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Effects of Website Credibility and Brand Trust on Responses to Online Behavioral Advertising

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Abstract

Online behavioral advertising that tracks user data has witnessed a dramatic increase in popularity. Using Psychological Reactance Theory, this study examines the effects of brand trust and website credibility on responses to behavioral advertising via privacy concerns. A 2 (brand trust: high vs. low) by 2 (website credibility: high vs. low) between-subjects experiment was conducted (N = 424). Results suggest that while brand trust influences purchase intention—as mediated via affective reactance—website credibility only exerts modest effects on the dependent variables. Implications for user perception factors and contextual factors—including ad effectiveness in the digital personalized marketing realm—are discussed.

Keywords: online behavioral advertising, privacy, psychological reactance, media credibility, brand trust

Introduction

Eighty-nine percent of digital marketers have invested in personalization (Witcher, 2018) by tracking, collecting, and analyzing user data on the Internet. Online behavioral advertising tracks user metrics, such as browsing and transaction history, clicks made, time spent, and overall interaction activities on a site, to create user profiles for personalized advertising content (Interactive Advertising Bureau, 2009). Despite their popularity (Benes, 2019) and effectiveness in enhancing user attitudes and behaviors (e.g., Abdel-Monem, 2021; Bleier & Eisenbeiss, 2015a; Tucker, 2014), behavioral ads may trigger online privacy concerns given their reliance on personal data surveillance (Chen et al., 2019; McDonald & Cranor, 2010). Behavioral advertising may threaten individual control of personal information and arouse one's motivation to restore personal freedom, thus enhancing psychological reactance (Ham, 2017; White et al., 2008). Privacy concern may thus lead to ad avoidance (Jung, 2017; Turow et al., 2009) and reduce purchase intention for online consumers (Girona & Korgaonkar, 2018; Morimoto, 2020). Sensing these user concerns, Facebook executives announced they are "...building new tools to give people more control over their information and addressed how privacy and personalized advertising are not at odds" (Egan, 2020, Para 2).

These tensions governing behavioral advertising effectiveness necessitate investigations of factors that may distinctively shape the psychological and behavioral implications of behavioral advertising. One such factor is trust, which influences online shopping "due to the vast information asymmetries and customer uncertainty inherent to the Internet" (Aguirre et al., 2015, p. 37). Consumers feel safe about providing marketers with personal information in exchange for benefits, based on the trust and expectation that personal information will be responsibly managed and used by pertinent parties (Ho & Chau, 2013; Okazaki et al., 2009). Trust in the marketer may reduce one's privacy concern and adverse feelings about being targeted. Although privacy concern and reactance are highly relevant reactions towards personalized advertising, it remains to be seen whether they represent the underlying psychological mechanism governing the influence of trust.

Many studies have explored trust as a dependent variable in the context of personalized advertising and services on the Internet, especially as a result of privacy concern (Ho & Chau, 2013; Miyazaki, 2008; Rifon et al., 2005; Stanaland et al., 2011; Varnali, 2019). Fewer studies have treated existing trust, either of the brand (e.g., Bleier & Eisenbeiss, 2015b) or of the publisher website (e.g., Aguirre et al., 2015), as an independent variable. Furthermore, studies focusing on

the variable of trust were largely conducted in the online shopping context. In these situations, trust is directed towards the online merchant/retailer where the brand/advertiser overlaps with the host website (Chellappa & Sin, 2005; Jai et al., 2013; Miyazaki, 2008; Pavlou, 2003; Stanaland et al., 2011) or trust is operationalized as a global measure for multiple parties (Internet vendors, online companies, the Internet, [e.g., Brinson & Eastin, 2016]). Yet in practice, it is also common for a brand to post personalized ads on an external website, typically using third-party cookies (Penn, 2012). In fact, consumers may be more concerned about privacy risks from third party-based cookies, as this mechanism implies unauthorized collection and secondary use of personal information (Yazıcıoğlu, 2018). In sum, research examining the separate impacts of trust in the brand and perceived trustworthiness of the publisher website on affective and behavioral responses has been scant.

In an effort to bridge the behavioral advertising literature gap, the contribution of the current study is twofold. Applying psychological reactance theory, this study aims to explore the mediation roles of privacy concern and reactance in explaining the influences of trust on responses toward behavioral advertising. Moreover, brand trust and publisher website credibility are treated simultaneously as two separate factors, each reflecting users' perceived risk associated with the promotional use of their personal data, to help extend our theoretical understanding of this ad form. Findings could highlight practical questions of digital advertising, including how products can be more effectively promoted in a different website in relation to consumers' pre-existing perceptions of brand and contextual factors.

Literature Review

Psychological Reactance

Psychological reactance describes an individual's motivational state aroused to restore a behavioral freedom that is perceived to be threatened or eliminated (Brehm, 1966). The magnitude of threat to behavioral freedom is crucial to the arousal of psychological reactance (Brehm & Brehm, 1981). Dillard and Shen (2005) further explicated the process of psychological reactance by not only identifying cognitive and affective components of reactance, but also validating a model that combines the antecedents of reactance (e.g., perceived threat of freedom) and the attitudinal and behavioral responses for freedom restoration. Negative affects, including anger (Dillard & Shen, 2005) and irritation (Edwards et al., 2002), are key emotional indicators of psychological reactance. The current study focuses on the emotional component of psychological reactance as an important reaction to online behavioral advertising.

Brand Trust

Consumers' exchange of personal information is viewed as an implied social contract in online shopping contexts, as suggested in Social Contract Theory (Dunfee et al., 1999; Miyazaki, 2008). Consumers assume a hypothetical social contract in a business transaction (Fogel & Nehmad, 2009), where they feel safe to provide a marketer with personal information in exchange for any benefits. This security feeling is grounded on the trust and expectation that the personal information will be responsibly managed and used by pertinent parties (Ho & Chau, 2013; Okazaki et al., 2009). Past research has demonstrated the importance of trust in the online marketer in enhancing acceptance of general or personalized digital and mobile advertising (Brinson & Eastin, 2016; Jafari et al., 2016).

Brand trust is consumers' belief that a brand, product, or service is dependable and competent (Herbst et al., 2012). For a new brand, word-of-mouth and brand reputation are important factors for brand trust (Ha, 2004). Due to the lack of face-to-face interaction and enhanced perceived risks over the Internet, initial trust is especially important for decision-making in online shopping contexts (Aljukhadar et al., 2017; McKnight & Chervany, 2001; Wang et al., 2004). Trust in advertisers positively influenced attitude (Jafari et al., 2016) and watching intention (Cheung & To, 2017) toward mobile advertising. Choi and Rifon (2002) reported a positive link between advertiser credibility and purchase intention toward a web banner ad. Although some studies addressed brand trust as a dependent variable involving personalized marketing tactics (Ho & Chau, 2013; Miyazaki, 2008; Rifon et al., 2005; Stanaland et al., 2011; Varnali, 2019), empirical investigations addressing implications of preexisting brand trust on behavioral advertising have been scarce.

Given that brand trust can be influenced by privacy conceptions, it's useful to consider related concerns in the context of behavioral advertising. Chen and Atkin (2020) defined privacy concern as "individuals' objective judgment of privacy risks" (p. 4), which could be motivated by such issues as "suffering of identity theft, financial loss, and relational conflicts in the past" (p. 4). Privacy has been conceived as an interpersonal boundary that individuals regulate to control the flow of information, especially online disclosures of an intensely personal, private nature (e.g., Millham & Atkin, 2018). Online behavioral advertising relies on collecting users' personal data to provide tailored services, putting individuals' personal data at high risk and increasing their privacy concerns (van Doorn & Hoekstra, 2013).

Trust can attenuate perceived risk in disclosing personal information during online transactions (McKnight & Chervany, 2001; Okazaki et

al., 2009). Trust in one's Internet partner is a crucial element that individuals assess when balancing the costs and benefits involved in information disclosure (Brinson et al., 2019). When managing one's personal information online, "once trust is established with a particular corporate entity...users should willingly allow for information collection in return for economic benefits" (Campbell & Carlson, 2002, p. 593). Trust in a brand may make consumers believe that their personal data are properly protected and used when they are exposed to personalized ads, leading to reduced privacy concern (Bleier & Eisenbeiss, 2015b; Schade et al., 2018). Hence, greater trust in a brand is likely to induce less privacy concern.

The topic of building trust and its consequences on the reactance behavior remains understudied. Consumers tend to think that a personalized ad from a trusted retailer is more beneficial and personally relevant (Office of Fair Trade, 2010); this will thus reduce psychological reactance toward the ad elicited by the exposure of personal information (Utami & Agus, 2019). Individuals may also feel intrusion, as an unsolicited behavioral ad limits their free choices for alternatives, resulting in reactance. But a brand enjoying high trust levels, with higher potential for quality products/services, could lower such reactance and save consumers time when searching for alternatives. Hence, reactance toward the ad may be lower when trust in the brand is higher.

Even though a handful of studies have verified the benefits of brand trust on consumer reactions towards personalized advertising, they focused on other variables than purchase intention, such as click-through rates (Bleier & Eisenbeiss, 2015b), acceptance of the ad (Boerman et al., 2017), and website revisit intention (Sung, 2017). The function related to purchase intention has only been discussed in conceptual terms (e.g., Rony, 2018; Schumann et al., 2014), rather than empirically. If users were willing to trust an online retailer to handle personal information used in personalized or behavioral advertising, they were more likely to disclose their information in the transaction (Bol et al., 2018). Based on the above-mentioned favorable influences of brand trust, it is logical to deduce that consumer trust in the brand on a behavioral ad should also promote greater purchase intention. More formally, we propose the following hypotheses:

H1: Brand trust will be negatively related to privacy concern toward a behavioral ad.

H2: Brand trust will be negatively related to affective reactance for a behavioral ad.

H3: Brand trust will be positively related to purchase intention for a behavioral ad.

Website Credibility

Media credibility refers to a medium platform's worthiness to be believed and typically consists of accuracy, fairness, depth of information, etc. (Johnson & Kaye, 2004). Based on source credibility theory (Berlo et al., 1969; Hovland & Weiss, 1951), the credibility of surrounding programming or editorial environments can potentially influence advertising effectiveness. As a media source of communication, website credibility can serve as a cue for consumer inference-making about the content carried in the site, including the ads (Colbert et al., 2014; Shamdasani et al., 2001). Credibility of the host website could alleviate consumers' privacy concern when they interact with an ad on the website, with the belief that their personal data will not be misused due to the favorable reputation of the website (Phelan et al., 2016).

Furthermore, although only limited research in advertising has focused on the relationship between website credibility and user psychological reactance, implications can be drawn from studies on compliance. Generally, a credible source is found to increase behavioral compliance among receivers (Cialdini & Rhoads, 2001; Meulenaer et al., 2018). In the same vein, information delivered by a credible media platform is likely to convince the users to accept or comply. As compliance and resistance are at opposite ends of a spectrum, and reactance can be regarded as the affective side of resistance (Knowles & Linn, 2004), the factors increasing an individual's compliance should otherwise decrease their reactance.

To date, studies focusing on the antecedents and consequences of trust have been largely confined to the online shopping context. In these situations, trust is directed towards the online merchant/retailer, where the website is actually the brand/advertiser (Chellappa & Sin, 2005; Jai et al., 2013; Miyazaki, 2008; Pavlou, 2003; Stanaland et al., 2011). These parties most likely rely on first-party cookies to collect information, with control over their own website (Hoofnagle et al., 2012). Yet in practice, ads may also be posted on external websites with third-parties (e.g., ad networks, data management platforms), which can track consumer browsing histories and online activities on behalf of brands, and/or buy and manage these data (Malthouse et al., 2018; Penn, 2012). In this context, the credibility of the external website may matter in consumers' evaluations of the encountered ad.

Online advertisers may rely on the credibility of a particular website to build more trust in their ads. Credibility of a media outlet is positively related to consumers' attitudinal and behavioral

evaluations of the advertisement (Choi & Rifon, 2002). When a less credible website presents a personalized ad, it elicits lower click-through intentions than a generic ad. This effect disappears on a more credible website (Aguirre et al., 2015), although the study did not directly test the effect on purchase intention. Despite that the role of a host website's credibility in forming perceptions of corresponding behavioral ads is not yet clear, research demonstrates that host website credibility enhances purchase intention toward the advertised brand (Bae et al., 2001; Choi & Rifon, 2002; Shamdasani et al., 2001). Based on the theoretical dynamics outlined above, we posit the following hypotheses:

H4: Website credibility will be negatively related to privacy concern toward a behavioral ad.

H5: Website credibility will be negatively related to affective reactance for a behavioral ad.

H6: Website credibility will be positively related to purchase intention for a behavioral ad.

Privacy Concerns and Psychological Reactance in Online Advertising

Threats to privacy will arouse one's motivation to restore their behavioral freedom regarding protection of personal information, thus enhancing affective reactance toward the ad and the brand (Ham, 2017). Empirical evidence has supported the relationship between privacy concern and psychological reactance for personalized ads, and specifically affective reactance. Chen et al.'s survey (2019) demonstrated that privacy concern regarding online personalized advertising was positively related to psychological reactance towards it. Bleier and Eisenbeiss (2015b) found that for both more and less trusted brands, there was a positive link between privacy concern and psychological reactance towards a behavioral ad. Hence, the following hypothesis is put forth:

H7: Privacy concern for a behavioral ad will be positively related to affective reactance.

Negative affects elicited by the threat to freedom may influence behavioral intention. Millham and Atkin (2018) found that the emotional state of anger predicted the strongest effects on online behaviors related to privacy (e.g., disclosing personal information on commercial websites). Jung and Park (2018) investigated users' responses to information privacy threats with a location-based personalized service, revealing that anger not only provoked retributive behaviors, such as complaining about service via word-of-mouth messages, but also induced behavioral change (refusal to use

the service thereafter). Psychological reactance toward personalized ads reduces users' click-through intentions (Bleier & Eisenbeiss, 2015b; White et al., 2008). Psychological reactance also mediated the effect of personalization on attitude toward the ad, and attitude toward the product (Bleier & Eisenbeiss, 2015a).

Nevertheless, none of these studies examined whether psychological reactance towards a personalized ad has a similar impact on purchase intention; some even adopted different conceptualizations and operationalizations of reactance, such as perception of highly distinctive personal knowledge (White et al., 2008) or ad intrusiveness (Bleier & Eisenbeiss, 2015b). As a result of psychological reactance to online behavioral advertising, users may act to avoid advertised products that elicit negative thoughts and feelings (Baek & Morimoto, 2012). Based on the above rationale, the following hypothesis is proposed:

H8: Affective reactance will be negatively related to purchase intention.

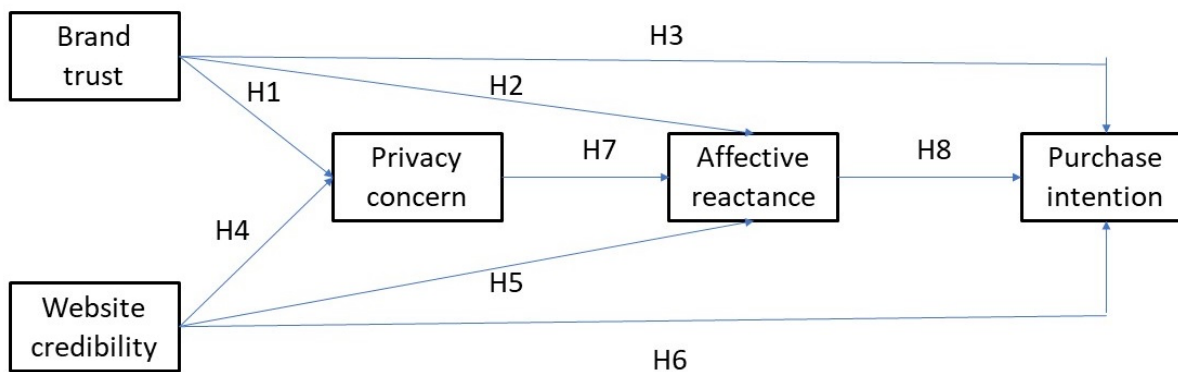
Despite discrete evidence supporting all of the aforementioned hypotheses, research has yet to test possible mediation effects—as derived from psychological reactance theory—in the context of personalized or behavioral ads. Boerman et al. (2017) in their systematic literature review argued that behavioral advertising “seems to first trigger affective responses” (p. 8) such as privacy concern and reactance, and consequently influence consumer behavior. It remains unknown whether perceived brand trust and website credibility for a behavioral ad brand will elicit privacy concern, which further leads to psychological reactance and lowered purchase intention. Hence, based on the theory and research reviewed above, we further posit a serial mediation: low brand trust/website credibility in online behavioral advertising may impose privacy concerns, thus enhancing negative affect toward the ad and dampening purchase intention. More formally:

H9: Brand trust will be negatively related to privacy concern and affective reactance, consecutively; affective reactance will be negatively related to purchase intention.

H10: Website credibility will be negatively related to privacy concern and affective reactance, consecutively; affective reactance will be negatively related to purchase intention.

Figure 1 illustrates the proposed hypotheses and research questions.

Figure 1. Research model.



Notes: H9 and H10 are not addressed in the model.

Methods

A 2 (brand trust: high vs. low) by 2 (website credibility: high vs. low) between-subjects experimental design was used to test the proposed hypotheses. Participants were randomly assigned to one of the four scenarios.

Sample and Procedure

Given that young adults (aged 18-29) are one of the largest Internet user segments, they represent an important target audience for online advertising (Baek & Morimoto, 2012). A sample of undergraduate students from a large northeastern university in the U.S. was thus deemed appropriate; participants were recruited via a multi-section introductory general education course to participate in an online experiment. The original data included 445 cases. Some 21 cases were removed due to highly incomplete data (over 90% of questions not answered). All told, 424 valid responses were finally rendered (54.5% female). The average age of participants was 19.18 ($SD = 1.17$). Participants' ethnic/racial composition encompassed Caucasians (62.7%), Asians (16.3%), Hispanics (8.7%), African Americans (7.3%), and other ethnic/racial groups (4.8%). There were no significant differences in descriptive statistical profiles between the deleted cases and the retained cases.

Participants were given background information about the advertised brand, which manipulated brand trust. They were then exposed to a fictitious behavioral ad scenario, either with a high-credible or low-credible website. After exposure to the stimulus ad, participants provided measurements for privacy concern, affective reactance, and purchase intention, in that order.

Stimulus

To rule out influences from previous impressions with real-life brands, this study used a fictitious bus company, GoTravel, as the

brand. Trust in brand was manipulated by a text description of positive or negative impressions, based on brand reputation and word-of-mouth from friends and a family member (Alam & Yasin, 2010; Ha, 2004). This manipulation was given as background information on a page prior to participants' exposure to the behavioral ad.

Moreover, Forbes was used as a high credible website, whereas BuzzFeed was used as a low credible website (Mitchell et al., 2014; Wu et al., 2016). Above the ad stimulus on the same page, participants were told the scenario: they were planning a trip to New York and searching for bus tickets online; the next day they saw the ad post for the bus company GoTravel, when browsing Forbes (or BuzzFeed).

The ad stimulus was designed and created by the researcher by imitating a behavioral ad format (see Appendix). The ad contained the company logo for GoTravel. Behavior-based information was made salient by including a photo of the New York City (travel destination) skyline in the night and copy saying "Leaving the town soon? Book now @ GoTravel."

Manipulation Check Questions

Brand trust

Participants were asked to evaluate the advertised brand with six Likert-type questions adapted from Delgado-Ballester (2004) (e.g., "GoTravel will provide satisfying services;" 1 = strongly disagree to 7 = strongly agree). These items were then averaged to form a composite variable of brand trust ($\alpha = .98$, $M = 3.79$, $SD = 1.61$).

Website credibility

Participants were asked to evaluate credibility of the website in the scenario on four semantic-differential (seven-point) items adapted from MacKenzie and Lutz (1989) (e.g., "not trustworthy/trustworthy"). These items were then averaged to form a composite website credibility measure ($\alpha = .92$, $M = 4.37$, $SD = 1.36$).

Measurements

Privacy concern

Privacy concern was measured by adapting four seven-point Likert-type questions from Sheng et al. (2008) (e.g., "[When I see this ad] it bothers me that the company/ website has too much information about me;" 1 = strongly disagree to 7 = strongly agree; $\alpha = .91$, $M = 4.43$, $SD = 1.35$).

Affective reactance

The measure was adopted from Gardner and Leshner (2016) to ask the participants "how much the advertisement made you feel each of

the following feelings” (irritated, angry, annoyed, and aggravated), on a seven-point scale (1 = none of this feeling to 7 = a great deal of this feeling; $\alpha = .94$, $M = 3.08$, $SD = 1.53$).

Purchase intention

Participants also reported their intention to 1) “consider buying tickets from GoTravel this time,” and 2) “consider GoTravel for my future travelling” (1 = strongly disagree to 7 = strongly agree; $r = .90$, $M = 3.37$, $SD = 1.49$).

All scales (privacy concern and affective reactance) were subject to a confirmatory factor analysis as an examination of measurement validity, and demonstrated an adequate model fit, $\chi^2(15) = 22.13$, $CMIN/DF = 1.48$, $p = .11$, $CFI = 1.00$, $NFI = .99$, $TLI = .99$, $RMSEA = .03$. All factor loadings were above .77. Descriptive statistics and bivariate correlations for all variables are reported in Table 1.

Table 1. Bivariate correlations, means and standard deviations.

	1	2	3	4	5
1. Privacy Concern	--				
2. Affective Reactance	.37**				
3. Intention	-.11*	-.21**			
4. Website Credibility	-.05	-.04	.05		
5. Brand Trust	.09	-.08	.27**	.01	
<i>M</i>	4.43	3.08	3.37	N/A	N/A
<i>SD</i>	1.35	1.53	1.49	N/A	N/A

Notes: * $p < 0.05$ level (2-tailed), ** $p < 0.01$ level (2-tailed)

Results

Manipulation Check

Two 2-way ANOVAs were conducted as manipulation checks. The factor of brand trust (but not website credibility) significantly predicted perceived brand trust: $F(1,420) = 338.81$, $p < .001$. As expected, the mean values for low brand trust conditions (Buzzfeed: $M = 2.82$, $SE = 0.11$; Forbes: $M = 2.76$, $SE = 0.12$) were both lower than those for the high brand trust conditions, respectively (Buzzfeed: $M = 4.90$, $SE = 0.13$; Forbes: $M = 5.00$, $SE = 0.12$). The factor of media credibility (but not brand trust) significantly predicted perceived website credibility: $F(1,420) = 123.97$, $p < .001$. As expected, the mean values for BuzzFeed conditions (low brand trust: $M = 3.77$, $SE = 0.11$; high brand trust: $M = 3.64$, $SE = 0.13$) were

both lower than those for the Forbes conditions, respectively (low brand trust: $M = 4.96$, $SE = 0.11$; high brand trust: $M = 5.06$, $SE = 0.12$). No interaction between website credibility and brand trust was found on these manipulation check measures.

Hypotheses Testing

Three hierarchical linear regressions were conducted (see Table 2). In the model on privacy concern, brand trust and website credibility were entered in the first step (both were dummy coded: high = 1, low = 0). In the model on affective reactance, brand trust and website credibility were entered in the first step and privacy concern was entered in a second step. In the model on purchase intention, all predictors in the prior model were entered, as well as affective reactance in a separate final step.

Table 2. Results of multiple regression analyses.

Predictor	Privacy concern		Affective reactance		Purchase intention	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Block 1		.2%		1%		11%
Brand trust	.07		-.09		.33***	
Website credibility	-.06		-.05		.06	
Block 2		--		14%***		2%*
Brand trust	--		-.12*		.34***	
Website credibility	--		-.02		.05	
Privacy concern	--		.38***		-.12*	
Block 3		--		--		2%**
Brand trust	--		--		.32***	
Website credibility	--		--		.05	
Privacy concern	--		--		-.06	
Affective reactance	--		--		-.16**	
Total R^2		.2%		14%		14%

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

H1 postulated that brand trust would be negatively related to privacy concern for a behavioral ad. Contrary to that expectation, results show that brand trust failed to emerge as a significant predictor of privacy concern, $\beta = .07$, $p = .20$. Therefore, H1 was not supported.

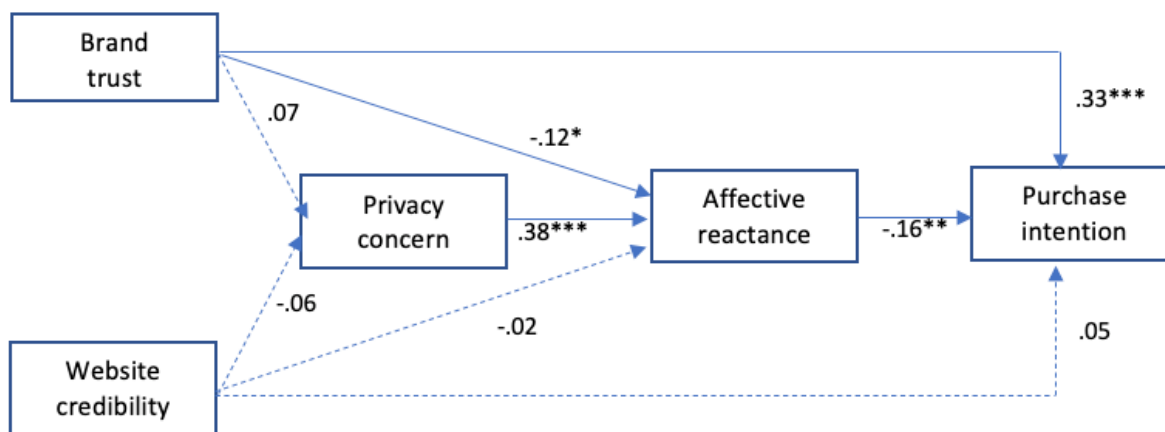
H2 posited that brand trust would be negatively related to affective reactance for a behavioral ad. Results reveal that in the final model, brand trust was a negative predictor of affective reactance, $\beta = -.12$, $p = .02$. H2 was therefore supported. Interestingly, the effect of brand trust was nonsignificant in the first step, when privacy concern was not accounted for.

H3 asserted that brand trust would be positively related to purchase intention for a behavioral ad. Brand trust was shown to positively predict purchase intention, $\beta = .32, p < .001$. Hence, H3 was supported.

H4 through H6 proposed that website credibility would be negatively related to privacy concern and affective reactance, as well as positively related to purchase intention for a behavioral ad. Results, however, show that website credibility failed to emerge as a significant predictor of privacy concern ($\beta = -.06, p = .27$), affective reactance ($\beta = -.02, p = .62$), nor purchase intention ($\beta = .05, p = .33$). Hence, H4 through H6 were not supported.

H7 proposed that privacy concern would be positively related to affective reactance. Results suggest that privacy concern was a positive predictor of affective reactance, $\beta = .38, p < .001$. Therefore, H7 was supported. H8 posited that affective reactance would be negatively related to purchase intention. Results show that affective reactance was a negative predictor of purchase intention, $\beta = -.16, p = .003$. Therefore, H8 was supported.

Figure 2. Results of hypothesized model.



Furthermore, Hayes’s (2017) Process Macro (version 3.1, Model 6 for serial mediation tests) was used to address the hypothesized mediation effects in H9 and H10 (see Table 3). H9 proposed a serial mediation effect from brand trust to purchase intention via privacy concern and affective reactance. The direct effect of brand trust on purchase intention was significant ($b = -.90, SE = 0.14, p < .001$). Even though the mediation effect through privacy concern and reactance consecutively was non-significant ($b = -.01, SE = 0.01, 95\% CI [-.03, .0003]$), the indirect effect through only reactance was significant ($b = .04, SE = 0.02, 95\% CI [.004, .08]$). That is, brand trust reduces affective reactance toward the behavioral ad and further enhances purchase intention. Therefore, H9 was partially supported.

Finally, H10 predicted a serial mediation effect from website credibility to purchase intention via privacy concern and reactance. None of the indirect paths were significant. H10 was thus not supported.

Table 3. Results of serial mediation tests from brand trust and website credibility.

Paths	<i>b</i> (SE)	<i>p</i> / CI
Direct effect		
Brand trust→Privacy concern	.25 (.13)	.06
Brand trust→Affective reactance	-.33 (.14)	.02
Brand trust→Purchase intention	.90 (.14)	< .001
Privacy concern→Affective reactance	.44 (.06)	< .001
Privacy concern→Purchase intention	-.06 (.05)	.25
Affective reactance→Purchase intention	-.14 (.05)	.002
Indirect effect		
Brand trust→Privacy concern→Purchase intention	-.02 (.02)	[-.06, .01]
Brand trust→Affective reactance→Purchase intention	.04 (.02)	[.004, .08]
Brand trust→Privacy concern→Affective reactance→Purchase intention	-.01 (.01)	[-.03, .0003]
Direct effect		
Website credibility→Privacy concern	-.14 (.13)	.28
Website credibility→Affective reactance	-.08 (.14)	.57
Website credibility→Purchase intention	.11 (.14)	.43
Privacy concern→Affective reactance	.42 (.05)	< .001
Privacy concern→Purchase intention	-.02 (.06)	.78
Affective reactance→Purchase intention	-.20 (.05)	<.001
Indirect effect		
Website credibility→Privacy concern→Purchase intention	-.002 (.01)	[-.02, .03]
Website credibility→Affective reactance→Purchase intention	.02 (.03)	[-.04, .08]

Website credibility→Privacy concern→Affective reactance	.01 (.01)	[-.01, .04]
→Purchase intention		

Notes: b = unstandardized b coefficients, SE = standardized errors, p = probability value, and CI = bias-corrected 95% confidence intervals.

Discussion

Despite the fast-growing applications of online behavioral advertising, this emerging platform elicits considerable concern about data security and information privacy. This study focused on the impact of trust on affective and behavioral responses toward behavioral advertising from the perspective of privacy concern. Specifically, by applying and extending psychological reactance theory, the present study was among the first to examine trust separately for the brand and the hosting website. The impacts on three main variables related to online behavioral advertising were of particular interest: privacy concerns, reactance, and advertising outcomes (i.e., purchase intention). Moreover, the current framework went beyond measuring direct effects by examining the serial mediation of brand trust to understand the relationship between these variables. The study highlights the importance of risk concerns and trust-related issues in determining consumer psychological and behavioral responses to online advertising.

Experimental results indicate that brand trust influences affective reactance and purchase intention, but not privacy concern. On the one hand, this finding supports previous conceptual discussions (Rony, 2018; Schumann et al., 2014) and empirical findings (Utami & Agus, 2019) on personalized ad effects, suggesting that low-reputation brand negatively impacts consumer perceptions, prompting increased reactance and decreased likelihood to make a purchase. In other words, behavioral ads from a trusted brand may provide personally relevant and useful information to better serve consumer needs (Office of Fair Trade, 2010), which could reduce reactance toward the ad.

More interestingly, the effect of brand trust on affective reactance only reached significance when privacy concern was also added as a predictor in the model. This suggests that the positive impact of brand trust is distinct from the negative impact of privacy concern on the emotional reactions toward the ad. After controlling for privacy concern, the facilitating function of brand trust on reactance was clearly manifested. The results may inspire industry practitioners to design general trust-building strategies, while considering privacy red flags that may induce negative responses from the audience.

On the other hand, the lack of significant influence of brand trust on privacy concern contradicts past empirical results in location-based personalized advertising (Schade et al., 2018). A possible explanation could be that behavioral advertising is already disdained by consumers, due to the intrusion and privacy risks that it poses. Hence, distrust in a brand may not further aggravate privacy concern toward behavioral ads from that brand. As Bergström (2015) suggests, consumers usually lack a sense of trust in behavioral advertising, which is unlikely to be offset by trust in a specific brand. An alternative explanation could stem from artifacts in the study design. In the absence of a pre-test, the ad stimuli may not have been sufficiently robust to generate privacy concern, despite triggering affective reactance. As research on this theoretical question remains limited and may be subject to specific contexts, future research should further explore the relationship between these variables.

Unlike brand trust, website credibility does not exert main effects on privacy concern, reactance, or purchase intentions. This finding was inconsistent with previous empirical findings on generic online display ads (Phelan et al., 2016; Um, 2017). As Aguirre et al. (2015) reported, a less credible website negatively moderated the impact of ad personalization on click-through intentions. Yet the current study shows that such an influence may not be replicated in other dependent variables. The results may also suggest distinctive effects and mechanisms for first-party versus third-party behavioral advertising. Here, the outside publishing website, as part of a third-party-based behavioral advertising model, does not make a difference in how respondents react to the ad and evaluate the brand. The results may reflect that behavioral ads are more commonly seen in online users' daily web browsing experience. The degree of website credibility does not make a substantial difference in the attempts to collect user data, nor allow demonstrations of these ads. Users may have also become savvier in attributing their aversion to the brand or advertiser, rather than a behavioral ad vehicle, thus diluting the transfer effect from perceptions of the medium to those of the message.

The present study also contributes to psychological reactance theory, substantiating and extending the conceptual understanding of the psychological reactance concept, where, brand trust can dampen whereas consumer privacy concern can enhance psychological reactance. Psychological reactance toward a behavioral ad can also directly affect purchase intention. The mediation analysis also demonstrated that the effect of brand trust on purchase intention was mediated through reactance, but not privacy concern. This finding has shed light on the underlying

mechanism of user reactions toward behavioral advertising. The nonsignificant path through privacy concern suggests that individuals' reactance toward a behavioral ad may not depend on their perceptions of privacy but operates instead through other possible considerations. For example, in the presence of behavioral ads, individuals may feel intrusion on freedom and less control regarding accessibility to other brands (Bleier & Eisenbeiss, 2015a). This could trigger reactance, even when it has nothing to do with concerns about privacy. Compared to a low trust brand, a high trust brand will reduce such reactance, with a more reliable offer rendering less need for alternatives.

On balance, the current study has implications for both digital advertising practitioners and regulators alike. Behavioral advertising may be accepted or rejected for different reasons, depending on contextual factors, which entail careful delineations of user motivations and reactions. One may still exhibit reactance toward a behavioral ad or hesitancy to patronize a brand, in which situational brand trust would make a difference. Advertisers and brands need to consider prior brand reputation and image when producing behavioral ads. Our results suggest that companies would be wise to 1) deliver behavioral advertising to individuals who have already formed initial trust in their brand, and 2) enhance the legitimacy and reliability of their products/services in both the content and design of behavioral ads targeting new users. Considering the importance of brand trust, it may also be beneficial for advertisers to engage in trust building activities, including improving transparency in their data tracking practices and giving consumers more control in managing their personal data (Chellappa & Sin, 2005).

The stronger role played by brand trust relative to website credibility (in response to behavioral advertising) may also offer insight to marketing practitioners with third-party-based behavioral ads. Although contextual factors of the hosting medium, such as matching between website and ad content (Anagnostopoulos et al., 2007), could differentially impact acceptance of the ad, its credibility may not be as salient as the reputation of the brand per se. Instead of turning to the vehicle where the ad will be shown, it is more important to emphasize building a positive brand image and boosting consumer confidence and comfort in patronizing the brand.

Finally, given the potential for increasingly obtrusive consumer surveillance mechanisms, enhanced regulation and educational programming is necessary to foster industry standards and enhance consumer understanding of and trust in behavioral advertising. More specific regulations are needed to facilitate the transparency and consumer control of advertising/marketing practices of companies—

and media—to disclose the underlying mechanisms in a more straightforward and user-friendly fashion. In the face of proposals to reign in the power of big tech, Facebook executives (Egan, 2020, Para 3) seem keenly aware of the need to acknowledge these user concerns, while pointing out the beneficial affordances supported by such advertising: “These services—from search and social networking, to video calls and private messaging—are all available to people for free. And they're free because they're supported by advertising. It's not a stretch to say that much of today's Internet has been brought to us by ads.”

Those executives go on to trumpet advances made in online advertising since the 1990s (e.g., reductions in SPAM, including content blocked or overlaid with “flashing, annoying ads”). The fact that such concerns delayed the rise of digital advertising—prompting businesses to focus on TV and print advertising through the early 2010s—underscores the need to consider the kinds of user concerns identified here. The fact that digital modalities now subsume the lion's share of advertising revenue stands testament to the enhanced reputation, in the eyes of businesses and consumers alike, that personalized (i.e., SPAM-free) online advertising now enjoys. As these affordances help increase efficiency and render a less intrusive platform, media literacy educators should foster a critical understanding of online behavioral advertising amongst the public by explaining how it is produced and disseminated. Information on innovative forms facilitated by technological development will also need to be updated. Facebook's recent feature, which identifies the actual party uploading user information for promotional purposes and provides an opt-out option, represents a pioneering move along these lines (Constine, 2019).

Limitations and Future Research

The present study has some limitations. First, this study did not use a pre-test to capture the participants' levels of privacy concern and affective reactance before treatment for comparison. Second, the manipulation based on word-of-mouth, rather than real interactions or experiences with the brand, may be less effective in inducing brand trust. Given the high valuation to which consumers assign to their privacy (e.g., Millham & Atkin, 2016), subsequent work could profitably extend this investigation to gauge one's willingness to post behavioral advertising-related information online. It may also be beneficial to test and compare different sub-types of behavioral advertising for these theoretical links; for example, generic retargeting (i.e., an ad that showed a generic ad for the same product type) versus dynamic retargeting (i.e., an ad that contained an image of the specific product the consumer had previously browsed) (Lambrecht & Tucker, 2013). Finally, later work could consider the

role that these and related constructs (e.g., third-person effect) play in determining public support for restrictions on such emerging forms of advertising (e.g., Youn et al., 2000).

Conclusion

Although past research has examined various content, contextual, and user factors influencing the effectiveness of online behavioral ads, more insight is needed on the inter-relationships involving consumer understanding and evaluations of the ad, the brand, and the website. Study results found that brand trust significantly determines affective reactance, which further affects purchase intention. Results shed light on the importance of customer-brand relationships in shaping acceptance/rejection of personalized messages in an online context.

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Appendix

High Brand Trust:

“GoTravel is a bus company. You have heard of it from your friends several times before. This year one of your family members starts to take the bus for business trips to Boston and New York. You heard from him/her that the bus is new and comfy, and the schedule is reliable. The drivers are very professional and friendly. They also offer free, high-speed WiFi so he can always stay online while travelling on the road.”

Low Brand Trust:

“GoTravel is a bus company. You have heard of it from your friends several times before. This year one of your family members starts to take the bus for business trips to Boston and New York. You heard from him/her that the bus is obsolete, and arrives late several times. The staff members are not friendly either. The WiFi on board is slow. It constantly disconnects, and takes forever to load any social networking site or text messages.”

High/Low Website Credibility:

“You are planning a trip to New York for spring break and searching on Google for bus tickets at the beginning of the semester. The next day when you browse The Forbes website (high)/ the BuzzFeed website (low), you see the following ad post from the bus company GoTravel, on the right-hand side of the screen. Please read this ad carefully and then answer some questions later.”

