personalized ads on consumer engagement, privacy concerns and ad avoidance through information control and perceived personalization. By following consumers online (previous searches, personal information), this advertising strategy has both positive and negative consequences. It can create positive outcomes such as the increase on engagement but also negative outcomes such as an increase on ad avoidance.

This thesis explores the antecedents (perceived personalization and information control) and consequences (privacy concerns, ad avoidance and consumer engagement) on the use of personalized advertising strategies on social media. This research suggests that this marketing strategy allows for a better interaction and bond between brands and consumers, leading to a continued growth of consumer brand engagement. We can highlight, therefore, that perceived personalization of social media advertisements is a key driver for consumer brand engagement.

Then, by analysing our results, we can conclude that the control consumers have over their own personal information is also a key aspect for the investigation on the personalized advertising strategies used on social media. Privacy concerns can have a significant impact on the outcome of personalized advertising strategies. As such, by having more control over personal information, consumers demonstrate a reduction in their concerns about privacy on social media. Information control is the main driver for privacy concerns and, as a consequence,

also for personalized advertisement outcomes on social media and avoidance of the respective ads.

6.2. Marketing and Managerial Implications

This dissertation can bring valuable insights for various management and marketing fields. The research findings can help understand how personalized advertising impacts the consumer and the success of the advertising strategies used. This study will allow brands to choose the right way to implement a personalized advertising strategy for their social media marketing in order to maximize consumer engagement.

This study found that perceived personalization and information control are some of the most important variables when discussing the impact of a personalized advertising strategy on consumers. The results revealed that perceived personalization has a significant and positive impact on consumer engagement. This can be useful for brands in a way that shows them how to increase consumer brand engagement, a way to better interact with consumers. Perceived personalization can be a key factor for the success of a social media advertising strategy since it can improve consumers' perceptions over this kind of ads.

On social media, consumers have the option to accept or reject personalized advertisements. They can keep this freedom of choice by managing personal information, information they can decide to share or not with the social media platforms, which can lead to a sense of autonomy and power. Furthermore, those who believe their freedom has been violated can demonstrate concerns about their privacy and, as a consequence, may react badly to future personalized advertising attempts, either by perceiving them in a negative way or avoiding them. Finally, we can conclude that using social media technology to give customers more control over their personal information and more ability to filter personalized advertising can enhance ad perceptions and lead consumer to better accept these ads, increase consumer engagement.

6.3. Limitations and Future Research Recommendations

After presenting the conclusions for this study we must also mention that, although our research has theoretical and practical implications, it still has its limitations which will be presented in this chapter.

Firstly, the sample, even though it was considerable in terms of number, it is mainly composed of women (70.2%). In addition, since not all our respondents had Instagram, a

significant number of answers was not considered for the rest of the analysis (22.8% - 127 respondents). With this, the size of our sample was significantly reduced.

Secondly, as it was mentioned in the methodology chapter of this dissertation, the sampling method used for this study was a non-probability sampling method. Even though it is quick and simple to use, this method comes with its limitations, being the main one the fact that the respondents do not reflect the complete population and should only be considered in the context of this research.

Finally, this research was conducted only through a quantitative analysis (online survey). Adding a qualitative method, such as interviews or focus groups, would have increase the study's credibility and value. Also, even though there were multiple and reversed questions to measure each construct, the credibility of our study is still affected by inaccurate answers as a result of incorrect interpretation of both questions and concepts. Since the method used was a online questionnaire, we cannot guarantee that the respondents read, analysed and though carefully before answering each question of the survey.

On another matter, despite its limitations, this researched provided useful and significant information that can encourage and facilitate further research.

This dissertation gave several insights on how ad personalization and information control impact privacy concerns and consumer engagement, contributing to areas such as social media marketing. Further research on this topic should include experimental designs of social media advertisements to investigate their impact on consumers (privacy concerns, consumer engagement, etc.) in greater depth and attempt to discover the success formula for social media advertisements.

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8. Appendix

Appendix A – Online Survey

SECTION 1 – MASTER THESIS

Hi! My name is Luís Ruivo and I am a finalist in the Master in Marketing at ISCTE-IUL. I am developing this article for my dissertation on the "The consumer's relationship with personalized social media ads".

To each question you must give the first answer that comes to your mind, without thinking about the previous answers. All responses are anonymous so please respond as honestly as possible. This takes approximately 7 minutes. Any questions contact: luis.reis.ruivo@hotmail.com.

Thank you for your participation.

1. Do you use Instagram?

☐ Yes.

☐ No.

SECTION 2 -PERSONALIZED ADS ON SOCIAL MEDIA

Personalized advertising is the process of advertising in which a retailer develops a customized ad of a product or service, on social media, based on prior customer activities on the Internet.

2. An ad related to a subject I've been researching online or talked about close to my cell phone has already appeared on my Instagram.

☐ Yes, both cases.

☐ Yes, one of the cases.

☐ No, none of the cases.

SECTION 3 – IMPACT ON CONSUMER

3 - These ads make purchase recommendations that match my needs.

☐ Strongly disagree.

- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

4 - I think that these ads enable me to order products that are tailor-made for me.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

5 - Overall, these ads are tailored to my situation.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

6 - These ads make me feel that I am a unique customer.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

7 - I believe that these ads are customized to my needs.

☐ Strongly disagree.

☐ Disagree.

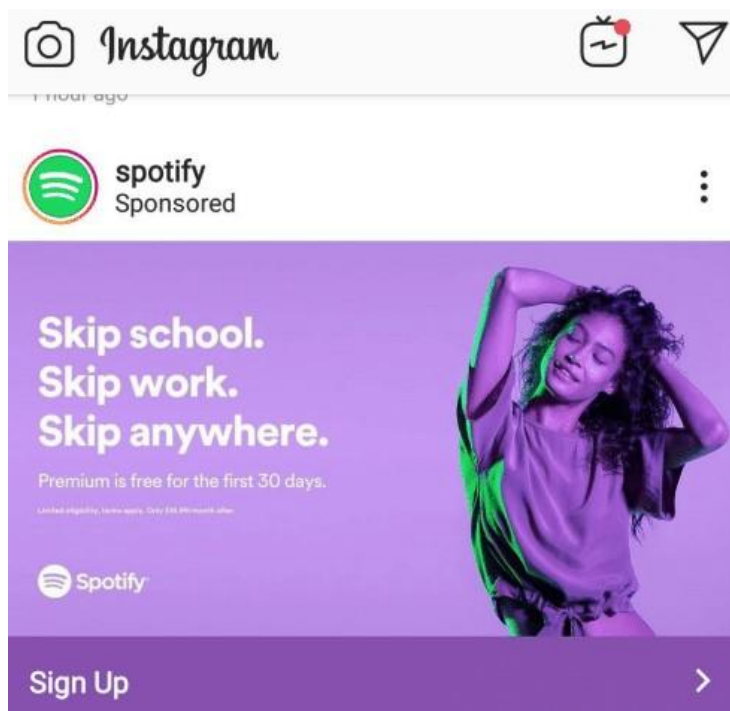
☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

8 - How personalized does this ad seem to you? (Consider 1-completely general and 6-completely personalized).



☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

9. When I receive personalized advertising on Instagram...						
9.1. I feel uncomfortable when information is shared without permission.	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
9.2. I am concerned about misuse of personal information.	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
9.3. It bothers me to receive too much advertising material of no interest.	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
9.4. I feel fear that information may not be safe while stored.	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
9.5. I believe that personal information is often misused.	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
9.6. I think companies share information	Strongly disagree	Disagree	Somewhat disagree.	Somewhat agree.	Agree	Strongly agree

without permission.						
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10 - I can easily control the number of ad messages I receive.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

11 - I choose the ways in which my personal information may be used for personalized advertising.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

12 - I have complete power over how the information I provide will be used later for personalized advertising.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

13 - How personalized does this ad seem to you? (Consider 1-completely general and 6-completely personalized).



- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

14 - I intentionally ignore any personalized advertising on Instagram.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

15 - I hate having personalized advertising on Instagram.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

16 - It would be better if there were no personalized advertising on Instagram.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

17 - I always discard personalized advertising on Instagram.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

18 - Using personalized ads gets me to think about those brands.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

19 - I think a lot about brands that use personalized ads.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

20 - Using personalized ads stimulates my interest to learn more about such brands.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

21 - I feel very positive when I use brands with personalized ads.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

22 - Using brands with personalized ads makes me happy.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

23 - I feel good when I use brands with personalized ads.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

24 - I'm proud to use brands with personalized ads.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

25 - I spend a lot of time using brand with personalized ads, compared to other brands.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

26 - Whenever I'm using a product, I usually use those which come from brands with personalized ads.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

27 - Brands with personalized ads are those that I usually use regardless of the product it is.

☐ Strongly disagree.

☐ Disagree.

☐ Somewhat disagree.

☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

SECTION 4 – BLUE COLOR MARKER

28 - I like the color blue.

☐ Strongly disagree.

- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

29 - The color blue is nice.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

30 - I love the color blue.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.
- ☐ Agree.
- ☐ Strongly agree.

31 - I hope to buy a car in the color blue.

- ☐ Strongly disagree.
- ☐ Disagree.
- ☐ Somewhat disagree.
- ☐ Somewhat agree.

☐ Agree.

☐ Strongly agree.

SECTION 5 – PERSONAL DATA

Gender.

☐ Male.

☐ Female.

☐ Prefer not to say.

☐ Other.

Age.

☐ <18.

☐ 18-24.

☐ 25-34.

☐ 35-44.

☐ 45-54.

☐ 55-64.

☐ >64.

Education Level (highest achieved)

☐ Middle school.

☐ High school.

☐ Professional degree.

☐ Bachelor's degree.

☐ Master's degree.

☐ Doctorate.

Occupation

☐ Student.

☐ Student-worker.

☐ Employed.

☐ Retired.

☐ Unemployed.

☐ Other.

Technology expertise.

☐ Not experienced.

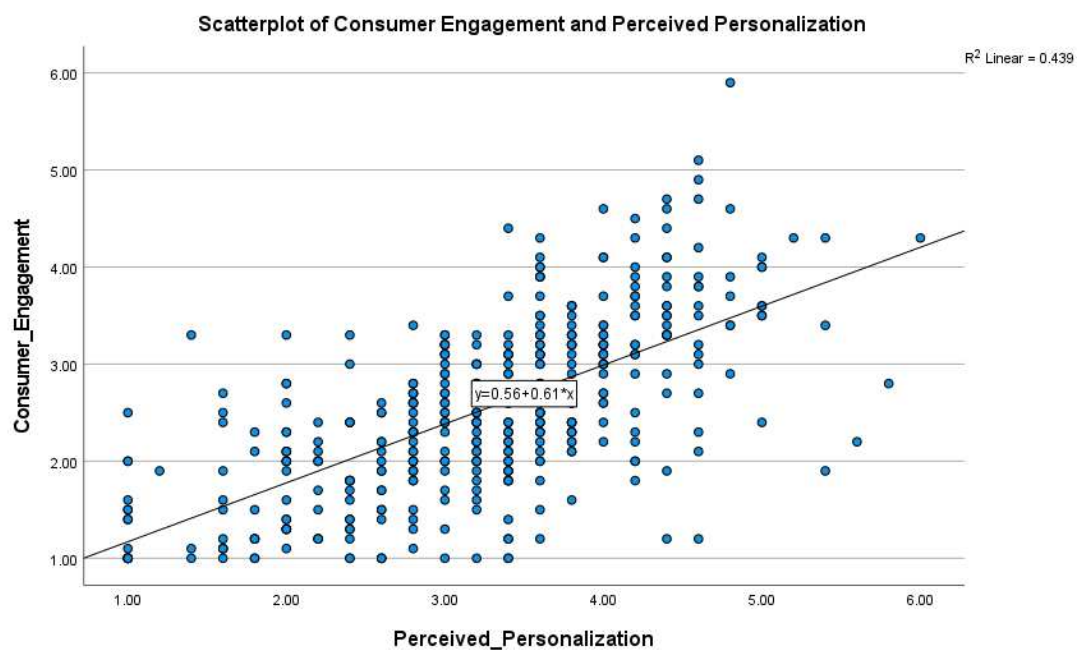
☐ Little experience.

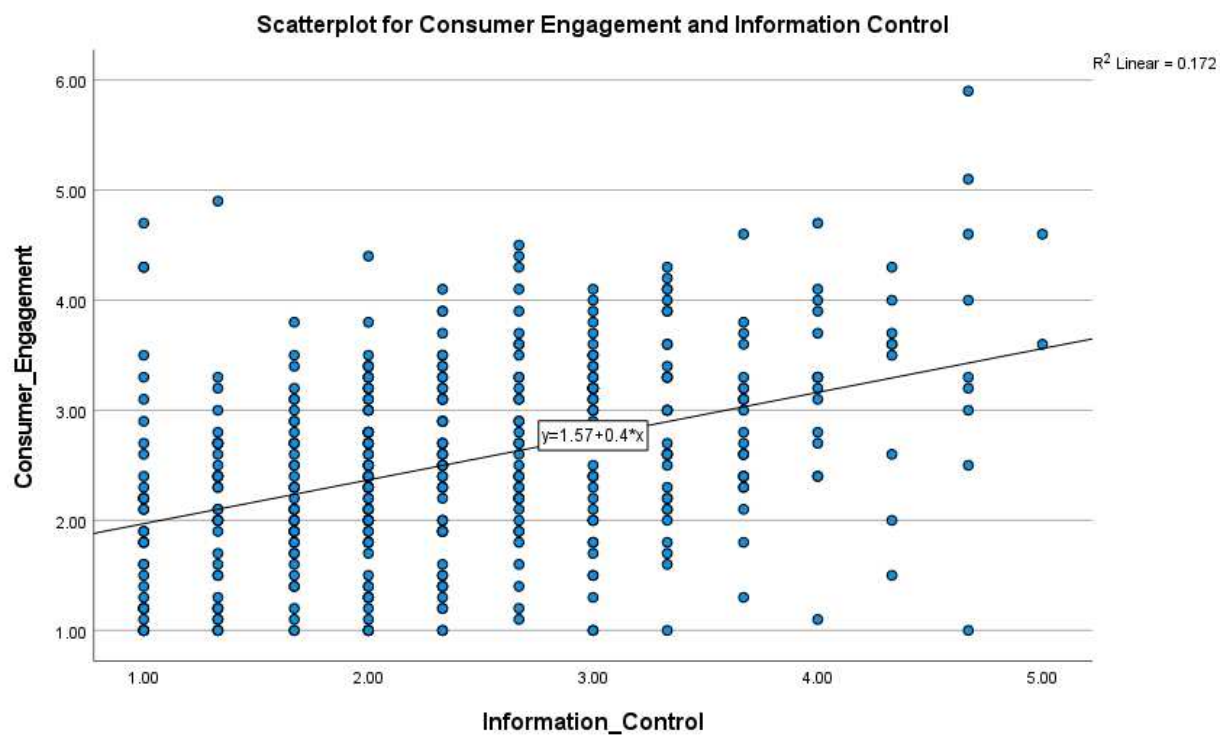
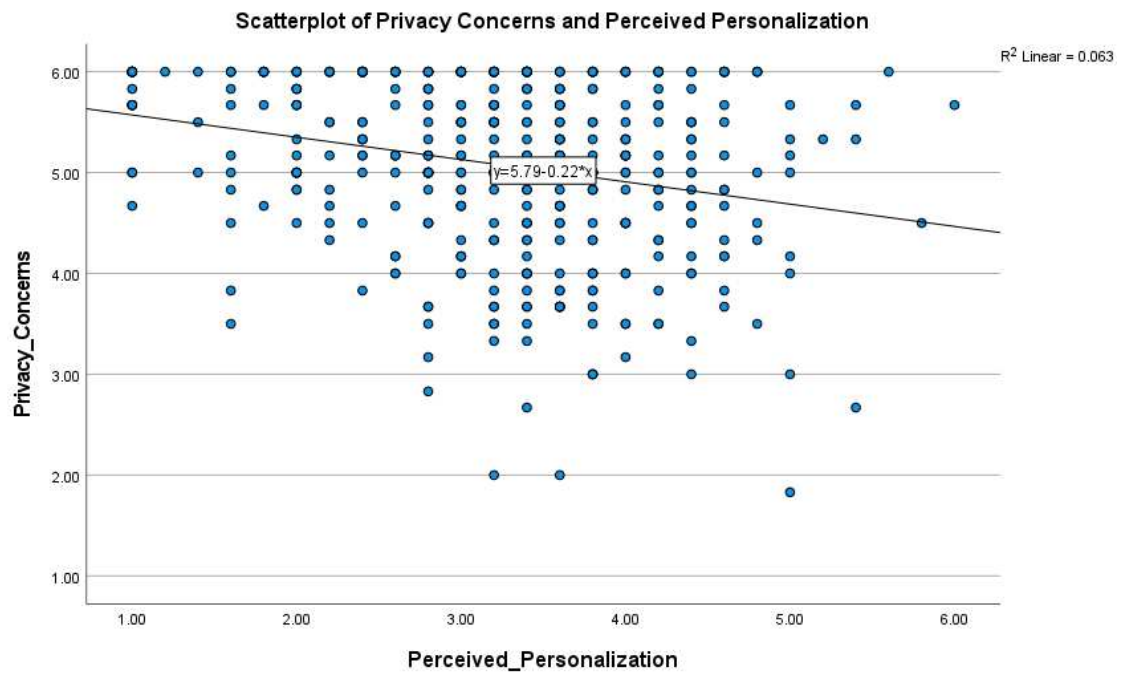
☐ Average user.

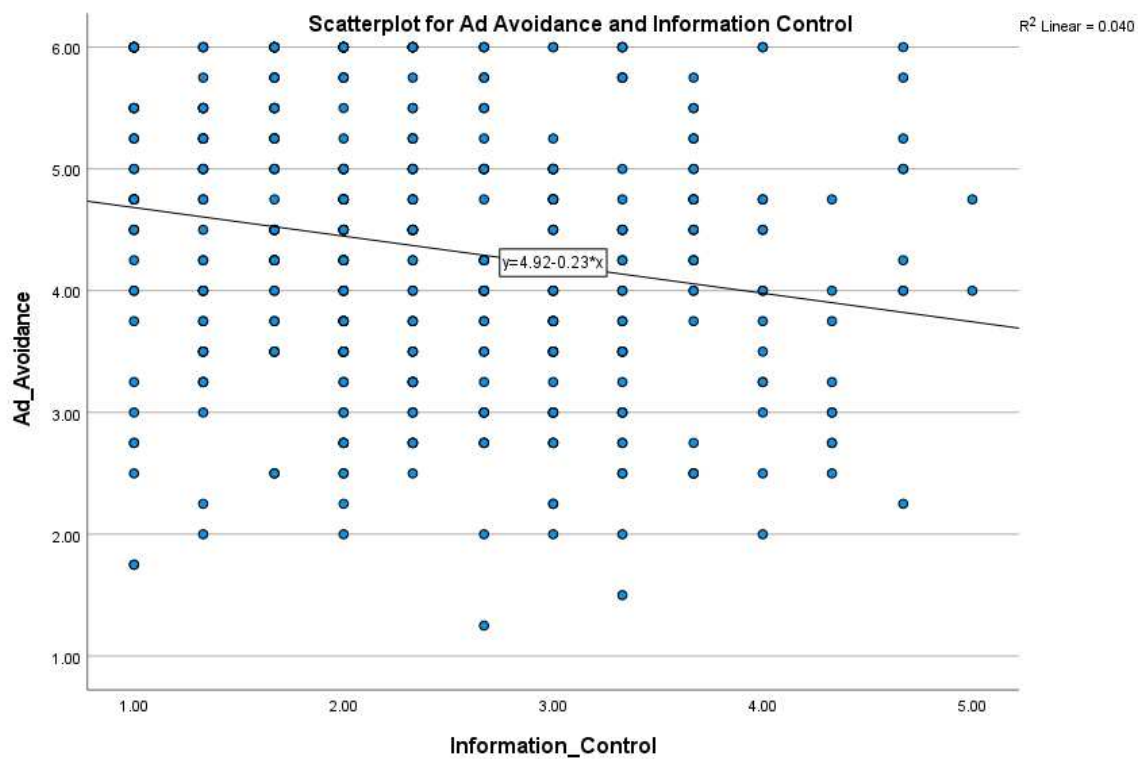
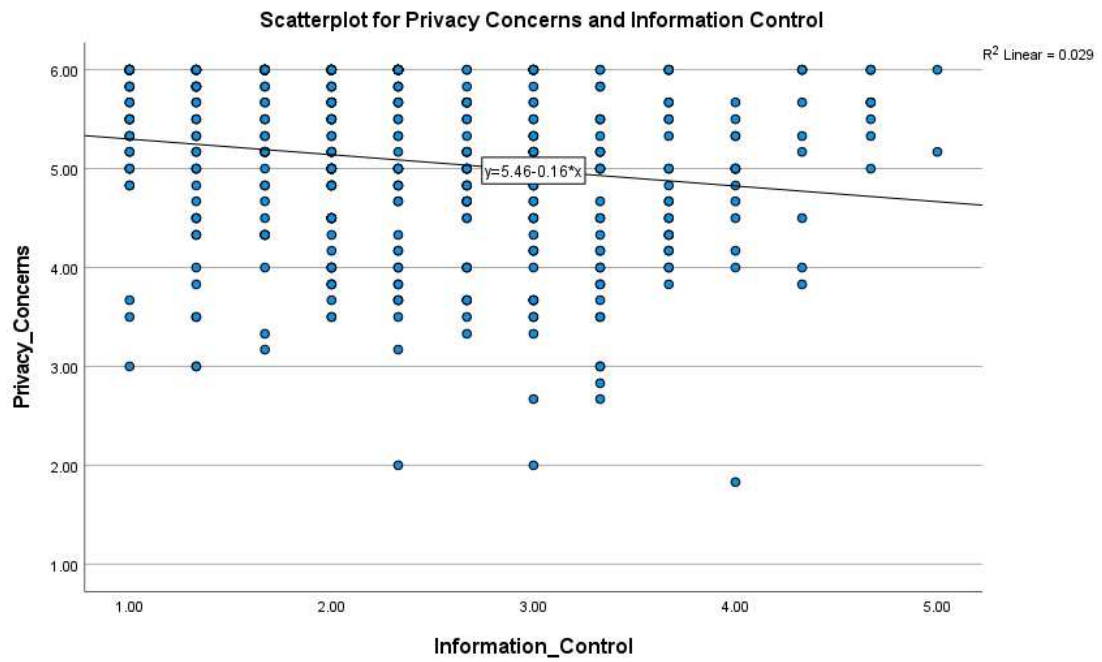
☐ Experienced.

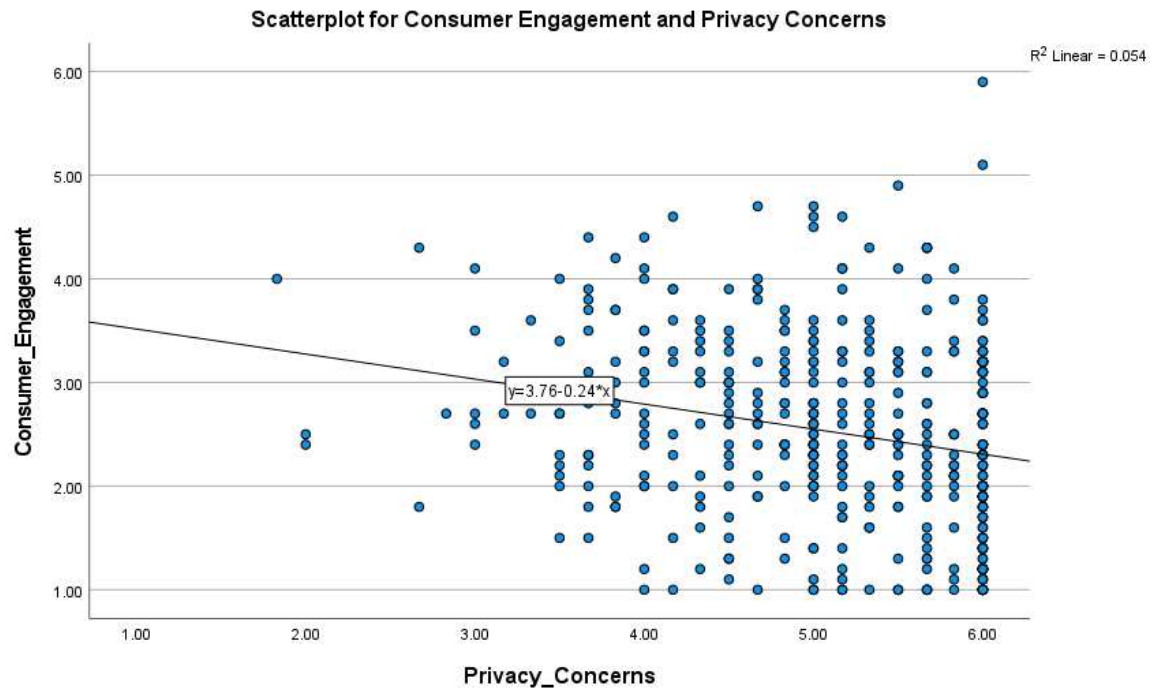
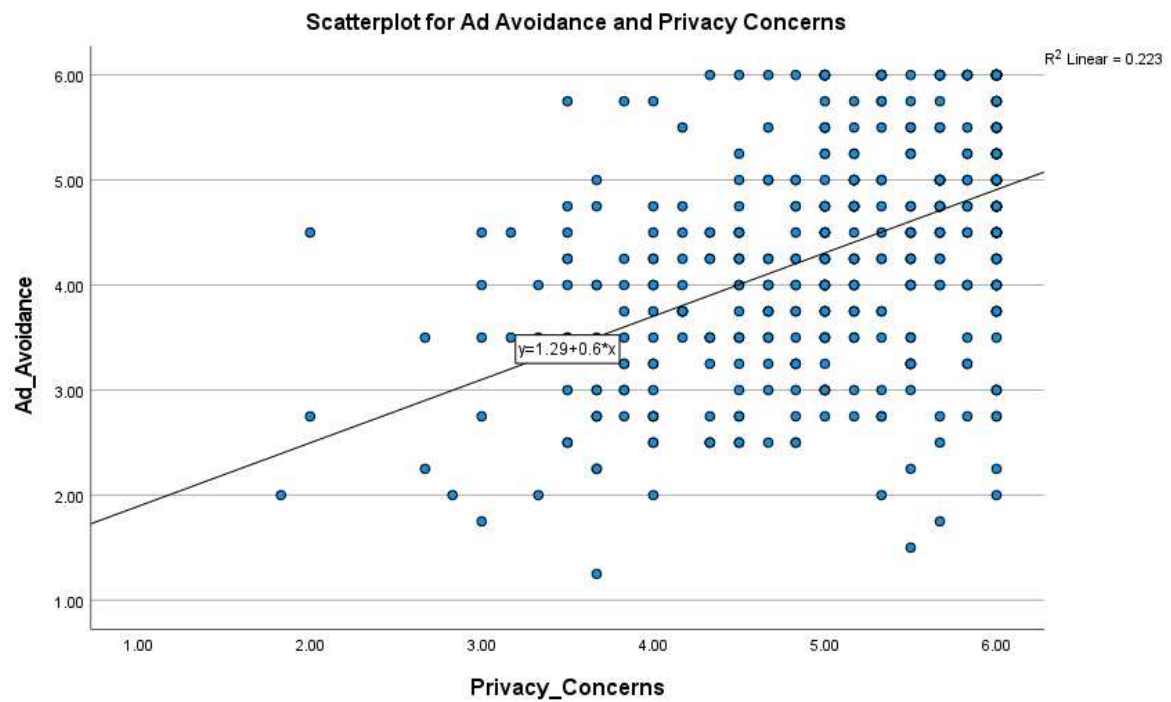
☐ Very experience.

Appendix B – Scatterplots for hypothesis testing



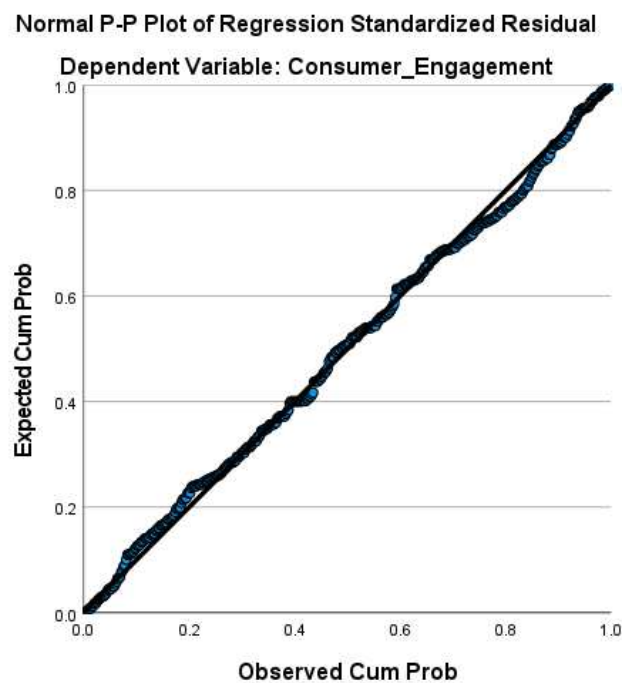
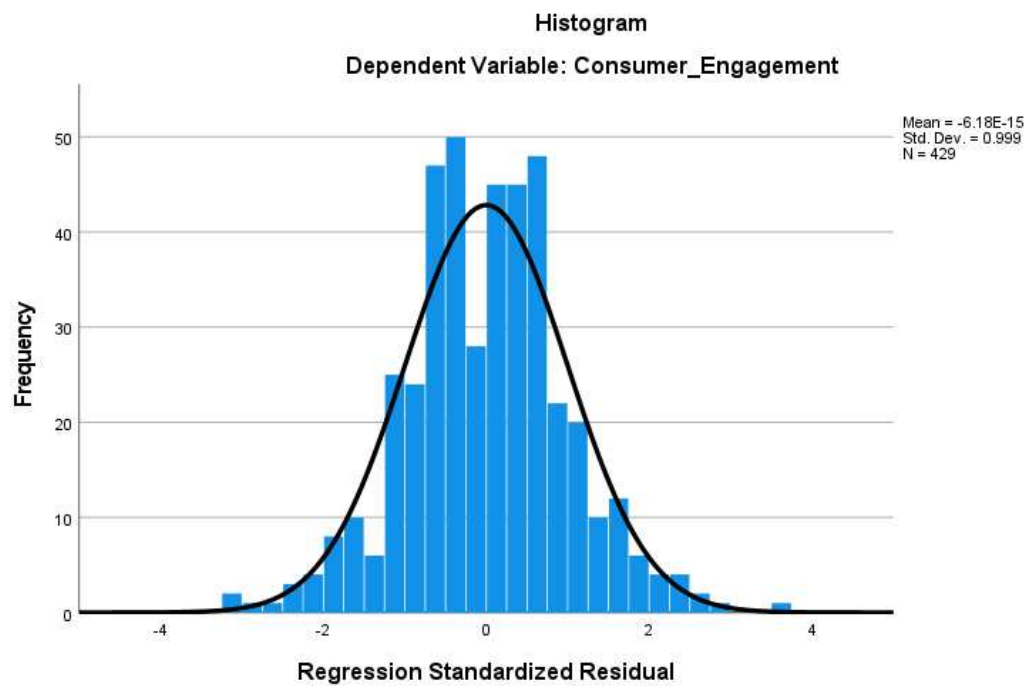




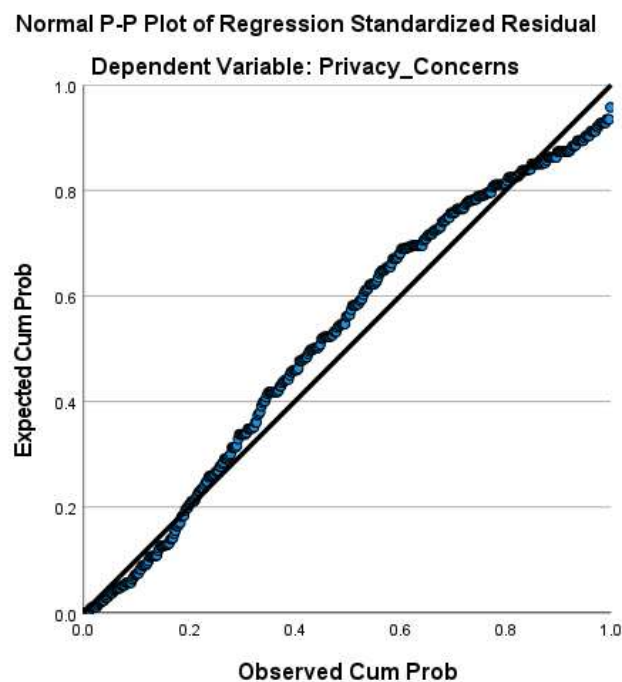
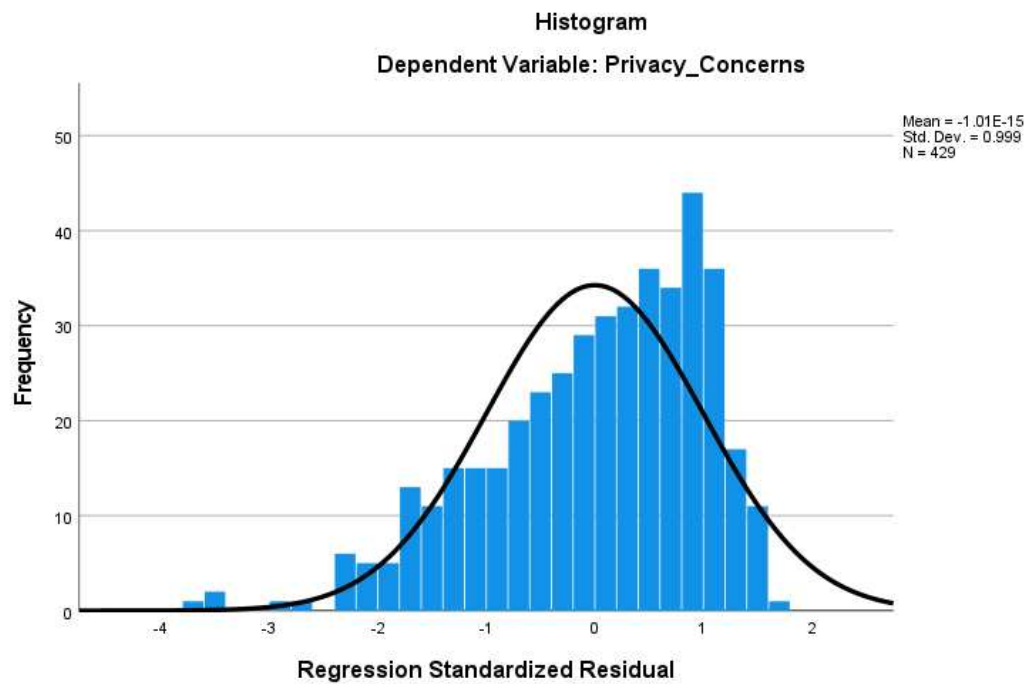


Appendix C – Histogram and normal P-P plot of regression standardized residuals

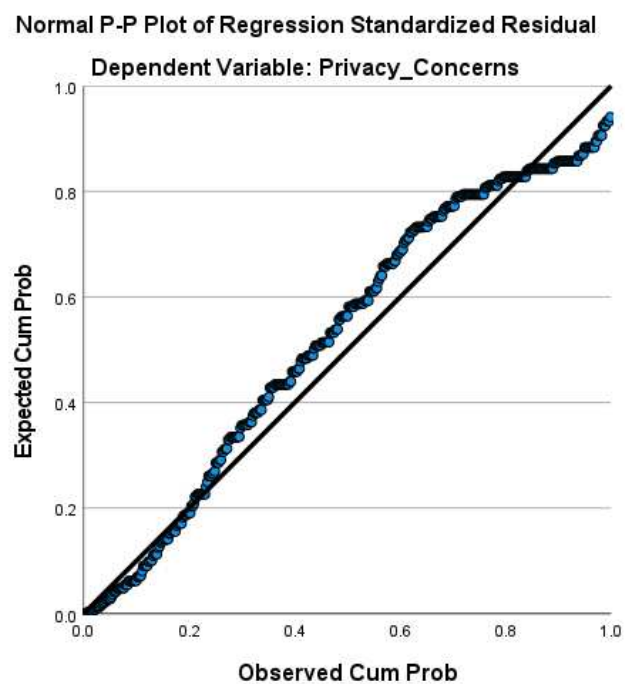
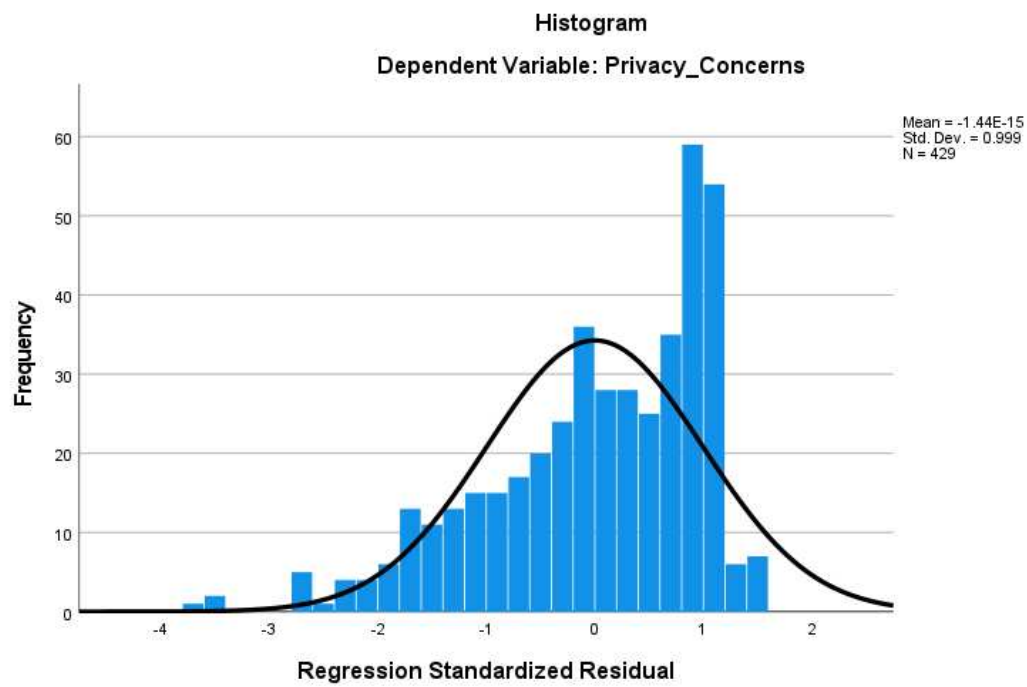
H1: Perceived personalization is positively related to consumer engagement



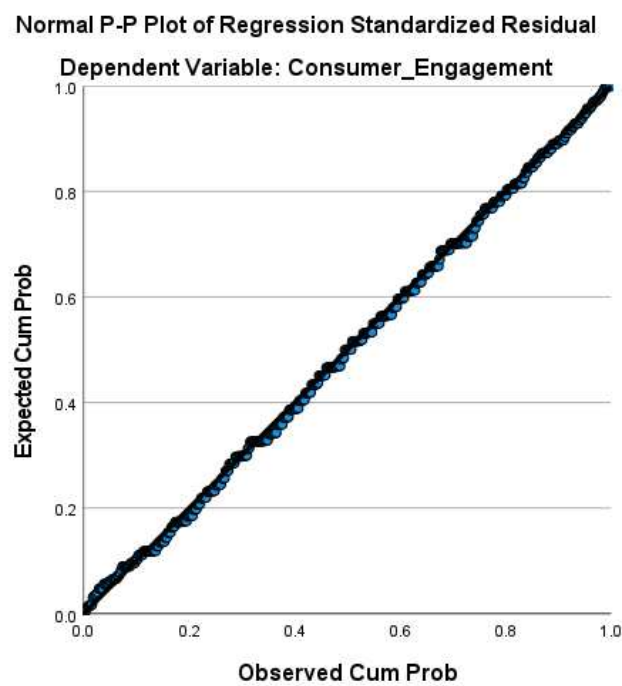
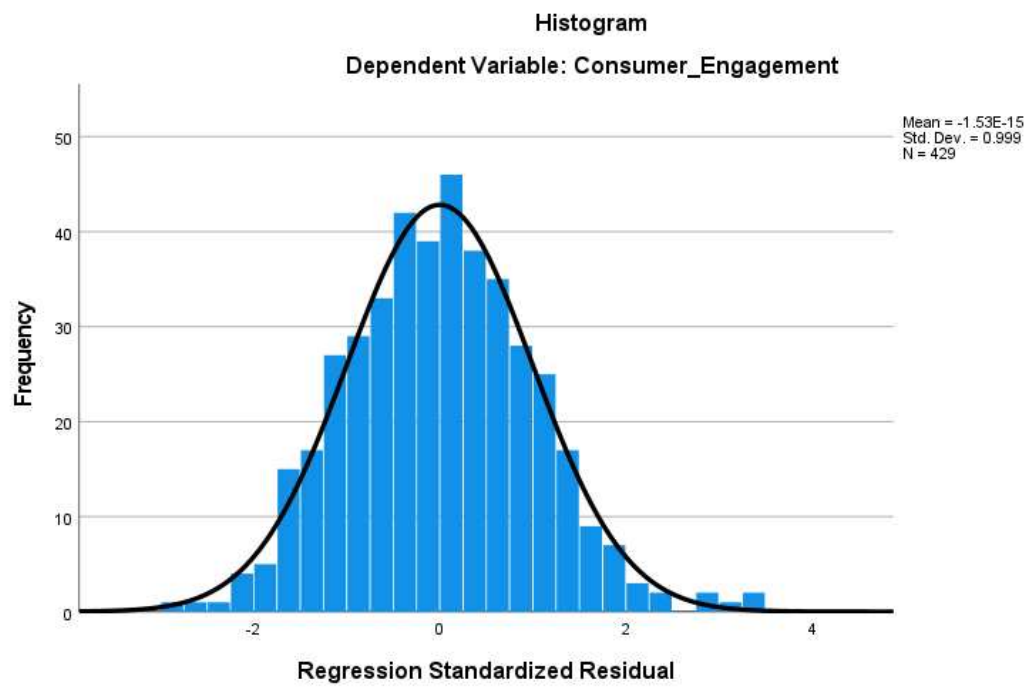
H2: Perceived personalization is positively related to privacy concerns.



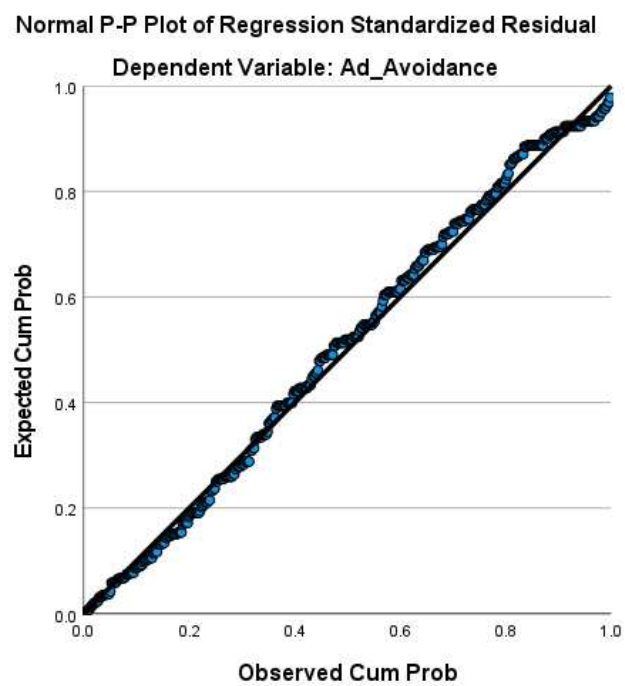
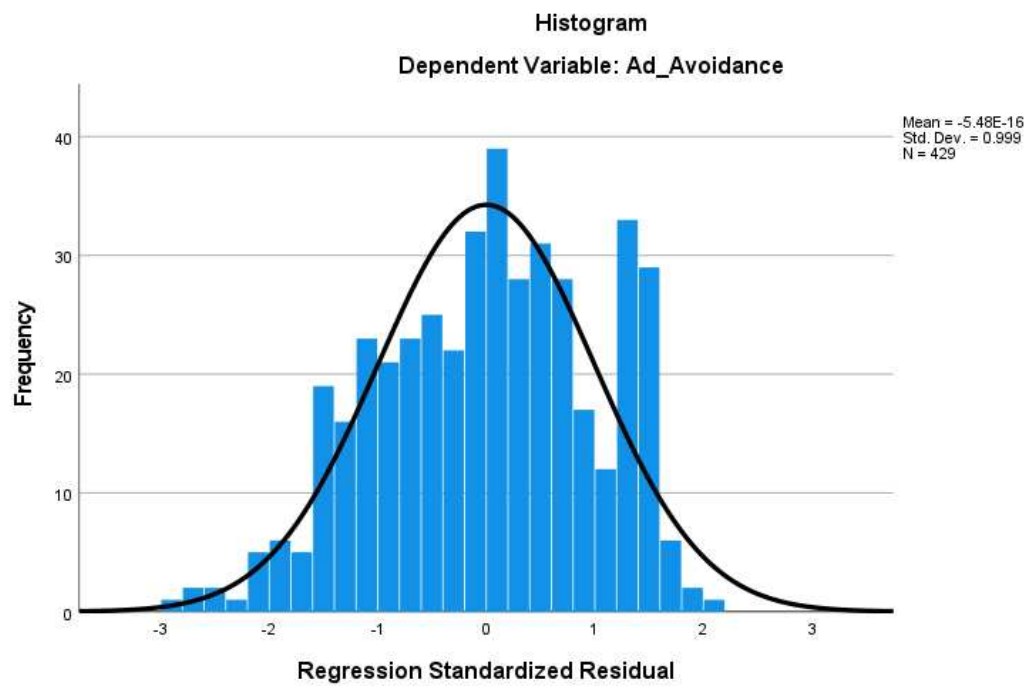
H3: Information control is negatively related to privacy concerns.



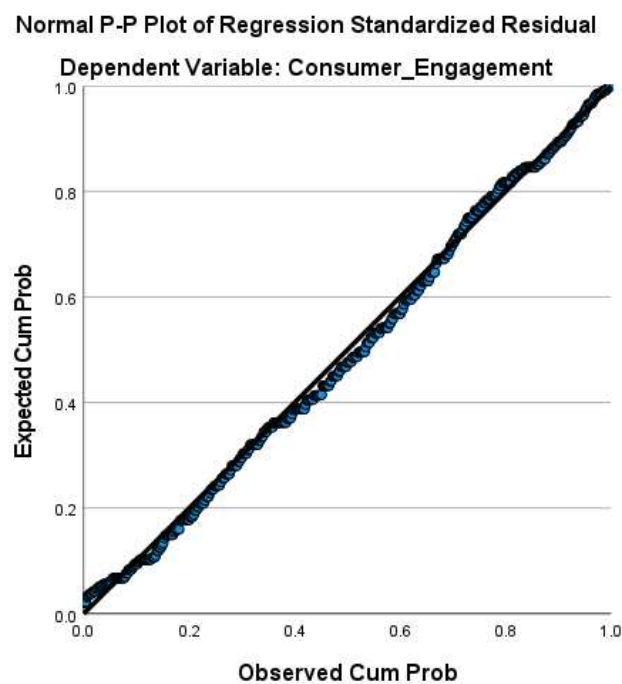
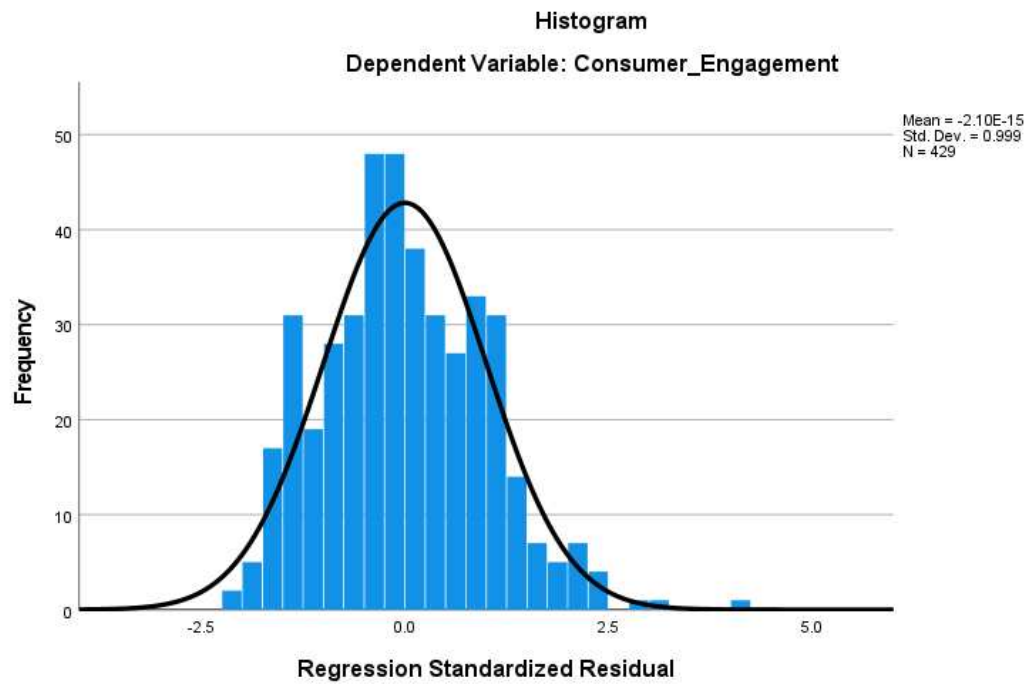
H4. Information control is positively correlated to consumer engagement.



H5. Information control is negatively correlated to ad avoidance.



H6. Privacy concerns are negatively correlated to consumer engagement.



H7. Privacy concerns are positively correlated to ad avoidance.

