

IMPACT OF PERSONALIZATION ON ONLINE SHOPPING INTENT: THE MEDIATING ROLE OF PERCEIVED AD INTRUSIVENESS

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Abstract

Due to rapid technological and Internet advancements, online shopping has become more popular, widespread, convenient, and easier for consumers. Common advantages of online shopping include convenience, product and service variety, price comparison, ability to view online customer reviews, possibility of different payment methods, accessibility, etc. However, it is important to consider potential challenges related to online shopping, such as inability to physically inspect the product before purchase, concerns about security and privacy, and exposure to fraud or counterfeit goods. The above factors emphasize the importance of ongoing research into the characteristics of online shopping because, with technological advances, online shopping is becoming increasingly present in everyday life. Purchase intention is one of the fundamental predictors of future consumer behavior. Personalized offering is one of the factors that influence online shopping intention. However, a consumer's experience of personalized ads can positively and negatively affect their perception of intrusiveness. Perceived intrusiveness of displayed ads can significantly impact their online purchase intention. This study investigates how the perceived personalization of online ads affects online purchase intention, with a focus on the mediating role of perceived intrusiveness. Theoretical contributions include insights into the interplay between personalization, intrusiveness, and purchase behavior, while practical implications guide marketers in mitigating the negative effects of personalized advertising.

Keywords: perceived personalization, perceived intrusiveness, online purchase intention, online purchase, personalized ads

JEL: M31, M37

1. Introduction

The COVID-19 pandemic has profoundly impacted global health, societies, and economies, leading to significant changes in consumer purchasing behavior across various sectors (Dionysiou et al., 2021; Bazi et al., 2022). Restrictions implemented by countries, such as limited mobility and curfews, caused a considerable economic slowdown in 2020 and 2021. Consequently, digital business activities saw significant growth, with online shopping emerging as a dominant solution for consumers, even those who typically did not engage in online purchasing (Nicewicz & Bilska, 2021). This shift toward e-commerce highlights the importance of understanding how personalized online shopping experiences can influence consumer behavior.

Personalization in online shopping involves tailoring the shopping experience to individual consumers by delivering relevant content, product recommendations, and offers based on their preferences, needs, interests, purchasing habits, and demographic data. The fundamental goal is to increase customer satisfaction, engagement, and conversion rates by offering a personalized 'shopping journey' (Soerensena, 2023). Perceived ad personalization refers to the consumer's perception of how well the ad content aligns with their needs, preferences, and characteristics. On the other hand, perceived intrusiveness relates to how consumers view ads as invasive, disruptive, or overly pushy during their online shopping experience. It includes disruptive ad formats, excessive targeting, or inappropriate use of personal data (van Doorn & Hoekstra, 2013). Online purchase intention refers to the consumer's expressed willingness or inclination to purchase online, which can be influenced by perceived personalization and intrusiveness.

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Over the past years, personalized advertising has become essential for attracting online consumers (Peer et al., 2020). Marketing literature (Kazeminia et al., 2019; Wessel & Thies, 2015; van Doorn & Hoekstra, 2013; Odoom, 2022) suggests that perceived intrusiveness plays a significant role in mediating the relationship between perceived personalization and online purchase intention. Specifically, it is hypothesized that the effect of perceived personalization on online purchase intention is partially explained or mediated by the perceived intrusiveness experienced by consumers.

This research addresses the gap in understanding the complex relationship between perceived personalization, perceived intrusiveness, and online purchase intention. By exploring how different levels of personalization influence consumer behavior, this study will shed light on the role of intrusiveness as a mediator. It will also consider demographic factors and specific product categories to better understand how personalized ads are perceived across consumer segments.

The theoretical implications of this research will contribute to the existing models of consumer behavior by highlighting the dual nature of personalization—its potential to enhance engagement while also posing risks of intrusiveness. Practically, the findings will offer actionable insights for marketers on how to design personalized ad campaigns that balance relevance and respect for consumer privacy.

The paper is organized as follows: the next section reviews the relevant literature, followed by the research methodology, results, and discussion. Finally, the conclusion summarizes the key findings and provides recommendations for future research.

2. Literature Review and Hypotheses Development

2.1 Online Purchase Intention

Understanding and predicting people's behavior can be crucial to determining a consumer's purchase intention. Furthermore, people's behavior results from someone's intention to act, which is determined by that

person's attitudes and norms about a particular act, such as an actual purchase (Ajzen, 1985; Hansen et al., 2012). In online shopping, consumers include individuals who actively search for content online, which can lead to purchase intentions. Online shopping attracts many consumers because of its benefits, such as the ease of searching for purchase information, convenience, various payment methods, ability to shop from one's own home, time savings, and ability to compare products and prices (Yang et al., 2010).

It is important to understand many factors that influence online purchase intention. Traditional research methods make measuring and controlling behavior difficult, so most research measures behavioral intentions. Marketers rely on purchase intention data to develop business and marketing strategies. This support comes from social psychology, such as Ajzen's Theory of Planned Behavior. Icek Ajzen proposed it in the late 1980s as an extension of his earlier work on the Theory of Reasoned Action. It is a social psychological theory that seeks to explain human behavior, particularly in decision-making. The theory provides a framework for understanding and predicting behavioral intentions and subsequent behavior based on individual attitudes, subjective norms, and perceived behavioral control. Consumer intention, the core dependent variable of the Theory of Planned Behavior, indicates a person's readiness to act in a certain way (Ajzen, 1985). According to this model, intention is considered one of the better predictors of consumer behavior. It is used as an outcome variable to substitute for actual purchase behavior in many studies on e-commerce and m-commerce (Venkatesh et al., 2003).

2.2 Perceived personalization

The growing importance of personalization is evident by the fact that a 5–15% revenue increase in online retail is directly attributed to the successful implementation of offer personalization (Boudet et al., 2019). According to Zanker et al. (2019), personalization involves the application of artificial intelligence (AI) and machine learning (ML) in cognitive and social psychology. The literature on personalization research has

grown rapidly recently, and the field continues to gain importance due to its multidisciplinary nature. Despite the exponential growth of personalization research, comprehensive reviews that integrate all the fragmented literature are lacking. Personalization has become popular recently as a method of successfully engaging consumers, especially online (Peer et al., 2020). According to Kazemini et al. (2019), personalization positively influences purchase intentions by customizing purchase aspects that support purchasing decision-making. As a result, personalization can help predict consumers' purchasing decisions for certain products and services or a particular brand (Wessel & Thies, 2015). The 'one size fits all' approach has recently become less effective in online retail. Computers, especially artificial intelligence, allow for the observation of each person individually and more personalized interactions based on their behavior, desires, attitudes, and beliefs (Kosiński et al., 2014). Such information allows for adapting sales methods to the consumer's decision-making style to improve the convenience of online shopping.

An increasing number of advertisements are tailored to the consumer. The development of digital technologies has enabled sophisticated strategies and mechanisms through which personalized advertising can be realized (Segijn & van Ooijen, 2020). Bol et al. (2018) define personalized advertising as "the strategic creation, modification, and adaptation of content and distribution of that content to optimize the fit with the personal characteristics, interests, preferences, communication styles, and behaviors of consumers." Roberts (2003) defines ad personalization as "the process of preparing individualized communication for a specific person based on stated or implied preferences."

Furthermore, the relevant academic literature on personalization distinguishes between actual and perceived ad personalization. Like Bol et al. (2018), Li et al. (2002) state that personalized advertising tailors and delivers promotional messages to consumers based on their unique preferences. Bang and Wojdyski (2016) suggest that personalized ads are based

on demographic data about online consumers' browsing and purchasing history. Tucker (2014) indicates that personalized online advertising is based on online consumers' self-identified data and the websites that online shoppers visit.

Perceived ad personalization, however, describes whether consumers perceive an advertising message as consistent with their interests, preferences, or needs. According to Simonson (2005), consumers may perceive a personalized message or advertisement as generic and vice versa, making perceived personalization more suitable than actual personalization and a better mechanism that drives the effectiveness of personalized advertising messages (Li, 2016). Perceived personalization of advertisements can significantly impact consumers' online shopping intentions. When consumers perceive that advertisements are personally tailored to their specific needs, preferences, and demographics, this can improve their online shopping intentions (Yadav & Rahman, 2017). Bleier & Eisenbeiss (2015a) confirmed the positive impact of perceived personalization on consumers' behavioral intentions in the context of online personalized advertisements. Perceived personalization increases the relevance of advertisements, making them more attractive to consumers. Accordingly, personalized ads that are aligned with consumers' interests and needs create a sense of relevance, capture their attention, and increase the likelihood of online consumers making a purchase (Yoo, Gretzel & Zanker, 2012; Polk et al., 2020; Tran et al., 2020).

Previous research has shown that perceived personalization is a far better predictor of consumer response than actual personalization (Li, 2016). Actual personalization can be objectively assessed by observing, for example, the number of personalization elements used or how easily these elements can identify a specific person. As such, personalization can range from no personalization (i.e., a simple generic message) to general personalization (i.e., advertising based on broad categories such as gender) to full personalization, where an individual is addressed based on specific individual information (e.g., name or links to specific

websites) (Li, 2016; Tran et al., 2020). Odoom (2022) has shown that the perceived personalization of advertisements positively influences online purchase intention.

People generally perceive advertisement messages as helpful in making purchase decisions, and the context of customized and personalized advertisements enhances this perception. Personalization, on the other hand, is experienced subjectively by users. Previous research has shown that for personalization to have any effect, consumers need to perceive an online advertisement as personalized, regardless of how this personalization is achieved (Li, 2016). In light of the above, the study focuses on consumers' perceived personalization of online advertisements they are exposed to while searching and browsing for products or services.

Based on the aforementioned relevant literature, the following hypothesis is stated:

H1: Consumers' perception of personalized displayed advertisements positively influences their online purchase intention.

2.3 Perceived Intrusiveness of Personalized Ads

Personalized advertising offers both benefits and certain drawbacks for consumers. According to the privacy account theory, consumers balance potential benefits and costs to maximize the positive and minimize the negative outcomes of personalization. For example, when consumers consent to collecting personal data for online advertising purposes, they may weigh potential benefits, such as receiving only relevant ads, against potential disadvantages, such as concerns about their privacy. Consumers are more likely to have a positive attitude toward ad personalization when the benefits outweigh the costs (Awad & Krishnan, 2006). On the one hand, consumers may benefit from personalized advertising because it would improve their user experience, for example, by reducing the number of irrelevant personalized ads and thus reducing the time it takes to find the desired product or service (Strycharz et al., 2019a). On the other hand, aggressively receiving personalized ads could be detrimental to people's privacy (Awad &

Krishnan, 2006; Strycharz et al., 2019b), and they might perceive such ads as intrusive.

In advertising, the feeling of intrusiveness is "a psychological reaction to ads that interfere with the consumer's cognitive processing ability in the purchase process" (Li et al., 2002). Intrusiveness leads the consumer to react negatively to various forms of communication. Furthermore, perceived intrusiveness describes the cognitive assessment of the degree to which an ad disrupts the consumer's ongoing cognitive process or interferes with his or her goals. It also refers to the psychological reaction to personalized advertising that causes feelings of annoyance or irritation and a manifestation of the mechanism by which an ad elicits emotional responses in consumers (Li et al., 2002). Kim et al. (2019) found that consumers react negatively when they are served personalized ads created based on information and data they did not provide on an online platform. Their results indicate that consumers are very sensitive to companies' ability to obtain their data and information. Furthermore, Bleier & Eisenbeiss (2015a) found that data collection that is perceived as too "personal or private" increases perceived intrusiveness. Using private information for advertising purposes implies a vulnerability to privacy, and the greater privacy risk and loss of control over personal information for consumers ultimately lead to higher levels of perceived intrusiveness (Bleier & Eisenbeiss, 2015a).

Thus, consumers agree to provide personal data and information to be served personalized ads to achieve certain benefits (e.g., shortening the purchase time). On the other hand, they expect that the negative aspects of providing their personal data will not outweigh the benefits they receive (targeting personalized ads even when they are not searching for the desired products or services online) (Kim et al., 2019). Accordingly, perceived personalization of ads may influence consumers' perceptions of the intrusiveness of these ads because the use of personal data becomes necessary to tailor ads, which requires an unwanted level of insight into consumers' interests and behaviors (Tucker, 2014). While Bang and Wodjinski (2016) did not find evidence supporting the effect of ad personalization on the interruption of the purchase process or as an obstacle to

achieving goals, other research highlighted the perception of intrusiveness as a consequence of personalized ads (De Keyzer et al., 2018).

The impact of perceived personalization of displayed ads on the perceived intrusiveness of such ads in online shopping is a key aspect to consider in advertising strategies. When consumers perceive ads as personalized, this can positively and negatively affect their perceived intrusiveness. Perceived personalization can improve the relevance and customization of displayed ads, minimizing the feeling of intrusiveness because, as long as ads are aligned with consumers' interests and needs, they can be perceived as helpful rather than intrusive (De Keyzer et al., 2018; Strycharz et al., 2019b). Excessive personalization or the perception of inappropriate use of personal data can lead to increased privacy concerns. If consumers believe that ads are too invasive or that their personal data is used without their consent, the perceived intrusiveness of ads may increase. Contextual factors, such as the timing and placement of ads, can also influence the perceived intrusiveness of ads. For example, if advertisements excessively disrupt the online shopping experience or appear in intrusive formats, consumers are more likely to perceive them as intrusive (van Doorn & Hoekstra, 2013; Bleier & Eisenbeiss, 2015a).

Perceived intrusiveness can also influence consumers' online purchase intentions, based on the idea that intrusiveness can create negative emotions such as frustration and annoyance, resulting in adverse consumer reactions (Li et al., 2002). Existing advertising research has shown that increased intrusiveness can cause unfavorable evaluations, behavioral intentions regarding the source, and negative reactions to brand image (De Keyzer et al., 2018). Therefore, presenting personalized ads to consumers can be a double-edged sword, leading to increased purchase intentions and greater perceived intrusiveness, which negatively affects online purchase intentions. Similarly to the previously mentioned studies, Odooom (2022) demonstrated in his study that perceived personalization of ads affects the perception of intrusiveness of these ads and that, depending on the degree of perception of these ads, they ultimately affect online purchase intentions.

van Doorn & Hoekstra (2013) found in their study that higher levels of intrusiveness negatively affect online purchase intention. Therefore, it is argued that to the extent personalized ads are perceived as intrusive, they will negatively impact online purchase intention.

Based on the relevant literature cited, the following hypotheses are stated:

H2: *Consumers' perception of the personalization of displayed ads positively affects their perceived intrusiveness of such ads.*

H3: *Consumers' perception of the intrusiveness of personalized ads negatively affects their online purchase intention.*

H4: *Perceived intrusiveness mediates the relationship between perceived personalization of ads and online purchase intention.*

3. Methodology

The empirical research was conducted in Bosnia and Herzegovina from September to November 2023. The convenience sample consisted of consumers who, over the last year, saw a personalized advertisement based on their browsing and search history for products or services more than twice. An online survey was conducted, with a link to access the survey shared via various social media platforms such as WhatsApp groups, Facebook, and Instagram. The survey questionnaire was distributed to 200 respondents, but valid responses were recorded from 152 respondents. The stated number of the respondents meets the minimum requirement for implementing the SEM model (10 to 20 respondents per claim).

The survey questionnaire consisted of two parts. The first part contained the questions related to the socio-demographic characteristics of the respondents (gender, age, monthly household income, level of education, employment status, number of household members), Internet use, and online shopping experience. The second part of the questionnaire contained the statements related to the variables used in the research work: perception of personalized ads, perceived intrusiveness, and online shopping intention. Each variable was explored using a

set of statements: the statements about how personalized ads are perceived were based on research by Baek & Morimoto (2012) and Tran (2017), the statements about how intrusive ads are were taken from Li et al. (2002), and the statements about online shopping intention were sourced from Shaouf et al. (2016). The respondents agreed with the statements using a five-point Likert scale (1–strongly disagree, 2–disagree, 3–neither agree nor disagree, 4–agree, 5–strongly agree). In addition, the questionnaire contained an elimination question regarding the perception of at least two personalized ads in the past year.

The IBM SPSS Statistics 25 program (IBM SPSS Statistics for Windows, version 25.0.) and Armonk (NY: IBM Corp, released 2017) were used for statistical data analysis. The results are expressed as number/frequency and percentage as well as arithmetic mean and standard deviation. The reliability of the

factors was checked with the Cronbach Alpha coefficient. Pearson's correlation coefficient analyzed the correlation of the variables. Structural Equation Modeling (SEM) was used to test the established model. The limit of statistical significance was set at 0.05.

3.1 Sample characteristics

The age of the respondents varied between 20 and 67 years, with an mean age of 29.2 years (SD = 9.53). In the past year, all the respondents saw a personalized ad based on their preferences, wishes, browsing history, etc., when searching for and browsing products and services. More than 80% of the respondents reported that this happened very often (precisely 83.6%), while the rest reported it sometimes. The characteristics of the respondents are shown in Table 1.

Table 1. *Characteristics of the respondents*

		n	%
Gender	Male	26	17.1
	Female	126	82.9
Monthly household income (BAM*)	less than 500	1	0.7
	501-1000	8	5.3
	1001-1500	30	19.7
	1501-2000	28	18.4
	more than 2000	85	55.9
Education level	Primary / Secondary Education	65	42.8
	1st or 2nd cycle of higher education	82	53.9
	3rd cycle of higher education	5	3.3
Number of household members	1-2	19	12.6
	3	36	23.8
	4	44	29.1
	5+	52	34.4
How much time do you use the Internet per day?	up to 2 hours	25	16.5
	3-4 hours	61	40.1
	5-6 hours	43	28.3
	more than 6 hours	23	15.1
Purchase frequency	3 times a year	70	48.3
	once a month	55	37.9
	once a week	14	9.7
	more than once a week	6	4.1
*Bosnia and Herzegovina Convertible Mark; 1 BAM = 0.511 €			

Source: Authors' creation

4. Results

The reliability analysis of the measurement instruments based on Cronbach's Alpha coefficient showed that all three dimensions have satisfactory internal reliability (CA>0.7; Table 2).

The mean values of individual statements within the dimensions show that in the case of perceived personalization of online ads, the respondents recognize that online ads are related to their previous research and reflect their previous online activity. They are relatively adapted to their shopping habits and are created just for them. On the other hand, the respondents associate personalized online ads with the use of personal data the least and are indifferent to the goal of personalized online ads (they do not consider them to be directed at an individual as a unique person).

Analysis of the responses on the dimension of perceived intrusiveness shows that while the respondents do not consider personalized online ads disturbing, they do characterize them as intrusive and invasive. The ratings of statements within the dimension of purchase intention indicate the relatively indecisive respondents; the mean ratings are relatively low and do not create a convincing image that they are excessively interested in online shopping.

Mean ratings of individual dimensions (Table 2) indicate a moderately positive perception of personalized ads. Individuals generally believe that online ads are somewhat, although not completely, personalized. Consumers perceive ads as moderately intrusive and show relatively low interest in online purchases associated with personalized ads.

Table 2. *Descriptive measures and Cronbach's alpha coefficient for statements and dimensions*

Dimensions/statements	M (SD)	CA
Perceived personalization of online ads (PAP) (Online ads shown ...)	3.38 (0.86)	0.873
They seem to be designed specifically for me. (PAP1)	3.36 (1.10)	
They are tailored to my shopping habits. (PAP2)	3.52 (1.12)	
They target me as a unique person. (PAP3)	3.09 (1.11)	
They are linked to my browsing history. (PAP4)	4.03 (1.10)	
They seem to reflect my needs, preferences, and wants. (PAP5)	3.14 (1.10)	
They seem to be created personally for me. (PAP7)	3.47 (1.20)	
Perceived Intrusiveness (PI) (I perceive the personalized ads I see as ...)	3.08 (1.22)	0.858
Intrusive. (PI1)	3.31 (0.92)	
Annoying. (PI2)	3.82 (1.12)	
Irritating. (PI4)	2.70 (1.22)	
Invasive. (PI5)	3.32 (1.20)	
Online Purchase Intent (OPI) (When I see personalized online ads...)	3.39 (1.14)	0.797
I am interested in purchasing online. (OPI1)	3.34 (1.10)	
I am considering purchasing the advertised product or service online. (OPI2)	2.72 (0.90)	
	2.85 (1.06)	
	2.93 (1.11)	
	2.38 (1.03)	
M (SD) – mean (standard deviation); CA - Cronbach's Alpha coefficient		

Source: Authors' creation

The correlation analysis (Table 3) among these three variables showed a significant positive correlation between the perceived personalization of online ads and their perceived intrusiveness. Furthermore, a significant, positive correlation was found between perceived personalization of online ads and online purchase intention. On the other

hand, no significant correlation was found between the perceived intrusiveness of online ads and online purchase intention.

Table 3 also shows the AVE and $\sqrt{\text{AVE}}$ values used to verify discriminant validity in the conducted analysis. According to the Fornell-Larcker criterion, discriminant validity is confirmed if the $\sqrt{\text{AVE}}$ for each construct is

greater than the correlations between that construct and other constructs. The results

shown in Table 3 indicate that the criterion mentioned above is met.

Table 3. *The correlation analysis*

			Pearson correlation coefficient		
	AVE	$\sqrt{\text{AVE}}$	PAP	PI	OPI
PAP	0.774	0.879	-	0.538**	0.553**
PI	0.752	0.866		-	0.108
OPI	0.662	0.814			-

**p<0.01; AVE - Average Variance Extracted

Source: Authors' creation

4.1 Hypothesis viability testing

The initial measurement model showed weaker representativeness. The modification indices were analyzed, correlations between some of the manifest variables were enabled, and the model was re-evaluated. The final model are shown in Figure 1.

model had relatively satisfactory representativeness: $\chi^2=182,960$; $df=82$; $p<0.001$; Normed chi-square $\chi^2/df = 2.231$; CFI=0.915; GFI=0.868; TLI=0.891; NFI=0.858; RMSEA=0.090; SRMR=0.0731 which suggests that the measurement model represents the data well. The results obtained with the final

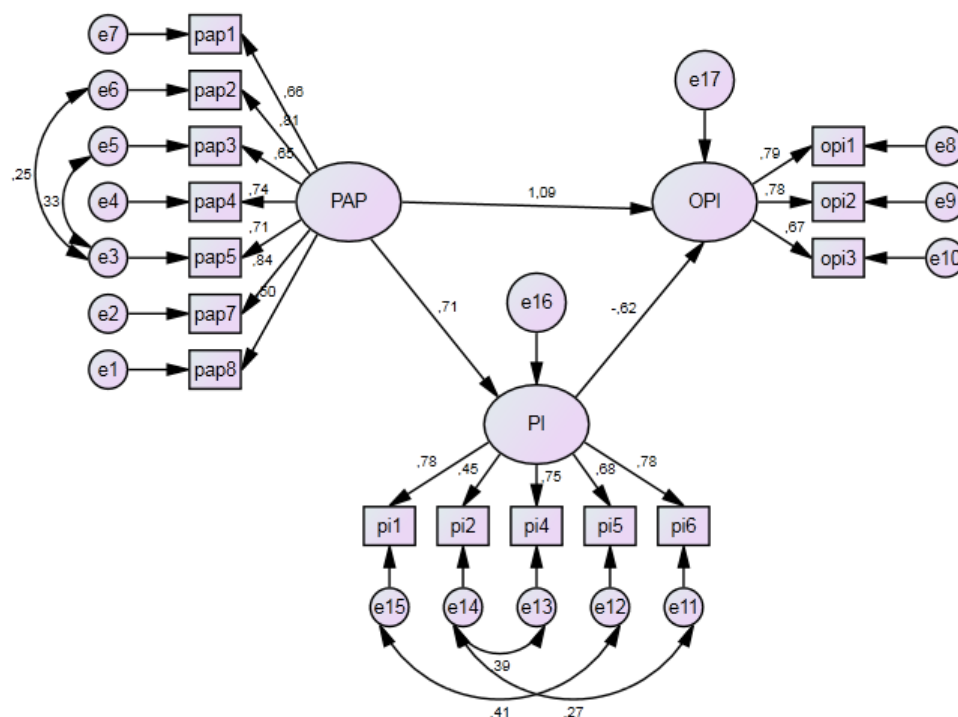


Figure 1. *Research model*

Source: Authors' creation

The results obtained from the model (Table 4) showed a significant, positive impact of perceived personalization of online ads on online purchase intention, which confirmed the first hypothesis (H1). Furthermore, it was found that there is a significant positive effect of the perception of personalized online ads on

the perceived intrusiveness of online ads and a significant negative effect of the perceived intrusiveness of online ads on online purchase intention. The above confirmed the second and third hypotheses (H2 and H3). Furthermore, a significant indirect effect was found, which confirmed that the perceived intrusiveness of

online ads has a mediating effect on the relationship between perceived personalization of online ads and online

purchase intention, based on which the fourth hypothesis (H4) was also confirmed.

Table 4. *Confirmation of the hypotheses*

Hypothesis		Overall effect	Indirect effect	Direct effect	
H1	PAP→OPI	0.655**			supported
H2	PAP→PI			0.707**	supported
H3	PI→OPI			-0.617**	supported
H4	PAP→PI→OPI		-0.436**		supported
**p<0.01					

Source: Authors' creation

5. Discussion

The results provide insight into the complex relationship between perceived ad personalization, perceived intrusiveness, and online purchase intention. The study results confirm that the perception of online ad personalization significantly and positively impacts online purchase intention, thus confirming hypothesis H1. Given their previous activities and preferences, consumers who perceive online ads as personalized, relevant, and tailored to their interests are more likely to express greater purchase intention. These results are consistent with previous research that found a positive relationship between perceived ad personalization and online purchase intention (Yoo, Gretzel & Zanker, 2012; Polk et al., 2020; De Keyzer et al., 2018; Tran et al., 2020; Odoom, 2022). The results suggest that users recognize the value of personalized ads when they match their preferences and online purchase behavior.

However, the literature also confirms the dual nature of personalized ads. Specifically, it was found that when people feel ads are personalized, they also tend to think that these ads invade their privacy (hypothesis H2 confirmed), which agrees with the studies by Strycharz et al. (2019b) and Bleier & Eisenbeiss (2015a), who noted that personalization can make people feel like their privacy is being violated. These results imply that ads, even when useful, can be perceived as intrusive by users if they believe they were created based on collected personal data without explicit consent. Namely, the more consumers perceive ads as personalized, the more they perceive them as intrusive and offensive. Although

personalized ads can provide usefulness, when they are placed in a way that does not correspond to the consumer's perception of privacy and control, they can be experienced as invasive.

The confirmation of the third hypothesis (H3), which states that perceived intrusiveness negatively affects online purchase intention, matches what Bleier & Eisenbeiss (2015b), Li et al. (2002), and van Doorn & Hoekstra (2013) found, showing that aggressive advertising, which disrupts consumers' cognitive processes, can lead to reduced interest in shopping. In addition, intrusive ads irritate and disrupt user experience. When ads are too privacy-invading or overly invasive, consumers often give up interacting with them, reducing the likelihood of online purchases. This further confirms the importance of carefully balancing personalization and privacy in online advertising.

The fourth hypothesis (H4) further clarifies this relationship, highlighting the role of perceived intrusiveness as a mediator between perceived personalization and online purchase intention. This suggests that the positive effects of personalization on consumer behavior may be reduced or even nullified if ads are perceived as too invasive. This finding is consistent with previous research by Strycharz et al. (2019a, 2019b), who showed that high levels of intrusiveness can reduce the usefulness of personalized ads and, as a result, reduce purchase intention. In other words, while personalization can increase the usefulness of ads, its excessive intensity can trigger negative emotional reactions,

confirming the importance of contextual advertising factors (e.g., display time, ad format) in shaping consumer response.

Furthermore, the mean values of the dimensions suggest that the respondents perceive personalized ads moderately positively, but with a certain degree of caution. Although they recognize that ads are relevant to their interests, they do not often perceive them as fully tailored to them, which could indicate limited trust in data collection practices or in the effectiveness of personalization mechanisms. Similarly, although they do not perceive ads as extremely irritating, they still perceive them as intrusive to some extent, which confirms earlier claims about the ambivalent nature of personalized advertising.

These findings highlight the need to include the Theory of Planned Behavior (Ajzen, 1985), which suggests that people's attitudes and sense of control over their actions are important factors in shaping their intentions. In the context of online advertising, positive attitudes towards personalization can stimulate purchase intention, but negatively perceived aspects, such as the intrusiveness of ads, can weaken this effect.

6. Conclusion

The results of this study highlight the importance of perceived personalization of ads on online purchase intention, pointing to the role of perceived intrusiveness, which can moderate this impact. Personalized ads can increase engagement and relevance for consumers, but excessive personalization can create a sense of invasiveness, which negatively impacts purchase intention. Therefore, it is important for marketers to balance personalization and avoid overly intrusive advertising.

This study contributes to the theoretical understanding of the impact of personalization on consumer behavior. The results confirm the importance of perceived personalization as a key component in shaping consumer intentions, which supports theories of individual adaptation in marketing. The study also points to the negative effects of excessive personalization, which requires balancing high

levels of personalization and maintaining positive consumer perceptions. These insights can be integrated into existing models of consumer behavior and extend theoretical implications in digital marketing.

For marketing practitioners, the study provides key guidelines for designing personalized campaigns. Marketing strategies should use personalization to improve user experience, while carefully avoiding excessive intrusiveness. Companies should use data responsibly, test different levels of personalization, and implement strict controls to maximize benefits and minimize negative consumer reactions. Transparency and accountability in the use of data are also key to building long-term loyalty. The study has several limitations, including a small and specific sample size, which may limit the generalizability of the results. Future research should include larger and more diverse samples, specific product categories, and demographic variables to better understand different consumer responses to personalized ads. Further research should also consider psychological aspects, such as privacy invasion tolerance and general openness to personalized communication, to enrich theoretical and practical insights into digital marketing.

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