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THE IMPACT OF ONLINE ADVERTISEMENT PERSONALIZATION AND TRANSPARENCY ON INDIVIDUAL DEFENSIVE RESPONSES AND ENGAGEMENT

Research in Progress

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Abstract

This study identifies the different individual defensive responses that are triggered by ad personalization. We investigate how these responses impact user engagement behavior on social media. The study also examines the role of transparency in advertising and the perceived benefits of personalization on user engagement in Europe. To conduct our study, we are theoretically grounded in the defensive response model. A multi-step quantitative approach constituting two experiments and a survey is used. With 154 and 199 participants each, the experiments allowed us to define the theoretical model. The experiment identified paradoxical findings. We indent surveying online ads-users to examine the impact of personalization on individual defensive responses and the role transparency plays in predicting user engagement. Our research contributes to the theory by identifying defensive responses that explain the engagement behavior, and the impact of transparency on personalized advertising.

Keywords: Online Ads Personalization, Ads-Transparency, Defensive responses, Ads-Engagement.

1 Introduction

There is a problem with how individuals become defensive about the invasiveness of personalized advertisements on social media. Companies typically respond to the challenge by increasing transparency of what information they collect and how such information is used (Dogruel, 2019). A 2021 Merkle survey¹, for instance, found that 44% of internet users in the US often feel invasive by personalized advertising. The same survey found that nearly half of the respondents felt that personalization helps them find suitable products and services. A similar paradoxical finding has been reported in surveys conducted in Europe (e.g., see the Center for Data Innovation report²). An important question that needs to be answered is – How does social media advertisement personalization impacts defensive responses and hence their engagement?

To address this question, four constructs need conceptual clarity – advertisement personalization, transparency, defensive responses, and engagement. Following Bol et al., (2018), we define social media advertisement personalization as the “modification, customization, and distribution of social media materials to optimize the fit with personal characteristics, interests, preferences, communication styles, and behaviors” (p. 373). Advertisement transparency occurs when consumers are aware of what information is collected and how it is used by the advertiser. Based on Campbell et al., (1997), defensive responses are reactions to stimuli that are perceived to be threatening. We consider advertisement engagement as “a consumer’s positively valenced brand-related cognitive, emotional, and behavioral activity during or related to focal consumer/brand interactions.” (Hollebeek et al., 2014; p. 149). In this paper, we argue that when consumers understand the benefits of personalization, it moderates the relationship between defense responses toward personalization and engagement. We conduct our argument by using the defensive response theory (Twyman et al., 2014).

1 Consumer Attitudes Toward Digital Advertising 2021 - Insider Intelligence Trends, Forecasts & Statistics (emarketer.com)

2 <https://www2.datainnovation.org/2021-value-personalized-ads-europe.pdf>

This paper aims to conduct an experimental study to identify the most significant defense responses resulting from high ad personalization and high ad transparency. We also investigate the impact of the resulting defense responses on users’ engagement behavior. Finally, we examine the moderation impact of personalization benefits on responses and engagement.

This paper contributes to the IS and advertising literature by extending the defensive response theory in the context of social media ads. First, we explain the impact of personalization and transparency on users’ defensive responses and their engagement with social media ads. Second, we identify the most significant responses that explain users’ behavior against personalized ads. Finally, we highlight the moderation role of personalization benefits on the relationship between defensive responses and ads-engagement. The study focuses on Facebook as it provides a better opportunity for personal identity expression and social interactions, making users more sensitive to personalized advertising.

2 Literature and Theoretical Framing

In this section, we discuss the literature and frame the hypothesis for our study.

2.1 The Defensive Responses in Advertising Literature

Consumers respond defensively to online personalized advertising (Friestad & Wright, 1994). The existing literature studies the consumers’ strategies and behaviors of resisting advertising based on their different perceptions and defense responses. Table 1 summarizes the literature reviews of the most relevant defensive behavior to our study context, and they are confusion, contest, resistance, avoidance, self-assertion, reactance, and skeptical responses.

Author(s)	Defense	Definition
Obermiller et al., (2005)	Skepticism	Consumer tendency toward disbelief of social ads claims
Brehm, (1966)	Reactance	When an individual feels that his/her freedom is threatened or skips the ads.
Speck & Elliott, (1997)	Avoidance	When consumers avoid ads physically, mechanically, or cognitively
Zuwerink Jacks & Cameron (2003)	Contesting	When consumers refuse the ad by challenging it based on their perception of the ad’s message, source, or persuasive tactics.
	Self-Assertion	When consumers make decisions based on their self-esteem and beliefs regardless of the ad’s persuasive message.
Turnbull et al., (2000)	Confusion	When a consumer fails to develop a correct interpretation of various facets of a product/service, during the decision-making process.

Table 1. A Summary of Users’ Defensive Responses Toward Social Media Ads

2.2 The Defensive Responses Model

Schacter and Gilbert (2011) defined a defense response as an unconscious psychological mechanism that reduces anxiety arising from unacceptable or potentially harmful stimuli. Later, Twyman et al., (2014) conceptualized the defense response concept in the context of information systems and suggested two phases that explain an individual's defensive behavior: (1) an initial defensive reflex, and (2) defensive responses. They propose that when a threat or hazardous stimuli is encountered for the first time, the sympathetic nervous system is activated, triggering a defensive physiological response that is supposed to aid an individual in assessing the threat and determining the best course of action. The initial defensive response evolves into behaviors aimed at avoiding or combating the threat (Gray, 1987). Figure 1 illustrates the concept of a defensive response to a perceived threat as suggested by (Twyman et al., 2014).

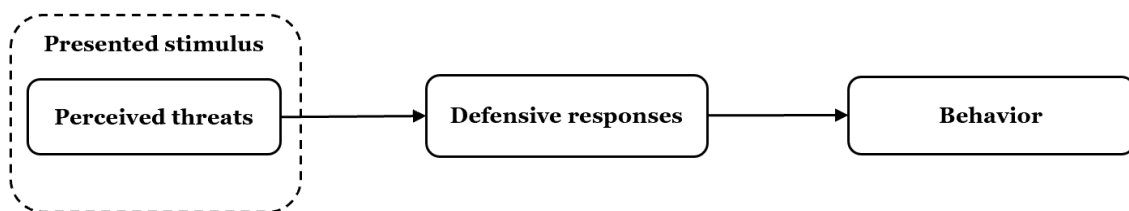


Figure 1. The Defensive Response Model

2.3 Ad Personalization and Privacy Concerns

Personalized advertising is a type of paid message that is "tailored to an individual's characteristics, interests, or tastes" (De Keyzer et al., 2015). This type of advertising collects data about the individual, such as demographics, personally identifiable information, and shopping-related data, and analyzes it using cookies and web-based behavior-tracking technologies and requiring users to agree to collect their data as a condition of using social media platforms (Bang & Wojdyski, 2016). Customers are becoming increasingly concerned about their privacy as personalized advertising platforms are now able to collect and share information invisibly. As a defensive response, consumers are skipping and falsifying data to restore fairness. (Wirtz et al., 2007).

Despite the growing usage of personalized ads on social media, evidence of the effects of personalization on advertising-related outcomes is inconsistent. (Yu & Cude, 2009). Some researchers suggest that personalized advertisements are more appealing to consumers and aligned with their interests (Lambrecht & Tucker, 2013), while others found that personalization stimuli users' perceptions about privacy concerns and provoke their negative responses (e.g., Zhu & Kanjanamekanant, 2021). Kang et al. (2021) proposed that high levels of personalization in advertising can enhance customer engagement by fostering a closer, more personalized relationship. However, personalization strategies also have psychological costs, as they require customers to share personal information, which may be perceived as intrusive and could ultimately result in decreased engagement. Hence:

H1A: High ad personalization triggers users' defensive responses against social media ads.

H1B: High ad personalization negatively impacts users' engagement with social media ads..

2.4 Ad Transparency

Information transparency refers to the practices that provide consumers with access to information collected by a company and how that information will be used (Awad & Krishnan, 2006). It is crucial for advertisers to be transparent about their data targeting practices (Morey et al., 2015). For example, Facebook introduced the "Why Am I Seeing This" feature in 2018 to provide more data transparency and allow users to control the personalized ads they see. However, there is an ongoing debate in the literature about how users respond to transparency. While Awad & Krishnan (2006) suggest that consumers who value transparency are less willing to be profiled for personalization, Karwatzki et al. (2017) argue that consumers want more transparency about the collection and use of their personal data. Nevertheless, they note that transparency can both mitigate the negative impact of privacy concerns on consumer engagement and trigger perceived threats when users understand how much information is collected and how it is used. These perceived threats may trigger defensive responses that can affect consumer behavior (Twyman et al., 2014). Hence, we postulate that:

H2A: High ad transparency triggers users' defensive responses against social media ads.

H2B: High ad transparency negatively influences users' engagement with social media ads.

2.5 The Defensive Responses and Ads-Engagement

Defense responses have been associated with insecure attachment behavior (Ciocca et al., 2017). The defensive response is a reaction only to stimuli perceived to be aversive or threatening. This reaction includes physiological and behavioral changes (Campbell et al., 1997; Roelofs et al., 2010). Defensive behaviors are driven by a perceived threat and therefore can be different from behavioral reactions to stimuli perceived to be non-threatening (Ambach et al., 2008). The existing literature also demonstrates the influence of defensive responses triggered by personalization on individuals' engagement behavior (Zhu & Kanjanamekanant, 2021). Therefore, we hypothesize that:

H3: The users' defense responses resulting from the personalization and transparency of social media advertising negatively influences their engagement behavior.

2.6 Personalization Benefits (Trade-Off Privacy for Benefits)

Although ad persuasion tactics and personalization may highlight privacy concerns, trade-off advertising tactics (i.e., information exchange for benefits-cost) revealed the careless behavior of social media users regarding privacy concerns and highlighted the pragmatic part of their engagement behavior (Ham, 2017). In the same context, Turow et al. (2015) claim that consumers implicitly are willing to share their information as a trade-off for their privacy. Accordingly, marketers get encouraged to create more personalized, invasive, and disruptive advertising techniques that could track consumers' social media profiles, backgrounds, behaviors, and lifestyles across devices. However, some researchers (e.g., Awad & Krishnan, 2006) suggested that consumers who rate information transparency as important are skeptical of sharing personal information and therefore less willing to participate in online personalization. Similarly, Kim et al. (2019) argued that transparency of personalized advertising affects ad effectiveness by shifting consumers' relative concerns for privacy versus their interest in personalization. This privacy-related backlash has resulted in a preventive attitude that triggers defensive behavior, making consumers less willing to make purchases and manifesting ad avoidance, which prevents individuals from engaging with the advertisement. Therefore, it was important to understand the impact of personalized ads' benefits on the relationship between users' defensive responses and engagement behavior. Thus, we hypothesize that:

H4: The personalization benefits of social media advertising positively moderate the relationship between users' defensive responses and their engagement behavior.

3 The Experimental Study

We conducted two experimental studies to test our hypotheses, using different privacy threats stimulus in each experiment. All hypotheses are presented in the conceptual model in Figure 2. In the first experiment, we manipulated personalization as a privacy threat stimulus by creating advertisements with non-personalized ads vs personalized ads. In the second experiment, we manipulated transparency as a privacy invasiveness stimulus by creating two Facebook advertisements (i.e., transparent vs non-transparent ads).

The idea of personalization control was to measure users' awareness regarding the Facebook data collection process within advertising personalization. We demonstrated to the participants that the Facebook advertising platform may take advantage of the large amount of data created online to personalize advertisements. For example, data from web browsing, search histories, media consumption, online purchases, and communication content (Dogruel, 2019). This data is then shared with the advertising companies to target potential consumers. This type of control stimuli users to perceive privacy threats and triggers their defensive responses, consequently affecting their engagement behavior against personalized advertisements.

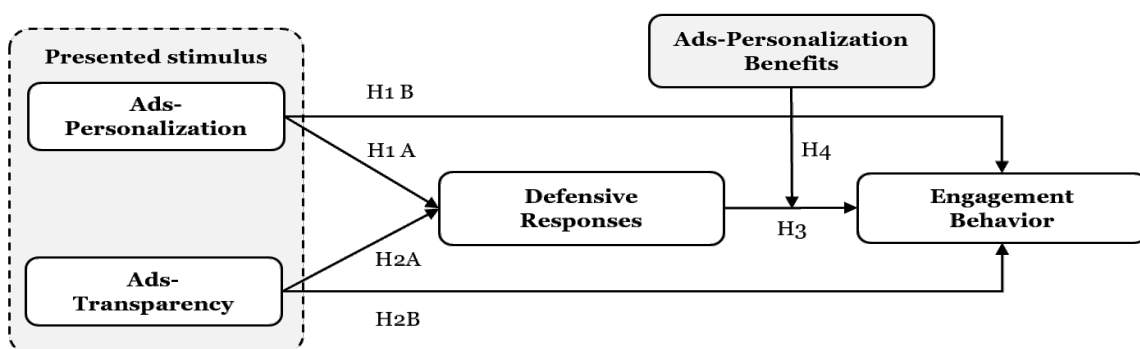


Figure 2. The Conceptual Model

3.1 Experiment 1: High Personalization Vs. Low Personalization

Experiment 1 investigated the hypothesis that ad personalization influences the user's defensive mechanism based on perceived intrusiveness and privacy concerns. Participants viewed a randomly

selected advertisement based on their interests. The first control was non-personalized ads which are defined as advertisements that are not based on a user's past behavior. While the second control was a personalized ad that was tailored and targeted users based on their past behavior such as interest, age, gender, and location.

A 16-question survey was designed using Qualtrics web services. The survey takes between 9 and 15 minutes to complete, with the average participant taking about 12 minutes. A total of 154 participants were recruited. All participants were upper-division students at a large public university in Europe. 61% of the participants were males and 39% were females. After cleansing the respondents' collected data, only 122 results were included. The survey design considered randomizing the control variables to avoid bias and participant direction. Also, many questions were randomized to avoid unintentional biases.

T-tests and SPSS were used to compare the mean of two groups (i.e., high personalized ads vs. low personalized ads). Based on the results, 29 users knew about Facebook's "Why am I seeing this ad" feature and used it, 55 users knew about it and never used it, 26 users do not know about it and would like to know about it, while 12 participants know nothing about it, and they do not care to know about it. Responding on a 9-point scale (1 p strongly disagree, 9 p strongly agree). First, Participants were asked questions about privacy threats e.g., "When I engage with Facebook ads, I feel that my private information is: 1) Compromised, 2) Protected; 3) Threatened; 4) Safe, 5) Used for another purpose; 6) Used outside Facebook". Then, Another question about personalization was asked e.g., "Facebook personalized ads are: 1) Invasive; 2) Beneficial; 3) Take advantage of me, 4) Must be avoided; 5) Confuses me; 6) Skeptical". Finally, users were asked about their engagement behavior.

3.1.1 Experiment 1: Results and Discussion

The results show that the user's privacy concerns were statistically significant. A group of 85 participants of 122 indicate that they would feel that with highly personalized ads, their privacy is intruded on or (F (1, 122) = 2.483, $p < 0.05$, Sig. = 0.033) and (M= -0.826, SE=0.391) because they believe that Facebook sells their personal information to the ads companies to target them. A group of 61 of the 122 participants showed a lack of trust in Facebook's transparency policy (F (1, 122) = 2.386; $p < 0.05$; Sig. = 0.033) and (M= -0.916, SE=0.424), they were believing that Facebook did not give them enough information about how they are being targeted by ad companies. There was an overlap between the two sets of participants.

Another significant result (F (1, 122) = 0.809, $p < 0.01$, Sig. = 0.006) and (M= -1.103, SE=0.391) for the effect of the highly personalized ads on users' perceived privacy invasion, showed that a group of 74 users of the 122 participants felt that personalized ads must be **avoided** because they considered the process of collecting their data by Facebook is violating their privacy. Finally, A significant T-test result (F (1, 122) = 1.197; $p < 0.1$; Sig. = 0.085) and (M= -0.814, SE=0.4) indicates that a group of 64 of 119 users felt that Facebook personalized ads **confuse** them because they don't know how they are working. The results show that users do not feel that Facebook tradeoff their privacy for benefits. However, personalization benefits were found to have a significant moderation impact on the relationship between defense responses and engagement threatened (F (1, 122) = 0.979; $p < 0.1$; Sig. = 0.065) and (M= 0.496, SE=0.365).

Study 1 results support H1A which provides significant evidence that personalized ads affect the user's defensive responses. The results also show that ads-personalization stimuli confusion and avoidance of defensive responses. However, engagement is significantly high. The results show that H3 is not supported which creates a paradoxical result. Also, the personalization benefits were found to be statistically significant in moderating the relationship between defense responses and engagement behavior (i.e., H4 is supported).

3.2 Experiment 2: High Transparency Vs. Low Transparency

This experiment investigates the hypothesis that transparency impacts users' defensive responses and predicts their engagement behavior (i.e., H2A&H2B). Participants viewed a randomized car advertisement controlled by a Facebook transparency feature called "Why am I seeing this ad" (Figure 3). The idea of transparency control was to establish a baseline against which we could examine

users' defensive responses against perceived privacy invasiveness and perceived trade-offs. The purpose of including "Why am I see this ad" was to demonstrate how users' awareness of Facebook's data management may affect their perceived defensive responses and consequently their engagement behavior. Doing so would allow quantitative comparisons across the high and low transparency on users' perceptions which resulted that users' engagement with social media ads is not only driven by users' awareness about invasive data management and resulting negative defense responses regarding perceived privacy threats but also by the trade-off influence of perceived personalization benefits.

Against prediction (i.e., H3), participants reported their willingness to engage in the advertisement regardless of the significant negative defensive responses such as avoidance and skepticism. We predict that Facebook advertising personalization benefits played a major driver in users behave in risk-tolerance behavior. Following Vaillant, (2001), the resulting defensive-engagement paradoxical behavior could be described psychologically as a "coping strategies attitude" which negates the effect of privacy invasion awareness on a user's engagement behavior because the defense mechanism which is considered an unconscious response is usually deployed outside of awareness (i.e., conciseness).

Low Transparent Facebook Advertising



High Transparent Facebook Advertising

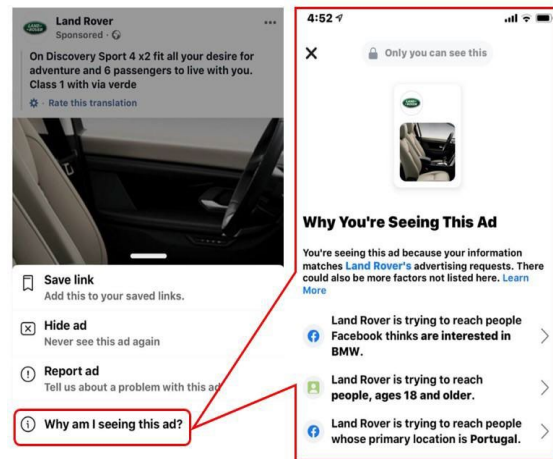


Figure 3. Example of Transparency Stimuli Using Facebook 'Why am I see this ad' feature

An 18 questions survey was designed using Qualtrics web services. The survey takes between 7 and 12 minutes to complete, with the average participant taking about 9 minutes. A total of 199 participants were recruited. only 121 results were included. All participants were upper-division students at a large public university in Europe. 56% of the participants we males and 44% we females. These participants were different from those in Experiment 1. The survey design randomized the control variables to avoid bias and participant direction. Also, many questions were randomized to avoid unintentional biases. Responding on a 9-point scale (1 p strongly disagree, 9 p strongly agree). Participants were asked questions about Transparency e.g., "The transparency feature of Facebook ads provide you with 1) How they use your data, 2) How they target you; 3) How much they know about you; 4) How they share your data with Ads companies, 5) How they follow you outside Facebook; 6) How much they know about you". Other questions about the perceived benefits of personalization and engagement were also asked.

The design covered the proposed research model including independent variables, moderators, mediators, control variables, and dependent variables. The main task of the study is to investigate the transparency effect of IV on defense responses and users' engagement as DV. Participants were instructed to remember the randomized ad because they would be asked about them later. Six defensive responses appeared in the survey, they were chosen based on the literature review and the nature of the study. The defenses are contest, confusion, avoidance, self-assertion, reactance, and skeptical response. In addition to the engagement questions, two questions appeared to examine users' awareness regarding Facebook ads transparency and advertising methods used (e.g., "Why do I see this ad"). Finally, the last question was used to measure the user's perceptions such as privacy concerns, identity threats, private information us' age, and perceived trust.

3.2.1 Experiment 2: Results and Discussion

T-tests (statistical test) and SPSS were used in experiment 1 to compare the mean of two groups (high transparency & low transparency). Based on the SPSS results, avoidance and skeptical responses were the two statistically significant defense responses. Responding on a 9-pints scale (1 strongly disagree, 9 strongly agree) a group of 29 participants indicate that they would avoid the ad based on the low transparency ($F(1, 121) = 4.658, p < 0.05, Sig. = -0.033$) and ($M = -5.34, SE = 0.430$). A group of 20 participants indicates that they would be skeptical toward the same ad based on the high transparency condition ($F(1, 121) = 2.780, p < 0.1, Sig. = -0.098$) and ($M = -4.42, SE = 0.355$). Responding to the same questions on the low transparency condition, no significant defensive responses resulted as predicted. Although defensive mechanisms were significant toward Facebook's high transparency, the engagements were high ($F(1, 121) = 3.293, p < 0.1, Sig. = 0.072$) and ($M = 4.26, SE = 0.383$). Hence, high transparency paradoxically backfires on the engagement level which causes a curious case of behavioral backlash.

Study 2 provides evidence that high transparency ads affect the defensive response of social media users by showing a high level of skepticism and avoidance attitude toward Facebook’s highly transparent ads. On the other hand, the study showed the paradoxical behavior of social media users regarding their engagement level with Facebook ads regardless of their high level of awareness. This finding is consistent with Vaillant, (2001) psychological study on how defensive mechanisms impair other aspects of cognition. In his work, he proposed that defense mechanisms are patterns of feelings or behaviors that arise in response to the awareness of danger or cognitive conflict. He argued that these defenses may reduce awareness of and response to sudden changes, emotions, conscience, or desires. As a result, he contends that defense responses are typically deployed outside of awareness. In light of this argument, we can argue that defensive responses against social media advertising are considered unconscious responses that may occur outside of the user's awareness of the privacy-intrusive nature of personalized ads (i.e., high transparency).

The results were consistent with Study 1 in the context of users’ defensive responses. To clarify, while the first study revealed the skeptical and avoidance responses of users against a lack of transparency, the second study showed the confusion and avoidance responses against the invasiveness of personalized ads. Table 2 summarizes the study experiments’ findings.

Manipulators (IVs)	DVs	No. of Participants	Purpose	Findings
High Personalization Vs Low Personalization	Defense Responses & Engagement Behavior	154	Investigate the impact of the pervasive ads’ personalization effect on the user’s defensive mechanism and their ads-engagement subsequently.	Ads-personalization stimuli confusion and avoidance of defensive responses. However, engagement is significantly high
High Transparency Vs Low Transparency		199	investigate the ads-transparency effect on users’ engagement behavior and how the perceived benefits influence their behavior accordingly.	Ads-transparency Stimuli skepticism and avoidance of defensive responses. However, engagement is significantly high

Table 2. Experimental Studies Overview

4 Implications and Future Research Directions

Our study identified three negative responses against personalization and transparency. The first is avoidance in which users tend to avoid personalized ads when they perceive high intrusiveness that may intrude on their privacy. Avoidance response may be a result of either high personalization or high transparency of advertising. The second response is skepticism in which users doubt advertisers' claims due to the high transparency impact. In this case, when users understand how advertisers manage their data to target them, transparency backfires on their responses and stimulates their skeptical defense response. The third response is confusion in which users could not make decisions regarding personalized advertising due to the lack of clarity about how their data is managed by the advertisers.

Our research results show that Facebook users have been confused about personalized advertisements because they don't know how they are working. Hence, online advertising platforms should consider adopting a transparent user interface, which is more intuitive. To illustrate, the “why am I seeing this ad” must be placed and presented in the main area of the advertising instead of hiding it in a menu-driven old style. Moreover, we suggest adding customization capabilities to the transparency features, so the user could be able to control his data more easily. Finally, we suggest that the level of transparency must be increased to avoid the skeptical and confusing negative response of consumers and improve their engagement.

Although psychology literature shows that the perceived threat of social media ads' invasiveness negatively impacts user engagement behavior, our results show user defensive behavior unfolding in terms of psychological responses that unclearly did not affect their engagement behavior. The personalization-engagement paradox reported in this study has been discussed in the extant literature. For instance, Dogruel, (2019) suggested that the personalization paradox in the context of online behavioral advertising has been identified in the literature (Aguirre et al., 2015). While research has shown that this paradox exists, an inconsistent picture of social media users' engagement in online personalized advertising still needs further investigation (Boerman et al., 2017) especially since users were largely surprised to learn about the amount of behavioral data used to create personalized advertising (Ur et al., 2012). This paradoxical behavior needs more investigation. Hence, further studies need to be conducted to have more elaborate on such backlash in users' defensive behavior. Therefore, we propose a defensive response model (Figure 4) to understand the defense-engagement paradox resulting from our experimental study. This is a future research direction and is currently in progress.

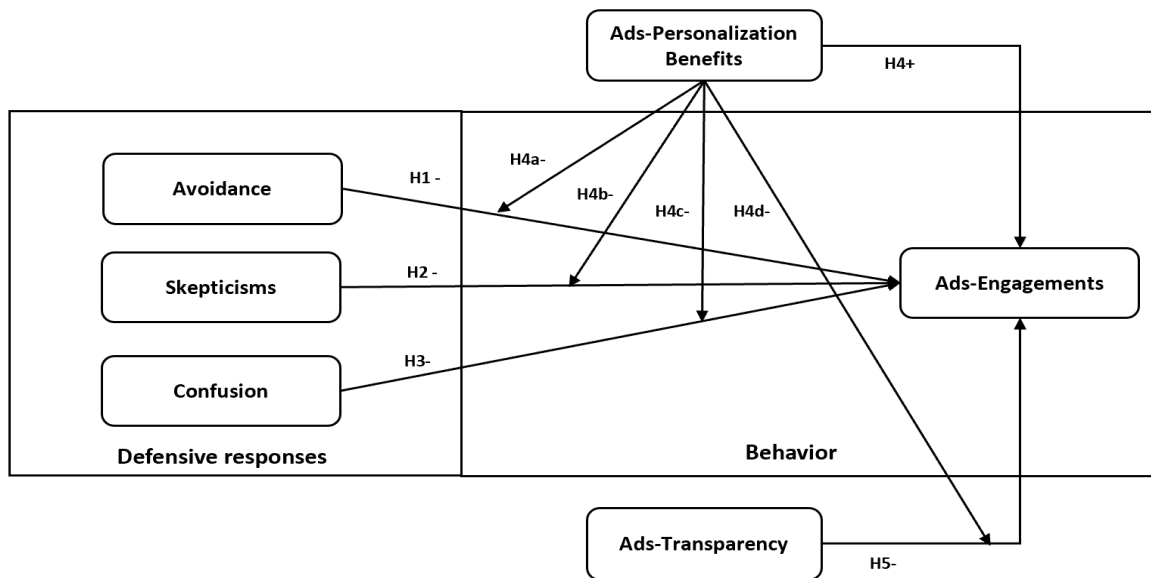


Figure 4: The Proposed Defensive Response Model

5 Conclusion

This study contributes to understanding the personalized advertising impact on defense responses and consequently the role of online advertising transparency and personalization benefits in explaining user engagement behavior. This study collectively shows that (a) Personalized and highly transparent advertising is perceived as a privacy threat, resulting in defensive responses that influence users' ad engagement.

- (b) High transparent personalized ad triggers negative responses that influence users' engagement.
- (c) Avoidance and skeptical responses in addition to the confusion are the most significant defensive responses that positively impact users' engagement behavior (i.e., defensive-engagement paradox).
- (d) The perceived benefits of personalized advertising moderate the relationship between users' defense responses and their engagement behavior explaining the defensive-engagement paradox in the online advertising context.

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