


Skepticism Toward Online Advertising: Causes, Consequences, and Remedial Moderators

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ABSTRACT

Despite the enormous spending on digital advertising, consumers are skeptical toward online advertising (STA). The authors integrated advertising value and stimulus-organism-response (SOR) frameworks to develop a model of STA's causes and consequences. Product knowledge and perceived ethics of online seller (ETH) were proposed as moderators. For Study 1, moderated-moderated mediation technique was applied on the time-lagged data of 411 consumers. For Study 2, a between-subject experiment ($n = 179$) compared the effects of skepticism across video and picture ads. The results indicate that ETH and product knowledge moderated the relationships between stimulus-organism and organism-response states, respectively. Moreover, consumers showed favorable attitudes toward video ads. This study made novel contributions to research on STA by filling multiple voids, integration of advertising value and SOR, infotainment and puffery as predictors, product knowledge and perceived ethics of online seller as moderators, and comparison across advertisement type (video vs. picture).

KEYWORDS

Attitude Toward Online Advertising, Experiment, Moderated Mediation, Online Marketing, Online Seller Ethics, Product Knowledge, Skepticism Toward Online Advertising, Stimulus-Organism-Response Model

1. INTRODUCTION AND BACKGROUND

Online advertising has experienced tremendous growth over the past decade. The amount spent online has even surpassed the amount spent on television advertising. The worldwide spending on Internet advertising in 2020 was 41% of the entire market, while in the same period, the amount spent on TV advertising was 28% of the total market (Guttman, 2021). Despite the effort and money spent on online advertising, research claims that, in general, consumers do not show trust in advertisements (Amawate & Deb, 2021; Obermiller & Spangenberg, 1998). Accordingly, skepticism toward advertising is a predisposition to distrust the claims made in advertisements (Obermiller & Spangenberg, 1998).

Skepticism is considered an essential component of consumer persuasion knowledge and a generalizable belief about how the marketplace operates (Friestad & Wright, 1994). Although the concept of skepticism toward advertising has been considered necessary, it has not been investigated widely. The existing literature has focused on skepticism toward environmental claims (Cheng, Chang, & Lee, 2020; Yu, 2020) or cause-related marketing (Amawate & Deb, 2021; Bae, 2018). However, skepticism toward online advertising, in general, has received limited attention from researchers.

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The advertising value model (Ducoffe, 1996) laid the foundations for understanding the effects of advertising characteristics on consumer attitudes. Infotainment in advertising is one such a characteristic that refers to the integration of informativeness and entertainment (Okazaki, 2004). Overall, the research suggests informativeness (Jacobson, Gruzd, & Hernández-García, 2020) and entertainment (Gaber, Wright, & Kooli, 2019; Koshy & Manohar, 2018) influence consumer attitude toward advertising. Therefore, collectively, infotainment should have a positive influence on consumer attitude toward advertising.

The other ad characteristic which could influence consumer attitude toward advertising is puffery. Preston (1996) defines advertising puffery as any action by the advertisers which involves using superlatives, subjective views, concealing evidence, or exaggerations in ads to praise a product or service. Research shows that deceit in marketing is one of the trigger points for consumers' lack of trust towards advertising (Xie, 2016). Moreover, when exposed to puffed ads, consumers generate adverse reactions and negative product evaluations (Raziq et al., 2018). In addition, when consumers are less skeptical, advertisers exploit them using puffery (Obermiller & Spangenberg, 1998).

Given the current state of research, this study endeavors to fill several gaps in the domain of consumers' skepticism toward online advertising. First, the existing body of research on STA shows limited attention toward theoretical foundations (Bae, 2018; Obermiller & Spangenberg, 1998). Therefore, the present study integrates the advertising value model (Ducoffe, 1996) and stimulus-organism-response model (Mehrabian & Russell, 1974) to explain STA. Based on the advertising value model, two ad characteristics, infotainment, and puffery were identified, serving as a stimulus for the organism state. Consumer skepticism toward advertising (STA) has previously been defined as an attitude and consumer's inclination to disbelieve advertising claims (Obermiller, Spangenberg, & MacLachlan, 2005). Therefore, in the present study, skepticism toward online advertising characterized the organism part of the stimulus-organism-response framework. Accordingly, once skepticism has been developed among consumers, it will lead to responses. Bagozzi (1986) referred to the response state as the final state in the SOR paradigm, which comprises the behaviors and attitudes. Therefore, attitude toward online advertising has been proposed to function as a response state in the SOR model. To date, research integrating advertising value and SOR models to explain STA is not known.

Apart from theoretical foundations, the effects of infotainment and puffery as predictors of skepticism toward online advertising have not been investigated so far. Thus, it adds to the novelty of the present study. Additionally, investigating the SOR paradigm in different contexts, researchers have found that moderating factors influence the relationship between stimulus and organism states (Fu, Chen, & Zheng, 2020) and between organism and response states (Indibara, 2017). Furthermore, Hosany, Buzova, and Sanz-Blas (2020) proposed investigating factors that could moderate stimulus-organism and organism-response states. In response to this call, researchers identified online seller's product knowledge and perceived ethics as possible moderators.

The present study also made significant contributions to the subject area on the methodological front—study 1 employed a moderated-moderated mediation approach (Hayes, 2018) to investigate the skepticism phenomenon. The application of this approach is still novel to the subject area. The findings of this study will advance the understanding and methodology of future investigations on skepticism toward online advertising. Whereas study 2 anchored a between-subjects experiment to understand the effects of STA across advertisement types (video vs picture) on Instagram. Thus, study 2 further validated the conceptual model used in study 1 and tested the (Obermiller & Spangenberg, 1998) assumption that consumers may have different skepticism levels depending upon the medium and specific ad.

2. HYPOTHESES DEVELOPMENT

2.1. Infotainment and STA

The term infotainment is derived from two interrelated and important advertising characteristics: informativeness and entertainment (Okazaki, 2004). The role of information is imperative in online advertising because consumers respond favorably toward relevant and informative ads (Aitken, Gray, & Lawson, 2008; Ducoffe, 1996). Thus, consumers on the internet make decisions after evaluating the information (relevant and factual) they obtain from the advertisements. Jacobson et al. (2020) further added to this vein of the investigation by finding that people use social media to generate and share information. Researchers have a consensus that informativeness induces consumers' motivations to view and process advertisements (Resnik & Stern, 1977).

The other aspect of the infotainment concept is entertainment. In the existing literature, the positive effects of entertainment on consumer attitudes have been emphasized. For example, Koshy and Manohar (2018), H. Lee and Cho (2019), and Gaber et al. (2019) have verified that consumers develop positive attitudes toward entertaining ads on the internet and social media. Thus the overall literature supports that infotainment induces favorable consumer attitudes, whether the internet or mobile advertising (Hongyan & Zhankui, 2017; Okazaki, 2004). In addition, recent research has shown that ads with detailed information and high quality of entertainment are positively embraced (Lin, Paragas, Goh, & Bautista, 2016).

The overarching theory (SOR) for the present study posits that environmental stimuli influence individuals' cognitive and emotional states. These cognitive and affective states, in turn, lead to specific actions (Mehrabian & Russell, 1974). Stimuli can be either controllable or uncontrollable. Advertising characteristics are controllable stimuli as they can be controlled and manipulated by the advertisers/sellers. Aligned with the advertising value model (Ducoffe, 1996), infotainment is an ad characteristic and a controllable stimulus, influencing skepticism toward online advertising. Skepticism toward advertising refers to a specific type of attitude different from the general attitude (Obermiller et al., 2005), defined as "an attitude of doubt or a disposition to incredulity either in general or toward a particular object" (Dictionary, 2019). As a result, for the sake of this study, STA falls into the organism realm of the SOR paradigm.

The studies investigating the direct influence of infotainment on STA are not known. However, some evidence exists for the potential relationship. For example, Hernandez, Chapa, Minor, Maldonado, and Barranzuela (2004) and Tsang, Ho, and Liang (2004) argued that lack of entertainment generates negative attitudes. When an ad fails to entertain consumers or provides irrelevant information, it is deemed boring and results in adverse reactions, including reduced credibility (Kim & Sundar, 2010; Teixeira & Stipp, 2013). Thus, it can be stated that boring and less informative ads will lead to skepticism (since skepticism refers to incredulity/lack of credence). To put it simply, STA being a negative attitude should be inversely related to infotainment. Therefore, this study proposes that infotainment will have a negative influence on skepticism toward online advertising.

2.2. Puffery and STA

Advertising puffery is any action by the advertisers which involves using superlatives, subjective views, concealing evidence, or exaggerations in ads to praise a product or service (Preston, 1996). The use of deceit in marketing is one of the trigger points for customer distrust towards advertising (Xie, 2016). The extant research provides some reference for the relationship between ad puffery and skepticism. Stern and Callister (2020) compared the effects of puffery and hyperbole on consumer attitudes. They found that consumers perceive both types of exaggerations to be deceptive. Moreover, when exposed to puffed ads, consumers develop adverse reactions and offer negative product evaluations (Raziq et al., 2018). Sellers' credibility and perceived truthfulness are at stake when ads contain puffery (Simons, 2017). Obermiller and Spangenberg (1998) added that advertisers exploit them using puffery when consumers are less skeptical.

Many advertisers use exaggeration to thrive in today's very competitive business climate, such as overstating the advantages of their goods or the overall value proposition of their market offering (Amyx & Lumpkin, 2016). Gao and Scorpio (2011) also supported that advertisers are motivated to use puffery in the wake of a highly competitive culture. Despite the benefits cashed by the marketers, increased use of puffery will erode the credibility of advertisements, eventually leading to customer skepticism.

There is a scarcity of empirical evidence on the relationship between puffery and STA. Amyx and Lumpkin (2016) investigated how the interaction between ad puffery and consumer ad skepticism influence consumer persuasion. The present study relies upon the advertising value model (Ducoffe, 1996) and argues that puffery is a controllable ad characteristic, entirely under the jurisdiction of marketers to use puffery or not. When integrated into the SOR realm, it could be another factor serving as a stimulus for STA. Therefore, it is expected that puffery will have a positive effect on skepticism toward online advertising.

2.3. STA and ATA

Attitude toward online advertising is defined as the aggregation of assessments of online advertising's perceived attributes and benefits (Wang, Sun, Lei, & Toncar, 2009). In the view of Voorveld, Neijens, and Smit (2011), a marketer's understanding of consumers' attitudes about online advertising is critical these days because most companies are shifting to online marketing and advertising. However, marketers' excessive use of online advertising may create a tendency to avoid advertisements on the internet. Because online communications and promotions are mostly pushed toward consumers, they are considered intrusive (Shavitt, Vargas, & Lowrey, 2004). Therefore, consumers tend to believe that they have no control over the content they watch on the Internet (Morimoto & Chang, 2006). A survey by MarketingCharts (2012) confirmed this tendency that two out of every three individuals were afraid of being exposed to excessive advertisements over the internet.

Past literature supports that skepticism leads to negative attitudes toward advertising (Rozendaal, Buijzen, & Valkenburg, 2011). Obermiller and Spangenberg (1998) also believed that skepticism toward advertising might be related to one's general attitude toward advertising. While investigating skepticism in the context of corporate social responsibility, Joireman, Liu, and Kareklas (2018) found that skepticism toward advertising had a negative impact on attitude toward advertising. Similarly, Raziq et al. (2018) investigated the influence of the need for cognition and skepticism toward advertising on attitudes and found that skepticism toward advertising negatively predicted consumer attitudes.

Residing on the SOR paradigm, research has usually opted for behavior as a response. However, According to Bagozzi (1986), response state refers to the final action or outcome in the SOR paradigm, and it includes both attitudes and behaviors. Therefore, ATA being a general attitude, is a response to skepticism toward online advertising. Aligned with the literature review, it can be concluded that skepticism toward online advertising will show a negative relationship with attitude toward online advertising.

2.4. Product Knowledge as a Moderator

Product knowledge, also referred to as product expertise (Obermiller & Spangenberg, 1998), has been studied extensively in consumer behavior research to facilitate information processing (Brucks, 1985). The level of consumers' product-related knowledge (high-knowledge versus low-knowledge) is linked directly to how they process the information. According to Bettman and Sujan (1987), consumers with high knowledge follow an analytical approach in their decision-making since they follow the proper decision-making process using the information already available in memory. Biswas and Sherrell (1993) argued that in comparison to low-knowledge consumers, high-knowledge consumers rely less on heuristic cues for their purchase decisions. Research also suggests that the consumer's knowledge

about the product also influences how he/she processes the advertisements about that product (G. E. Smith & Wortzel, 1997).

Despite the rich literature on product knowledge and information processing, there is insufficient empirical research on the moderating influence of product knowledge on ad skepticism. Obermiller and Spangenberg (1998) proposed that individual factors such as product knowledge or expertise could influence ad skepticism and its outcomes. Building on Obermiller and Spangenberg's study, Tan and Tan (2007) empirically examined the influence of product knowledge to reduce the negative consequences of skepticism toward health claims. However, they could not find a significant relationship. While the SOR paradigm also supports that the relationship between stimulus and organism could be influenced by the moderating variables (Chang, Eckman, & Yan, 2011; Minton, 2019). Based on the overarching theoretical paradigm of SOR, mixed findings from the literature, and little empirical evidence, it is imminent to assume that further investigation is needed on product knowledge and online ad skepticism.

In a recent study, Han, Yu, and Kim (2019) argued that increased product knowledge increases consumer trust and fosters positive attitudes. When consumers are skeptical about claims made in marketing, they use their information and knowledge to assess the truthfulness of messages (Bae, 2018). The researchers believe that consumers with more product knowledge evaluate the informativeness and puffery in the advertisements, ultimately affecting the skepticism toward online advertising. In this way, knowledgeable consumers should be less prone to skepticism when exposed to ads containing infotainment. Furthermore, the effects of puffery should be less pronounced for knowledgeable consumers.

Hypothesis 1: Product knowledge moderates the relationship between (1a) infotainment, (1b) puffery, and skepticism toward online advertising, such that the relationship is weaker when product knowledge is high.

2.5. Perceived Ethics of Online Seller as Moderator

Román (2007) identified that the most compelling issues of online buyers include online security, the privacy of financial information, the reliability of the online seller, fraud, and the quality of the products being sold. Recently, a shift has been seen from identifying ethical concerns to how these ethical concerns lead to various perceptions and behaviors. For example, Limbu, Wolf, and Lunsford (2012) studied ethical dimensions on customer satisfaction and loyalty. They found that order fulfillment, security, and non-deception were the imperative dimensions of ethical concerns that ultimately lead to customer satisfaction. Other studies, such as Adam, Aderet, and Sadeh (2008), stated that ethical concerns were related to consumers' purchase intentions, while Ratnasingham (1998) found them related to loyalty.

Signaling theory also comes into play in this regard. The theory states that whenever there is an information gap between a seller and a buyer (i.e., the buyer knows little about the product compared to the seller), the buyer must rely on some signal to overcome this information asymmetry (Spence, 2002). The perceived ethics of the online seller could serve as one such signal. Román (2007) found that consumers' trust is reduced if they perceive deception from the online seller. Once trust is reduced, it will further lead to a reduction in satisfaction and loyalty (Román & Cuestas, 2008). Obermiller et al. (2005) added that skepticism toward advertising creates multiple responses among consumers; one is searching for other information cues. As argued, ethical practices by the seller could be used by consumers as a cue to negate the effects of skepticism toward online advertising.

Although the concepts of ad skepticism and seller ethics are related, the literature does not provide enough empirical evidence for the interaction between online ad skepticism and perceived ethics of online sellers. However, from the SOR perspective, there is evidence for the effects of moderating

factors between organism and response states (Indibara, 2017; Joireman et al., 2018; Tan & Tan, 2007). Based on the theoretical standpoint of SOR and presented literature, it is proposed that:

Hypothesis 2: The perceived ethics of the online seller moderates the relationship between skepticism toward online advertising and attitude toward online advertising, such that the relationship is weaker when the perceived ethics of the online seller is high.

Based on the first two hypotheses, there is an indication of the moderated-moderated mediation model suggested by Hayes (2018). In the moderated-moderated mediation model, the mediating variable (skepticism toward online advertising) carries the effects of independent variables (infotainment and puffery) to the dependent variable (attitude toward online advertising), and those effects are influenced by the moderating variables (product knowledge and the perceived ethics of the online seller). The conceptual framework in figure 1 presents the graphical depiction of this argument.

Hypothesis 3: Product knowledge and the perceived ethics of the online seller moderate the indirect relationship of (3a) infotainment, (3b) puffery on attitude toward online advertising through skepticism toward online advertising such that the indirect effects are realized when product knowledge and the perceived ethics of the online seller are high.

2.6. Effects Across Advertisement Type

Research on the effects of multimedia content on websites advocates that consumers develop positive attitudes when the content is rich. Thus, websites employing richer multimedia content are deemed more persuasive by consumers than websites with little or no multimedia (Appiah, 2006). Coyle and Thorson (2001) also affirmed that consumers show favorable audio/animated content attitudes than static content. They further added that audio, video, and animated advertisements enhance the consumer experience by increasing vividness. Since web surfers establish a sense of “connection” with characters in video ads (K. M. Lee, 2004), they find them more rich and vivid.

The underlying mechanism for the more substantial effects of video ads compared to picture ads can be attributed to the “social richness,” as Short, Williams, and Christie (1976) explained. They argued that social richness depends on communication, i.e., face-to-face communication is the most socially rich mode, followed by video, audio, and written communication. Overall, the research posits that respondents showed a positive attitude toward the information in video form compared to static pictures (Appiah, 2006; Mechling & Gustafson, 2008). Therefore, attitude toward online advertising as a general attitude, and skepticism toward online advertising as a specific attitude (Obermiller & Spangenberg, 1998), should be influenced differently based on ads (video vs picture) shown to the consumers. In addition, Obermiller and Spangenberg assumed that consumers might have different levels of skepticism depending upon the medium and type of ad. Expressly, it is assumed that the effects will be more substantial for video ads aligned with the existing body of knowledge. We, therefore, propose that:

H4a: The effect of infotainment on skepticism toward online advertising is stronger for video ads than for picture ads.

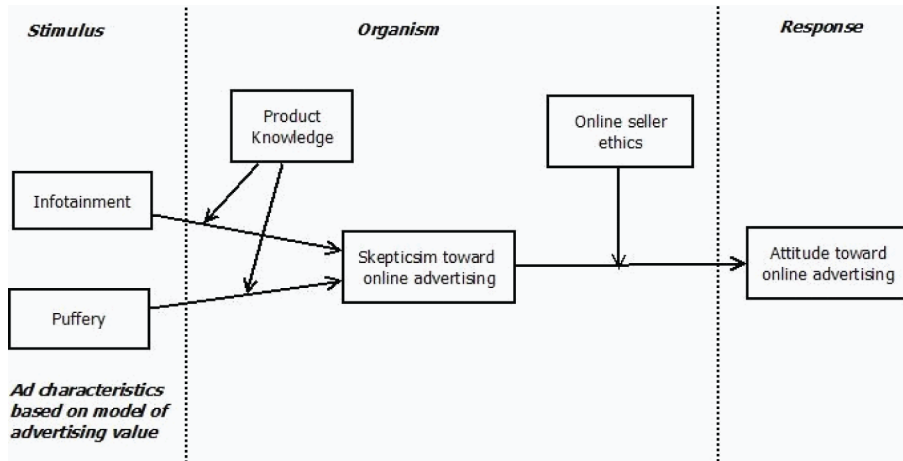
H4b: The effect of puffery on skepticism toward online advertising is stronger for video ads than for picture ads.

H4c: The effect of skepticism toward online advertising on attitude toward online advertising is stronger for video ads than for picture ads.

H4d: The effect of product knowledge on skepticism toward online advertising is stronger for video ads than for picture ads.

H4e: The effect of perceived ethics of online seller on attitude toward online advertising is stronger for video ads than for picture ads.

Figure 1. Conceptual framework



3. STUDY 1

3.1. Methodology

3.1.1. Sampling and Data Collection

There were roughly 37 million Internet users in Pakistan (17 percent of the total population) (Bank, 2019). An online sample size calculator Raosoft (2004), recommended the minimum sample size of 385 based on population size. To recruit the participants, (a) the study was widely advertised on the internet as widely as possible; (b) asked masters students to promote it among their friends, family, coworkers, and neighbors (c) personal contacts.

Existing studies state that collecting all data in one go can lead to common method variance. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) suggested separating data collection for predictor and criterion variables to overcome this problem. Therefore, data in this study were collected in three phases with a gap of three weeks each. Phase 1 collected the data for advertisement characteristics (infotainment and puffery) and product knowledge. Phase 2 collected data for skepticism toward online advertising and the perceived ethics of the online seller. Phase 3 collected data for attitude toward online advertising.

Respondents who participated in phase 1 were requested to share their e-mail addresses for future correspondence. Subsequently, those e-mail ids were used to request participation in phase 2 and phase 3. As compensation, 15 participants were given USB pen drives that were shared among random participants. At the end of data collection, responses of 411 participants were available, filled for all three data collection stages. Because the collected data were according to the desired size, data analyses were performed.

3.1.2. Measures

For this study, already established scales were used to elicit subjects' responses. For study 1, a five-category Likert scale was used. Respondents were asked to recall any online ad they have recently watched and then respond to the questions.

Skepticism toward online advertising was operationalized using a 9-item scale adapted from Obermiller and Spangenberg (1998). The original scale was developed for skepticism toward traditional advertising. The scale was modified for the online context. A sample item is *Online advertising is a reliable source of information about the quality and performance of products*. All the items in the scale were reverse coded, with higher values indicating lower skepticism toward online advertising. Consumers' responses regarding online advertising were elicited using five items adopted from Wang et al. (2009). A sample item is *I consider online advertising essential*. A negative item for attention check (*In general, I think that online advertising increases the cost of products*) was reverse-scored before analyses.

Infotainment was assessed using five items adapted from Ducoffe (1996). The scale was modified to fit the online setting. The sample item is *Online advertising is exciting*. Puffery was operationalized using six items adapted from Amyx and Lumpkin (2016). The items were revised for the current study, and sample items are *The online ads are exaggerated*, and *The online ads are overstated*. After factor analyses, four items were retained for study 1.

Product knowledge was measured on four items scale adopted from D. C. Smith and Park (1992). This scale was also adjusted for online context with a sample item *I feel very knowledgeable about the product in the online ad*. The perceived ethics of the online seller was measured using 13 items adopted from Román (2007). The scale tapped all four dimensions of perceived ethics of online sellers; security, privacy, fulfillment, and non-deception. A sample item is *The security policy of the company in the online ad is easy to understand*.

3.2. Data Analyses and Results

As far as demographic information is concerned, most respondents belonged to the age group of 20-30 years (65%). Seventy percent of the respondents were male. Most of the respondents were educated, having bachelors and masters degrees, while less than 3% had doctoral or other qualifications.

3.2.1. Summary of Confirmatory Factor Analysis

Factor loadings were estimated as part of the analyses, and AVE (average variance extracted) and CR (composite reliability) values were computed. Fornell and Larcker (1981) argued that the lower threshold value for AVE should be 0.40 only if the CR values are above 0.60. Because all the CR values are above the 0.60 threshold level, AVE values are considered acceptable, indicating appropriate convergent validity. For discriminant validity, Gaskin, Godfrey, and Vance (2018) suggested that HTMT values should be less than 1.00. All the observed values were below the given threshold, indicating adequate discriminant validity (Table 1).

3.2.2. Hypotheses Testing

To test the hypotheses, PROCESS macro based on version 3.5 was used. It was proposed in hypothesis 1 that product knowledge moderates the relationship between infotainment (1a), puffery (1b), and skepticism toward online advertising, such that the relationship will be weaker when product knowledge is high. The results of data analysis in this regard are presented in table 2.

It can be observed from the table that the interaction term for the model (infotainment-skepticism), when moderated by product knowledge, is significant ($\beta = .13$, $p < .01$). The interaction plot for this relationship is presented in figure 2. Skepticism toward advertising was found to be lower when infotainment and product knowledge were high. Hence, H(1a) was supported.

Table 1. Convergent and discriminant validity

Variables	CR	AVE	ATA	INF	ETH	PK	PUF
Attitude toward online advertising	0.85	0.55					
Infotainment	0.89	0.62	<i>0.83</i>				
Perceived ethics of online seller	0.89	0.41	<i>0.88</i>	<i>0.79</i>			
Product knowledge	0.85	0.59	<i>0.91</i>	<i>0.89</i>	<i>0.88</i>		
Puffery	0.84	0.56	<i>0.74</i>	<i>0.63</i>	<i>0.68</i>	<i>0.67</i>	
Skepticism toward online advertising	0.90	0.51	<i>0.91</i>	<i>0.82</i>	<i>0.91</i>	<i>0.91</i>	<i>0.66</i>

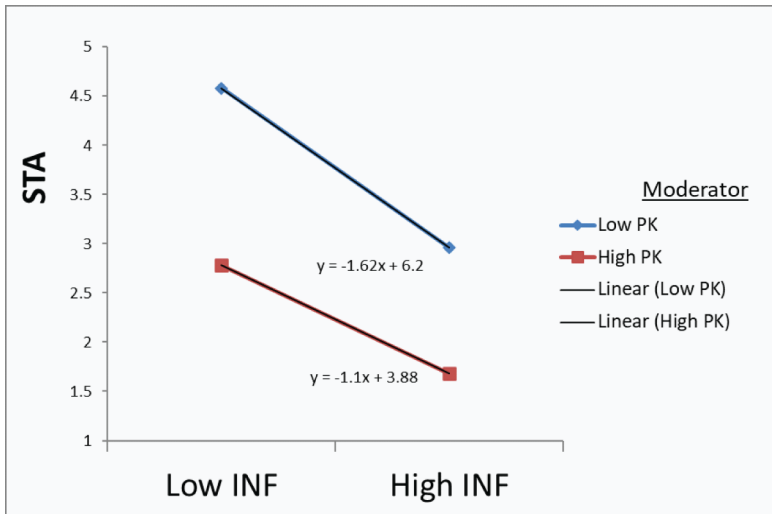
Note. CR = composite reliability; AVE = average variance extracted; STA = skepticism toward online advertising; ETH = perceived ethics of online seller; PK = product knowledge; INF = infotainment; ATA = attitude toward online advertising; PUF = puffery. Italicized values indicate HTMT ratios.

Table 2. Regression results of the overall model

Model	β	SE	T	R ²
<i>Infotainment-Skepticism model</i>				<i>.65</i>
Constant	6.19	.18	35.00***	
Infotainment	-.68	.08	-8.74***	
Product knowledge	-.75	.07	-10.76***	
Infotainment x PK	.13	.02	5.28***	
<i>Puffery-Skepticism model</i>				<i>.63</i>
Constant	2.35	.35	6.80***	
Puffery	.68	.08	8.21***	
Product knowledge	.04	.10	.41	
Puffery x PK	-.17	.03	-6.47***	
<i>Skepticism-Attitude model</i>				<i>.64</i>
Constant	5.80	.44	13.14***	
STA	-1.07	.10	-11.00***	
ETH	-.35	.11	-3.22**	
STA x ETH	.18	.03	6.49***	

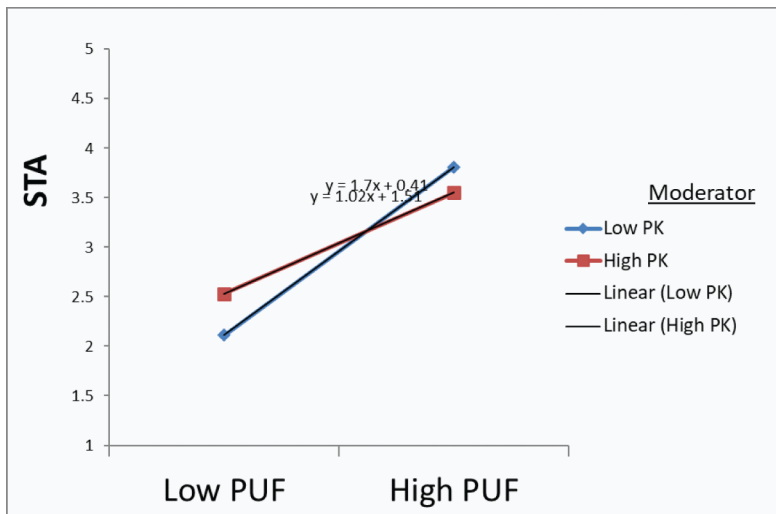
Note. STA = skepticism toward online advertising; ETH = perceived ethics of online seller; PK = product knowledge. *** p < .001; ** p < .05.

Figure 2. Interaction plot for infotainment-skepticism model



Similarly, the interaction term for the model (puffery-skepticism) when moderated by product knowledge is significant ($\beta = -.17, p < .01$). Figure 3 presents the interaction plot for this relationship. It can be observed from the figure that skepticism is higher in the presence of puffery, but the relationship is weakened in the presence of product knowledge. Hence, H(1b) was supported by the results.

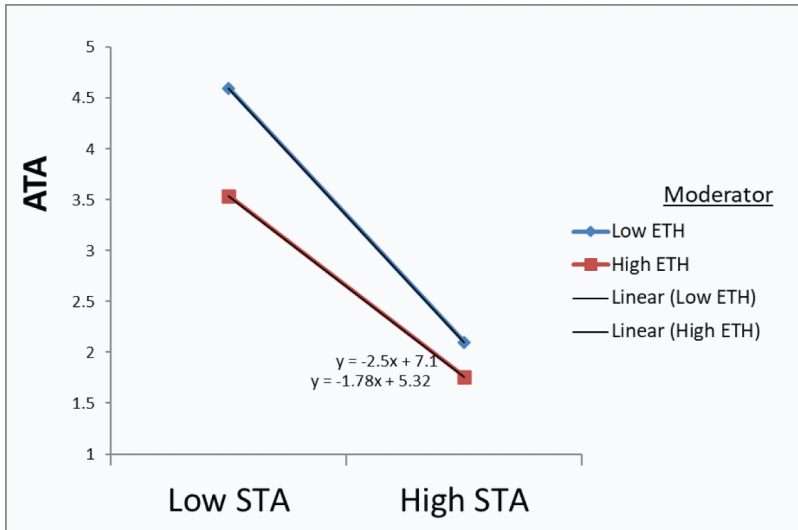
Figure 3. Interaction plot for puffery-skepticism model



For H2, it was posited that the perceived ethics of the online seller moderates the relationship between skepticism toward online advertising and attitude toward online advertising, such that the relationship is weaker when the perceived ethics of the online seller is high. By observing table 2, it can be found that the interaction term for the model (skepticism-attitude), when moderated by

perceived ethics of online seller, is significant ($\beta = .18, p < .01$). Figure 4 presents the interaction plot for this relationship. It can be observed from the figure that the negative effect of skepticism toward online advertising on attitude toward online advertising is weakened when the perceived ethics of the online seller is higher. Hence, H2 was supported by the results.

Figure 4. Interaction plot for skepticism-attitude model



The third hypothesis stated that product knowledge and the perceived ethics of the online seller moderate the indirect relationship of infotainment (H3a) and puffery (H3b) on attitude toward online advertising through skepticism toward online advertising such that the indirect effects are realized when product knowledge and the perceived ethics of the online seller were high. To test these hypotheses (3a and 3b), two moderated-moderated mediation analyses were performed using the PROCESS macro 3.5 and model 21 in SPSS.

Table 3 presents the results of the conditional process analysis performed for H(3a). The table lists the effect sizes and (upper and lower limit) confidence intervals for the conditional effect of infotainment on attitude toward online advertising through skepticism toward online advertising at four different combinations of product knowledge and the perceived ethics of the online seller. As shown in the table, the indirect effect of infotainment on attitude toward online advertising was

Table 3. Conditional effect of infotainment

Value of moderators		Indirect effect size	Confidence interval	
Product knowledge	Perceived ethics of online seller		Lower	Upper
Low	Low	.19	.13	.25
Low	High	.10	.05	.16
High	Low	.08	.03	.13
High	High	.04	.02	.09

significant for all four conditions of product knowledge and the perceived ethics of the online seller. Thus, hypothesis 3a was supported.

Table 4 shows moderated-moderated mediation analysis results in a similar vein when puffery was taken as a predictor variable (hypothesis 3b). It can be observed from the table that the indirect effect of puffery on attitude toward online advertising was significant when both the perceived ethics of the online seller and product knowledge were low ($\beta = -.16$, $LL = -.21$ & $UL = -.11$). The indirect effect was also significant for low product knowledge and high perceived ethics of online seller case ($\beta = -.09$, $LL = -.14$ & $UL = -.05$). The other two combinations found zero value between their upper and lower limit confidence intervals. Therefore, it can be concluded that there was partial support for hypothesis 3b.

Table 4. Conditional effect of puffery

Value of moderators		Indirect effect size	Confidence interval	
Product knowledge	Perceived ethics of online seller		Lower	Upper
Low	Low	-.16	-.21	-.11
Low	High	-.09	-.14	-.05
High	Low	-.01	-.05	.04
High	High	-.01	-.04	.03

4. STUDY 2

To achieve a deeper understanding of the skepticism phenomenon in the online setting and empirically validate the assumptions of advertising richness and advertising vividness (Ge, Sui, Zhou, & Li, 2020; Short et al., 1976), study 2 tested skepticism across video and photo ads. Moreover, Obermiller and Spangenberg (1998) assumed that consumers' skepticism depends upon the medium and type of ad. Therefore, this study replicates the research model adopted in study 1 (see figure 1) with an experimental design. The experiment served to overcome multiple voids left intact in study 1; (a) test across advertisement type (b) further validate the conceptual framework due to high internal validity (c) test media richness assumptions in context of STA.

4.1. Methodology

4.1.1. Manipulation

A group of masters students ($n = 30$) were invited to decide on a platform and product for experimental manipulation. The members who participated in the focus group were not invited to the experiment. The participants were asked, "Which online platform they preferred for watching ads?". Most of them responded with Instagram (mode = 19). When asked, "Which product ads did they watch most?" the focus group informed that they preferred to watch ads related to mobile phones when surfing Instagram. Thus, researchers selected Instagram as a platform and mobile phones as a product category. Next, they were inquired about their favorite smartphone brand/model, to which they responded with Vivo V20. Then participants were divided into a group of two. One group was asked to search for their preferred video ad of Vivo V20 on Instagram. The other group was asked to search for three picture ads of the same mobile phone on Instagram (see appendix A). Since videos take longer to watch, the choice of 3 picture ads was made on the recommendation of the focus group to ensure both experimental groups were exposed to stimuli for a similar amount of time. Later, one video ad and

three picture ads selected by the focus group were randomly shown to the subjects in anticipation of data collection. The participants in this pretest were not included in the main experiment.

4.1.2. Participants

The present study employed a between-subjects experiment based on advertisement type (video vs picture). Data were collected from Internet buyers using an online experiment. Subjects participated voluntarily in the study in response to the survey advertisement on social media, while the participants of study 1 were not invited for the experiment. The participants were randomly assigned to one of two experimental scenarios. An initial screening question ensured that only the Internet buyers participated in the experiment. Next, the participants were shown either video or picture advertisements subject to random assignment. After watching advertisements, respondents completed an online survey on all variables from the study.

A total of 179 Internet buyers participated in the experiment. Regarding gender, 99 (55%) participants were male. The majority had a bachelor's degree (67%) and were less than or equal to 40 years old. In terms of ad distribution, 91 participants watched video ads while 88 watched picture ads.

4.1.3. Measures

In contrast, to study 1, a 7-point Likert scale was used for study 2. The scales for all the variables were reused from study 1. After the factor analysis, all six items for ad puffery were retained for study 2 (in contrast to 4 items for study 1). Similarly, a complete set of 13 elements were used for study 2 (9 items were used for study 1).

4.2. Data Analysis and Results

Data were analyzed through AMOS 21 using structural equation modeling (SEM) and multigroup analysis. The multigroup analysis was performed using the path coefficient comparison approach suggested by Keil et al. (2000). See Appendix B for calculations of path differences using multigroup analysis.

The overall sample was separated into two groups based on video or picture advertisements. The relationship between infotainment and skepticism toward online advertising was different based on advertisement type: video ($\beta = -.32, p < .000$) and picture ($\beta = -.27, p < .000$). And difference in path coefficients was significant ($\Delta\beta = .05, t = -4.77$). Table 5 presents the summary of path coefficients comparison across advertisement types.

Table 5. Path coefficient comparison

Model	Video		Picture	
	Estimate	Sig.	Estimate	Sig.
INF→STA	-.32	***	-.27	***
PUF→STA	.27	***	.19	**
PK→STA	-.19	*	-.43	***
STA→ATA	-.42	***	-.39	***
ETH→ATA	.18	.136	.37	**

Note. INF = infotainment; STA = skepticism toward online advertising; PUF = puffery; PK = product knowledge; ATA = attitude toward online advertising; ETH = perceived ethics of online seller. *** $p < .000$; ** $p < .05$; * $p < .10$.

The effect of puffery on skepticism toward online advertising was stronger for video ads ($\beta = .27, p < .000$) than for the picture ads ($\beta = .19, p < .05$) and the path difference was significant ($\Delta\beta = .08, t = 6.86$). The effect of skepticism toward online advertising on attitude toward online advertising was different across advertisement type: video ($\beta = -.42, p < .000$) and picture ($\beta = -.39, p < .000$). And path coefficient was significant ($\Delta\beta = .03, t = -1.84$).

5. DISCUSSION

This study integrated advertising value and stimulus-organism- response (SOR) frameworks to develop a model of STA's causes and consequences. Furthermore, product knowledge and perceived ethics of online seller were proposed as moderators. Two separate studies were conducted to test the hypotheses. Study 1 employed a survey technique on a representative sample of Internet users, while study 2 resided on an experimental design.

The first three hypotheses, i.e., H1, H2, H3, were investigated through study 1. It was proposed in H1 that product knowledge will moderate the relationship between infotainment (1a), puffery (1b), and skepticism toward online advertising, such that the relationship will be weaker when product knowledge is high. The data analysis supported the results. Like the previous research, it was found that infotainment as a stimulus predicted STA as an organismic realm (Gaber et al., 2019; Teixeira & Stipp, 2013; Tsang et al., 2004). Similarly, puffery, the other stimulus, positively influenced the organism state (Raziq et al., 2018; Stern & Callister, 2020). In the Asian context, Jamil and Qayyum (2019) also found that various stimuli influence STA (the organism state). The influence of infotainment and puffery on STA further validated the assumptions of the advertising value model (Ducoffe, 1996). Furthermore, the product knowledge interacted with both stimuli (infotainment and puffery) to influence the organism state (STA). Previously, research on SOR has also supported the interaction effects of stimuli and moderators on organism state (Chang et al., 2011; Minton, 2019). Overall, consumers with higher product knowledge pay more attention to infotainment of the online ads, thus less susceptible to STA. In contrast, consumers with high product knowledge could diagnose ad puffery and thus lesser prone to online ad skepticism.

It was proposed in H2 that the perceived ethics of the online seller moderates the relationship between skepticism toward online advertising and attitude toward online advertising, such that the relationship is weaker when the perceived ethics of the online seller is high. The results also support the idea that the perception that an online seller follows ethical considerations leads to a reduction in the negative influence of skepticism and ultimately boosts a positive attitude toward online advertising. Extant literature also validates the fact that the perceived ethical behavior of a seller leads to positive outcomes. For example, Adam et al. (2008), Limbu et al. (2012), and Román (2007) found the ethical behavior of a seller to be related to positive outcomes such as purchase intentions, satisfaction, and loyalty. More recently, Asian consumers also showed that interaction between STA and perceived ethics results in favorable consumer attitudes toward online information (Jamil & Qayyum, 2019). Additionally, Indibara (2017) and Joireman et al. (2018) argued that interaction between organism and moderating variable(s) could influence the outcome of response realms.

The H3 posited that product knowledge and the perceived ethics of the online seller moderate the indirect relationship of infotainment (3a) and puffery (3b) on attitude toward online advertising through skepticism toward online advertising such that the indirect effects are realized when product knowledge and the perceived ethics of the online seller were high. This overall moderated-moderated mediation was supported fully for H3a and partially supported for H3b. These findings have imperative implications for the stimulus-organism-response model, which postulates that the organism state mediates the relationship between stimulus and response states (Fu et al., 2020), and contextual factors influence this indirect effect at both the stimulus-organism (Chang et al., 2011; Minton, 2019) and organism-response (Indibara, 2017; Joireman et al., 2018) states. Existing studies on the SOR paradigm have taken a piecemeal approach to investigate stimulus-organism and organism-response

with the effects of moderators. However, this study has adopted a holistic approach by simultaneously investigating stimulus-organism-response in the presence of two moderators. This has provided a more comprehensive examination of the SOR paradigm, which is currently lacking in the literature.

Study 2 investigated H4 by comparing the effects across advertisement types. The effects of infotainment and puffery on STA were stronger in video ads than in picture ads. Hence H4a and H4b were supported. Similarly, in line with the literature, the effect of skepticism toward online advertising on attitude toward online advertising was stronger for video ads than for picture ads, lending support for H4c. These findings align with the existing studies such as Appiah (2006) and Mechling and Gustafson (2008). They also found that consumers prefer online content when it is in video form compared to static pictures.

Moreover, Jamil and Qayyum (2021) showed that Asian consumers respond differently to online skepticism when exposed to alternative sources and types of information. Research on advertising richness and advertising vividness explains these outcomes (Ge et al., 2020). Advertising vividness refers to consumer behaviors in response to the sensory stimulation (Weinberger, Swani, Yoon, & Gulas, 2017), i.e., higher sensory stimulation leads to higher vividness. Moreover, video ads are more vivid than picture or textual ads. Therefore, the present study's findings support that consumers find video ads more rich and vivid than picture ads.

In contrast to researchers' expectations, the effect of product knowledge on STA was more substantial for picture ads. Similarly, the effect of perceived ethics of online seller was more substantial on ATA for picture ads. Therefore, both H4d and H4e were not supported. One possible explanation for these outcomes may be that consumers with higher levels of product knowledge do not require more vividness of ads to make decisions. Since product knowledge facilitates information processing (Obermiller & Spangenberg, 1998), pictorial ads are sufficient to shape consumer decisions. Similarly, it can be assumed that the perceived ethics of the online seller serves as a quality signal; consumers may find picture ads sufficient when the sellers are believed to be ethical.

5.1. Implications

This study has implications for both researchers and practitioners. For researchers, it advances the understanding of skepticism toward online advertising by integrating the advertising value model and SOR framework. Residing on the advertising value model, it identified two controllable stimuli (infotainment and puffery) which influence STA. Additionally, product knowledge and perceived ethics of online seller were introduced as moderators. Previously, the researchers relied upon attribution theory to explain skepticism phenomena (Leonidou & Skarmeas, 2017), which is more suitable in general contexts. However, in online advertising, the advertising value SOR models are more specific and relevant, thus opening new avenues of research for future researchers.

Study 1 relied on the Hayes (2018) moderated-moderated mediation approach to simultaneously investigate the effect of the stimulus on the organism, organism to response, and two moderating variables. This approach resulted in a better explanation of the SOR paradigm and the phenomenon of skepticism toward online advertising. Thus, a path has been paved for a much more comprehensive examination of SOR for future investigations.

Two studies were conducted to triangulate and enhance the validity of the proposed conceptual framework. Study 1 followed the survey approach, while study 2 followed the experimental design, promising external and internal validity. In addition, the comparison across ad types (video vs picture) increased the understanding of the researchers that skepticism could be influenced by the type of advertisement and the richness of the content.

As far as practitioners are concerned, this study provides essential prescriptive advice on overcoming the perils of skepticism toward advertising. Because the study found that skepticism toward online advertising results in a negative attitude toward online advertising, researchers introduced product knowledge and the perceived ethics of the online seller as remedial moderating variables. Learning from these findings, practitioners and managers of online businesses should increase the

positive impact of their advertising efforts by adopting ethical practices to induce positive signals. The ethical practices of online sellers inculcate trust among consumers (Jamil & Qayyum, 2019), resulting in reduced STA.

As far as product knowledge is concerned, online sellers should increase awareness and knowledge of the product(s) in the market. For example, asking independent experts to share/write product reviews would be helpful. Another possible method would be to attract product-relevant influencers, who could review the products and post videos on their pages. Social media influencer reviews have influenced learning and decision-making (Jamil & Qayyum, 2021; J. E. Lee & Watkins, 2016). Therefore, informed consumers would be able to assess, adapt, and recommend online information.

In terms of mode, the findings of this study recommend the use of video ads over picture ads. Although people share more pictorial content on social media, particularly Instagram, the consumers, on the other hand, prefer video content. The video ads are considered socially richer (Ge et al., 2020), developing a connection between the source and recipient. Additionally, Jamil and Qayyum (2021) supported that Asian consumers prefer online information in video format and presented in their native language. Therefore, videos should be the preferred choice of online advertisers when it comes to promoting their products.

The advertisement characteristics (infotainment and puffery) are controllable variables, i.e., managers and practitioners can manipulate them. The relevant and entertaining ads help consumer information processing, resulting in reduced skepticism toward online advertising (Jamil & Qayyum, 2019). Conversely, the exaggerated claims make consumers believe that online sellers are unreliable, further escalating consumer STA. Therefore, online advertisers should mitigate consumers' online skepticism by making the ad content more informative/entertaining and avoiding exaggerated claims.

5.2. Limitations and Future Research Directions

Like every study, this one is not free from limitations. First, only two ad characteristics (infotainment and puffery) were used as stimuli in the study. Other variables could be included in the model that may influence skepticism, such as emotional appeals, confusion, and informativeness. Second, only one response variable has been included; other responses, such as media choice and negative word of mouth, may extend the model further. Third, as a novel contribution, the perceived ethics of online sellers was introduced in the model. Other remedial variables may be introduced to investigate whether they mitigate the perils of skepticism toward online advertising. Fourth, both survey and experimental designs were employed to strengthen the methodology of this study. At the same time, future investigations may opt for longitudinal designs to further understand the skepticism phenomenon.

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APPENDIX A

Link to video ad on Instagram:

<https://www.instagram.com/tv/CHfW914gKQH/>

Link to picture ad 1 on Instagram:

<https://www.instagram.com/p/CLV0M-8lyw2/>

Link to picture ad 2 on Instagram:

<https://www.instagram.com/p/CLa37l5HpYq/>

Link to picture ad 3 on Instagram:

<https://www.instagram.com/p/CMAYYb2HWNb/>

APPENDIX B

Calculations for multigroup analysis:

$$t = \frac{PC_1 - PC_2}{\left[S_{pooled} \times \sqrt{\left(\frac{1}{N_1} + \frac{1}{N_2} \right)} \right]}$$

where:

Spooled = a pooled estimator of variance

N_1 = Sample size of dataset 1

N_2 = Sample size of dataset 2

SE_1 = Standard error of structural path for group 1

SE_2 = Standard error of structural path for group 2

PC_1 = Path coefficient for group 1

PC_2 = Path coefficient for group 2

$$S_{pooled} = \sqrt{\left\{ \left[\frac{(N_1 - 1)}{N_1 + N_2 - 2} \right] \times SE_1^2 + \left[\frac{(N_1 - 1)}{N_1 + N_2 - 2} \right] \times SE_2^2 \right\}}$$