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Ad Relevance vs. Skepticism: Explaining Avoidance and Purchase Intention

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Abstract

Personalized digital ads cut both ways. Relevance can pull consumers in; intrusiveness and perceived manipulation can push them away. This study proposes and tests an integrated model linking perceived ad relevance, advertising skepticism, and intrusiveness to ad avoidance and purchase intention, and examines whether brand engagement in self-concept (BESC) softens defensive reactions. We surveyed 550 Vietnamese consumers and analyzed the data with PLS-SEM (SmartPLS 4). Results show that relevance lifts purchase intention and reduces avoidance, while intrusiveness and skepticism undermine persuasion. BESC buffers the skepticism forward avoidance link, indicating identity-based protection for favored brands. Mediation tests reveal that skepticism, relevance, and avoidance channel the harm from intrusiveness to purchase outcomes. The validated model exhibits strong explanatory and predictive performance and clarifies how constructive (relevance) and defensive (skepticism, avoidance) mechanisms operate simultaneously in digital advertising.

Keywords

advertising relevance, skepticism, intrusiveness, avoidance, purchase intention

Introduction

Digital advertising has become one of the most pervasive tools of consumer persuasion in contemporary markets (Dwivedi et al., 2021). Its effectiveness, however, critically depends on whether consumers perceive messages as personally relevant. When ads align with individual needs and interests, they enhance engagement and strengthen purchase intentions (Bleier & Eisenbeiss, 2015a;

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De Keyzer et al., 2015). In contrast, intrusive or manipulative ads provoke irritation and avoidance (Cho & Cheon, 2004; Edwards et al., 2002). Moreover, consumers' general skepticism toward advertising-defined as a tendency to doubt persuasive claims further reduces message credibility and fosters resistance (Obermiller & Spangenberg, 1998).

The rise of algorithmic targeting and personalization has intensified these dynamics. Personalization often improves perceived relevance, generating favorable attitudes and stronger behavioral responses. Yet it simultaneously raises privacy concerns and perceptions of "creepiness," undermining trust and fueling avoidance (Aguirre et al., 2015; Boerman & Smit, 2023). This paradox highlights the need to understand how relevance and intrusiveness operate jointly in shaping consumer outcomes. Recent findings confirm that perceived relevance remains a powerful driver of positive advertising effects across digital platforms (Chen et al., 2023; Yeo et al., 2025).

Despite these advances, two gaps persist. First, research seldom integrates intrusiveness, skepticism, and relevance into a single explanatory framework; most studies address these constructs independently, leaving their combined influence on avoidance and purchase intention unclear. Second, little is known about identity-based factors that may buffer defensive reactions. Brand Engagement in Self-Concept (BESC) the degree to which individuals incorporate brands into their self-identity (Sprott et al., 2009) offers such a mechanism. Empirical work shows that consumers with high BESC remain loyal and engaged even when their self-concept is threatened, suggesting resilience to negative cues (Liu et al., 2018). This implies that BESC can moderate the impact of skepticism, reducing avoidance among identity-connected consumers.

To address these gaps, this study develops and empirically tests an integrated model linking perceived ad intrusiveness, skepticism, and relevance to ad avoidance and purchase intention, while assessing the moderating role of BESC. Data from 550 Vietnamese online consumers were analyzed using partial least squares structural equation modeling (PLS-SEM). Vietnam represents a pertinent empirical context, as rapid digital adoption is coupled with heightened skepticism toward online advertising in an emerging market setting.

The contributions are twofold. Theoretically, the study advances persuasion knowledge and advertising avoidance research by integrating psychological reactance, skepticism, relevance, and brand engagement into a unified moderated framework. Managerially, it offers practical guidance on designing campaigns that maximize relevance, minimize intrusiveness, and leverage brand identity connections to sustain purchase intentions in digital environments.

Digital Advertising in Vietnam

Digital advertising in Vietnam has expanded rapidly, with personalization becoming central to online marketing. Prior studies confirm that personalization can enhance relevance and usefulness, improving attitudes and purchase intentions (Bleier & Eisenbeiss, 2015a, 2015b; De Keyzer et al., 2015). Yet intrusive formats often provoke irritation and avoidance (Cho & Cheon, 2004; Edwards et al., 2002). Recent empirical evidence reinforces this link: Niu et al. (2021) show that advertising invasiveness in social media contexts heightens irritation and directly predicts avoidance, underscoring the robustness of this mechanism across digital environments. This paradox is well documented globally (Aguirre et al., 2015; Boerman & Smit, 2023) but less examined in Vietnam, where personalization is prevalent but consumer tolerance for intrusiveness remains uncertain.

Cultural attitudes also shape responses. Vietnamese consumers value informativeness, credibility, and entertainment, but irritation undermines ad acceptance. Khanh Giao and Vuong (2020) found that perceived value and informativeness significantly shaped attitudes toward mobile location-based advertising in Vietnam, while irritation weakened acceptance. Similarly, Khanh Giao and

Vuong (2020) reported that Vietnamese smartphone users' attitudes toward mobile ads depended strongly on perceived usefulness and entertainment, but irritation and overload reduced receptivity. These findings indicate that permission-based approaches are essential, since intrusive ads are often read as privacy violations (Boerman & Smit, 2023a, 2023b). Thus, although consumers welcome relevance, tactics that threaten autonomy trigger defensive avoidance consistent with psychological reactance theory.

Advertising skepticism adds another challenge. Defined as disbelief toward advertising claims (Obermiller & Spangenberg, 1998), skepticism is known to undermine persuasion. Research on personalized ads shows that skepticism predicts avoidance, even for relevant messages (Baek & Morimoto, 2012). In Vietnam, studies on online and green advertising find skepticism reduces trust and engagement. However, little work has explored how skepticism interacts with intrusiveness and relevance in the digital sphere, leaving a conceptual gap for extending the Persuasion Knowledge Model.

Ad avoidance is a common outcome. Consumers employ ad blockers or skip content to regain control. Nguyen-Viet et al. (2022) report that privacy concerns and irritation drive Facebook ad avoidance, mirroring global evidence that intrusiveness heightens defensive coping (Edwards et al., 2002). Avoidance not only reduces exposure but may erode brand trust, emphasizing the need to balance personalization with respect for user autonomy.

Ultimately, advertising seeks to shape purchase intentions. Relevance supports persuasion, while irritation diminishes willingness to buy (Bleier & Eisenbeiss, 2015a; Lambrecht & Tucker, 2013). In Vietnam, word-of-mouth is often viewed as more credible than paid advertising, and electronic word-of-mouth (eWOM) has been shown to strengthen trust, information adoption, and purchase intention (Do & Pereira, 2023; Hue, 2024; Ngo et al., 2024). By contrast, intrusive digital advertising provokes reactance and annoyance, diminishing brand evaluations and recall (Edwards et al., 2002; Lambrecht & Tucker, 2013). These findings highlight the risk that obtrusive formats can erode both immediate responses and long-term equity. Yet research in Vietnam remains fragmented, with privacy concerns, skepticism, and irritation linked to ad avoidance but without an integrated model connecting intrusiveness, relevance, skepticism, avoidance, and purchase intention. This gap provides the rationale for the present study.

Purchase intention is positioned as the focal outcome because it captures the most managerially actionable stage of consumer response to digital advertising-bridging message evaluation and downstream choice-and remains the dominant effectiveness metric in contemporary advertising research.

Finally, individual differences such as Brand Engagement in Self-Concept (BESC) may clarify consumer heterogeneity. Sprott et al. (2009) define BESC as the extent to which consumers integrate brands into their identity. High-BESC consumers tend to remain loyal and may resist avoidance even when skeptical. However, BESC remains underexplored in Vietnam's digital context, representing an important gap.

In sum, Vietnam illustrates how personalization meets both opportunity and resistance. Existing studies highlight the role of irritation, privacy concern, and skepticism in shaping avoidance, but integrated models remain scarce. Exploring how intrusiveness, relevance, skepticism, avoidance, purchase intention, and BESC interact can advance theory and provide practical guidance for advertisers (Table 1).

Theoretical Background

Psychological Reactance Theory (PRT) was introduced by Brehm (1966) to describe how individuals respond when they perceive a restriction of freedom. When consumers encounter advertising

Table 1. Recent and Relevant Studies on Personalization-Related Resistance (2021–2025)

Study	Context/method	Key constructs	Core takeaway
Boerman & Smit (2023)	Conceptual overview	Privacy, targeting, intrusiveness	Clarifies privacy–advertising tensions and open research agenda
Boerman & Smit (2023)	Online personalized ads	Privacy concern, intrusiveness, responses	Shows how privacy concern and intrusiveness shape responses to personalized ads
De Keyzer et al. (2024)	Social media personalization	Relevance vs. creepiness (dual-path)	Identifies dual paths: Relevance benefits vs creepiness harms
Dinana et al. (2025)	Digital advertising	BESC, skepticism, avoidance	BESC can buffer skepticism-driven defensive reactions
Niu et al. (2021)	Social media ads	Invasiveness, irritation, avoidance	Perceived invasiveness triggers irritation and avoidance
Yeo et al. (2025)	Meta-analytic evidence	Personalization, effectiveness	Personalization effects are heterogeneous and depend on perceived relevance and boundary conditions

formats such as pop-ups or forced autoplay videos, they often experience reactance, a motivational state that drives them to resist persuasion attempts and reassert autonomy. This reaction is commonly expressed through advertising avoidance behaviors (Edwards et al., 2002). Research further shows that intrusiveness not only provokes irritation but also reduces the extent to which advertising is judged as relevant (Li et al., 2002). Recent evidence supports this view: Niu et al. (2021) demonstrate that advertising invasiveness in social media contexts heightens irritation and directly predicts avoidance. These findings are consistent with the Stimulus–Organism–Response framework (Mehrabian & Russell, 1974), in which intrusive advertising serves as a negative stimulus, reactance is the organismic response, and avoidance is the behavioral outcome. Thus, PRT provides a theoretical foundation for understanding how intrusiveness erodes perceptions of relevance and increases avoidance.

The Persuasion Knowledge Model (PKM) developed by Friestad and Wright (1994) emphasizes that consumers accumulate knowledge about persuasion tactics and use this knowledge to interpret and resist advertising. When individuals recognize manipulative intent in advertising, skepticism and defensive responses are activated. Skepticism, defined as a generalized disbelief in advertising claims (Obermiller & Spangenberg, 1998), plays a crucial role in this process. Intrusive tactics such as retargeting or personalized pop-ups often reinforce perceptions of manipulation, intensifying skepticism and diminishing ad credibility (Ham et al., 2015). Skeptical consumers are also less likely to view even relevant ads as valuable, since suspicion reduces perceived authenticity. PKM therefore clarifies how intrusiveness triggers skepticism, which subsequently influences avoidance and purchase intention.

The Elaboration Likelihood Model (ELM) proposed by Petty and Cacioppo (1986) explains how consumers process persuasive messages through central or peripheral routes. Under central processing, when advertising content is perceived as personally relevant, individuals invest cognitive effort in evaluating the message, leading to stronger and more persistent attitudes. In contrast, when relevance is low, individuals rely on superficial cues or disengage, resulting in weaker outcomes. Contemporary studies confirm this pattern: relevant ads foster favorable evaluations and purchase intentions (Chen et al., 2023), while irrelevant ones encourage avoidance. This suggests that perceived relevance is essential for triggering central processing and positive persuasion. In the

present context, ELM demonstrates why relevance is expected to enhance purchase intention and reduce avoidance, complementing the mechanisms proposed by PRT and PKM.

Social Identity Theory (SIT), introduced by Tajfel and Turner (1979), argues that individuals derive part of their self-concept from group memberships. Extending this idea to consumer research, Sprott et al. (2009) conceptualized Brand Engagement in Self-Concept (BESC), which captures the degree to which brands form part of consumers' identity. When brand engagement is high, consumers are motivated to maintain positive evaluations of brands, even when they encounter skepticism-inducing messages. This buffering effect occurs because rejecting the brand would also undermine the self-concept. Evidence shows that brand engagement can reduce avoidance tendencies under conditions of skepticism (Dinana et al., 2025). SIT and BESC therefore provide theoretical support for the moderating effect of brand engagement in the relationship between skepticism and avoidance.

Integrating Theories Into the Conceptual Framework

Taking together, these theoretical perspectives explain different aspects of consumer responses to advertising. Psychological Reactance Theory accounts for the irritation and avoidance that arise from intrusiveness. The Persuasion Knowledge Model describes how skepticism develops when consumers detect manipulative tactics. The Elaboration Likelihood Model highlights the pivotal role of relevance in encouraging deeper processing and purchase intention. Finally, Social Identity Theory, operationalized through brand engagement in self-concept, explains why some consumers resist avoidance even when skeptical. Integrating these theories yields a comprehensive framework that moves beyond linear cause–effect logic and incorporates both cognitive defenses and identity-based mechanisms. This theoretical synthesis addresses calls for richer integration in advertising research (Boerman & Smit, 2023; De Keyzer et al., 2024; Yeo et al., 2025) and directly informs the conceptual model tested in this study.

Hypotheses Development

Perceived Ad Intrusiveness and its Outcomes

Empirical studies have consistently demonstrated that intrusive advertising formats such as pop-ups, autoplay videos, or interstitials provoke irritation and resistance. Li et al. (2002) validated a scale showing that intrusiveness reduces consumer willingness to engage with ad content. Edwards et al. (2002) further confirmed that intrusiveness triggers avoidance behaviors as consumers attempt to regain control. More recently, Boerman and Smit (2023) observed that consumers interpret intrusive personalized ads as privacy violations, reinforcing avoidance tendencies. Similarly, Niu et al. (2021) found that advertising invasiveness in social media contexts heightens irritation and directly predicts avoidance. Building on this evidence, the present study expects intrusiveness to lower perceived relevance, increase skepticism, and heighten avoidance.

H1: Perceived ad intrusiveness negatively influences perceived ad relevance.

H2: Perceived ad intrusiveness positively influences ad avoidance.

H3: Perceived ad intrusiveness positively influences advertising skepticism.

Perceived Ad Relevance and Consumer Responses

Perceived relevance reflects the degree to which advertising matches consumer interests. Evidence shows that relevance is a strong predictor of favorable evaluations: Chen et al. (2023) found that relevance improves consumer attitudes toward both ads and platforms. Similarly, Dinana et al. (2025) reported that relevant messages foster engagement and purchase intention. Meta-analytic results by Yeo et al. (2025) confirm that personalization enhances relevance, which strongly drives advertising effectiveness. Despite this evidence, limited research examines how relevance simultaneously reduces avoidance and strengthens purchase intention in emerging markets such as Vietnam.

H4: Perceived ad relevance negatively influences ad avoidance.

H5: Perceived ad relevance positively influences purchase intention.

Ad Avoidance and Purchase Intention

Avoidance behaviors undermine the impact of advertising by limiting exposure. Kelly et al. (2010) showed that consumers who actively avoid ads demonstrate weaker brand attitudes and lower purchase likelihood. Likewise, McCoy et al. (2007) found that disruptive online formats reduce purchase intention by eliciting negative emotions. Extending this logic, avoidance is expected to function as a key inhibitor of purchase outcomes in the present context.

H6: Ad avoidance negatively influences purchase intention.

Direct Effects of Intrusiveness on Purchase Intention

Beyond avoidance, intrusiveness may directly reduce purchase intention through negative affect transfer. Experimental evidence confirms that irritation generated by intrusive ads lowers brand evaluations and purchase likelihood (McCoy et al., 2007). Therefore, intrusiveness is hypothesized to exert a direct negative influence on purchase intention.

H7: Perceived ad intrusiveness negatively influences purchase intention.

Advertising Skepticism as a Barrier to Effectiveness

Advertising skepticism reflects a general disbelief toward advertising claims (Obermiller & Spangenberg, 1998). Empirical research shows that skepticism undermines ad credibility, prompting consumers to disengage (Boerman & Smit, 2023). Ham et al. (2015) found that skepticism not only predicts avoidance but also reduces relevance judgments, even when ads are objectively aligned with consumer interests. These insights highlight skepticism as a central barrier to advertising effectiveness.

H8: Advertising skepticism positively influences ad avoidance.

H9: Advertising skepticism negatively influences perceived ad relevance.

H10: Advertising skepticism negatively influences purchase intention.

Brand engagement in self-concept (BESC) describes the extent to which consumers integrate brands into their identity (Sprott et al., 2009). Prior work suggests that identity-linked engagement can buffer skepticism-driven defensive responses in digital advertising (Dinana et al., 2025). Accordingly, the study posits that BESC weakens the positive association between skepticism and avoidance.

H11: Brand engagement in self-concept moderates the relationship between advertising skepticism and ad avoidance, such that the effect is weaker when engagement is high.

The conceptual framework incorporates both direct and moderating effects, as illustrated in Figure 1.

Methodology

Research Design

This research adopted a quantitative, cross-sectional survey design to test the proposed model that links perceived ad intrusiveness, ad relevance, and advertising skepticism to ad avoidance and purchase intention, with brand engagement in self-concept (BESC) as a moderator. A structured questionnaire was distributed online, ensuring uniform measurement across respondents. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) implemented in SmartPLS 4. This method was selected because of its suitability for prediction-oriented research, complex path models, and the inclusion of both mediation and moderation effects (Hair et al., 2019; Henseler et al., 2015). To minimize common method bias, items were presented in randomized order, neutral instructions were provided, and respondent anonymity was guaranteed. In addition to these procedural remedies, we also conducted post-hoc statistical tests. Specifically, full collinearity VIF values for all constructs were below 3.3, confirming that common method bias is unlikely to distort the results (Henseler et al., 2015; Kock, 2015).

Although covariance-based SEM (CB-SEM) is well suited to strict theory confirmation and the evaluation of global model fit, PLS-SEM is preferable when the objective is prediction and

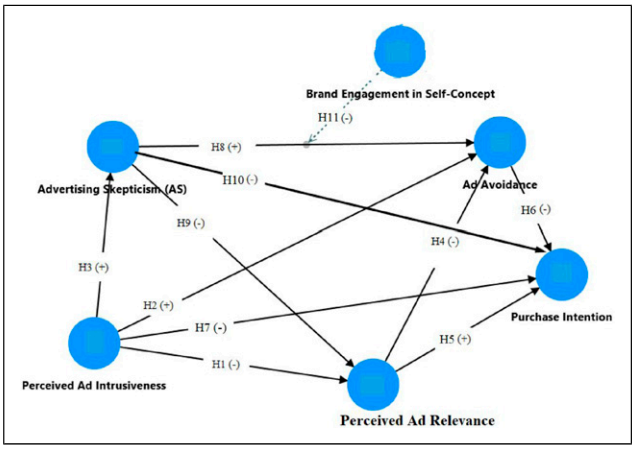

Figure 1. Conceptual framework

explanation of target constructs, especially in complex models that combine mediation and moderation and may deviate from multivariate normality. Given our focus on explaining and predicting ad avoidance and purchase intention and testing an interaction effect, we therefore employed PLS-SEM for model estimation (Hair et al., 2019; Henseler et al., 2015).

Sample and Data Collection

Sample Size Adequacy. With 550 usable responses, the sample substantially exceeds the minimum recommended by the 10-times rule (10 × 4 = 40; the maximum number of predictors pointing at a single endogenous construct is four in the proposed model). A conservative power analysis based on Cohen's f^2 for the overall F-test in multiple regression ($\alpha = 0.05$; desired power = 0.80; u = 4 predictors) indicates that detecting a small effect of $f^2 = 0.022$ requires approximately N = 548 observations (Cohen, 1988). Thus, the achieved sample size ($N = 550$) is adequate for the model's complexity. Complementary minimum sample size estimators developed specifically for PLS-SEM also support this conclusion (Hair et al., 2019; Kock & Hadaya, 2018).

The study targeted Vietnamese online consumers who had been exposed to digital advertising in the past three months. Respondents were recruited via direct online invitations distributed through closed online communities and personal networks in 2025. The questionnaire link was shared through invitations rather than posted as an open public link to reduce duplicate or low-effort participation. Participation was voluntary and no monetary incentives were offered. A total of 600 individuals initiated the survey. After removing incomplete submissions and responses failing basic quality checks (e.g., clear straight-lining or inconsistent screening answers), 550 usable responses were retained for analysis, representing a 91.7% completion/retention rate among survey starters (Table 2). Closed online communities here refer to member-only groups/forums where access is controlled; invitations were sent directly, and the survey link was therefore not posted as a publicly searchable open link.

Table 2. Demographic Profile of Respondents ($N = 550$)

Variable	Category	Frequency	Percentage (%)
Gender	Male	174	31.64
	Female	196	35.64
	Other/Prefer not to say	180	32.73
Age group	18–24	138	25.09
	25–34	145	26.36
	35–44	130	23.64
	45+	137	24.91
Education	High school or below	205	37.27
	Undergraduate	178	32.36
	Postgraduate (Master/PhD)	167	30.36
Monthly income (VND)	<5 million	122	22.18
	5–10 million	143	26.00
	10–20 million	148	26.91
	>20 million	137	24.91
Online shopping frequency	Rarely (≤1 time/month)	166	30.18
	Occasionally (2–3 times/month)	173	31.45
	Frequently (≥1 time/week)	211	38.36

Of the 550 respondents, 35.6% identified as female, 31.6% as male, and 32.7% selected "Other/Prefer not to say." This relatively high share of non-disclosure reflects the design of an anonymous online survey in which participants were explicitly allowed to withhold demographic details. It should therefore be interpreted as voluntary non-disclosure rather than a sampling error. Because gender is not used as a control variable in the structural model, this pattern does not bias the reported results.

The demographic profile demonstrates a balanced distribution across gender, age, education, and income. Notably, over one-third of respondents reported shopping online at least once per week, confirming the suitability of this sample for examining responses to digital advertising.

Measurement Development

All constructs were operationalized as reflective measures, using five-point Likert scales (1 = strongly disagree, 5 = strongly agree). Established and validated scales from prior literature were adopted and adapted to the Vietnamese digital advertising context: advertising skepticism (Obermiller & Spangenberg, 1998), perceived ad intrusiveness (Li et al., 2002), perceived ad relevance (Kim & Huh, 2017), ad avoidance (Cho & Cheon, 2004), purchase intention (Spears & Singh, 2004), and BESC (Sprott et al., 2009). Translation and back-translation procedures ensured semantic equivalence, and a pilot study with 30 participants confirmed item clarity.

Ethical Considerations

Informed consent was obtained before participation. Respondents were informed of the study purpose, voluntary nature of participation, and their right to withdraw at any stage. No personally identifiable information was collected, and data was used exclusively for academic purposes.

Data Analysis

PLS-SEM estimation in SmartPLS 4 followed the recommended two-stage approach, assessing the measurement model before testing structural relationships.

Measurement Model. All standardized indicator loadings exceeded 0.70 (0.795–0.901: AA 0.810–0.857; AS 0.795–0.855; BESC 0.824–0.874; PAI 0.816–0.834; PAR 0.865–0.883; PI 0.888–0.901), supporting item reliability. Internal consistency and convergent validity were satisfactory: Cronbach's α = 0.842–0.948, rho_a = 0.843–0.949, CR = 0.894–0.956, and AVE = 0.677–0.796 (Table 3). Discriminant validity met the Fornell–Larcker criterion ($\sqrt{}$AVE on the diagonal 0.823–

Table 3. Construct Reliability and Validity

Construct	Cronbach's α	rho_a	CR (rho_c)	AVE
Ad avoidance (AA)	0.889	0.890	0.919	0.694
Advertising skepticism (AS)	0.940	0.940	0.950	0.677
Brand engagement in self-concept (BESC)	0.948	0.949	0.956	0.732
Perceived ad intrusiveness (PAI)	0.842	0.843	0.894	0.679
Perceived ad relevance (PAR)	0.843	0.843	0.905	0.761
Purchase intention (PI)	0.872	0.872	0.921	0.796

0.892 exceeded inter-construct correlations). HTMT diagnostics showed two pairs slightly above 0.85 (AS–PAR = 0.887; PI–PAR = 0.892) and two at/near the threshold (AA–PI = 0.850; PAI–PI = 0.845), with the remaining pairs below 0.85; overall, HTMT values are below 0.90 and acceptable for conceptually related constructs.

Assessment of Structural Model

Model Fit. The standardized root mean square residual (SRMR) was 0.034 for the saturated model (below the 0.08 threshold) and 0.088 for the estimated model (slightly above 0.08). Additional indices were d_ULS = 0.597/4.062, d_G = 0.336/0.365, χ^2 = 1062.272/1101.991, and NFI = 0.924/0.921 (saturated/estimated).

Intrusiveness strongly drives skepticism (β = 0.761) and avoidance (β = 0.269), while reducing relevance (β = −0.143) and purchase intention (β = −0.167). Skepticism emerges as another central factor, lowering relevance and purchase intention, and promoting avoidance. Relevance has protective effects, reducing avoidance and improving intention. BESC plays a dual role by directly reducing avoidance and moderating the effect of skepticism on avoidance (Table 4).

The model explains between 58% and 73% of variance in the endogenous constructs, demonstrating robust explanatory power (Table 5).

The largest contributions are intrusiveness → skepticism (f^2 = 1.379) and skepticism → relevance (f^2 = 0.532) — both large. All remaining paths show small effects (f^2 ≈ 0.022–0.126) yet are statistically significant (e.g., skepticism → intention f^2 = 0.126; relevance → avoidance f^2 = 0.107; BESC → avoidance f^2 = 0.105; intrusiveness → avoidance f^2 = 0.094; others ≤0.056). In substantive terms, small f^2 values are common in consumer-behavior models and can still matter when effects accumulate across multiple pathways. Moreover, the model's practical relevance is supported by the high R^2 values, positive out-of-sample predictive results (Q^2_predict), and the IPMA findings that translate total effects into actionable priorities (Table 6).

The strongest indirect routes to purchase intention are PAI → AS → PI (β = −0.275, $p < .001$) and AS → PAR → PI (β = −0.151, $p < .001$). Smaller yet significant serial chains run via relevance and avoidance (AS → PAR → AA → PI = −0.042, $p < .001$; PAI → PAR → AA → PI = −0.009, $p = .028$), while a constructive path (PAR → AA → PI = 0.061, $p < .001$) shows

Table 4. Structural Path Estimates

Hypothesis	Relationship	β	t-value	*p*-value	Decision
H1	PAI → PAR	−0.143	3.070	.002	Supported
H2	PAI → AA	0.269	6.134	<.001	Supported
H3	PAI → AS	0.761	38.155	<.001	Supported
H4	PAR → AA	−0.315	7.122	<.001	Supported
H5	PAR → PI	0.222	4.750	<.001	Supported
H6	AA → PI	−0.194	4.184	<.001	Supported
H7	PAI → PI	−0.167	3.643	<.001	Supported
H8	AS → AA	0.158	2.662	.008	Supported
H9	AS → PAR	−0.681	15.048	<.001	Supported
H10	AS → PI	−0.361	5.991	<.001	Supported
-	BESC → AA	−0.260	6.812	<.001	Significant
H11	BESC × AS → AA	−0.173	3.685	<.001	Significant

Table 5. Variance Explained (R^2 Values)

Endogenous construct	R^2	Adjusted R^2	Interpretation
Ad avoidance (AA)	0.693	0.690	Substantial
Advertising skepticism (AS)	0.580	0.579	Moderate–high
Perceived ad relevance (PAR)	0.633	0.631	Substantial
Purchase intention (PI)	0.727	0.725	Substantial

relevance lowers avoidance and indirectly raises intention. The interaction also produces a modest positive carry-over (BESC × AS → AA → PI = 0.034, $p = .001$). Collectively, skepticism is the central conduit of harm; relevance (and reduced avoidance) is the main countervailing mechanism.

Mediation Analysis (See Table 7)

Bootstrapped specific indirect effects indicate two dominant chains to purchase intention: PAI → AS → PI ($\beta = -0.275$, $p < .001$) and AS → PAR → PI ($\beta = -0.151$, $p < .001$). Smaller but significant routes include AS → AA → PI ($\beta = -0.031$, $p = .044$), PAR → AA → PI ($\beta = 0.061$, $p < .001$), and serial paths via relevance and avoidance (AS → PAR → AA → PI = −0.042, $p < .001$; PAI → PAR → AA → PI = −0.009, $p = .028$). These indirect effects coexist with significant direct effects (PAI → PI = −0.167; AS → PI = −0.361; PAR → PI = 0.222; all $p < .001$), indicating partial complementary mediation for intrusiveness, skepticism, and relevance (Table 7).

Taken together, the pattern shows that intrusiveness harms intention mostly indirectly via skepticism: about ∼76% of its total effect is mediated (indirect −0.537 vs. total −0.705). For skepticism, about ∼38% of its total impact is transmitted through relevance/avoidance (indirect −0.223 vs. total −0.584). By contrast, relevance benefits intention primarily directly, with a smaller mediated share ∼22% (indirect 0.061 vs. total 0.283). This reinforces a sequential process in which intrusiveness → skepticism → lower relevance/higher avoidance → lower

Table 6. Effect Sizes (f^2)

Path	f^2	Magnitude
PAI → AS	1.379	Large
AS → PAR	0.532	Large
PAR → AA	0.107	Small
AS → PI	0.126	Small
PAI → AA	0.094	Small
BESC → AA	0.105	Small
PAR → PI	0.056	Small
AA → PI	0.047	Small
BESC × AS → AA	0.039	Small
PAI → PI	0.039	Small
AS → AA	0.022	Small
PAI → PAR	0.024	Small

Table 7. Specific Indirect Effects

Indirect path	β	t-value	*p*-value	Decision
AS → PAR → PI	−0.151	4.767	<.001	Supported
AS → AA → PI	−0.031	2.013	.044	Supported
AS → PAR → AA → PI	−0.042	3.534	<.001	Supported
PAR → AA → PI	0.061	3.583	<.001	Supported
PAI → AS → PI	−0.275	5.852	<.001	Supported
PAI → AA → PI	−0.052	3.377	.001	Supported
PAI → PAR → PI	−0.032	2.354	.019	Supported
PAI → PAR → AA → PI	−0.009	2.205	.028	Supported
BESC × AS → AA → PI	0.034	3.222	.001	Supported

intention, while raising relevance (and thus reducing avoidance) forms the main countervailing pathway (Figure 2).

Importance–Performance Map Analysis (IPMA)

IPMA in SmartPLS contrasts structural-model *total effects* ("importance") with latent-variable *performance* scores, giving a two-dimensional view that helps prioritize managerial actions (focus on high-importance, low-performance constructs) (Ringle & Sarstedt, 2016). The results are presented in Table 8.

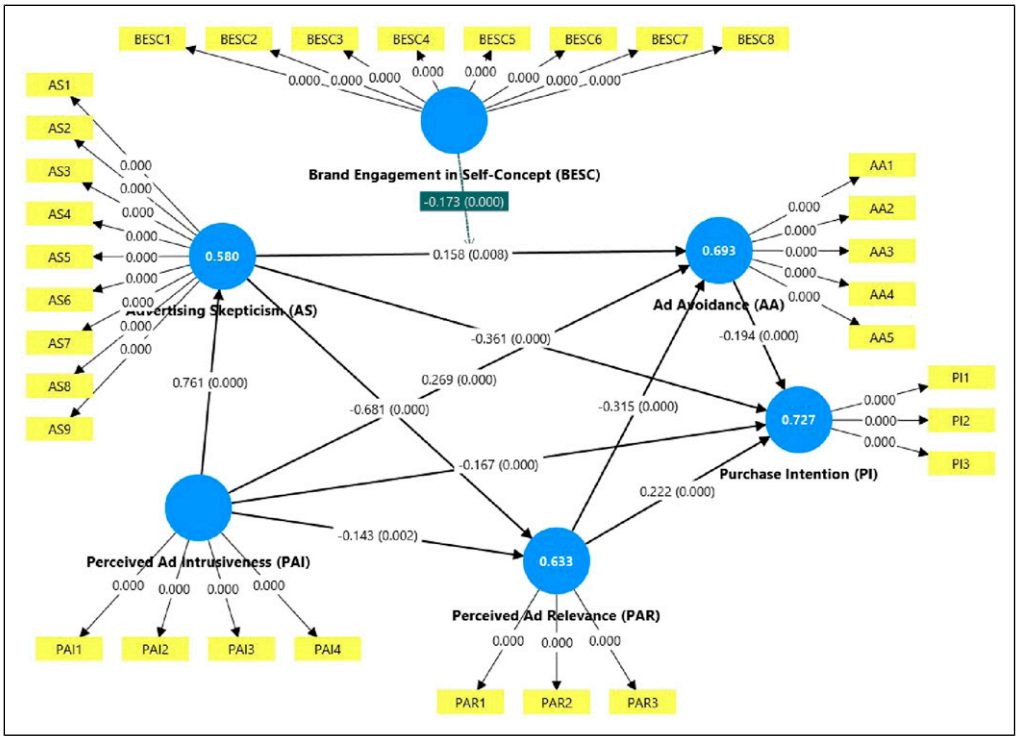

Figure 2. Estimated structural model (PLS-SEM)

Table 8. IPMA Results for Purchase Intention

Predictor construct	Total effect on PI (importance)	Performance (0–100)	Importance rank (by | total effect|)	Managerial priority
Perceived ad intrusiveness (PAI)	−0.705	51.007	1	Manage intrusiveness
Advertising skepticism (AS)	−0.584	49.916	2	Key target for reduction
Perceived ad relevance (PAR)	0.283	46.141	3	Build relevance
Ad avoidance (AA)	−0.194	53.710	4	Reduce avoidance
Brand engagement in self-concept (BESC)	0.051	46.934	5	Leverage engagement

- **Advertising skepticism** and **perceived ad intrusiveness** show strong negative effects on PI with moderate performance, suggesting that reducing perceived manipulativeness and intrusiveness should be the first priority.
- **Ad relevance** has a positive and substantial effect with mid-level performance, implying that firms should continue improving message–audience fit.
- **Brand engagement** demonstrates a moderate positive effect and relatively high performance, confirming its role as a buffer that firms can strategically leverage.

Figure 3 presents the IPMA map for purchase intention, contrasting the importance of each construct with its performance score to highlight managerial priorities.

Predictive Relevance (Q^2_predict)

The Q^2_predict values were obtained from the SmartPLS LV summary using a 10-fold cross-validation procedure. Positive Q^2_predict values across endogenous constructs confirm the predictive power of the model.

All Q^2_predict values are above zero, indicating out-of-sample predictive power: AA = 0.602, AS = 0.578, PI = 0.540, PAR = 0.437 (Table 9). The highest predictive accuracy is observed for ad avoidance, followed by skepticism, purchase intention, and relevance. These results reinforce that the model is not only explanatory but also useful for prediction.

Discussion

Attainment of Research Objectives

This study set out to examine how perceived ad intrusiveness, skepticism, and relevance jointly shape ad avoidance and purchase intention, while testing whether brand engagement in self-concept (BESC) moderate defensive responses. All hypotheses were supported, consistent with theoretical expectations. Intrusiveness increased skepticism ($\beta = 0.761$, $p < .001$) and avoidance ($\beta = 0.269$, $p < .001$), while reducing relevance ($\beta = -0.143$, $p = .002$) and intention ($\beta = -0.167$, $p < .001$). These findings align with Edwards et al. (2002), who showed that intrusive online formats provoke

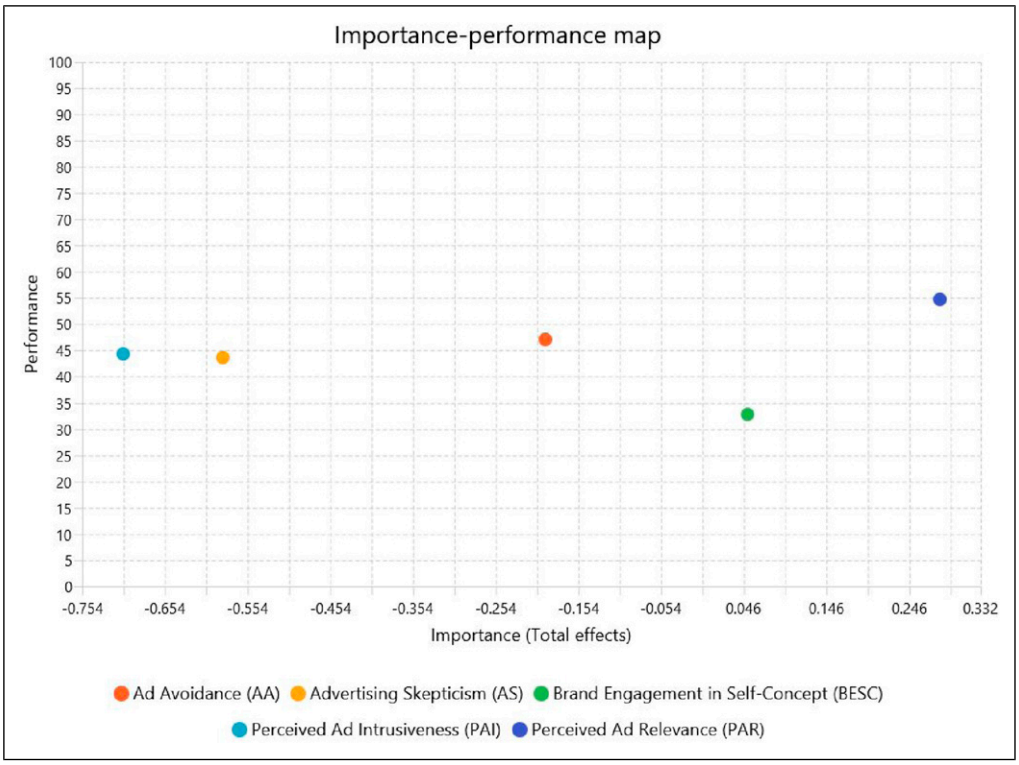

Figure 3. IPMA map for purchase intention

irritation and defensive coping. Skepticism, as theorized by Obermiller and Spangenberg (1998), lowered relevance ($\beta = -0.681$, $p < .001$), heightened avoidance ($\beta = 0.158$, $p = .008$), and reduced intention ($\beta = -0.361$, $p < .001$). Relevance, in contrast, exerted constructive effects, reducing avoidance ($\beta = -0.315$, $p < .001$) and enhancing intention ($\beta = 0.222$, $p < .001$), consistent with Bleier & Eisenbeiss (2015a). Avoidance itself suppressed intention ($\beta = -0.194$, $p < .001$). Mediation analysis confirmed that skepticism and relevance transmit much of the harm caused by intrusiveness (e.g., PAI → AS → PI, $\beta = -0.275$; AS → PAR → PI, $\beta = -0.151$). Moderation tests showed that BESC buffered skepticism's effect on avoidance ($\beta = -0.173$, $p < .001$), echoing findings on identity-based brand resilience (Sprott et al., 2009).

Table 9. Q^2_predict Values (Latent Variable Summary)

Endogenous construct	Q^2_predict	Interpretation
Ad avoidance (AA)	0.602	Strong predictive relevance
Advertising skepticism (AS)	0.578	Strong predictive relevance
Perceived ad relevance (PAR)	0.437	Strong predictive relevance
Purchase intention (PI)	0.540	Strong predictive relevance

Contribution of the Study

Theoretical Contributions

The study advances advertising theory by integrating multiple perspectives into a single framework. First, it demonstrates that skepticism functions as a destructive psychological conduit. Prior studies identified skepticism as a barrier to persuasion (Ham et al., 2015), but few examined its dual role as both direct inhibitor and mediator. This research shows that skepticism transmits intrusiveness into diminished relevance, heightened avoidance, and weaker purchase intention. Second, relevance emerged as a constructive counterforce. Chen et al. (2023) emphasized that relevance fosters engagement, and the present results confirm its capacity to reduce avoidance and enhance intention even under intrusive conditions. Third, the moderating effect of BESC extends social identity theory by showing that consumers who embed brands into their self-concept resist avoidance despite skepticism, corroborating Dinana et al. (2025).

Contextual and Methodological Contributions

The Vietnamese context provides unique insights. Prior work highlighted cultural sensitivity to ad irritation and privacy (Khanh Giao & Vuong, 2020), and the present findings reinforce that personalization in Vietnam must be balanced with autonomy. Methodologically, the study demonstrates the value of combining mediation and moderation within PLS-SEM to capture complex consumer processes (Hair et al., 2019). Moreover, the application of Importance–Performance Map Analysis (Ringle & Sarstedt, 2016) links statistical results to managerial priorities. By integrating mediation, moderation, and IPMA within a single predictive model, the research responds to calls for richer, decision-oriented advertising research (Boerman & Smit, 2023). Overall, the contributions span theoretical advancement, contextual enrichment, and methodological innovation.

Model Fit and Predictive Utility

The model exhibited acceptable fit and strong predictive validity. The SRMR value of 0.034 (saturated) fell below the recommended 0.08 threshold (Henseler et al., 2015), indicating minimal residual correlations. Although the estimated SRMR was 0.088, slightly above the cut-off, PLS-SEM emphasizes prediction over strict fit, making this acceptable. NFI values above 0.90 (0.924/0.921) further suggest adequate model representation. Similar tolerance has been reported in recent advertising research using complex models (Boerman & Smit, 2023).

Predictive Power Was Robust. All Q^2_predict values were positive (AA = 0.602; AS = 0.578; PI = 0.540; PAR = 0.437), confirming out-of-sample performance in line with PLSpredict guidelines (Shmueli et al., 2019). These results indicate that the model is not only explanatory but also reliable for prediction, echoing Shmueli et al. (2019), who emphasize PLS-SEM's predictive orientation in enhancing decision-making relevance.

Benchmarking Against LM. To benchmark predictive accuracy, we compared PLS-SEM with a linear regression (LM) model using out-of-sample errors (RMSE/MAE) and the Cramér–von Mises test. PLS achieved lower errors for Ad Avoidance (AA), was statistically indistinguishable from LM for Advertising Skepticism (AS) and Perceived Ad Relevance (PAR), but was slightly worse for Purchase Intention (PI). Overall, PLS-SEM retains an advantage on defensive responses (AA)

within this moderated-mediation structure, while LM remains competitive for intention (details in the Supplementary "Prediction errors vs. LM benchmark"). The ability to explain between 58% and 73% of variance in endogenous constructs also compares favorably with benchmarks in digital advertising studies (Yeo et al., 2025).

Taken together, the combination of adequate fit and strong predictive relevance strengthens the claim that this model is both theoretically defensible and practically useful. For academics, it validates a rigorous integrative framework; for practitioners, it offers a predictive tool for anticipating consumer responses to digital advertising.

Theoretical Implications

The results confirm and extend several theories. **Psychological Reactance Theory** (Brehm, 1966) is supported as intrusiveness triggered skepticism and avoidance, reflecting consumer resistance to perceived threats to autonomy. This echoes Cho and Cheon (2004), who documented that intrusive internet ads evoke irritation and rejection. **The Persuasion Knowledge Model** (Friestad & Wright, 1994) is validated by the central role of skepticism: consumers who detect manipulative intent disengage, as found in Boerman & Smit (2023b). Here, skepticism mediated intrusiveness's impact on intention, revealing its destructive function. **The Elaboration Likelihood Model** (Petty & Cacioppo, 1986) gains empirical support: relevance increased intention and reduced avoidance, fostering central processing and deeper persuasion. This finding corroborates Chen et al. (2023) and Yeo et al. (2025), who demonstrated that personalization enhances message effectiveness when perceived as relevant. **Social Identity Theory** (Tajfel & Turner, 1979), operationalized through BESC, was confirmed: high engagement buffered skepticism's effect on avoidance, consistent with Sprott et al. (2009).

The integration of these mechanisms clarifies why digital advertising simultaneously provokes persuasion and resistance. Past studies examined these constructs separately; this research unites them into a single moderated-mediation model, advancing calls for theoretical integration (De Keyzer et al., 2024). Skepticism acts as a destructive pathway, while relevance provides a constructive counterpath, explaining both positive and defensive responses.

Based on these results, three theoretical propositions can be advanced: (1) intrusiveness primarily undermines purchase intention through skepticism; (2) relevance exerts both direct and indirect positive effects, offsetting skepticism and avoidance; and (3) BESC functions as a boundary condition that mitigates skepticism-driven avoidance. These propositions extend persuasion knowledge and identity frameworks, offering a more nuanced account of consumer responses in digital contexts.

Implications for Policy and Platform Governance

The findings suggest clear implications for policymakers and platforms. First, the destructive impact of intrusiveness and skepticism on purchase intention underscores the need for privacy-by-design regulation. Prior work shows that transparency reduces perceived manipulation (Boerman & Smit, 2023). Regulators should mandate clear disclosure of targeting criteria and strengthen consumer control over data usage.

Second, the evidence that repeated intrusions heighten avoidance aligns with Edwards et al. (2002), who demonstrated that intrusive online ads erode trust. Platforms should therefore implement frequency and pacing caps, limiting the number of disruptive exposures per user. Restricting

formats such as pop-ups and forced autoplay can mitigate reactance while sustaining long-term advertising effectiveness.

Third, the constructive role of relevance suggests that permission-based personalization is preferable. Studies confirm that opt-in personalization enhances authenticity and reduces defensive responses (Aguirre et al., 2015). Platforms could empower users to customize ad preferences, thereby improving fit without threatening autonomy.

Collectively, these measures address the destructive role of skepticism and intrusiveness while leveraging relevance as a constructive force. By balancing personalization with autonomy and transparency, regulators and platforms can strengthen consumer trust in digital advertising ecosystems.

Managerial Implications

The IPMA results highlight where advertisers should focus resources. First, skepticism and intrusiveness exerted the strongest negative effects on purchase intention (−0.584 and −0.705, respectively) but showed only moderate performance. This suggests an urgent need to reduce perceived manipulativeness. Transparent communication and simplified privacy disclosures can directly lower skepticism, consistent with Ham et al. (2015). Likewise, minimizing disruptive retargeting or autoplay formats can reduce intrusiveness, echoing Cho and Cheon's (2004) findings that irritation drives avoidance.

Second, relevance had substantial positive importance (0.283) but mid-level performance (46.1). This indicates that firms should invest more heavily in authentic personalization strategies. Bleier & Eisenbeiss (2015a, 2015b) showed that contextual targeting improves attitudes when aligned with consumer needs. Applying such strategies while avoiding overly granular surveillance can increase message effectiveness.

Third, BESC offered moderate positive effects with relatively high performance. Strengthening identity-based ties through brand communities or value-driven storytelling can enhance resilience to skepticism, as confirmed by Dinana et al. (2025).

Budget allocations should therefore prioritize three levers: (1) reduce intrusiveness through frequency and format control; (2) improve personalization relevance using contextual and value-based cues; and (3) foster consumer–brand identity alignment. By aligning investments with these insights, firms can counter defensive reactions and amplify constructive engagement, ultimately improving campaign ROI in competitive digital environments.

Research Limitations

Several limitations warrant acknowledgment. First, the cross-sectional survey design restricts causal inference. While mediation and moderation pathways were significant, longitudinal or experimental research is needed to confirm temporal ordering. This limitation is common in persuasion studies but can be addressed through repeated-exposure or field-experiment designs.

An additional limitation concerns demographic non-disclosure: a relatively large share of respondents selected "Other/Prefer not to say" for gender. While this can reflect privacy-preserving choices in anonymous online surveys, it may also indicate satisficing for some participants. We therefore applied basic response-quality screening prior to estimation; nevertheless, future studies should replicate the model using quota-based or panel sampling and more granular demographic measurement.

Second, reliance on self-reported measures raises risks of response bias and common method variance, despite procedural safeguards and diagnostics such as HTMT and VIF (Henseler et al., 2015). Future work should complement perceptions with behavioral data such as clickstream analytics or eye-tracking, as suggested by Kelly et al. (2010).

Third, the focus on Vietnamese consumers limits generalizability. Cultural attitudes toward privacy and advertising vary across markets (Aguirre et al., 2015). Comparative studies in developed contexts with stronger regulation would clarify boundary conditions.

Finally, constructs were modeled reflectively, though intrusiveness and engagement may also have formative aspects. Testing alternative specifications would enhance validity.

Despite these limitations, the study provides robust explanatory and predictive insights. The clear identification of skepticism and relevance as central mechanisms strengthens confidence in the model, while the limitations outline precise avenues for methodological refinement.

Future Research Directions

Future research could extend these findings in several ways. First, longitudinal or experimental studies could capture dynamic processes more rigorously. For example, repeated exposure designs would reveal how skepticism evolves over time and whether BESC continues to moderate avoidance under varying conditions.

Second, additional moderators warrant exploration. Privacy concern and trust in platforms are likely to shape responses to personalization (Boerman & Smit, 2023a, 2023b). Distinguishing between state and trait skepticism may also deepen understanding of individual differences in defensive coping.

Third, cross-cultural analyses would enhance generalizability. As Aguirre et al. (2015) note, personalization is perceived differently depending on regulatory environments. Replicating this model in contexts such as Europe or North America could reveal whether identity-based engagement buffers skepticism consistently across cultures.

Fourth, integrating behavioral measures would strengthen validity. Combining survey data with clickstream logs, ad-blocker usage, or eye-tracking would provide objective indicators of avoidance, reducing reliance on self-report.

Finally, applying IPMA at the segment level could identify heterogeneous consumer priorities. Targeting interventions to high-value or high-risk groups would refine managerial recommendations. Together, these directions offer pathways to advance theory and improve practice in digital advertising research.

Conclusion

This study set out to clarify how perceived ad intrusiveness, skepticism, and relevance interact to shape avoidance and purchase intention, and whether brand engagement in self-concept (BESC) softens defensive reactions. Using data from 550 Vietnamese consumers analyzed with PLS-SEM, the model demonstrated strong explanatory power (R^2 up to 0.727) and predictive accuracy (Q^2_predict = 0.540 for purchase intention). The findings show that intrusiveness and skepticism undermine persuasion, while relevance and BESC provide constructive counterforces. Mediation tests confirmed that skepticism is the central conduit of harm, transmitting intrusiveness into diminished relevance, stronger avoidance, and lower purchase intention. In contrast, relevance enhances persuasion both directly and indirectly by reducing avoidance. The moderation effect of

BESC highlights identity-based resilience: consumers who integrate brands into their self-concept are less likely to avoid advertising even when skeptical.

The study contributes to theory by integrating psychological reactance, persuasion knowledge, elaboration likelihood, and social identity perspectives within a single predictive framework, thereby explaining why digital advertising provokes both persuasion and resistance. Practically, it underscores the importance of reducing intrusiveness, managing skepticism, and investing in authentic personalization while leveraging brand–consumer identity ties.

While limited by its cross-sectional, self-reported design and cultural scope, the research provides a robust foundation for future work using longitudinal or experimental designs, behavioral measures, and cross-market comparisons. Ultimately, the results affirm that effective digital advertising requires balancing autonomy, transparency, and relevance curbing manipulative intrusiveness while fostering identity-linked, value-driven engagement.

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Ethical Considerations

The study was conducted in accordance with ethical research guidelines. Participants were informed of the study's objectives, assured of anonymity, and provided informed consent prior to participation. No personally identifiable information was collected. Ethical approval was granted by the institutional research ethics committee.

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Declaration of Conflicting Interests

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Data Availability Statement

The data supporting the findings of this study (survey instrument, measurement scales, and SmartPLS outputs) are available from the corresponding author upon reasonable request.

Declarations

We hereby declare that this paper is the result of our original work and has not been submitted, in whole or in part, for any other course, degree, or academic award. All sources of information, data, and literature used in the preparation of this paper have been properly cited and acknowledged. We affirm that each author has contributed substantially to the work and collectively take responsibility for its content.

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Appendix A

Measurement Scales

All constructs were measured reflectively using 5-point Likert scales (1 = Strongly disagree, 5 = Strongly agree). Items were adapted from validated scales in prior research. Reverse-coded items are indicated (R). Specifically, the measures were adapted from the following sources: advertising skepticism (Obermiller & Spangenberg, 1998); perceived ad intrusiveness (Li et al., 2002); perceived ad relevance (Kim & Huh, 2017); ad avoidance (Cho & Cheon, 2004); purchase intention (Spears & Singh, 2004); and brand engagement in self-concept (BESC) (Sprott et al., 2009).

Advertising Skepticism

- AS1: Advertising is generally untruthful.
- AS2: Advertising is a reliable source of information. (R)
- AS3: Most advertising cannot be believed.
- AS4: Most advertising tells the truth. (R)
- AS5: I feel I've been accurately informed through advertising. (R)
- AS6: Most advertising is informative. (R)
- AS7: Advertising is generally misleading.
- AS8: Most advertising provides good information about the product. (R)
- AS9: Most advertising is exaggerated.

Perceived Ad Intrusiveness

- PAI1: This ad is intrusive.
- PAI2: This ad interferes with my goals.
- PAI3: This ad is obtrusive.
- PAI4: This ad is distracting.

Perceived Ad Relevance

- PAR1: This ad is relevant to me.
- PAR2: This ad fits my interests.
- PAR3: This ad is personally useful.

Ad Avoidance

- AA1: I try to ignore online ads.
- AA2: I avoid looking at online ads.
- AA3: I skip or close online ads whenever possible.
- AA4: I do not pay attention to online ads.
- AA5: I try to get rid of ads when they appear on my screen.

Purchase Intention

- PI1: I intend to buy the product from this brand.
- PI2: I would consider buying from this brand.
- PI3: The likelihood of purchasing from this brand is high.

Brand Engagement in Self-Concept (BESC)

- BE1: Brands say a lot about who I am.
- BE2: I feel a personal connection to certain brands.
- BE3: Part of me is defined by the brands I use.
- BE4: I think brands help me express who I am.
- BE5: I use brands to communicate something about myself to others.
- BE6: The brands I use reflect my style.
- BE7: My favorite brands are an important indication of who I am.
- BE8: I identify with the brands I use.