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The Impact of Consumer Perceptions of Personalised Advertising on Purchase Intention¹

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Abstract: This study examines how consumers' perceptions of personalised advertising influence their online purchase intentions. Previous research shows that personalised advertising increases customers' willingness to share information and make purchases. However, other studies highlight privacy concerns and their negative impact on consumer behaviour. By conducting an anonymous online survey, the study examines the relationship between perceived personalisation and purchase intention, testing for the mediating role of disposition to value privacy, invasiveness, perceived usefulness and consumer innovativeness. The results show that while personalised advertising can significantly increase purchase intention, perceived usefulness and consumer innovativeness also play a role. The study contributes to the existing literature by providing insights into the mechanisms by which personalised advertising influences consumer behaviour and offers practical implications for improving the effectiveness of personalisation strategies. Future research directions include exploring the long-term effects of personalised advertising and further investigating privacy related concerns.

Keywords: Personalised advertising | Purchase intention | Consumer perceptions | Survey | Mediation analysis

JEL - Codes: C83 Survey Methods • Sampling Methods | M31 Marketing | M37 Advertising

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Introduction

In recent years, there has been a surge in the use of personalised advertising as a key communication tool to engage with customers (Strycharz et al., 2019). To increase the likelihood of a sale, companies are increasingly collecting large amounts of personal data in order to provide users with tailored and personalised content (Tucker, 2014; Behera et al., 2020). Thus, the term personalised advertising refers to content that is specifically tailored to an individual's preferences, characteristics, behaviours, demographics and interests (Boerman et al., 2017). This form of advertising aims to increase the effectiveness of marketing campaigns by delivering messages that are more likely to resonate with individual consumers, ultimately leading to higher engagement, conversion rates and customer satisfaction (Behera et al., 2020). By effectively reaching and targeting consumers, personalised advertising plays a critical role in directly influencing consumer behaviour.

With the growth of the digital world and the platform economy, personalised advertising is now prevalent across multiple digital platforms and channels, including social media platforms, search engines, e-commerce websites, streaming services, email marketing, mobile applications and display advertising networks (Dwivedi et al., 2021). Companies such as Amazon, Meta and Google are leading the way in personalised recommendation solutions and systems through their large and rich customer databases (Deloitte, 2020). For example, Amazon's personalised product recommendations use browsing history, past purchases, wish lists and abandoned shopping carts to improve the user experience and increase sales through effective cross-selling and up-selling, demonstrating the powerful and effective use of data in personalised advertising (Saluja, 2023). In fact, McKinsey & Company (2023) found that personalised advertising offers significant benefits to businesses, including reduced customer acquisition costs of up to 50 per cent, sales increases of 5 to 15 per cent, and a 10 to 30 per cent increase in marketing return on investment (ROI). As a result, 95 per cent of senior marketers surveyed worldwide rated their personalisation strategies as (somewhat or very) successful (Statista, 2024).

The remarkable success attributed to personalised advertising is due to its profound impact on consumers' purchase intentions, resulting in a greater desire to purchase a product or service when navigating the internet (Shaouf et al., 2016). However, from a consumer perspective, personalised advertising is perceived as one of the most controversial practices currently used by marketers (Strycharz et al., 2019). This is because consumers are now acutely aware that a large proportion of the advertising content shown to them is tailored to their individual preferences, characteristics or interests (Tran, 2017). Some consumers find personalised advertising engaging and useful, while others find it creepy and off-putting (Tucker, 2014). On one hand, some consumers no longer want personalisation, they demand it (McKinsey & Company, 2021). In fact,

according to the McKinsey & Company (2021) Next in Personalisation report, a consumer survey found that 71% of consumers expect personalisation. Conversely, familiarity with personalised advertising may also make consumers less susceptible to advertising by enabling them to resist persuasion by either rejecting or ignoring the ad altogether (Segijn & van Ooijen, 2022; Fransen et al., 2015). Therefore, the effectiveness of personalised advertising, i.e. consumers purchase intentions, may be affected by this change in behaviour (Segijn & van Ooijen, 2022; Fransen et al., 2015; Kim et al., 2011).

In the context of personalised advertising, consumer perceptions are shaped by how consumers view the personalisation of content, whether they find it useful and convenient or intrusive and unsettling (Aguirre et al., 2016). Therefore, there is a consensus in the literature that a privacy-personalisation paradox arises because consumers perceive both the risks and benefits of daily exposure to personalised advertising, and it is imperative that both perspectives are acknowledged and addressed (Aguirre et al., 2016; Brandimarte et al., 2013; Li, 2012). Individuals who feel they have some control over certain aspects of their privacy may paradoxically disclose more information, ultimately making themselves more vulnerable despite their efforts to protect their privacy (Aguirre et al., 2016; Brandimarte et al., 2013;). Conversely, perceptions of limited control may lead to less disclosure, even in situations where the risks involved are minimal.

Indeed, personalisation has been extensively researched in the fields of marketing and e-commerce, both of which are closely related to advertising (Fan & Poole, 2006). Researchers have consistently found that advertisers' access to big data is a clear way to provide personalised services to users (Chen et al., 2019). Thus, academic research on personalised advertising has provided valuable insights into the consequences of exposure to personalised advertising, with a particular focus on privacy concerns and benefits (Tucker, 2014; Aguirre et al., 2016; Gironde & Korgaonkar, 2018). However, there remains a significant gap in understanding how these factors specifically influence purchase intention. In fact, a number of scholars highlight the critical need for marketers to deepen their understanding of consumers' perceptions of personalised advertising, emphasising its pivotal role in shaping purchase intent (Gironde & Korgaonkar, 2018; Campbell et al., 2021; Ford et al., 2023).

As researchers believe that consumer perceptions of online advertising are a useful measure for predicting purchase behaviour (Lim et al., 2011), the research question *"How do consumers' perceptions of personalised advertising influence their online purchase intentions?"* arose. Another crucial aspect that remains under-researched is the assessment of whether users perceive personalised content as more relevant or invasive, as consumer opinions are very divided on this issue (Campbell et al., 2021). This led to the sub-questions: *"What drives consumers to*

perceive personalised content as relevant?" and "What drives consumers to perceive personalised content as invasive?". Therefore, this study aims to address the privacy-personalisation paradox that continues to challenge advertisers when it comes to consumers' online purchase intentions (Ford et al., 2023; Aguirre et al., 2016). In addition, addressing the gap in the literature regarding consumers' attitudes and behaviours towards personalised advertising is also part of the focus of this study, as consumers' perceptions, knowledge, and responses to personalised advertising may change over time as technology evolves (Lina & Setiyanto, 2021).

The following section provides a comprehensive review of the relevant literature on personalised advertising. In this context, particular emphasis will be placed on purchase intentions and consumer perspectives on both risks and benefits. A theoretical framework will then be outlined to address the central research question, accompanied by proposed hypotheses derived from the existing literature and existing theoretical models. The operationalisation of key constructs will be detailed to ensure clarity and coherence. A methodology section will then outline the procedures and analyses undertaken to effectively investigate both the primary research question and its sub-questions. The findings, together with the discussion, aim to provide pragmatic insights into the mechanisms through which personalised advertising influences consumer purchase intentions. Finally, the implications, limitations, directions for future research, contributions and conclusions are presented. This research aims to enrich the existing academic discourse by advancing the understanding of consumer behaviour concerning personalised advertising, thereby helping to improve the effectiveness of this timely approach.

Literature review

In the following section, the concepts of personalised advertising and purchase intention are further explained, and their relationship highlighted. In addition, the personalisation-privacy paradox is introduced as a framework to illustrate the consumer perspective on personalised advertising. Finally, the privacy-related literature relevant to this research is outlined.

Personalised advertising

For decades, personalised advertising has been an invaluable and indispensable tool for web shops and service providers, serving as a crucial driver of success (Kim et al., 2001). While some might assume that the concept of personalisation in marketing and advertising is a new phenomenon of the 21st century, the reality is that this practice did not come about suddenly or overnight (Tedlow, 1996; Rife & Ryan, 2020). In recent years, personalised advertising has been on the rise and has become more than a valuable tool – it is an emerging trend in online advertising (Eastin et al., 2016, Tucker, 2014; Gironda & Korgaonkar, 2018). Some authors even describe the current advertising era as one of hyper-segmentation and personalisation, where companies personalise their communication content and try to connect with consumers on a very individual level (Aguirre et al., 2016).

Personalised advertising is defined as a form of customised advertising messages and content designed to meet the specific needs of an individual customer (Dawn, 2014). It involves tailoring and recommending products/services based on individual consumer characteristics, browsing history and purchasing preferences before the customer initiates a search (Lee & Cranage, 2011). Thus, personal information such as name, past purchase history, demographics, psychographics, location and lifestyle interests are crucial to deliver these ads (Baek & Morimoto, 2012). Additionally, they can also be tailored based on implicit user behaviour, such as searches, link clicks and time spent on content, as well as explicit feedback, such as likes and reviews (Yan et al., 2009). By tailoring ads to users' characteristics, preferences and interests, personalised advertising offers several benefits, including supporting free access to ad-supported content, reducing irrelevant ads, and reducing search time (Malheiros et al., 2012; O'Donnell & Cramer, 2015). Therefore, personalised advertising includes all online advertising that uses personal information to target specific individuals. This can be achieved through content personalisation, where the message itself is adapted, or through targeted exposure, where the ad is shown only to selected individuals (Boerman et al., 2021).

Purchase intention

In the context of advertising, purchase intention refers to the process by which consumers plan to purchase a product or service as a result of exposure to advertising through various channels (Lee et al., 2017). Typically, before making a purchase decision, consumers go through

a process in which they identify their needs and wants and attempt to select, acquire and use a particular product or service (Pasharibu et al., 2020). In the context of this research, purchase intention is defined as a consumer's desire to purchase a product or service online (Shaouf et al., 2016). This desire can have a significant impact on the purchase decision, acting as an impulse that drives the purchase decision (Romadhoni et al., 2023). It indicates the likelihood that consumers plan or are willing to purchase a particular product or service from an online store in the future (Wu et al., 2011; Peña-García et al., 2020). In fact, studies have shown that an increase in purchase intention correlates with a higher likelihood of making a purchase (Martins et al., 2019; Ho Nguyen et al., 2022).

The primary goal of personalised advertising is to engage consumers and encourage them to purchase or subscribe to advertised products and services. Consequently, a consumer's actual purchase intention becomes a critical factor in determining the effectiveness of personalised online advertising (Lim et al., 2011). This means that the ultimate goal of personalised advertising is to foster positive consumer intentions towards a particular product or service (Lee et al., 2022).

Research has shown that personalised advertising can elicit positive consumer responses, including increased purchase intention (Gironde & Korgaonkar, 2018). This suggests that when consumers show positive purchase intentions, their engagement is more likely to result in an actual purchase. Therefore, understanding purchase intentions is crucial to understanding consumer behaviour and is essential to the success and improvement of many online businesses (Ho Nguyen et al., 2022).

The consumer perspective

The benefits of personalised advertising for businesses are undeniable. In fact, delivering tailored content to consumers has a significant impact on profits and customer retention rates (Kumar & Gupta, 2016). However, whereas advertisers argue that tracking allows consumers to enjoy free apps and content while viewing relevant ads, some users demand more privacy and restrictions on behavioural tracking and targeting (Rafieian & Yoganarasimhan, 2021).

Indeed, there are some inconsistencies in the existing literature on how consumers perceive personalised advertising, particularly in relation to privacy concerns. Previous research has shown that consumers experience greater convenience through non-monetary benefits such as enhanced service, personalised recommendations, customised products, decision support and faster communication (Chellappa and Sin, 2005; Prince, 2018; Strycharz et al., 2019). Additionally, some authors argue that personalised advertising has a positive impact on consumers, potentially increasing their purchase intention (Shanahan et al., 2019; Lee et al., 2017; Lina & Setiyanto, 2021). In fact, researchers have found that users can perceive personalised ad

content as highly engaging and relevant to their interests, increasing the likelihood of making purchases recommended in such ads (Zhu & Kanjanamekanant, 2021).

However, despite the benefits of personalised advertising, consumers may feel uncomfortable about their information potentially being shared with third parties without their consent (Lee & Cranage, 2011). As a result, privacy concerns may negatively affect their attitudes towards personalisation, potentially reducing the perceived benefits of it (Joinson & Paine, 2007). In fact, many researchers argue that personalised ads can be intrusive and have negative effects on consumers (van Doorn & Hoekstra, 2013; Lina & Setiyanto, 2021).

Thus, Aguirre et al. (2016) introduced the term 'personalisation-privacy paradox' as the conflicting outcomes of personalised advertising through digital media on consumer engagement with a business. On one hand, personalisation can increase consumer engagement by providing more relevant and meaningful communications to the consumer (De Keyzer et al., 2015). On the other hand, it can reduce consumer engagement by increasing privacy concerns as consumers worry about how their personal information is being collected and used by the company (Quach et al., 2022). As there is no way back from delivering personalised advertising, this paradox highlights the challenge companies face in balancing the benefits of personalisation with the need to address and mitigate privacy concerns to avoid consumer disengagement.

Privacy

The degree of personalisation in advertising depends on the type and amount of data used for targeting (Boerman et al., 2021). This variability can lead to different perceptions among consumers, particularly with regard to privacy. In fact, users trade access to their private data for content and services, and the data collected is referred to as the user's online footprint (Puglisi et al., 2017). Indeed, the use of cookies, small pieces of information stored by websites on web browsers, increases the effectiveness of this data collection (Mellet & Beauvisage, 2019).

Cookies have become the backbone of a vast online marketing infrastructure due to their ability to transform online behavioural information into valuable data assets that are then associated with advertising products and services (Mellet & Beauvisage, 2019). For example, when users visit a website, third-party tracking cookies are placed on their computers to monitor their journey (Gomer et al., 2013). The information collected is used by publishers and ad exchange services, which act as intermediaries between advertisers and web domain owners (Gomer et al., 2013; Cahn et al., 2016). Puglisi et al. (2017) explain that cookies enable the provision of personalised services, the maintenance of user profiles, the collection of reading activity and the ultimate identification of user preferences.

Research on the use of cookies and privacy is very diverse and sometimes contradictory. Some studies argue that cookies damage trust and reduce purchase intent (Martin & Murphy,

2016; Miyazaki, 2008). In fact, as consumer awareness of personalised advertising grows, personalised ads may reduce ad performance if they raise privacy concerns and provoke negative user reactions (Zhu & Kanjanamekanant, 2021). However, other studies claim that the use of cookies increases consumers' trust perceptions and purchase intentions (Schmidt et al., 2020).

For example, companies such as Google, Apple and Microsoft are actively working to reduce users' negative perceptions of data use (Núñez-Barriopedro et al., 2022). They do this by highlighting the positive aspects of personalised advertising, such as better offers tailored to users' interests, demonstrating the non-invasive nature of targeted advertising, and promising transparency in data processing and handling (Núñez-Barriopedro et al., 2022). These efforts are aimed at positively influencing consumers' perceptions of personalised advertising and fostering greater acceptance of the topic.

Theoretical framework

The following section operationalises personalised advertising through the lens of perceived personalisation (Tran, 2017). It also presents the theoretical framework that guides this study, based on privacy calculus theory (Laufer & Wolfe, 1977; Culnan & Armstrong, 1999; Li, 2012) and Gironde & Korgaonkar's (2018) framework. The key constructs of the research are introduced and explained, along with the proposed hypotheses. These are examined for their role in either enhancing or inhibiting purchase intentions, providing a comprehensive framework for understanding consumers' perceptions of personalised advertising and its potential impact on purchase intentions.

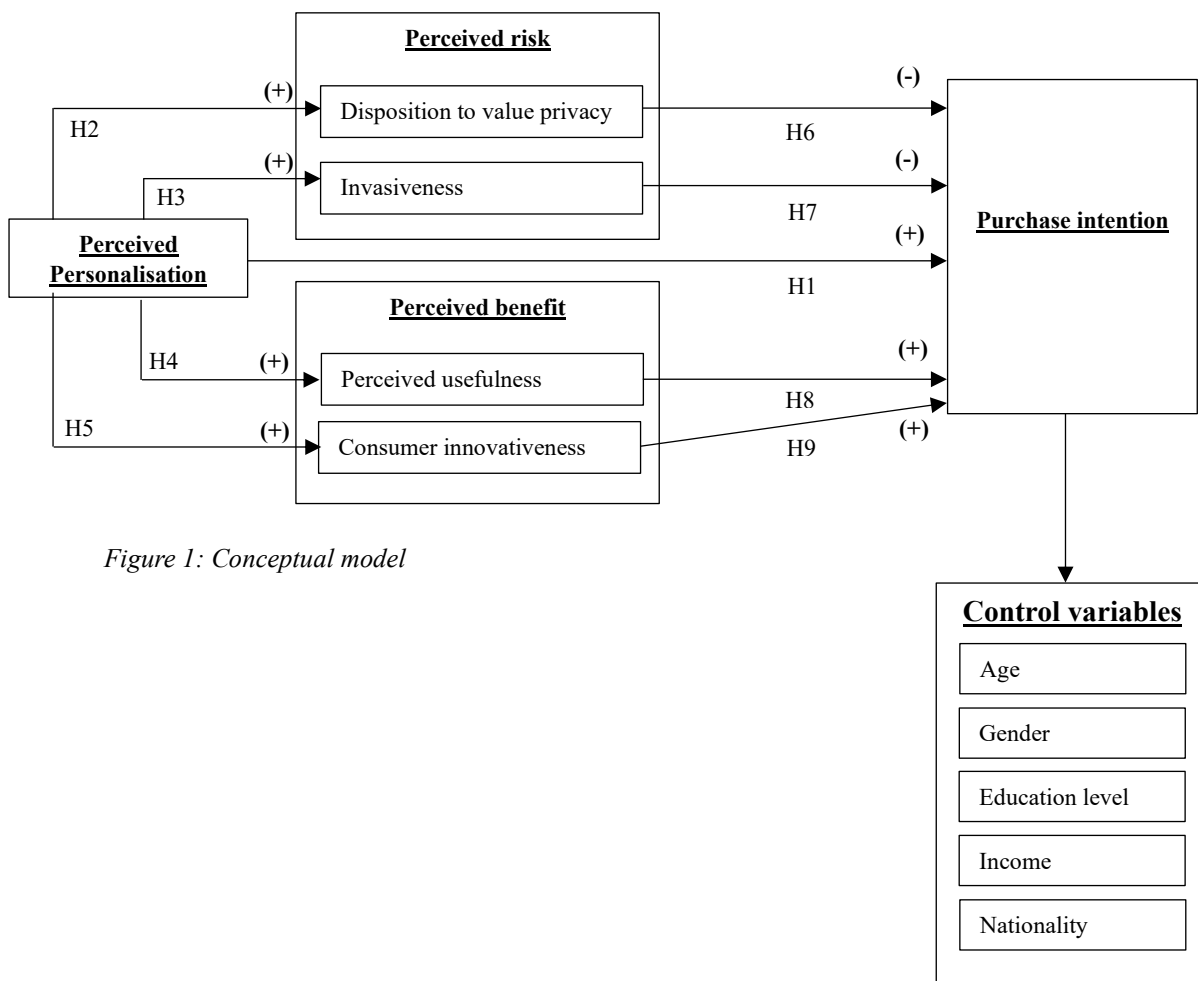


Figure 1: Conceptual model

Personalised advertising provides customers with tailored recommendations for products and services in the current marketplace that closely match their measured or stored preferences (Kramer et al., 2007; Lee et al., 2022). It can be seen as an enabling factor in shaping consumer intentions towards an online advertised product or service (Lee et al., 2022). Therefore, this study operationalises personalised advertising as perceived personalisation - a consolidated concept that refers to the customer's subjective perception or belief that the advertising message or content has been specifically tailored to their individual preferences, characteristics or interests (Tran, 2017).

Indeed, Tran (2017) believes that the construct of perceived personalisation enhances customers' perceptions of the degree of customisation and can shape attitudes, behaviours and responses to advertising messages. As stimulating positive consumer intentions is a key objective of personalised advertisement, previous researchers have highlighted the significant relationship between consumer perceptions of high levels of personalisation and positive responses (Li 2016; Lee et al., 2022). Therefore, the first hypothesis was formulated based on how perceived personalisation plays an important role in bringing consumers' purchase intentions towards a given product or service into the personalised content (Lee et al., 2022).

The purchase intention construct is defined in this study as a consumer's desire and intention to make an online purchase following exposure to personalised advertising (Pasharibu et al., 2020). Consistent with many theoretical models of consumer behaviour, online purchase rates for a product or service are generally higher among consumers with strong purchase intentions than among those with weaker intentions (Shaouf et al., 2016). This is coherent with the notion that personalised advertising can lead to positive purchase intentions, which are predictive of actual purchase behaviour (Ford et al., 2023). In order to fully understand the impact of perceived personalisation on purchase intention, this study examines the total effect between the independent and dependent variables through the following hypothesis:

H1: Perceived personalisation has a positive effect on purchase intention.

Consumers' perceptions of personalised advertising are primarily driven by their perceptions of privacy (Gironda & Korgaonkar, 2018). The nature and content of personalised advertising influences consumers' perceptions of privacy and their acceptance of advertisers' collection and use of their information (Boerman et al., 2021). As such, privacy plays an important role in shaping consumers' purchase intentions and is therefore a key success factor in measuring the effectiveness of personalised advertising (Gironda & Korgaonkar, 2018). There are both costs and benefits associated with privacy.

According to the privacy calculus theory, an individual's willingness to disclose information is determined by a behavioural calculus in which various factors are weighed against potential outcomes (Laufer & Wolfe, 1977; Culnan & Armstrong, 1999; Li, 2012). This posits that there are perceived trade-offs between potential risks/costs and benefits that are assessed in the context of disclosing information (Li, 2012). Based on the privacy calculus theory, perceived personalisation has two outcomes, as illustrated in Figure 1. The first one is a perceived risk, which arises when consumers perceive that there is a potential loss associated with the disclosure of personal information (Kim et al., 2019). The second is a perceived benefit, which is associated with the benefits of personalisation in exchange for disclosing personal information (Kim et al., 2019).

Gironda & Korgaonkar (2018) proposed a framework for assessing the acceptability of personalised advertising, based on the privacy calculus theory. The present study will therefore consider some of the key constructs of Gironda & Korgaonkar's (2018) framework, following their suggestion for further research and follow-up studies in their attempt to investigate how consumers perceive personalised advertising. Thus, perceived risks are represented by disposition to value privacy and invasiveness, while perceived benefits are exemplified by perceived usefulness and consumer innovativeness (see Figure 1).

An individuals' disposition to value privacy reflects their tendency to manage certain limits on the disclosure of personal information (Gironda & Korgaonkar, 2018). This disposition is rooted in consumers' intrinsic needs and attitudes towards preserving personal space, especially with regard to their personal information (Xu et al., 2008). Individuals with a higher disposition to value privacy tend to have stronger privacy concerns and are more likely to protect their personal information or limit its disclosure (Xu et al., 2011). Hypothesis 2 therefore tests whether consumers' disposition to value privacy increases when they perceive personalisation as a potential risk:

H2: Perceived personalisation has a positive effect on disposition to value privacy.

Research has shown that for consumers, there seems to be a fine line between personalisation and invasiveness in advertising (Taylor et al., 2011; Gironda & Korgaonkar, 2018). In fact, invasiveness refers to the perception that a particular action or entity invades one's privacy (Lukaszewski et al., 2008). This construct encompasses both the perception and awareness that an invasion of privacy has occurred (Gironda & Korgaonkar, 2018). Therefore, Hypothesis 3 tests whether consumers' sense of invasiveness is enhanced when they perceive personalisation as a potential risk:

H3: Perceived personalisation has a positive effect on invasiveness.

Perceived usefulness represents the benefits that personalised advertising can bring to a consumer (Gironda & Korgaonkar, 2018). It helps consumers discover new products or services, learn about current offers, stay updated, and save time and effort in searching (Lin & Kim, 2016; Ducoffe, 1996). Researchers believe that useful personalised content can reduce privacy-related concerns and increase its perceived benefits (Lee & Cranage, 2011; Lavado-Nalvaiz et al., 2022). Hypothesis 4 therefore tests whether consumers' perception of a personalised ad as useful increases when they perceive personalisation as beneficial:

H4: Perceived personalisation has a positive effect on perceived usefulness.

Consumer innovativeness is advantageous for marketers, as innovative consumers tend to be more open to new trends, such as personalised advertising (Gironda & Korgaonkar, 2018). This construct is associated with the success of new technologies, products and services. Innovative consumers are known for their knowledge, willingness to spend more time and money shopping, and desire for variety and novelty (Gironda & Korgaonkar, 2018; Goldsmith et al., 2003; Roehrich, 2004). Therefore, Hypothesis 5 tests whether when consumers perceive personalisation as beneficial, it can increase their consumer innovativeness characteristics:

H5: Perceived personalisation has a positive effect on consumer innovativeness.

As mentioned throughout this study, perceived privacy-related risks are a major concern today, with many consumers feeling a lack of control over their personal information and worrying about what companies know about them and how this information is obtained and used (Baek and Morimoto, 2012). The constructs of disposition to value privacy and invasiveness reflect negative perceptions in consumers' minds and represent the cost elements in the cost-benefit analysis of privacy calculus theory (Gironda & Korgaonkar, 2018). As a result, numerous studies have shown that privacy-related costs and risks are negatively associated with intentions (Liao et al., 2011; Xu et al., 2011). In line with Gironda & Korgaonkar (2018), we expect this relationship to persist in the context of personalised advertising, with higher levels of privacy-related constructs leading to lower purchase intentions. Thus, disposition to value privacy and invasiveness serve as perceived risk constructs that may inhibit consumers' purchase intentions in response to personalised advertising:

H6: Disposition to value privacy has a negative effect on purchase intention.

H7: Invasiveness has a negative effect on purchase intention.

Additionally, as previously highlighted, the perceived benefits of personalised advertising are also recognised by consumers, with users valuing increased convenience, personalised experiences and streamlined access to information and services (Smith et al., 2020). In fact, Gironda & Korgaonkar (2018) highlight that once a consumer understands the usefulness of a particular action, product or service, it reinforces the user's intention. Thus, perceived usefulness has been found to be a significant antecedent of intention (Purnawirawan et al., 2012). In addition, personalised advertising provides innovative consumers, who are also recognised as active knowledge seekers and highly interested in new information, with tailored messages about the products and services that most interest them (Goldsmith et al., 2003; Gironda & Korgaonkar, 2018). Studies suggest that individuals with higher levels of consumer innovativeness should be more likely to purchase from personalised advertisers (Gironda & Korgaonkar, 2018). Thus,

perceived usefulness and consumer innovativeness serve as perceived benefit constructs and act as possible drivers of consumer purchase intention in response to personalised advertising:

H8: Perceived usefulness has a positive effect on purchase intention.

H9: Consumer innovativeness has a positive effect on purchase intention.

In line with the theoretical framework presented in Figure 1, this study includes control variables such as age, gender, nationality, education and income level. Indeed, demographic factors are crucial in understanding online shopping behaviour (Bhat et al., 2021). In particular, age is highlighted in the literature as a critical determinant of consumer behaviour (Hernández et al., 2011). In addition, research highlights that gender significantly influences consumers' purchase intentions and decisions, while nationality also plays a role in the purchase intention process (Bakshi, 2012; Rezvani et al., 2012). Income and education further influence online shopping behaviour by increasing purchasing power and deepening knowledge of processes and products/services (Kaur & Kochar, 2018).

All of the constructs described above are proposed to influence consumers' online purchase intentions, as they can drive or inhibit them. Therefore, Figure 1 illustrates the conceptual model guiding this study, which is based on existing literature and theoretical frameworks (Laufer & Wolfe, 1977; Culnan & Armstrong, 1999; Li, 2012; Tran, 2017; Gironda & Korgaonkar, 2018). Furthermore, it provides a comprehensive basis for understanding how individuals perceive personalisation and how these perceptions might influence their purchase intentions. The proposed theoretical framework serves as a guide to examine how the independent variable, perceived personalisation, influences the dependent variable, purchase intention, through perceived risk and benefit mediators. Table 1 outlines all the constructs in this study and their definitions, including the independent variable (perceived personalisation), the dependent variable (purchase intention) and the mediating variables (disposition to value privacy, invasiveness, perceived usefulness and consumer innovativeness).

Empirical Strategy

The following section outlines the empirical strategy used in this study, detailing the data collection (survey) and analysis procedures. It explains the methodology used to measure the relationship between the independent variable, perceived personalisation, and the dependent variable, purchase intention. It also explains the analysis of the mediating effects of disposition to value privacy, invasiveness, perceived usefulness and consumer innovativeness, as illustrated in Figure 1. Socio-demographic control variables including gender, age, nationality, education and income level were also included.

Data Collection and description

As this study follows a deductive logic, an anonymous online survey was used as the primary data collection method to measure the extent to which people's perceptions of personalised advertising influence their purchase intentions. In fact, surveys are the leading research tool for academics and a common way to gain better insights into consumers (Evans & Mathur, 2018). This data collection method is considered to be low cost, provides rapid feedback, has wide coverage and is not subject to time and space constraints (Sun et al., 2020). It is also a structured and organised source of information, which helps to collect data in a consistent manner using a standardised set of questions. In this way, it was possible to assess respondents' level of (dis)agreement on the constructs of perceived personalisation, disposition to value privacy, invasiveness, perceived usefulness, consumer innovativeness and purchase intention. Thus, the responses collected reflect a self-reported survey that captures consumers' beliefs, opinions, attitudes, behaviours and attributes when it comes to how they feel about personalised advertising as internet navigators.

As advertisers have a strict perspective on the collection of online information from minors (Daems et al., 2019), the selected sample population was characterised by consumers over the age of 18. In fact, online surveys provide researchers with a more efficient means of engaging with younger populations, requiring less time and effort (Sun et al., 2020; Sun & Wang, 2019). In addition, older adults are more attentive to online banner ads than their younger counterparts, regardless of the time of day (Goodrich, 2013). Therefore, the survey sample included people over the age of 18 with no upper limit, as existing literature suggests that older people have higher purchase intentions (Goodrich, 2013). This demographic ensured that the target population was likely to engage with online advertising and technology. Additionally, the selected population made it possible to assess how different age groups, genders, nationalities, education and income levels play a role in this research.

The survey was designed in Qualtrics, had an average duration of 5 minutes and consisted of four main sections (see Appendix: I. Survey). It was pre-tested to check for any problems with

wording, content, question ambiguity and platform usability. The pre-test was conducted with a test panel similar to the target population of N=10, a satisfactory size as common issues can be detected with high power with a sample size of 7 (Perneger et al., 2015). Based on the feedback from the pre-test, the survey was sent out through personalised links and social media posts. It was available for a period of 2 weeks. Additionally, as one of the main limitations of conducting a survey is ensuring a high response rate (Deutskens et al., 2004), personalised links, thank you messages and follow-up texts/emails were sent to encourage respondents to complete the survey and spread the word. All items in the survey were pre-programmed as mandatory and randomised to avoid missing data or biased responses.

The survey's first section was the introduction, where clarity and conciseness were a priority and information such as the purpose, duration and general rules were provided. It was stated that the purpose of the survey was to gain insight into how consumers, as internet navigators, feel about personalised advertising and how it might affect their purchase intentions. A definition of personalised advertising was provided to ensure that each respondent was aligned with the study. Then, it was explained that the survey would take no more than 5 minutes to complete and that all responses would remain completely anonymous. A final thank you message and contact details were provided.

The second section included the measurement items. It was divided into six different subsections, concerning each construct: perceived personalisation, disposition to value privacy, invasiveness, perceived usefulness, consumer innovativeness and purchase intention. All six constructs were assessed using a multi-item construct approach. More specifically, perceived personalisation was measured with five item questions, the four mediators with four item questions each, and purchase intention with three item questions. All measurement items were taken from valid scales with minor modifications to fit the current context (see Table 2 and Appendix: I. Survey). Additionally, all measurement items were rated on a standard Likert scale (Likert, 1932) ranging from 1 (strongly disagree) to 5 (strongly agree).

The third section consisted of socio-demographic items including age (open response), gender (female, male, other and I prefer not to say), nationality (all European countries and other - specify), education (less than high school degree, high school degree or equivalent, bachelor's degree, master's degree, PhD) and income (I am a student/working student, less than €20,000, €20,000-40,000, €40,000-60,000, €60,000-80,000, €80,000-100,000, above €100,000 and I prefer not to say). These socio-demographic items served as control variables, as identified in the theoretical framework (Figure 1).

Lastly, a final section included a thank you message and contact details.

Constructs	Definition	Items
Perceived personalisation (P)	Tran (2017) Refers to the customer's subjective perception that the advertising message/content has been specifically tailored to their individual preferences, characteristics or interests.	Tran (2017) 1. The personalised advertising I see online makes purchase recommendations that match my needs. 2. The personalised advertising I see online enables me to order products that are tailor-made for me. 3. The personalised advertising I see online is tailored to my situation. 4. The personalised advertising I see online makes me feel that I am a unique customer. 5. I believe the personalised advertising I see online is customized to my needs.
Disposition to value privacy (D)	Gironda & Korgaonkar (2018) Reflects an individual's tendency to manage certain limits on the disclosure of personal information.	Gironda & Korgaonkar (2018) 6. Compared to others, I am more sensitive to the way companies handle my personal information. 7. Compared to others, I tend to be more concerned about threats to my information privacy. 8. I care about the privacy of my personal information. 9. I am aware of cookies and think twice before accepting/rejecting them.
Invasiveness (I)	Lukaszewski et al. (2008) Related to the perception that a particular action or entity invades one's privacy.	Gironda & Korgaonkar (2018) 10. I feel that the collection of personal information for the purpose of providing personalised advertising is an invasion of my privacy. 11. I feel that personalised advertising is an invasion of consumer privacy in general. 12. I feel that consumer privacy is violated by the way companies make use of personalised advertising. 13. I feel that personalised advertising violates consumers' right to privacy.
Perceived usefulness (PU)	Gironda & Korgaonkar (2018) The benefit that a personalised advertisement can bring to a consumer.	Gironda & Korgaonkar (2018) 14. I find personalised advertising helpful. 15. I find personalised advertising relevant.

Consumer innovativeness (C)	<p>Gironda & Korgaonkar (2018) Goldsmith et al. (2003) Characterizes consumers who tend to be more positive and open to innovation. Consumers who spend more time and money shopping for variety and novelty.</p>	<p>16. I find personalised advertising worth seeing. 17. Overall, I find personalised advertising useful. Gironda & Korgaonkar (2018) 18. I am usually one of the first to try new products and services that are advertised. 19. I know more than others do about the latest new products and services from advertising. 20. I am eager to buy new products and services as soon as they are advertised. 21. I tend to be very open and receptive to the online advertising I see.</p>
Purchase intention (PI)	<p>Shaouf et al. (2016) and Pasharibu et al. (2020) Consumer's desire to buy a product or service online. Stage preceding a purchase decision in which consumers have needs and wants and aim to select, acquire and use a particular product or service.</p>	<p>Shaouf et al. (2016) 22. After viewing an online personalised advertisement, I became interested in making a purchase. 23. After viewing an online personalised advertisement, I am willing to purchase the product/service being advertised. 24. After viewing an online personalised advertisement, I will probably purchase the product/service being advertised.</p>

Table 1: Constructs' definitions and measurement items

Data Analysis

The survey accounted with a sample size of 207 valid respondents. In fact, a minimum size of 200 is often recommended by researchers as a reasonable size for online surveys, as it has been shown to produce more than adequate results (Guadagnoli & Velicer, 1988; Samar et al., 2019).

After data collection, the dataset was imported from Qualtrics into Excel. The first step involved cleaning the data in Excel to remove any invalid respondents and/or responses. The cleaned dataset was then imported into Stata statistical software. Cronbach's alpha reliability test was performed to assess the reliability and validity of all constructs. This test is a standard practice in research when multi-item measures of a construct are used, as is the case in this study (Tavakol & Dennick, 2011).

Descriptive analyses were carried out using descriptive statistics and methods such as distribution (frequencies), measures of central tendency (mean, median and mode) and measures of dispersion (range, standard deviation, variance and spread). In fact, descriptive analyses are

usually the easiest statistical analyses to perform and understand, as they provide a straightforward way of summarising data and describing a sample (Fisher & Marshall, 2009). This approach was very useful for summarising the demographic characteristics of the sample, including gender, age, nationality and education and income level. Comparative analyses were conducted using t-tests to gain a deeper insight into the behaviour of specific groups across the different constructs.

For each construct, correlation coefficients were used to test whether there was a linear relationship between variables in the population as a whole and to quantify the strength of the linear relationship between pairs of variables (Bewick et al., 2003).

Finally, a mediation analysis was carried out to test the proposed hypotheses. The approach proposed by Baron and Kenny (1986) was followed, as it is commonly used by many researchers (Newsom, 2023). It consists of a four-step approach in which several regression analyses are carried out, testing the significance of the coefficients at each step. Since this study considers four mediators, an adjustment was necessary. Also, the control variables age, gender, nationality, education and income level were taken into consideration in every step.

The first step was to perform a simple regression analysis to test the effect of the independent variable, perceived personalisation, on the dependent variable, purchase intention. The second step involved conducting four separate regression analyses with the independent variable, perceived personalisation, predicting each of the mediators, disposition to value privacy, invasiveness, perceived usefulness and consumer innovativeness. Third, another four regression analyses were performed with each mediator predicting the dependent variable, purchase intention. As steps 1-3 showed significant relationships, a multiple regression analysis was performed with the independent variable and the significant mediators predicting the dependent variable. As a result, these regressions were run to measure effects between constructs and effectively accept or reject the hypotheses (Bewick et al., 2003). The results are presented and discussed in detail in the following sections.

Results

In this section, all constructs were tested for validity and consistency. In addition, descriptive statistical analyses were carried out to characterise the sample and t-tests were used for comparative analysis between different age groups, genders and nationalities. Finally, a mediation analysis using regression models was used to adequately test the proposed hypothesis.

Reliability

As a first step prior to any analysis, each construct was assessed for validity and reliability. Cronbach's alpha reliability scores are the most widely used in survey research as they ensure the internal consistency of constructs (Bonett & Wright, 2015; Henson, 2001). Indeed, a score of 0.7 or higher is considered reliable, and as can be seen in Table 2, all constructs exceeded this acceptable value. Given that all six Cronbach's alpha values were above the 0.7 threshold for reliable measures, the constructs were not adjusted. For the invasiveness and perceived usefulness constructs, existing literature suggests that an excessively high Cronbach alpha value, coupled with very high interitem covariance, may imply redundancy between survey items, indicating similarity (Tavakol & Dennick, 2011). Nevertheless, in this study, these specific constructs were measured using an established scale developed by Girona and Korgaonkar (2018). Therefore, the constructs were accepted as is.

Construct	Average interitem covariance	Number of items in the scale	Scale reliability coefficient
Perceived Personalisation (P)	0.47	5	.76
Disposition to Value Privacy (D)	0.66	4	.78
Invasiveness (I)	0.95	4	.91
Perceived Usefulness (PU)	1.01	4	.93
Consumer Innovativeness (C)	0.66	4	.79
Purchase Intention (PI)	0.72	3	.83

Table 2: Cronbach's alpha score per construct

The sample

Five socio-demographic questions were included in the survey, resulting in the following characterisation of the sample (Table 3). The average age of the sample was approximately 35 years, with a minimum age of 18 and a maximum age of 89. This resulted in a diverse age range, skewed towards the younger end, with a median age of 25 years. Respondents were predominantly female (60.39%) and recruited from 22 countries, with the majority from Europe (95.18%). Respondents were also well educated, with 90.34% reporting that they had attended university and/or were still students or working students.

Measure	Items	n	%
Age	≤ 25 years	106	51.21
	> 25 years	101	48.79
Gender	Female	125	60.39
	Male	82	39.61
Nationality	Austria	1	0.48
	Brazil	1	0.48
	Bulgaria	1	0.48
	Canada	2	0.97
	Chile	1	0.48
	Croatia	2	0.97
	Czech Republic	1	0.48
	France	3	1.45
	Germany	9	4.35
	Greece	2	0.97
	Indonesia	1	0.48
	Ireland	13	6.28
	Italy	4	1.93
	Netherlands	13	6.28
	Poland	2	0.97
	Portugal	134	64.73
	San Marino	1	0.48
	Spain	5	2.42
	Sweden	2	0.97
	Thailand	1	0.48
Education	United Kingdom	4	1.93
	USA	4	1.93
	High school degree or equivalent	20	9.66
	Bachelor's degree	87	42.03
	Master's degree	97	46.86
Income	PhD	3	1.45
	Student/working student	84	40.58
	Less than 20,000€	27	13.04
	20,000€ - 40,000€	41	19.81
	40,000€ - 60,000€	15	7.25
	60,000€ - 80,000€	10	4.83
	80,000€ - 100,000€	8	3.86
	Above 100,000€	6	2.90
I prefer not to say.	16	7.73	

Table 3: Demographic profile of respondents (N=207)

Comparative analysis

Given the age distribution (median of 25 years) and the predominance of female (60.39%) and Portuguese respondents (64.73%), a comparative analysis was conducted across different demographic groups: 25 years and under vs. over 25 years, female vs. male, and all other countries vs. Portugal. This approach enabled the exploration of potential differences in consumer perceptions among these groups. The comparative analysis examined the behaviour of each demographic group in relation to six constructs: perceived personalisation (P), disposition to value privacy disposition (D), invasiveness (I), perceived usefulness (PU), consumer innovativeness (C), and purchase intention (PI). Descriptive statistics, including means and standard deviations, were calculated for each construct within each group. Independent samples t-tests were then employed to assess whether significant differences existed between the groups for each variable (see Appendix II. Comparative analyses: T tests).

In terms of age, the comparative analysis shows that older respondents have higher scores for disposition to value privacy (mean difference=-0.57; $p<.001$) and invasiveness (mean difference=-0.38; $p=.0074$). This suggests that older aged respondents value privacy more and perceive personalised advertising as more invasive than younger respondents. Finally, younger respondents have a significantly higher purchase intention (mean difference=0.28; $p=.0274$). This means that respondents under the age of 25 are more likely to purchase products/services that are specifically advertised to them online.

For gender, female respondents showed significantly higher consumer innovativeness traits than male respondents (mean difference= 0.28; $p=.0296$). This result means that female respondents tend to be more positive and open to innovation, spending more time and money shopping for variety and novelty than male respondents.

Lastly, when comparing other countries with Portugal, slight differences were only observed for perceived personalisation (mean difference= 0.23; $p=.0453$). Individuals from 'other countries' perceived that advertising messages or content were more tailored to their individual preferences, characteristics or interests than respondents from Portugal. In other words, they felt that the ads they usually see online are more personalised to them than respondents from Portugal.

After characterising the sample, a correlation analysis was conducted to measure the strength of the relationship between variables. Table 4 shows the descriptive statistics and correlations of the independent variable, the mediators, the dependent variable and the control variables. Some significant correlations were found and are worth mentioning.

In fact, perceived personalisation (P) showed a positive and significant correlation with purchase intention (PI) (.39; $p<0.001$). This finding suggests that the relationship between the independent and dependent variables is unlikely to have occurred by chance, which is consistent

with this study. In addition, perceived personalisation (P) showed a positive and significant correlation with perceived usefulness (PU) (.42, $p < 0.001$) and consumer innovativeness (C) (.26, $p < 0.001$). Furthermore, both perceived usefulness (PU) (.62; $p < 0.001$) and consumer innovativeness (C) (.69, $p < 0.001$) showed a significant correlation with purchase intention (PI). These positive, statistically significant correlations are consistent with the existing literature and the perceived benefit part of the theoretical framework of this study. Regarding the perceived risk part of the theoretical framework, as expected, invasiveness (I) consistently showed negative and significant correlations with purchase intentions (PI) (-.29, $p < 0.001$). Among the control variables, it is possible to see the strong and positive correlation between income and age (.63, $p < 0.001$). This finding is in line with the young characterisation of the sample, showing that older people tend to have higher incomes. These important relationships will be further explained and developed in the discussion section.

	n	M	SD	P	D	I	PU	C	PI	Age	Gender	Nationality	Education	Income
P	207	3.10	0.79	1.00										
D	207	3.68	0.92	-.04	1.00									
I	207	3.59	1.02	-.04	.42***	1.00								
PU	207	3.16	1.04	.42***	-.12	-.43***	1.00							
C	207	2.39	0.91	.26***	-.10	-.25***	.51***	1.00						
PI	207	2.64	0.93	.39***	-.13	-.29***	.62***	.69***	1.00					
Age	207	34.92	15.61	-.16*	.27***	.19**	.02	-.03	-.123	1.00				
Gender	207	1.40	0.49	-.12	.01	-.03	-.04	-.15*	-.09	.04	1.00			
Nationality	207	35.05	8.49	-.15*	.05	-.01	.02	.04	-.03	.16*	-.01	1.00		
Education	207	3.40	0.68	-.01	-.01	-.05	.01	-.06	-.09	.05	.09	.05	1.00	
Income	207	2.85	2.18	-.06	.19**	.09	-.01	.06	-.12	.63***	.07	.20**	.20**	1.00

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4: Descriptive statistics and correlations ($n = 207$)

Results and hypothesis testing

The nine hypotheses proposed along with the conceptual model presented in Figure 1 were tested by conducting a mediation analysis. The mediation analysis was performed following Baron and Kenny (1986) approach of four steps, as mentioned previously. This approach allowed to examine the effect of perceived personalisation (independent variable) on purchase intention (dependent variable) directly and indirectly through the four mediators (disposition to value privacy, invasiveness, perceived usefulness and consumer innovativeness), controlling for age, gender, nationality, education and income in all regressions. Table 9 shows an overview of the accepted/rejected hypotheses.

First, a regression analysis was performed between the dependent variable purchase intention (PI) and the independent variable perceived personalisation (P), with the presence of the control variables. Thus, Table 5 shows the total effect of perceived personalisation on purchase intention (Model_PI_P). The total effect includes both the direct effect and any indirect effect that may be mediated by the proposed mediators disposition to value privacy (D), invasiveness (I), perceived usefulness (PU) and consumer innovativeness (C). It can be observed that when consumers perceive that an ad has been specifically tailored to their individual preferences, characteristics or interests, they are more likely to develop purchase intentions towards it. This conclusion is drawn from the regression described above and shown in Table 5, which shows a robust positive relationship between perceived personalisation and purchase intention ($p < .001$). Thus, the first hypothesis (H1) regarding the positive effect of perceived personalisation on purchase intention is empirically supported and accepted. In this first step, the control variables (age, gender, nationality, education, income) were not significant predictors.

	(1) Model_PI_P
Age	-0.001 (0.01)
Gender	-0.05 (0.12)
Nationality	0.01 (0.01)
Education	-0.09 (0.09)
Income	-0.04 (0.04)
P	0.46*** (0.08)
Constant	1.54** (0.54)
Observations	207

Standard errors in parentheses

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

As a second step in the mediation analysis, four separate models were created by running four separate regressions to test whether there was a relationship between the independent variable perceived personalisation (P) and each mediator. Table 6 shows the direct effects of perceived personalisation (P) on the potential mediators disposition to value privacy (D), invasiveness (I), perceived usefulness (PU) and consumer innovativeness (C), allowing to test hypotheses H2, H3, H4 and H5.

The first model (Model_D_P) shows how perceived personalisation did not significantly affect disposition to value privacy ($p=.917$). This means that consumers' perception of an ad as personalised does not seem to have a significant impact on their disposition to value privacy, i.e. their tendency to manage the limits of the disclosure of personal information. This result leads to the rejection of the second hypothesis (H2), which proposed a positive effect of perceived personalisation (P) on disposition to value privacy (D). Regarding the control variables, only age played a significant role on disposition to value privacy ($p=.005$), showing that older respondents tend to have a higher disposition to value privacy.

Similarly, the second model (Model_I_P) shows that perceived personalisation had no significant effect on invasiveness ($p=0.836$). When consumers perceive an ad as personalised, they do not significantly feel that their privacy is being invaded. As a result, the third hypothesis (H3) proposing a positive effect of perceived personalisation (P) on invasiveness (I) is rejected. Among the control variables considered in the study, only age was found to have a significant effect on invasiveness ($p=.016$). This is consistent with the comparative analysis presented earlier, which showed that older respondents reported a greater sense of invasiveness.

When looking at the third model (Model_PU_P), perceived personalisation has a significant and positive impact on perceived usefulness ($p<.001$). This result suggests that when respondents perceive an ad as personalised to their individual preferences, characteristics or interests, they are significantly more likely to find it useful. Consequently, hypothesis four (H4), which proposed a positive effect of perceived personalisation on perceived usefulness, is accepted.

The last and fourth model of this step (Model_C_P) shows that perceived personalisation emerges as a driver of consumer innovativeness ($p<.001$). This denotes that when consumers perceive an ad as personalised, it stimulates their openness to new ideas and their time spent shopping and navigating online. As a result, the fifth hypothesis (H5), which predicted a positive effect of perceived personalisation on consumer innovativeness, is accepted.

	(1) Model_D_P	(2) Model_I_P	(3) Model_PU_P	(4) Model_C_P
Age	0.02** (0.01)	0.01* (0.01)	0.01 (0.01)	-0.004 (0.01)
Gender	-0.004 (0.13)	-0.07 (0.15)	0.03 (0.14)	-0.22 (0.13)
Nationality	0.0004 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Education	-0.04 (0.09)	-0.08 (0.11)	0.03 (0.10)	-0.10 (0.09)
Income	0.02 (0.04)	-0.02 (0.04)	-0.04 (0.04)	0.05 (0.04)
P	0.01 (0.08)	-0.02 (0.09)	0.59*** (0.09)	0.29*** (0.08)
Constant	3.20*** (0.56)	3.75*** (0.63)	0.67 (0.56)	1.89*** (0.55)
Observations	207	207	207	207

Standard errors in parentheses

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6

As a third step, four models were again created by conducting four separate regressions, as shown in table 7. The four models aim to test the hypotheses H6, H7, H8 and H9, respectively. In fact, each model shows the direct effects of each mediator (D, I, PU, C) on the dependent variable, purchase intention (PI). Although there was no significant relationship between perceived personalisation and any of the perceived risk-related constructs (disposition to value privacy and invasiveness) on the previous step, the relationships between these two constructs and purchase intention were still assessed. This allowed to understand if there was a stand-alone impact of any perceived risk construct on the dependent variable purchase intention (PI).

In fact, the first model (Model_PI_D) indicates that disposition to value privacy did not significantly affect purchase intention ($p = .172$). How much respondents value their privacy does not seem to have a strong negative impact on their purchase intention. As a result, the sixth hypothesis (H6), which suggests a negative effect of disposition to value privacy on purchase intention, is not supported and rejected.

Regarding invasiveness, the results from the second model (Model_PI_I) show that the construct had a significant negative effect on purchase intention ($p < .001$). This means that if consumers in this study feel that their privacy is being invaded, that feeling of invasiveness leads to a lower likelihood of purchase intent. This is in line with the seventh hypothesis (H7), which suggests a negative effect of invasiveness on purchase intention. Therefore, H7 is supported and accepted.

The findings from third model (Model_PI_PU) revealed that perceived usefulness had a significant positive effect on purchase intention ($p < .001$). This result suggests that consumers

who find an advertisement useful are significantly more likely to intend to purchase the product or service being advertised. In this way, H8, which proposes a positive effect of perceived usefulness on purchase intention is accepted.

Finally, the last model (Model_PI_C) indicates the positive and significant impact of consumer innovativeness on purchase intention ($p < .001$). This finding suggests that consumers who are more likely to try new products, services or ideas are significantly more likely to intend to purchase new products or services. Thus, H9, that proposes that consumer innovativeness has a positive effect on purchase intention, is accepted. The model also indicates that higher income respondents may have somewhat reduced purchase intentions ($p = .020$).

	(1) Model_PI_D	(2) Model_PI_I	(3) Model_PI_PU	(4) Model_PI_C
Age	-0.004 (0.01)	-0.001 (0.005)	-0.01 (0.004)	-0.0003 (0.004)
Gender	-0.14 (0.13)	-0.16 (0.13)	-0.10 (0.10)	0.06 (0.10)
Nationality	-0.001 (0.01)	-0.002 (0.008)	-0.002 (0.006)	-0.003 (0.01)
Education	-0.09 (0.10)	-0.11 (0.09)	-0.10 (0.08)	-0.02 (0.07)
Income	-0.02 (0.04)	-0.03 (0.04)	-0.01 (0.03)	-0.07* (0.03)
D	-0.10 (0.07)			
I		-0.26*** (0.06)		
PU			0.56*** (0.05)	
C				0.72*** (0.05)
Constant	3.73*** (0.52)	4.37*** (0.50)	1.70*** (0.39)	1.21** (0.37)
Observations	207	207	207	207

Standard errors in parentheses

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7

At this stage three main findings are known: (1) perceived personalisation has a positive and significant effect on purchase intention; (2) perceived personalisation has a positive and significant effect on both perceived usefulness and consumer innovativeness; and (3) invasiveness has a negative significant effect on purchase intention, whereas perceived usefulness and consumer innovativeness both have a positive significant effect on purchase intention. Thus, as the fourth and last step can only be performed if there are significant relationships in steps one to three, only perceived usefulness and consumer innovativeness were included in the last regression/model. Table 8 shows a multiple regression to test the combined effect of perceived

personalisation (P) and the mediators perceived usefulness (PU) and consumer innovativeness (C) on purchase intention (PI). The combined model aims to confirm the mediating influence of perceived usefulness and consumer innovativeness in the relationship between perceived personalisation and purchase intention.

Regarding Table 8, it can be concluded that perceived personalisation still has a significant positive effect on purchase intention ($p=.016$). However, the magnitude of this effect is reduced, when compared to Table 5. Thus, Table 8 shows that perceived usefulness ($p<0.01$) and consumer innovativeness ($p<0.01$) partially mediate the relationship between perceived personalisation and purchase intention. These findings support a mediation model for the perceived benefit constructs and reinforce the notion that perceived personalisation positively influences purchase intention through these mediators. Regarding the control variables, Table 8 suggests that higher income levels are associated with slightly lower purchase intentions ($p=.034$), which is consistent with the fourth model shown in Table 7.

	(1) Model_Combined
Age	-0.001 (0.004)
Gender	0.06 (0.09)
Nationality	-0.001 (0.005)
Education	-0.05 (0.06)
Income	-0.05* (0.03)
P	0.15* (0.06)
PU	0.28*** (0.05)
C	0.52*** (0.05)
Constant	0.36 (0.38)
Observations	207

Standard errors in parentheses
* $p<.05$, ** $p<.01$, *** $p<.001$

Table 8

Hypothesis Relationship	β	S.E.	p	Accepted/Rejected
H1 Perceived Personalisation → Purchase Intention	0.46	0.08	<.001	Accepted
H2 Perceived Personalisation → Disposition to Value Privacy	0.01	0.08	.917	Rejected
H3 Perceived Personalisation → Invasiveness	-0.02	0.09	.836	Rejected
H4 Perceived Personalisation → Perceived Usefulness	0.59	0.09	<.001	Accepted
H5 Perceived Personalisation → Consumer Innovativeness	0.29	0.08	<.001	Accepted
H6 Disposition to Value Privacy → Purchase Intention	-0.10	0.07	.172	Rejected
H7 Invasiveness → Purchase Intention	-0.26	0.06	<.001	Accepted
H8 Perceived Usefulness → Purchase Intention	0.56	0.05	<.001	Accepted
H9 Consumer Innovativeness → Purchase Intention	0.72	0.05	<.001	Accepted

Table 9: Overview of the accepted/rejected hypotheses

Discussion and Conclusion

Discussion

The results presented in the previous section reveal several important findings and valuable insights for marketing and advertising theory and practice, particularly regarding consumers' perceptions and intentions towards personalised advertising. The main finding and contribution of this research is that there is a significant positive relationship between perceived personalisation and purchase intention. Indeed, consumers' perceptions of personalised advertising as tailored to them had a positive and significant impact on their purchase intention, in line with existing research (De Keyzer et al., 2015; Tran, 2017; Lee et al., 2022). In other words, consumers are more likely to develop purchase intentions when they perceive advertising as personalised and tailored to their individual interests, preferences and needs.

This finding highlights the importance of personalised advertising strategies as a sales tool (Behera et al., 2020). It is also consistent with the belief that perceptions of personalised advertising are useful in predicting purchase behaviour (Lim et al., 2011). Therefore, this primary finding addresses the central research question and validates the proposition that personalised advertising, operationalised as perceived personalisation, has a positive impact on consumers, as suggested by Shanahan et al. (2019), Lee et al. (2017), and Lina & Setiyanto (2021). Furthermore, it is consistent with the idea that personalised advertising strategies can lead to higher engagement rates and consequently higher conversion rates (Tucker, 2014; Gironda & Korgaonkar, 2018). The identification of perceived personalisation as a crucial factor in consumers' decision-making processes when faced with online advertising supports many theories related to consumer behaviour and marketing effectiveness. Indeed, this research has shown that advertisers and marketers should continue to use personalisation to increase their consumers' purchase intent.

Another important finding is how perceived personalisation significantly predicts perceived usefulness and consumer innovativeness. Consumers in this study perceived personalised advertising content as useful, relevant, helpful and worthwhile. Consequently, as hypothesised, findings showed that when consumers perceive personalised advertising as useful, they are more likely to have a positive attitude towards it, which subsequently was proven to influence their purchase intention (Gironda & Korgaonkar, 2018). Additionally, respondents exhibited characteristics of consumer innovativeness, indicating a willingness to explore new products and services targeted to them personally through personalised online advertising (Gironda & Korgaonkar, 2018). Those respondents were highly receptive to such advertising and actively engaged in online shopping, investing both time and money in this activity. These findings on consumer innovativeness also proved to be a driver, similar to perceived usefulness, that positively influenced consumer purchase intent.

The two perceived benefit constructs (perceived usefulness and consumer innovativeness) were found to be significantly predicted by perceived personalisation. Additionally, they also predicted purchase intention. In this way, they were confirmed as mediators, partially influencing the relationship between the perceived personalisation and purchase intention. This confirms the critical role of perceived usefulness and consumer innovativeness in driving consumer behaviour about personalised advertising (Gironda & Korgaonkar, 2018; Zhu & Kanjanamekanant, 2021). In addition, it suggests that while perceived personalisation directly increases purchase intention, part of its effect is also channelled through increasing perceived usefulness and consumer innovativeness traits.

These findings highlight the importance of the online advertising industry creating ads that not only meet consumer preferences, but also provide real benefits and usefulness to the audience (O'Donnell & Cramer, 2015; Gironda & Korgaonkar, 2018). They underscore that targeting innovative consumers with personalised ads may increase engagement and positive perceptions and can directly lead to increased sales (Goldsmith et al., 2003; Roehrich, 2004; Gironda & Korgaonkar, 2018). Overall, marketers should use personalised advertising as a powerful tool to increase purchase intent, primarily by increasing perceived usefulness and targeting innovative consumers. Therefore, it could be concluded that there is indeed a perceived benefit when consumers are aware of and engaged by personalised advertising efforts.

Consequently, the proposed mediation model was validated for the perceived benefit part of the theoretical framework. However, this was not the case for the perceived risk constructs. Perceived personalisation did not prove to influence respondents' disposition to value privacy and their sense of privacy invasiveness. More specifically, the results suggest that experiencing personalised advertising in the context of this study does not make consumers feel that their privacy is compromised or that the approach is intrusive, contradicting the existing literature (van Doorn & Hoekstra, 2013; Lina & Setiyanto, 2021). These findings highlight the complexity of consumer perceptions, as they may recognise the benefits of personalisation without necessarily feeling a loss of privacy or increased invasiveness.

Respondents' tendency to manage certain limits on the disclosure of personal information was also shown not to influence their purchase intention. However, respondents showed that when they felt their privacy was being invaded, this feeling of invasiveness negatively influenced their purchase intention towards online advertising. This stand-alone effect of invasiveness on purchase intention is in line with the existing literature (Gironda & Korgaonkar, 2018). However, it may mean that the presence of personalised advertising is not necessary for this to occur, acting as an independent effect.

As a conclusion, disposition to value privacy and invasiveness did not significantly mediate the relationship between perceived personalisation and purchase intention. This suggests that perceived risk constructs do not significantly alter the positive impact of perceived personalisation on purchase intention. This may indicate a level of acceptance or trust of personalised advertising efforts among respondents in this study. In fact, the insignificance of the perceived risk constructs may be due to the demographics of the study sample, which was predominantly of young adults. According to the existing literature, younger adults tend to be less concerned about privacy issues (Blank et al., 2014). However, as the sample shows, older adults are also exposed to personalised advertising, so it is important for marketers to balance personalisation with transparency and respect for consumer privacy to mitigate potential negative effects (O'Donnell & Cramer, 2015).

As a result, the theoretical frameworks used in this study – based on the privacy calculus theory and Gironde & Korgaonkar's framework – were partially validated. The proposition that perceived personalisation can bring both a perceived risk and perceived benefit could only be confirmed for the latter (Li, 2012; Kim et al., 2019). Thus, while positive outcomes from personalisation were confirmed, the study did not find consistent evidence supporting the negative implications related to privacy as predicted by the personalisation-privacy paradox (Lee & Cranage, 2011; Aguirre et al., 2016). Indeed, of the proposed mediators, only perceived usefulness and consumer innovativeness were both positively and significantly influenced by perceived personalisation and positively and significantly influenced purchase intention. This means that only the perceived benefit constructs were validated as mediators. As a result, the study calls for further refinement of theoretical frameworks related to personalised advertising in order to better explain consumer perceptions, especially in relation to privacy-related constructs.

In terms of control variables, age and income had an impact in some models, while gender, nationality and education did not emerge as significant predictors in any of the models. Age was found to be a significant predictor of both disposition to value privacy and invasiveness. This means that older respondents showed that perceived personalisation led them to value their privacy more and to feel more invaded by it. These findings are in line with the literature on how insightful using age as a control variable when analysing consumer behaviour (Hernández et al., 2011). Regarding income, higher income levels were associated with slightly lower purchase intentions. This negative effect contradicts the literature, which states that higher income levels should provide consumers with greater purchasing power and intention (Kaur & Kochar, 2018). Finally, although the existing literature suggests that gender, country of origin and education play a crucial role in consumer behaviour, this could not be confirmed in this study (Bakshi, 2012; Rezvani et al., 2012; Kaur & Kochar, 2018). Overall, it can be concluded that the control variables did not play a vital role in shaping the results of this study.

Finally, important findings emerged from the comparative analyses between different groups based on age group, gender and nationality. Personalised advertising strategies may be more effective for younger consumers, who are less concerned about privacy and more likely to make purchases. In contrast, strategies targeting older consumers should carefully address privacy concerns and the perceived invasiveness of marketing efforts. The results also suggest that female consumers are more likely to try new products, adopt innovative solutions and spend more time and money shopping online. As a result, tailoring advertising strategies by demographic preferences and privacy concerns could optimise the effectiveness of personalised advertising. For example, targeting advertising messages to younger female adults. Finally, as the majority of the sample is from Portugal, respondents from this country showed lower levels of perceived personalisation. This suggests that they do not perceive personalised advertising to the same extent as respondents from other countries.

Limitations and future research

The present study had some limitations that may affect the generalisability and reliability of the findings. Firstly, the sample consisted predominantly of young adults and female participants, which may limit the applicability of the findings to broader demographic groups. Future research should seek to include a more diverse and random pool of participants to better understand how different demographic groups perceive personalised advertising. Secondly, the study included a significant number of respondents from Portugal, which may limit the applicability of the findings to other cultural or national contexts. Indeed, nationality and culture play a major role in shaping beliefs, values, norms and behaviours (Hofstede, 2011). In fact, cultural factors and social practices can be really important in tailoring advertising strategies to effectively resonate with different demographic groups. This highlights the inadequacy of the comparative analysis between Portugal and all other countries. To address this limitation, future studies could include participants from different cultural backgrounds, ensuring a significant representation of each, to explore how cultural factors influence perceptions of privacy and responses to personalised advertising (Bhat et al., 2021).

Another limitation is the reliance on self-reported data, which may be subject to social desirability bias and inaccurate self-reporting (Brutus et al., 2013). This approach may result in respondents providing answers that are influenced by social desirability bias or by the wording and structure of the questions, leading to common method bias (Siemsen et al., 2010). It may also have artificially inflated the relationships between variables, making it appear that certain factors, such as perceived personalisation, perceived usefulness and consumer innovativeness, have a greater impact on consumer behaviour than they do. Efforts such as randomising the order of questions were performed to minimise the impact of question wording or context on responses.

However, to reduce common method biases, future research could make use of multiple sources, as the data in this study was all collected from an online survey (Podsakoff et al., 2003). In addition, longitudinal studies that track changes in perceptions and behaviours over time should be conducted, which can help distinguish true relationships from transient effects (Brutus et al., 2013).

In addition, the constructs measured in the study are inherently subjective and influenced by individual differences and external factors. Further research should explore these constructs in different contexts and consider additional variables that may influence consumer perceptions and behaviour. In particular, it would be beneficial to include variables such as perceived privacy control, which refers to an individual's belief in their ability to control the release and dissemination of personal information (Xu et al., 2011; Gironde & Korgaonkar, 2018). Privacy concerns, which includes concerns about potential loss of privacy due to voluntary or surreptitious disclosure of information, may also be a beneficial variable to include (Liao et al., 2011; Gironde & Korgaonkar, 2018). These variables may provide clearer insights and be easier for respondents to assess.

Moreover, the cross-sectional nature of the study has also been identified as a limitation (Spector, 2019). As the data was collected at a single point in time over a two-week period, it only provides a snapshot of consumers' perceptions and behaviours towards personalised advertising (Kesmodel, 2018). Therefore, more longitudinal research may be useful as future research, as mentioned previously. Tracking consumer perceptions and behaviours over time would provide a more comprehensive understanding and could take into account evolving digital marketing strategies and consumer attitudes.

Finally, this research calls for the refinement of its theoretical framework. As privacy calculus theory could not be fully validated, future research should focus on better understanding privacy-related constructs and their impact on consumer behaviour. By addressing the limitations above presented and focusing on the suggestions for future research, advertisers and marketers can improve the understanding of consumer responses to personalised advertising and contribute to the development of more robust frameworks and models.

Conclusion

This study provides several important insights for marketers and advertisers aiming to leverage personalised advertising. Personalisation has proved to be a potent tool for enhancing purchase intentions, primarily through increasing perceived usefulness and consumer innovativeness characteristics, rather than altering privacy concerns or feelings of invasiveness.

Thus, the central research question, "*How do consumers' perceptions of personalised advertising influence their online purchase intentions?*" is addressed by these findings, which show that consumers' perceptions of personalised advertising in this study are positive and positively influence their online purchase intentions.

With regard to the first sub-question, "*What makes consumers perceive personalised content as relevant?*", the research shows that perceived usefulness is a significant driver of relevance. If consumers find the personalised content useful and feel it matches their preferences, they perceive it as relevant. These findings suggest that advertisers and marketers should continue to focus on personalised strategies to increase perceived usefulness and drive purchase intent. Additionally, targeting consumers that tend to be very open and receptive to the online advertising they see is an important takeaway of this study.

However, the second sub-question "*What makes consumers perceive personalised content as invasive?*" could not be answered as perceived risk constructs such as privacy disposition and invasiveness were generally not significant in this study. This suggests a complexity in consumer perceptions, where the benefits of personalisation may outweigh the perceived risks for many of the consumers involved in this study. Therefore, the study highlights the need for further research into what drives consumers to perceive personalised content as invasive. Privacy concerns should be explored in more detail, as there is much emphasis in the literature in this area that could not be verified in this study.

In summary, personalised advertising is validated as a valuable strategy for increasing purchase intent by providing useful promotional content and targeting innovative consumers, ultimately increasing consumer engagement and driving business success. It is therefore conceivable that customer perceptions of personalisation could be even more positive if privacy concerns are adequately addressed.

References

Aguirre, E., Roggeveen, A. L., Grewal, D., & Wetzels, M. (2016). The personalization-privacy paradox: Implications for new media. *Journal of Consumer Marketing*, 33(2), 98–110. <https://doi.org/10.1108/JCM-06-2015-1458>

Baek, T. H., & Morimoto, M. (2012). Stay Away From Me. *Journal of Advertising*, 41(1), 59–76. <https://doi.org/10.2753/JOA0091-3367410105>

Bakshi, S. (2012). IMPACT OF GENDER ON CONSUMER PURCHASE BEHAVIOUR. *Journal of Research in Commerce and Management*, VOLUME NO.1, ISSUE NO.9.

Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173–1182. <https://doi.org/10.1037//0022-3514.51.6.1173>

Behera, R. K., Gunasekaran, A., Gupta, S., Kamboj, S., & Bala, P. K. (2020). Personalized digital marketing recommender engine. *Journal of Retailing and Consumer Services*, 53, 101799. <https://doi.org/10.1016/j.jretconser.2019.03.026>

Bewick, V., Cheek, L., & Ball, J. (2003). Statistics review 7: Correlation and regression. *Critical Care*, 7(6), 451. <https://doi.org/10.1186/cc2401>

Bhat, S. A., Islam, S. B., & Sheikh, A. H. (2021). Evaluating the Influence of Consumer Demographics on Online Purchase Intention: An E-Tail Perspective. *Paradigm*, 25(2), 141–160. <https://doi.org/10.1177/09718907211045185>

Blank, G., Bolsover, G., & Dubois, E. (2014). *A New Privacy Paradox: Young People and Privacy on Social Network Sites* (SSRN Scholarly Paper 2479938). <https://doi.org/10.2139/ssrn.2479938>

Boerman, S. C., Kruikemeier, S., & Bol, N. (2021). When is personalized advertising crossing personal boundaries? How type of information, data sharing, and personalized pricing influence consumer perceptions of personalized advertising. *Computers in Human Behavior Reports*, 4, 100144. <https://doi.org/10.1016/j.chbr.2021.100144>

Boerman, S. C., Kruikemeier, S., & Zuiderveen Borgesius, F. J. (2017). Online Behavioral Advertising: A Literature Review and Research Agenda. *Journal of Advertising*, 46(3), 363–376. <https://doi.org/10.1080/00913367.2017.1339368>

Bonett, D. G., & Wright, T. A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3–15. <https://doi.org/10.1002/job.1960>

Brandimarte, L., Acquisti, A., & Loewenstein, G. (2013). Misplaced Confidences: Privacy and the Control Paradox. *Social Psychological and Personality Science*, 4(3), 340–347. <https://doi.org/10.1177/1948550612455931>

Brutus, S., Aguinis, H., & Wassmer, U. (2013). Self-Reported Limitations and Future Directions in Scholarly Reports: Analysis and Recommendations. *Journal of Management*, 39(1), 48–75. <https://doi.org/10.1177/0149206312455245>

Cahn, A., Alfeld, S., Barford, P., & Muthukrishnan, S. (2016). An Empirical Study of Web Cookies. *Proceedings of the 25th International Conference on World Wide Web*, 891–901. <https://doi.org/10.1145/2872427.2882991>

Campbell, C., Plangger, K., Sands, S., & Kietzmann, J. (2021). Preparing for an Era of Deepfakes and AI-Generated Ads: A Framework for Understanding Responses to Manipulated Advertising. *Journal of Advertising*, 51. <https://doi.org/10.1080/00913367.2021.1909515>

Chellappa, R. K., & Sin, R. G. (2005). Personalization versus Privacy: An Empirical Examination of the Online Consumer's Dilemma. *Information Technology and Management*, 6(2), 181–202. <https://doi.org/10.1007/s10799-005-5879-y>

Chen, G., Xie, P., Dong, J., & Wang, T. (2019). Understanding Programmatic Creative: The Role of AI. *Journal of Advertising*, 48(4), 347–355. <https://doi.org/10.1080/00913367.2019.1654421>

Culnan, M. J., & Armstrong, P. K. (1999). Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation. *Organization Science*, 10(1), 104–115. <https://doi.org/10.1287/orsc.10.1.104>

Daems, K., Pelsmacker, P. D., & Moons, I. (2019). Advertisers' perceptions regarding the ethical appropriateness of new advertising formats aimed at minors. *Journal of Marketing Communications*. <https://www.tandfonline.com/doi/full/10.1080/13527266.2017.1409250>

Dawn, S. K. (2014, January 1). Personalised Marketing: Concepts and Framework. *Productivity* 54(4):370. <https://www.proquest.com/openview/1fa52f22f927d975386747a8fc6b664f/1?cbl=506334&pq-origsite=gscholar&parentSessionId=0I0aptSN0db7I2h8CjyjypJNw4ftMpsbn0UCnsl8oTg%3D>

De Keyzer, F., Dens, N., & De Pelsmacker, P. (2015). Is this for me? How Consumers Respond to Personalized Advertising on Social Network Sites. *Journal of Interactive Advertising*, 15(2), 124–134. <https://doi.org/10.1080/15252019.2015.1082450>

Deloitte. (2020, June 24). *Connecting with meaning*. Connecting with Meaning. <https://www2.deloitte.com/ca/en/pages/deloitte-analytics/articles/connecting-with-meaning.html>

Deutskens, E., de Ruyter, K., Wetzels, M., & Oosterveld, P. (2004). Response Rate and Response Quality of Internet-Based Surveys: An Experimental Study. *Marketing Letters*, 15(1), 21–36. <https://doi.org/10.1023/B:MARK.0000021968.86465.00>

Do consumers want to control their personal data? Empirical evidence—ScienceDirect. (n.d.). Retrieved 27 June 2024, from https://www.sciencedirect.com/science/article/pii/S1071581917301416?casa_token=Im8xyISFEcEAAAAA:xjGuy8RXirRzN0BWh-EApAcJn158FChb-MZeY08n3rr5IkObgOIqIPsupQ2TrB1_qL59xJ5QYg

Ducoffe, R. H. (1996). ADVERTISING VALUE AND ADVERTISING ON THE WEB. *Journal of Advertising Research*, 36(5), 21–21.

Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 102168. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>

Eastin, M. S., Brinson, N. H., Doorey, A., & Wilcox, G. (2016). Living in a big data world: Predicting mobile commerce activity through privacy concerns. *Computers in Human Behavior*, 58, 214–220. <https://doi.org/10.1016/j.chb.2015.12.050>

Evans, J. R., & Mathur, A. (2018). The value of online surveys: A look back and a look ahead. *Internet Research*, 28(4), 854–887. <https://doi.org/10.1108/IntR-03-2018-0089>

Fan, H., & Poole, M. S. (2006). What Is Personalization? Perspectives on the Design and Implementation of Personalization in Information Systems. *Journal of Organizational Computing and Electronic Commerce*, 16(3–4), 179–202. <https://doi.org/10.1080/10919392.2006.9681199>

Fisher, M. J., & Marshall, A. P. (2009). Understanding descriptive statistics. *Australian Critical Care*, 22(2), 93–97. <https://doi.org/10.1016/j.aucc.2008.11.003>

Ford, J., Jain, V., Wadhvani, K., & Gupta, D. G. (2023). AI advertising: An overview and guidelines. *Journal of Business Research*, 166, 114124.

<https://doi.org/10.1016/j.jbusres.2023.114124>

Fransen, M. L., Smit, E. G., & Verlegh, P. W. J. (2015). Strategies and motives for resistance to persuasion: An integrative framework. *Frontiers in Psychology*, 6.

<https://doi.org/10.3389/fpsyg.2015.01201>

Girona, J. T., & Korgaonkar, P. K. (2018). iSpy? Tailored versus Invasive Ads and Consumers' Perceptions of Personalized Advertising. *Electronic Commerce Research and Applications*, 29, 64–77. <https://doi.org/10.1016/j.elerap.2018.03.007>

Goldsmith, R. E., Flynn, L. R., & Goldsmith, E. B. (2003). Innovative Consumers and Market Mavens. *Journal of Marketing Theory and Practice*, 11(4), 54–65.

<https://doi.org/10.1080/10696679.2003.11658508>

Gomer, R., Rodrigues, E. M., Milic-Frayling, N., & Schraefel, M. C. (2013). Network Analysis of Third Party Tracking: User Exposure to Tracking Cookies through Search. 2013 *IEEE/WIC/ACM International Joint Conferences on Web Intelligence (WI) and Intelligent Agent Technologies (IAT)*, 1, 549–556. <https://doi.org/10.1109/WI-IAT.2013.77>

Goodrich, K. (2013). Effects of age and time of day on Internet advertising outcomes. *Journal of Marketing Communications*, 19(4), 229–244.

<https://doi.org/10.1080/13527266.2011.620618>

Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103(2), 265–275. <https://doi.org/10.1037/0033-2909.103.2.265>

Henson, R. K. (2001). Understanding Internal Consistency Reliability Estimates: A Conceptual Primer on Coefficient Alpha. *Measurement and Evaluation in Counseling and Development*. <https://www.tandfonline.com/doi/abs/10.1080/07481756.2002.12069034>

Hernández, B., Jiménez, J., & José Martín, M. (2011). Age, gender and income: Do they really moderate online shopping behaviour? *Online Information Review*, 35(1), 113–133.

<https://doi.org/10.1108/14684521111113614>

Ho Nguyen, H., Nguyen-Viet, B., Hoang Nguyen, Y. T., & Hoang Le, T. (2022). Understanding online purchase intention: The mediating role of attitude towards advertising. *Cogent Business & Management*, 9(1), 2095950.

<https://doi.org/10.1080/23311975.2022.2095950>

- Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1). <https://doi.org/10.9707/2307-0919.1014>
- Joinson, A., & Paine, C. B. (2007). *Oxford Handbook of Internet Psychology*. OUP Oxford.
- Kaur, H., & Kochar, R. (2018). A Review of Factors Affecting Consumer Behavior towards Online Shopping. *International Journal of Engineering and Management Research*, Volume-8, 54–58. <https://doi.org/doi.org/10.31033/ijemr.8.4.6>
- Kesmodel, U. S. (2018). Cross-sectional studies – what are they good for? *Acta Obstetricia et Gynecologica Scandinavica*, 97(4), 388–393. <https://doi.org/10.1111/aogs.13331>
- Kim, C., Kwon, K., & Chang, W. (2011). How to measure the effectiveness of online advertising in online marketplaces. *Expert Systems with Applications*, 38(4), 4234–4243. <https://doi.org/10.1016/j.eswa.2010.09.090>
- Kim, D., Park, K., Park, Y., & Ahn, J.-H. (2019). Willingness to provide personal information: Perspective of privacy calculus in IoT services. *Computers in Human Behavior*, 92, 273–281. <https://doi.org/10.1016/j.chb.2018.11.022>
- Kim, J. W., Lee, B. H., Shaw, M. J., Chang, H.-L., & Nelson, M. (2001). Application of Decision-Tree Induction Techniques to Personalized Advertisements on Internet Storefronts. *International Journal of Electronic Commerce*, 5(3), 45–62. <https://doi.org/10.1080/10864415.2001.11044215>
- Kramer, T., Spolter-Weisfeld, S., & Thakkar, M. (2007). The Effect of Cultural Orientation on Consumer Responses to Personalization. *Marketing Science*, 26(2), 246–258.
- Kumar, V., & Gupta, S. (2016). Conceptualizing the Evolution and Future of Advertising. *Journal of Advertising*, 45(3), 302–317. <https://doi.org/10.1080/00913367.2016.1199335>
- Laufer, R. S., & Wolfe, M. (1977). Privacy as a Concept and a Social Issue: A Multidimensional Developmental Theory. *Journal of Social Issues*, 33(3), 22–42. <https://doi.org/10.1111/j.1540-4560.1977.tb01880.x>
- Lavado-Nalvaiz, N., Lucia-Palacios, L., & Pérez-López, R. (2022). The role of the humanisation of smart home speakers in the personalisation–privacy paradox. *Electronic Commerce Research and Applications*, 53, 101146. <https://doi.org/10.1016/j.elerap.2022.101146>

Lee, C. H., & Cranage, D. A. (2011). Personalisation–privacy paradox: The effects of personalisation and privacy assurance on customer responses to travel Web sites. *Tourism Management*, 32(5), 987–994. <https://doi.org/10.1016/j.tourman.2010.08.011>

Lee, E.-B., Lee, S.-G., & Yang, C.-G. (2017). The influences of advertisement attitude and brand attitude on purchase intention of smartphone advertising. *Industrial Management & Data Systems*, 117(6), 1011–1036. <https://doi.org/10.1108/IMDS-06-2016-0229>

Lee, J., Kim, C., & Lee, K. C. (2022). Exploring the personalization-intrusiveness-intention framework to evaluate the effects of personalization in social media. *International Journal of Information Management*, 66, 102532. <https://doi.org/10.1016/j.ijinfomgt.2022.102532>

Li, C. (2016). When does web-based personalization really work? The distinction between actual personalization and perceived personalization. *Computers in Human Behavior*, 54, 25–33. <https://doi.org/10.1016/j.chb.2015.07.049>

Li, H. (2019). Special Section Introduction: Artificial Intelligence and Advertising. *Journal of Advertising*, 48, 1–5. <https://doi.org/10.1080/00913367.2019.1654947>

Li, Y. (2012). Theories in online information privacy research: A critical review and an integrated framework. *Decision Support Systems*, 54(1), 471–481. <https://doi.org/10.1016/j.dss.2012.06.010>

Liao, C., Liu, C.-C., & Chen, K. (2011). Examining the impact of privacy, trust and risk perceptions beyond monetary transactions: An integrated model. *Electronic Commerce Research and Applications*, 10(6), 702–715. <https://doi.org/10.1016/j.elerap.2011.07.003>

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 22 140, 55–55.

Lim, Y., Yap, C. S., & Lau, T.-C. (2011). The Effectiveness of Online Advertising in Purchase Decision: Liking, Recall and Click. *Australian Journal of Basic and Applied Sciences*, 5, 1517–1524.

Lin, C. A., & Kim, T. (2016). Predicting user response to sponsored advertising on social media via the technology acceptance model. *Computers in Human Behavior*, 64, 710–718. <https://doi.org/10.1016/j.chb.2016.07.027>

Lina, L. F., & Setiyanto, A. (2021). Privacy Concerns in Personalized Advertising Effectiveness on Social Media. *SRIWIJAYA INTERNATIONAL JOURNAL OF DYNAMIC ECONOMICS AND BUSINESS*, 147–156. <https://doi.org/10.29259/sijdeb.v1i2.147-156>

Lukaszewski, K. M., Stone, D. L., & Stone-Romero, E. F. (2008). The Effects of the Ability to Choose the Type of Human Resources System on Perceptions of Invasion of Privacy and System Satisfaction. *Journal of Business and Psychology*, 23(3), 73–86.

<https://doi.org/10.1007/s10869-008-9074-0>

Malheiros, M., Jennett, C., Patel, S., Brostoff, S., & Sasse, A. (2012). Too close for comfort: A study of the effectiveness and acceptability of rich-media personalized advertising. *Conference on Human Factors in Computing Systems - Proceedings*.

<https://doi.org/10.1145/2207676.2207758>

Martin, K. D., & Murphy, P. E. (2017). The role of data privacy in marketing. *Journal of the Academy of Marketing Science*, 45(2), 135–155. <https://doi.org/10.1007/s11747-016-0495-4>

Martins, J., Costa, C., Oliveira, T., Gonçalves, R., & Branco, F. (2019). How smartphone advertising influences consumers' purchase intention. *Journal of Business Research*, 94, 378–387. <https://doi.org/10.1016/j.jbusres.2017.12.047>

McKinsey & Company. (2021, November). *The value of getting personalization right—Or wrong—Is multiplying* | McKinsey. The Value of Getting Personalization Right—or Wrong—Is Multiplying. [https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying#/#/](https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/the-value-of-getting-personalization-right-or-wrong-is-multiplying#/)

McKinsey & Company. (2023, May 30). *What is personalization?* | McKinsey. <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-personalization>

Mellet, K., & Beauvisage, T. (2019). Cookie monsters. Anatomy of a digital market infrastructure. *Consumption Markets & Culture*, 23, 1–20.

<https://doi.org/10.1080/10253866.2019.1661246>

Miyazaki, A. D. (2008). Online Privacy and the Disclosure of Cookie Use: Effects on Consumer Trust and Anticipated Patronage. *Journal of Public Policy & Marketing*, 27(1), 19–33. <https://doi.org/10.1509/jppm.27.1.19>

Newsom, J. (2023). Testing Mediation with Regression Analysis. *Structural Equation Modeling*.

Niu, X., Wang, X., & Liu, Z. (2021). When I feel invaded, I will avoid it: The effect of advertising invasiveness on consumers' avoidance of social media advertising. *Journal of Retailing and Consumer Services*, 58, 102320. <https://doi.org/10.1016/j.jretconser.2020.102320>

Núñez-Barriopedro, E., Cuesta-Valiño, P., & Mansori-Amar, S. (2022). The role of perceived usefulness and annoyance on programmatic advertising: The moderating effect of

Internet user privacy and cookies. *Corporate Communications: An International Journal*, 28(2), 311–324. <https://doi.org/10.1108/CCIJ-03-2022-0033>

O'Donnell, K., & Cramer, H. (2015). People's Perceptions of Personalized Ads. *Proceedings of the 24th International Conference on World Wide Web*, 1293–1298. <https://doi.org/10.1145/2740908.2742003>

Pasharibu, Y., Soerijanto, J. A., & Jie, F. (2020). Intention to buy, interactive marketing, and online purchase decisions. *Jurnal Ekonomi Dan Bisnis*, 23(2), Article 2. <https://doi.org/10.24914/jeb.v23i2.3398>

Peña-García, N., Gil-Saura, I., Rodríguez-Orejuela, A., & Siqueira-Junior, J. R. (2020). Purchase intention and purchase behavior online: A cross-cultural approach. *Heliyon*, 6(6), e04284. <https://doi.org/10.1016/j.heliyon.2020.e04284>

Perneger, T. V., Courvoisier, D. S., Hudelson, P. M., & Gayet-Ageron, A. (2015). Sample size for pre-tests of questionnaires. *Quality of Life Research*, 24(1), 147–151.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>

Puglisi, S., Rebollo-Monedero, D., & Forné, J. (2017). On web user tracking of browsing patterns for personalised advertising. *International Journal of Parallel, Emergent and Distributed Systems*, 32(5), 502–521. <https://doi.org/10.1080/17445760.2017.1282480>

Purnawirawan, N., De Pelsmacker, P., & Dens, N. (2012). Balance and Sequence in Online Reviews: How Perceived Usefulness Affects Attitudes and Intentions. *Journal of Interactive Marketing*, 26(4), 244–255. <https://doi.org/10.1016/j.intmar.2012.04.002>

Quach, S., Thaichon, P., Martin, K. D., Weaven, S., & Palmatier, R. W. (2022). Digital technologies: Tensions in privacy and data. *Journal of the Academy of Marketing Science*, 50(6), 1299–1323. <https://doi.org/10.1007/s11747-022-00845-y>

Rafieian, O., & Yoganarasimhan, H. (2021). Targeting and Privacy in Mobile Advertising. *Marketing Science*, 40(2), 193–218. <https://doi.org/10.1287/mksc.2020.1235>

Rezvani, S., Javadian Dehkordi, G., Sabbir Rahman, M., Fouladivanda, F., Habibi, M., & Eghtebasi, S. (2012). A Conceptual Study on the Country of Origin Effect on Consumer Purchase Intention. *Asian Social Science*, 8(12), p205. <https://doi.org/10.5539/ass.v8n12p205>

Rife, N., & Ryan, Y. (2020, September 10). The Evolution of Personalization in Marketing. *The Jabian Journal*. <https://journal.jabian.com/the-evolution-of-personalization-in-marketing/>

Roehrich, G. (2004). Consumer innovativeness: Concepts and measurements. *Journal of Business Research*, 57(6), 671–677. [https://doi.org/10.1016/S0148-2963\(02\)00311-9](https://doi.org/10.1016/S0148-2963(02)00311-9)

Romadhoni, B., Akhmad, A., Naldah, N., & Rossanty, N. P. E. (2023). Purchasing Decisions Effect of Social Media Marketing, Electronic Word of Mouth (eWOM), Purchase Intention. *Journal of Accounting and Finance Management*, 4(1), 74–86. <https://doi.org/10.38035/jafm.v4i1.194>

SALUJA, K. (2023, June 5). *How to Stand Out: 15 Personalized Marketing Examples from Top Brands*. <https://www.eventible.com/learning/personalized-marketing-examples/>

Samar, R., Alnaser, F. M. I., & Ghani, M. A. (2019, February). *DESIGNING SURVEY RESEARCH: RECOMMENDATION FOR QUESTIONNAIRE DEVELOPMENT, CALCULATING SAMPLE SIZE AND SELECTING RESEARCH PARADIGMS - ProQuest*. <https://www.proquest.com/openview/1a0da16e9739df9e14494e73219fa99b/1?pq-origsite=gscholar&cbl=2033472>

Schmidt, L., Bornschein, R., & Maier, E. (2020). The effect of privacy choice in cookie notices on consumers' perceived fairness of frequent price changes. *Psychology & Marketing*, 37(9), 1263–1276. <https://doi.org/10.1002/mar.21356>

Segijn, C. M., & van Ooijen, I. (2022). Differences in consumer knowledge and perceptions of personalized advertising: Comparing online behavioural advertising and synced advertising. *Journal of Marketing Communications*, 28(2), 207–226. <https://doi.org/10.1080/13527266.2020.1857297>

Shanahan, T., Tran, T. P., & Taylor, E. C. (2019). Getting to know you: Social media personalization as a means of enhancing brand loyalty and perceived quality. *Journal of Retailing and Consumer Services*, 47, 57–65. <https://doi.org/10.1016/j.jretconser.2018.10.007>

Shaouf, A., Lü, K., & Li, X. (2016). The effect of web advertising visual design on online purchase intention: An examination across gender. *Computers in Human Behavior*, 60, 622–634. <https://doi.org/10.1016/j.chb.2016.02.090>

Siemsen, E., Roth, A., & Oliveira, P. (2010). Common Method Bias in Regression Models With Linear, Quadratic, and Interaction Effects. *Organizational Research Methods*, 13(3), 456–476. <https://doi.org/10.1177/1094428109351241>

Spector, P. E. (2019). Do Not Cross Me: Optimizing the Use of Cross-Sectional Designs. *Journal of Business and Psychology*, 34(2), 125–137. <https://doi.org/10.1007/s10869-018-09613-8>

Statista. (2023, November 30). *Share of shoppers willing to share personal data such as demographics or product preferences worldwide as of November 2021 and 2022, by generation*. Statista. <https://www.statista.com/statistics/1426212/shoppers-willing-to-share-personal-data-worldwide/>

Statista. (2024, March 21). *Success rate of personalization strategies worldwide 2022*. Statista. <https://www.statista.com/statistics/1426197/success-rate-personalization-strategies/>

Strycharz, J., van Noort, G., Helberger, N., & Smit, E. (2019). Contrasting perspectives – practitioner’s viewpoint on personalised marketing communication. *European Journal of Marketing*, 53(4), 635–660. <https://doi.org/10.1108/EJM-11-2017-0896>

Sun, Y., Luo, B., Wang, S., & Fang, W. (2020). What you see is meaningful: Does green advertising change the intentions of consumers to purchase eco-labeled products? *Business Strategy and the Environment*, 30. <https://doi.org/10.1002/bse.2648>

Sun, Y., & Wang, S. (2019). Understanding consumers’ intentions to purchase green products in the social media marketing context. *Asia Pacific Journal of Marketing and Logistics, ahead-of-print*. <https://doi.org/10.1108/APJML-03-2019-0178>

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach’s alpha. *International Journal of Medical Education*, 2, 53–55. <https://doi.org/10.5116/ijme.4dfb.8dfd>

Tedlow, R. S. (1996). *New and Improved: The Story of Mass Marketing in America*. Boston: Harvard Business School Press. <https://www.hbs.edu/faculty/Pages/item.aspx?num=259>

Tran, T. P. (2017). Personalized ads on Facebook: An effective marketing tool for online marketers. *Journal of Retailing and Consumer Services*, 39, 230–242. <https://doi.org/10.1016/j.jretconser.2017.06.010>

Tucker, C. E. (2014). Social Networks, Personalized Advertising, and Privacy Controls. *Journal of Marketing Research*, 51(5), 546–562. <https://doi.org/10.1509/jmr.10.0355>

van Doorn, J., & Hoekstra, J. C. (2013). Customization of online advertising: The role of intrusiveness. *Marketing Letters*, 24(4), 339–351. <https://doi.org/10.1007/s11002-012-9222-1>

Wu, P. C. S., Yeh, G. Y.-Y., & Hsiao, C.-R. (2011). The Effect of Store Image and Service Quality on Brand Image and Purchase Intention for Private Label Brands. *Australasian Marketing Journal*, 19(1), 30–39. <https://doi.org/10.1016/j.ausmj.2010.11.001>

Xu, H., Dinev, T., Smith, H., & Hart, P. (2008). Examining the Formation of Individual's Privacy Concerns: Toward an Integrative View. In *ICIS 2008 Proceedings—Twenty Ninth International Conference on Information Systems*.

Xu, H., Dinev, T., Smith, J., & Hart, P. (2011). Information Privacy Concerns: Linking Individual Perceptions with Institutional Privacy Assurances. *Journal of the Association for Information Systems*, 12(12). <https://doi.org/10.17705/1jais.00281>

Yan, J., Liu, N., Wang, G., Zhang, W., Jiang, Y., & Chen, Z. (2009). How much can behavioral targeting help online advertising? *Proceedings of the 18th International Conference on World Wide Web*, 261–270. <https://doi.org/10.1145/1526709.1526745>

Zhu, Y.-Q., & Kanjanamekanant, K. (2021). No trespassing: Exploring privacy boundaries in personalized advertisement and its effects on ad attitude and purchase intentions on social media. *Information & Management*, 58(2), 103314. <https://doi.org/10.1016/j.im.2020.103314>

Appendix

I. Survey

A: Introduction

As part of my Master's thesis entitled 'The impact of consumer perceptions of personalised advertising on purchase intentions' for the Master of Business Development & Entrepreneurship at Utrecht University, I would like to ask you to participate in this survey. The purpose of this survey is to gain insights into how consumers feel about personalised advertising as internet navigators and how it might affect their purchasing intentions. Personalised advertising is considered to be content that is specifically tailored to your individual preferences, characteristics or interests.

The survey will take no more than 5 minutes to complete, and all responses will remain completely anonymous. Your contribution is very much appreciated and valuable to this study, so I encourage you to stay until the end of the survey.

Thank you very much!

If you require any further information, please do not hesitate to contact me.

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B: Measurement Items

Perceived personalisation

To what extent do you feel that the ads you see online are made just for you? For the statements below please indicate your level of (dis)agreement...

1. The personalised advertising I see online makes purchase recommendations that match my needs.
2. The personalised advertising I see online enables me to order products that are tailor-made for me.
3. Overall, the personalised advertising I see online is tailored to my situation.
4. The personalised advertising I see online makes me feel that I am a unique customer.
5. I believe the personalised advertising I see online is customized to my needs.

Disposition to value privacy

How much do you care about your personal information? For the statements below please indicate your level of (dis)agreement...

1. Compared to others, I am more sensitive to the way companies handle my personal information.
2. Compared to others, I tend to be more concerned about threats to my information privacy.
3. I care about the privacy of my personal information.
4. I am aware of cookies and think twice before accepting/rejecting them.

Invasiveness

How much do you feel your privacy is being invaded? For the statements below please indicate your level of (dis)agreement...

1. I feel that the collection of personal information for the purpose of providing personalised advertising is an invasion of my privacy.
2. I feel that personalised advertising is an invasion of consumer privacy in general.
3. I feel that consumer privacy is violated by the way companies make use of personalised advertising.
4. I feel that personalised advertising violates consumers' right to privacy.

Perceived usefulness:

How helpful do you find personalised ads? For the statements below please indicate your level of (dis)agreement...

1. I find personalised advertising helpful.
2. I find personalised advertising relevant.
3. I find personalised advertising worth seeing.
4. Overall, I find personalised advertising useful.

Consumer innovativeness:

Do you consider yourself someone who enjoys exploring new products and ideas when shopping online? For the statements below please indicate your level of (dis)agreement...

1. I am usually one of the first to try new products and services that are advertised.
2. I know more than others do about the latest new products and services from advertising.

3. I am eager to buy new products and services as soon as they are advertised.
4. I tend to be very open and receptive to the online advertising I see.

Purchase intention:

Do you often find yourself wanting to buy things that are advertised to you online? For the statements below please indicate your level of (dis)agreement...

1. After viewing an online personalised advertisement, I became interested in making a purchase.
2. After viewing an online personalised advertisement, I am willing to purchase the product/service being advertised.
3. After viewing an online personalised advertisement, I will probably purchase the product/service being advertised.

C: Demographics

What is your age?

What is your gender?

What is your nationality?

What is the highest level of school you have completed or the highest degree you have received?

What is your total gross annual income?

D: Closing

Your input is greatly appreciated. Thank you for completing the survey!

If you require any further information, please do not hesitate to contact me.

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II. *Comparative analyses: T tests*

	25 years and under		Over 25 years		t(205)	<i>p</i>	Cohen's d
	M	SD	M	SD			
P	3.21	0.73	3.00	0.83	1.95	.0523	0.27
D	3.40	0.92	3.97	0.82	-4.76	<.001	0.66
I	3.41	0.97	3.79	1.04	-2.71	.0074	0.38
PU	3.21	0.98	3.11	1.10	0.66	.5086	0.09
C	2.44	0.89	2.33	0.94	0.88	.3795	0.12
PI	2.78	0.88	2.50	0.96	2.22	.0274	0.31

	Female		Male		t(205)	<i>p</i>	Cohen's d
	M	SD	M	SD			
P	3.18	0.81	2.99	0.74	1.78	.0771	0.26
D	3.67	0.93	3.69	0.90	-0.11	.9149	0.02
I	3.62	1.08	3.55	0.94	0.44	.6598	0.08
PU	3.20	1.10	3.11	0.96	0.56	.5754	0.08
C	2.50	0.96	2.22	0.81	2.19	.0296	0.32
PI	2.71	0.98	2.54	0.85	1.26	.2103	0.18

	Other countries		Portugal		t(205)	<i>p</i>	Cohen's d
	M	SD	M	SD			
P	3.25	0.80	3.02	0.77	2.01	.0453	0.29
D	3.59	0.88	3.73	0.93	-1.07	.2880	0.16
I	3.61	1.05	3.58	1.01	0.16	.8719	0.02
PU	3.08	1.03	3.21	1.05	-0.89	.3726	0.13
C	2.36	0.95	2.40	0.90	-0.31	.7553	0.05
PI	2.65	0.94	2.63	0.93	0.14	.8909	0.03

III. Codebook

	Concept	Variable	Meaning	Scale
Measurement items	Independent variable	PU	Perceived personalisation	5-point Likert scale
	Dependent variable	PI	Purchase intention	5-point Likert scale
	Mediators	D	Disposition to value privacy	5-point Likert scale
		I	Invasiveness	5-point Likert scale
		PU	Perceived usefulness	5-point Likert scale
		C	Consumer innovativeness	5-point Likert scale
Socio-demographic items	Control variables	Age	Participants age in years	Open answer
		Gender	Participants gender	1-female
				2- male
				3- other
				I prefer not to say
		Nationality	Participants nationality	Choice answer for Europe Open answer for others
		Education	Participants education level	1- I am a student/working student
2- less than €20,000 3- €20,000-40,000 4- €40,000-60,000 5- €60,000-80,000 6- €80,000-100,000 7- above €100,000 8- I prefer not to say				
Income	Participants income level	1- less than high school degree 2- high school degree or equivalent 3- bachelor's degree 4- master's degree 5- PhD		