

THE DARK SIDE OF ARTIFICIAL INTELLIGENCE-BASED PERSONALIZATION: INTRUSIVENESS, TRUST, AND CONSUMER RESISTANCE ON E-COMMERCE PLATFORMS

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Abstract. The development of Artificial Intelligence (AI) has encouraged companies to implement personalization strategies in digital marketing through e-commerce platforms and social media. Although AI-based personalization can improve consumer experience and marketing effectiveness, overly intensive personalization may also generate negative responses in the form of consumer resistance. This study aims to analyze the effect of AI personalization on consumer resistance by considering the mediating roles of perceived intrusiveness and customer trust. This study employed a quantitative approach using an explanatory research method. Data were obtained by distributing online questionnaires to 400 active users of digital platforms in Indonesia and were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). The results show that AI personalization affects perceived intrusiveness, customer trust, and consumer resistance. Perceived intrusiveness is proven to increase resistance behavior, whereas customer trust reduces resistance behavior. In addition, perceived intrusiveness and customer trust are able to mediate the relationship between AI personalization and consumer resistance, both partially and sequentially. This study shows that overly intensive AI personalization can generate intrusive perceptions, reduce consumer trust, and increase resistance to digital marketing. These findings contribute to the development of the literature on the dark side of AI-based personalization and provide input for companies in designing personalization strategies that are more balanced and oriented toward consumer comfort.

Keywords: *AI personalization; perceived intrusiveness; customer trust; consumer resistance; digital marketing*

I. INTRODUCTION

The development of digital technology and Artificial Intelligence (AI) has changed the way companies interact with consumers through digital platforms such as e-commerce, social media, and data-driven applications. AI enables companies to collect, analyze, and predict consumer behavior in real time, allowing them to deliver more relevant and personalized marketing content (Davenport et al., 2020). AI-based personalization strategies are considered effective in improving customer engagement, user experience, and digital marketing effectiveness (Bleier et al., 2022).

Nevertheless, the increase in personalization intensity also creates various negative consequences for consumers. One phenomenon widely discussed in the digital marketing literature is the personalization paradox, namely a condition in which increasingly accurate personalization instead generates consumer discomfort and resistance (Aguirre et al., 2021). Consumers begin to feel that companies know too much about their personal information, resulting in perceptions of privacy loss and a sense of being digitally monitored.

In the context of digital marketing, perceived intrusiveness is one of the main issues influencing consumers' psychological responses. Perceived intrusiveness refers to the

perception that digital marketing activities are overly disruptive or violate individuals' privacy boundaries (Kim et al., 2020). When consumers feel that advertisements and product recommendations are too personal, they tend to experience discomfort and demonstrate resistance behavior, such as avoiding advertisements, using ad-blockers, or switching platforms.

In addition to perceived intrusiveness, customer trust is also an important factor in determining how consumers respond to AI-based personalization. Trust relates to consumers' belief that companies use personal data securely, transparently, and ethically (Martin et al., 2020). Low trust in digital platforms can increase consumer resistance to the use of AI in digital marketing.

Previous studies have shown that AI personalization is closely related to perceived intrusiveness, customer trust, and consumer resistance (White et al., 2021; Li et al., 2022). However, most prior studies have focused on developed-country contexts and have not extensively examined the personalization paradox among digital consumers in Indonesia. In addition, previous studies have tended to examine relationships among variables partially and have not widely integrated perceived intrusiveness and customer trust

as mediating mechanisms within a comprehensive research model.

Based on this research gap, this study aims to analyze the effect of AI personalization on consumer resistance by considering the mediating roles of perceived intrusiveness and customer trust among users of digital platforms in Indonesia.

Research on AI personalization has developed rapidly in the digital marketing literature. Nevertheless, several research gaps remain that form an important basis for conducting this study. First, most previous studies have focused more on the positive impacts of AI personalization, such as increased engagement, purchase intention, and customer satisfaction (Bleier et al., 2022; Li et al., 2022). Research on the dark side of AI-based personalization remains relatively limited, particularly studies that discuss consumer resistance.

Second, previous studies generally examined only the direct relationship between personalization and consumer response without explaining the psychological mechanisms underlying the emergence of resistance behavior. Therefore, this study integrates perceived intrusiveness and customer trust as mediating variables to explain the causal mechanism between AI personalization and consumer resistance.

Third, research on the personalization paradox in the context of developing countries, particularly Indonesia, remains highly limited. In fact, the digital behavior characteristics of Indonesian consumers involve very high levels of social media and e-commerce use, which may produce responses that differ from those in developed countries.

The novelty of this study lies in:

- a. The development of a conceptual model that simultaneously integrates AI personalization, perceived intrusiveness, customer trust, and consumer resistance.
- b. The examination of the sequential mediation of perceived intrusiveness and customer trust in explaining the personalization paradox.
- c. The research focus on users of digital platforms in Indonesia, a context that remains rarely examined in the AI-driven marketing literature.

This study aims to:

- a. Analyze the effect of AI personalization on perceived intrusiveness.
- b. Analyze the effect of AI personalization on customer trust.
- c. Analyze the effect of perceived intrusiveness on consumer resistance.
- d. Analyze the effect of customer trust on consumer resistance.
- e. Examine the mediating roles of perceived intrusiveness and customer trust in the relationship between AI personalization and consumer resistance.

Privacy Calculus Theory

Privacy Calculus Theory explains that consumers consider benefits and risks before providing personal data to digital companies (Xu et al., 2021). When the benefits of personalization are perceived to be lower than the privacy risks, consumers tend to demonstrate resistance behavior.

Reactance Theory

Reactance Theory explains that individuals show resistance when they feel that their freedom is threatened (White et al., 2021). In the context of AI personalization, overly intensive personalization may create perceptions of loss of control, thereby triggering consumer resistance.

AI Personalization and Perceived Intrusiveness

AI-based personalization enables companies to understand consumer behavior in depth. However, overly specific personalization may generate intrusive perceptions because consumers feel digitally monitored.

H1: AI personalization has a positive effect on perceived intrusiveness.

AI Personalization and Customer Trust

AI personalization can improve service relevance; however, personalization perceived as excessive may reduce consumer trust in digital platforms.

H2: AI personalization has an effect on customer trust.

Perceived Intrusiveness and Consumer Resistance

The higher the perceived intrusiveness, the higher the tendency of consumers to demonstrate resistance behavior toward digital marketing.

H3: Perceived intrusiveness has a positive effect on consumer resistance.

Customer Trust and Consumer Resistance

Consumers with a high level of trust tend to be more receptive to digital personalization and demonstrate lower resistance.

H4: Customer trust has a negative effect on consumer resistance.

Mediation of Perceived Intrusiveness and Customer Trust

Perceived intrusiveness and customer trust are presumed to mediate the relationship between AI personalization and consumer resistance.

H5: Perceived intrusiveness mediates the effect of AI personalization on consumer resistance.

H6: Customer trust mediates the effect of AI personalization on consumer resistance.

H7: Perceived intrusiveness and customer trust sequentially mediate the relationship between AI personalization and consumer resistance.

II. RESEARCH METHOD

This study employed a quantitative approach using an explanatory research method. The study was conducted using a cross-sectional design through the distribution of online questionnaires. The research population consisted of active users of digital platforms in Indonesia who had received recommendations or advertisements based on AI personalization. The sampling technique used purposive sampling with the following criteria:

- a. At least 17 years old.
- b. Actively use digital platforms.
- c. Have received advertisements or recommendations based on AI.

The research sample consisted of 400 respondents. The research instrument used a 5-point Likert scale. The variable indicators were adapted from previous studies:

Variable	Source
AI Personalization	Bleier & Eisenbeiss (2022)
Perceived Intrusiveness	Kim & Huh (2020)
Customer Trust	Martin et al. (2020)
Consumer Resistance	Xu et al. (2021)

Data Analysis Technique

Data analysis was conducted using SEM-PLS with SmartPLS software.

The analysis stages included:

- a. Outer Model Evaluation
 - 1) Convergent validity
 - 2) Discriminant validity
 - 3) Composite reliability
- b. Inner Model Evaluation
 - 1) R-square
 - 2) Path coefficient
 - 3) Effect size (f^2)
 - 4) Predictive relevance (Q^2)
- c. Hypothesis Testing
 - 1) T-statistics > 1.96
 - 2) P-value < 0.05

Ethical Consideration

This study was conducted by observing informed consent and the confidentiality of respondents' data. All respondents participated voluntarily, and respondents' identities were kept confidential.

III. RESULTS AND DISCUSSION

Respondent Profile

Most respondents were aged 17-22 years (75%), and the majority actively used e-commerce platforms and social media every day.

Outer Model Results

Variable	AVE	Composite Reliability
AI Personalization	0.812	0.944
Perceived Intrusiveness	0.825	0.951
Customer Trust	0.801	0.938
Consumer Resistance	0.834	0.955

All variables had AVE values > 0.50 and Composite Reliability values > 0.70; therefore, they were declared valid and reliable.

Inner Model Results

Endogenous Variable	R ²
Perceived Intrusiveness	0.612
Customer Trust	0.548
Consumer Resistance	0.701

The R² values indicate that the research model has strong explanatory power.

Hypothesis Testing Results

Hypothesis	Path Coefficient	T-Statistics	P-Value	Result
H1	0.782	16.442	0.000	Accepted
H2	-0.511	9.833	0.000	Accepted
H3	0.643	12.773	0.000	Accepted
H4	-0.587	11.992	0.000	Accepted

The results show that AI personalization increases consumers' perceived intrusiveness. This finding supports Reactance Theory, which explains that consumers will show negative responses when they feel that their privacy is disturbed.

In addition, this study proves that perceived intrusiveness increases consumer resistance. Consumers who feel digitally monitored tend to avoid advertisements and demonstrate defensive behavior toward digital platforms.

This study also found that customer trust has a negative effect on consumer resistance.

When consumers trust that companies use data securely and transparently, resistance to AI personalization becomes lower.

Theoretically, this study extends the concept of the personalization paradox by showing that perceived intrusiveness and customer trust are important psychological mechanisms that explain the relationship between AI personalization and consumer resistance.

IV. CONCLUSION

This study proves that AI personalization does not always produce positive impacts for consumers. Overly intensive personalization can increase perceived intrusiveness, reduce customer trust, and increase consumer resistance. This study provides a theoretical contribution to the development of the personalization paradox and AI-driven marketing literature. Practically, companies need to implement personalization strategies that are more ethical, transparent, and attentive to consumer privacy.

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