

CONSUMER RESPONSES TO ONLINE ADVERTISING AND ONLINE REVIEWS: THE MEDIATING ROLE OF COGNITIVE RESPONSES AND AFFECTIVE RESPONSES

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ABSTRACT

Scholars and practitioners are increasingly interested in the subject of integrated online marketing communications, i.e., the impacts of the sequence of online product information on customers' persuasion. In this study, we classify online reviews published by online interactive media into two types: online attribute-based review and online experiential-based review, and then examine the synergy caused by online advertising and the sequence of these two types of reviews. The matching of different product types and the sequence of online product information creates synergy based on the media congruence hypothesis and primacy effect. The results of two laboratory experiments (N1 = 160; N2 = 200) show that the matching between the sequence of online advertisement and attribute-based review and product category affects message responses through cognitive responses; the matching between the sequence of online advertising and experience-based review and product category affects responses through cognitive responses or affective responses. The results complement and extend the relevant literature on synergy and matching effect and provide practical implications for marketers to develop and implement online communication plans.

Keywords: Online advertising; Online reviews; Cognitive responses; Affective responses; Message responses

1. Introduction

With the development of the Internet, consumers spend much more time on online activities. To cater to their habits and attract their attention, enterprises is increasingly placing their advertisements online in the hope of reinforcing their brand image promote consumers' purchase (Akpınar and Berger, 2017). Investment by enterprises in online advertisements, estimated at USD 375 billion globally, exceeds that in offline advertisements (iResearch, 2018). In addition to online advertising, enterprises also adopt a larger number of other online marketing communication, such as social media and online brand communities (Chen et al., 2013; Havlena et al., 2007). Given the various options

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that online advertising channels offer, employing an optimal mix to increase the return on investment of media has become an important subject for enterprises (Killian and McManus, 2015).

Enterprises can disseminate product information by using multiple online media for marketing communication, either simultaneously or sequentially, creating a synergy effect. The synergy effect is reflected in how consumers' purchasing decisions and behaviors are influenced when they obtain information from multiple media rather than a single media. When consumers get access to product information from multiple online media simultaneously, they are required to conduct multi-tasks for processing the information, which distracts them and weakens the persuasive effects of the messages (Kazakova et al., 2016). However, exposing them to online product information sequentially will reinforce their information processing and will enhance the persuasive effects of the messages (Loda and Coleman, 2005). This study focuses on the latter scenario, where product information is published sequentially through various online media.

Previous studies on synergy have focused on different media, such as offline and online media (Berger et al., 2010) and different online media (Dong and Li, 2018). However, there are differences not only in the characteristics of various media but also in their product information content (Gavilanes et al., 2018). In examining the synergy of online media, Dong and Li (2018) showed that the sequence of online broadcasting media and online interactive media would create a sequence effect. The sequence effect is reflected in how the order of media influences consumers. Online broadcasting media is traditional online media, such as banner ads. Online interactive media mainly refers to social media, such as Twitter and Facebook. But the study did not consider the differences in the information content published by online interactive media, wherein consumers can publish both online attribute-based reviews and experiential-based reviews. The attribute-based review focuses on the objective characteristics of the focal products, which is an attribute-based evaluation; the experience-based review focuses on the overall subjective assessment of a product, which is an experience-based evaluation. Further, it did not specify if there was any difference between online advertising and attribute-based review or between online advertising and experience-based review.

Meanwhile, some studies of sequence effects have mainly found cognitive effects on memory (Varan et al., 2013). They rarely incorporate affective responses into the research model. With the formation of consumers' visual processing and their perception of experiential consumption (DeRosia and McQuarrie, 2019), affective responses play an important role in final consumption decision-making (Dong et al., 2017).

This study examines how the interaction between the sequence of online product information and product type influences consumer persuasion using the media congruency hypothesis and primacy effect. As a result, there are two substantial contributions to this study. In terms of theory, we distinguish the content of information published by consumers on online interactive media into attribute-based review and experience-based review and then explore the effects of the sequence of online product information and product type on consumer persuasion. The results of two laboratory experiments show that the matching between the sequence of online product information and product type affects message responses through cognitive and/or affective responses. This study enriches the research on integrated online marketing communications and broadens the existing literature on the sequence of online media and its effects on consumer persuasion. In terms of practical implications, this study provides marketers with valuable insights on developing reasonable and effective online marketing communication strategies; more specifically, marketing planners can effectively communicate using various online media in a reasonable way, based on the contents of product information, to achieve the anticipated persuasive effect.

2. Theoretical Background and Research Hypotheses

2.1. Online Media: Online Broadcasting Media (OBM) & Online Interactive Media (OIM)

With the development of the Internet, instead of offline, enterprise is increasingly taking advantage of online media to communicate information. In previous studies, Dong and his colleagues (2017) divide online media into online broadcasting media and online interactive media. Online broadcasting media is traditional online media, for example, banner ads; the characteristics include one-to-many communication (Taylor et al., 2013), and content is largely controlled by enterprises (Kim et al., 2016). Online interactive media mainly refers to social media, such as Twitter and Facebook, which are characterized by one-to-one or many-to-many deep interaction (Fischer and Reuber, 2011). The content of online interactive media is consumer created and has greater credibility (Fischer and Reuber, 2011), and consumers often refer to it to help them make decisions (Dong et al., 2022). Consumers are users of both media (Srivastava, 2013; Zhang et al., 2015).

The media congruency hypothesis shows that the consistency of information content and product category is beneficial to the communication effect (Wright and Lynch, 1995). In marketing, many researchers focus on the influence of search products and experiential products on online media selection (Kim et al., 2016; Lim et al., 2015; Loda and Coleman, 2005). Search products refer to consumers who can obtain enough attribute information before purchasing (Zeitham and Bitner, 2000), and such product information is easily obtained from online advertising (Hsieh

et al., 2005). Experiential products refer to consumers who cannot obtain attribute information before purchasing and using (Brush and Artz, 1999). Information on such products is generally obtained from more reliable information sources such as social media (Huang et al., 2013; Smith and Vogt, 1995). Compared with experiential products, the attributes of search products are more clear. Because consumers can obtain search product information through a variety of information sources before purchasing, it is difficult for marketers to fabricate product characteristics (Nelson, 1974). For experiential products, consumers need to buy them before they can get to know the relevant information. In this case, consumers think that marketers may spread some vague information and turn to trust the opinions given by the consumers. Therefore, search product information communicated by online broadcasting media is more likely to gain consumers' trust (Ford et al., 1990). While experiential product information communicated by online interactive media can gain more trust from consumers. In other words, online broadcasting media matches search products, and online interactive media matches experiential products. Directly, Lim and Chung (2011) found that online broadcasting media is more suitable for spreading search products, while online interactive media is more suitable for spreading experiential products. Because the attribute information of search products is publicized by marketers through online broadcasting media, while the information on experiential products is published by consumers in online interactive media. The matching of products and media attracts more attention from users (Petty et al., 1983), thus enhancing consumers' response to information (Dahlén, 2002).

Although studies have focused on the match between different media platforms and product types, the information content as an important part of media platforms, few studies have focused on the match between information content and product types. The next section introduces online broadcasting media and online interactive media details and the matching relationship between different content and different product types.

2.2. Online Media Content: Online Advertising, Online Attribute-based Review (OAR) / Online Experience-based Review (OER)

Communication content of online broadcasting media includes new product announcements, current product displays, sweepstakes and contests, sales, infotainment, and organization branding (Gavilanes et al., 2018). Among them, enterprises usually publish new products or characteristics of current products in the form of text and/or pictures. This is called online advertising. Communication content of online interactive media mainly appears in the form of reviews (Ana et al., 2022; Liang et al., 2022). In this study, online interactive media content is divided into attribute-based review and experience-based review. Attribute cues are objective features, which can be raw materials directly related to the product, or prices and packaging not directly related (Bruce et al., 2020). Experiential cues describe how using a product brings about feelings such as sensory pleasure (Keller, 1993). Becker et al. (2018) even directly pointed out that the emotional intensity of experience-based reviews and other emotional cues is higher than that of attribute-based reviews and other informative cues. Therefore, the attribute-based review is mainly aimed at the objective characteristics of products and is rational, objective, and concrete. The experience-based review mainly involves consumers' overall evaluation of products from a subjective perspective and is emotional, subjective, and abstract (Huang et al., 2013) (See appendix A for details). As mentioned in the previous section, online broadcasting media matches the search product, and online interactive media matches the experiential product. So online advertising posted in online broadcasting media matches search products, and attribute-based review / experience-based review posted in online interactive media matches experiential products.

2.3. The Matching of the Order of Online Media Content and Product Type

Although online interactive media is receiving increasing attention from companies and researchers, online broadcasting media also plays a significant role in communicating brand and product information, as consumers tend to get their information from both online media (Srivastava, 2013; Zhang et al., 2015). Previous studies have looked at synergies between different media (Naik and Peters, 2009; Feng and Papatla, 2011) and sequence effects (Edell and Keller, 1987; Loda and Coleman, 2005; Varan et al., 2013), the former is reflected in how consumers' purchasing decisions and behaviors are influenced when they obtain information from multiple media rather than a single media, and the latter is reflected in how the order of media influences consumers. However, the above studies only focus on media. Based on the media congruency hypothesis and primacy effect, this study focuses on content in different media and the match of content order and product type.

This study believes that for search products, presenting online advertising first and then attribute-based review / experience-based review will help consumers form a positive brand attitude and improve their purchase intention. For experiential products, attribute-based review / experience-based review should be presented first, and online advertising should be presented later, which is beneficial for consumers to form a positive brand attitude and improve purchase intention.

According to the media congruency hypothesis, media congruency will attract more attention (Petty and Cacioppo, 1986). When consumers pay more attention to media information, the degree of elaborate processing of information may be higher, and the primacy effect will also occur (Haugtvedt and Wegener, 1994). The primacy effect refers to

early exposure to an attribute enhancing the importance of the attribute (Oppewal et al., 2015). This process encourages consumers to focus more on the previous information, enhancing information intensity (Biswas et al., 2009) and perceptual congruence, leading to positive results (Reich and Pittman, 2020; Germelmann et al., 2020). Therefore, compared with the order of attribute-based review / experience-based review → online advertising, the order of online advertising → attribute-based review / experience-based review will make consumers focus their attention on online advertising, further enhance consumer perceptual congruence, thus strengthening their trust in the information communicated by enterprises and making them easier to be persuaded. In other words, the order of online advertising → attribute-based review / experience-based review will generate positive brand attitude and higher purchase intention. Similarly, for experiential products, because it match attribute-based review / experience-based review in online interactive media, the content presentation sequence of attribute-based review / experience-based review → online advertising makes consumers pay more attention to attribute-based review / experience-based review, enhance perceptual congruence, and form positive attitudes such as trusting reviews, which is conducive to the formation of positive brand attitudes and the improvement of purchase intention. Based on the above, we propose:

H1a: For search products, compared with attribute-based review → online advertising, presenting media content to consumers in the order of online advertising → attribute-based review is more conducive to forming a positive brand attitude and purchase intention.

H1b: For search products, compared with experience-based review → online advertising, presenting media content to consumers in the order of online advertising → experience-based review is more conducive to forming a positive brand attitude and purchase intention.

H2a: For experiential products, compared with online advertising → attribute-based review, presenting media content to consumers in the order of attribute-based review → online advertising is more conducive to forming a positive brand attitude and purchase intention.

H2b: For experiential products, compared with online advertising → experience-based review, presenting media content to consumers in the order of experience-based review → online advertising is more conducive to forming a positive brand attitude and purchase intention.

2.4. The Mediate Effect of Cognitive Responses / Affective Responses

We believe that for search products, presenting media content to consumers in the order of online advertising → attribute-based review / experience-based review is more conducive to forming a positive brand attitude and purchase intention. These effects are mediated by cognitive responses. As mentioned above, when media content is presented to consumers in the order of online advertising → attribute-based review / experience-based review for search products, consumers will focus on online advertising due to media congruency hypothesis and primacy effect, and online advertising is relatively objective information about product attributes released by enterprises, which will stimulate consumers' cognitive responses (Camilleri, 2020).

For experiential products, when media content is presented in the order of attribute-based review → online advertising, consumers' cognitive responses will be stimulated, thus improving their purchase intention and forming a positive brand attitude. When media content is presented in the order of experience-based review → online advertising, it will stimulate consumer' affective responses, thus improving their purchase intention and forming a positive brand attitude. Specifically, when media content is presented to consumers in the order of attribute-based review / experience-based review → online advertising, consumers will pay more attention to attribute-based review / experience-based review, and attribute-based review and experience-based review are different types of reviews, so there are two possibilities. The first one is attribute-based review → online advertising. Because attribute-based review is the review with objective and rational characteristics (Huang et al., 2013), like online advertising, it will stimulate consumers' cognitive responses and elaborately process product attributes in the review, making it easier to trust the content of the review. Second, experience-based review → online advertising. Experience-based review is the review based on consumer experience, which is more subjective and emotional (Huang et al., 2013). Therefore, when consumers pay attention to experience-based review due to media congruency hypothesis and primacy effect, it will stimulate more affective responses of consumers. Thus, positive brand attitude and higher purchase intention are formed (Peck and Wiggins, 2006). Based on these, the following proposes are made:

H3a: For search products, presenting media contents to consumers in the order of online advertising → attribute-based review will stimulate consumers' cognitive responses, thus forming a positive brand attitude and higher purchase intention

H3b: For search products, presenting media contents to consumers in the order of online advertising → experience-based review will stimulate consumers' cognitive responses, thus forming a positive brand attitude and

higher purchase intention

H4a: For experiential products, when media contents are presented in the order of attribute-based review → online advertising, consumers’ cognitive responses will be stimulated, thus improving their purchase intention and forming a positive brand attitude.

H4b: For experiential products, when media contents are presented in the order of experience-based review → online advertising, consumers’ affective responses will be stimulated, thus improving their purchase intention and forming a positive brand attitude.

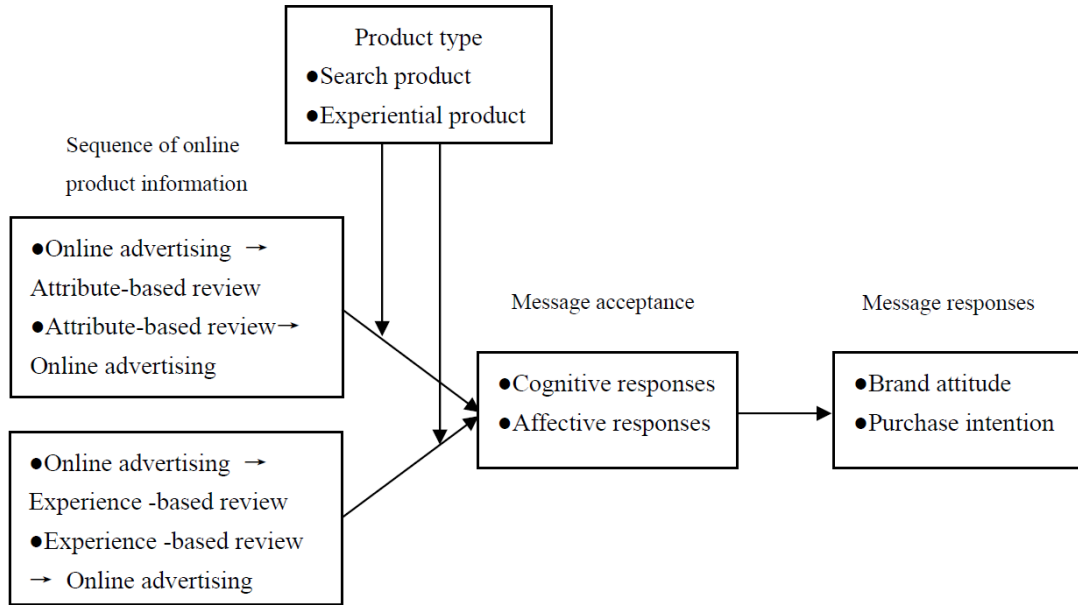


Figure 1: Conceptual Model

3. Experiment 1

Experiment 1 was a laboratory experiment with a 2 (product category: experience vs. search) × 2 (information order: attribute-based review → online advertising vs. online advertising → attribute-based review) experiment design. Randomly recruited participants to collect data to verify H1a, H2a, H3a and H4a—the fit effect of online media content order and product category (experience- attribute-based review → online advertising; search- online advertising → attribute-based review), and the mediating role of cognitive responses.

3.1. Pretest

Pretest 1

In order to ensure the effectiveness of product category manipulation, we conducted pretest 1 before the formal experiment.

According to the classification stander of Mudambi and Schuff’s (2010), four alternative products were selected through an 8-person focus group interview. Smartphones and cameras are the search products, while education and tourism are the experience products. We finally chose smart phones and tourism as experimental materials.

Further, 26 participants were recruited to evaluate the experiential and search attributes of smartphones and tourism. Measure items include “It is important for me to see/touch/listen to the product to assess it,” “I can adequately assess this product by using only the information provided by the retailers or manufacturers about the product’s attributes and features,” and “I can evaluate the quality of this product simply by reading product attribute information.” (7-point scale). The first measures experiential attributes, and the latter two measure search attributes. The results showed that smart phone was the search product ($M_{\text{experience}} = 4.88, M_{\text{search}} = 5.65, p < 0.001$), tourism is the experiential product ($M_{\text{experience}} = 5.86, M_{\text{search}} = 4.30, p < 0.001$). Therefore, in the formal experiment, smart phones are used as search products and tourism as experiential products.

Pretest 2

Since product attribute reviews were involved in the formal experiment, after the above pre-test1, we asked the

participants to list 10 attributes of smart phones and tourism products respectively (Smith and Vogt, 1995). For smartphones, the most commonly mentioned attributes are cosmetic features (such as color, size) and features (such as memory, photography, etc.). For tourism, the most frequently mentioned attributes are the destination as well as environmental characteristics (such as transportation, culture, food, etc.). Next, refer to Huang et al. (2013) to summarize and extract comments (attribute-based review) about attributes through the following steps. First, we observed several product reviews of smartphones in Taobao stores and on tourism at Tuniu.com. We used python to crawl and extract nearly 100 comments for each product on these websites. We asked two graduate students majoring in online marketing to filter these comments based on whether the comments were product-related evaluations; non-product-related comments (e.g., transaction- and transportation-related reviews) were removed. Second, based on the definition of attribute-based review, we asked four graduate students to choose 40 attribute-based reviews. Third, because keeping comments with similar lengths ensures the rigor of the experiment (Park and Lee, 2008), we removed extremely long or short comments. We finally extracted similar number of comments for each product (e.g., 10 attribute-based reviews each for smartphone and tourism).

3.2. Design & Participants

In Experiment 1, 2 (product category: experience vs. search) \times 2 (information order: attribute-based review \rightarrow online advertising vs. online advertising \rightarrow attribute-based review) was used. The participants were randomly assigned to one of four scenarios. The messages are all positive.

A total of 160 participants were recruited from a university in central China. Their average age was 19.6 and 57% were male. They often get product information from various channels in life, such as social networking sites, online advertising and so on. Each situation involved approximately 40 participants.

3.3. Procedure

The experiment took place in the university computer lab, where each participant was randomly assigned to a scenario. To ensure that the subjects understood the task, they were given 5-10 minutes to read the introduction and ask questions. After confirming and understanding the task, start the experiment.

The experiment mainly includes three parts. First, we manipulated the product category through a scenario. In the experiential condition, participants were told that they planned to travel. In the search condition, participants were told they planned to buy a new phone. In both cases, subjects were told they had enough money. Next, the information sequence was manipulated, and the experimental stimulus materials were designed by referring to real product information and product reviews in daily life. Specifically, according to the products assigned to the subjects in the previous stage, we presented them with a website picture, in which there were both online advertising and attribute-based comments (attribute-based review), but online advertising and attribute-based review were randomly assigned. After reading the relevant stimulus material, the participants entered the last part, variable measurement. Including the dependent variables (brand attitude, purchase intention), mediation variables (cognitive response), demographic variables, control variables and product category manipulation test.

3.4. Measurement

Based on the manipulation checks, we adopted the product type scale used in the pretest (Cronbach's $\alpha = 0.839$).

Similar to previous studies (Dong et al., 2017; Dong et al., 2018), we measured brand attitude with three 7-point items: "positive/negative," "good/bad," and "interesting/uninteresting" ($\alpha = 0.907$). Purchase intention was measured by three 7-point Likert items: "I would never buy this brand," "I would seriously consider purchasing this brand," (strongly disagree/strongly agree), and "I would be likely to purchase this brand" (very unlikely/very likely) ($\alpha = 0.862$). The cognitive response toward a brand was measured through positive thoughts about the brand. With reference to the method developed by Chang and Thorson (2004), this study induced cognitive thoughts in response to the exposure to media messages. The participants were first asked to list all the thoughts that came to mind while watching stimulus material. After watching, they were asked to rate each idea based on its positive, negative, or neutral attributes.

The participants' product category involvement was measured to control for its effects on the product type (Koschate-Fischer et al., 2014). This involved two 7-point Likert items: "For me, category X is very important" and "For me, category X is very interesting" ($\alpha = 0.828$, inter-item correlation = 0.712).

3.5. Results

Manipulation Checks

ANOVA confirmed the successful manipulation of the product type. A smartphone was used as a search product, and tourism was used as an experience product in the pretest. The smartphone ($M_{\text{experience}} = 4.70$, $M_{\text{search}} = 5.59$, $p < 0.001$) was classified as a search product, whereas tourism ($M_{\text{experience}} = 5.88$, $M_{\text{search}} = 4.35$, $p < 0.001$) as an experience product.

Matching Effects

Firstly, participants' product category involvement does not differ by product type ($F(1, 158) = 0.322$, $p = 0.571$).

We used ANOVA to verify the matching effect of product category and information order. First, product category and information order have no significant influence on the brand attitude ($F_{\text{product category}}(1, 158) = 1.713, p = 0.121$; $F_{\text{information order}}(1, 158) = 0.094, p = 0.759$) or purchase intention ($F_{\text{product category}}(1, 158) = 0.160, p = 0.690$; $F_{\text{information order}}(1, 158) = 0.517, p = 0.473$). However, the interaction between product category and information order is significant (regardless of brand attitude ($F(1, 156) = 6.276, p < 0.001$) or purchase intention ($F(1, 156) = 9.084, p < 0.001$)) as the dependent variable (see Figure 2). Brand attitude as a dependent variable: For search products, online ads were presented first, and then attribute-based reviews were presented, and participants had a more positive brand attitude ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 5.132, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 4.686$; $F(1, 156) = 4.418, p < 0.05$); For experiential products, attribute-based comments were presented first and then online advertising was presented, and participants had a more positive brand attitude ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 4.529, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 5.298$; $F(1, 156) = 22.138, p < 0.001$). When purchasing intention is taken as the dependent variable, the results are similar to the above: for search products, online advertising is presented first, and then attribute-based comments are presented, and participants have higher purchasing intention ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 5.297, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 4.872$; $F(1, 156) = 6.997, p < 0.01$). For experiential products, attribute-based comments were presented before online advertising, and participants had higher purchase intention ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 4.401, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 5.307$; $F(1, 156) = 23.329, p < 0.001$). Controlling for participants' product category involvement, the results are still significant. Results support H1a and H2a.

In addition, the interaction between the sequence of online product information and the product type had a significant influence on cognitive responses ($F(1, 156) = 4.621, p = 0.004$) (see Figure 3). For search products, online ads were presented first and then attribute-based comments were presented, and subjects had stronger cognitive responses ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 3.980, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 2.864$; $F(1, 156) = 7.184, p < 0.01$). For experiential products, attribute-based comments were presented first and then online ads were presented, and subjects had stronger cognitive responses ($M_{\text{online advertising} \rightarrow \text{attribute-based review}} = 2.361, M_{\text{attribute-based review} \rightarrow \text{online advertising}} = 3.770$; $F(1, 156) = 17.294, p < 0.001$). Controlling for participants' product category involvement, the results are still significant.

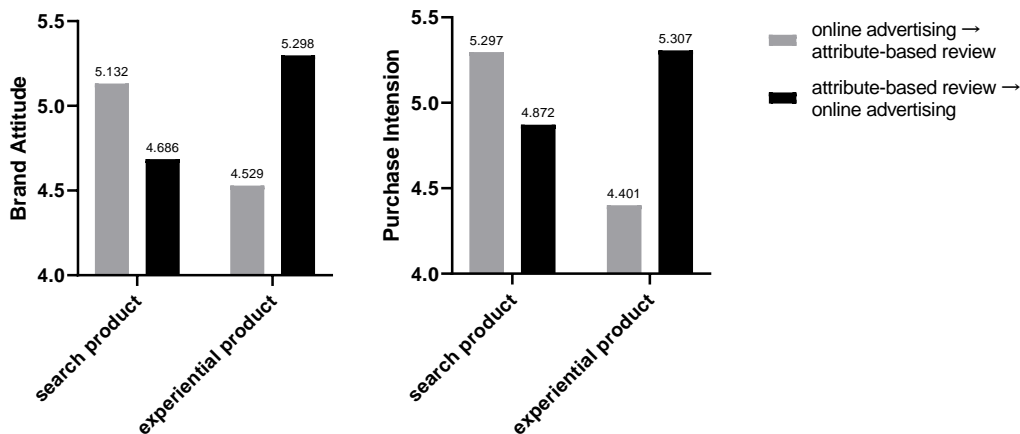


Figure 2: Brand Attitude and Purchase Intention as the Function of the Interaction of Sequence and Product Type (Experiment 1)

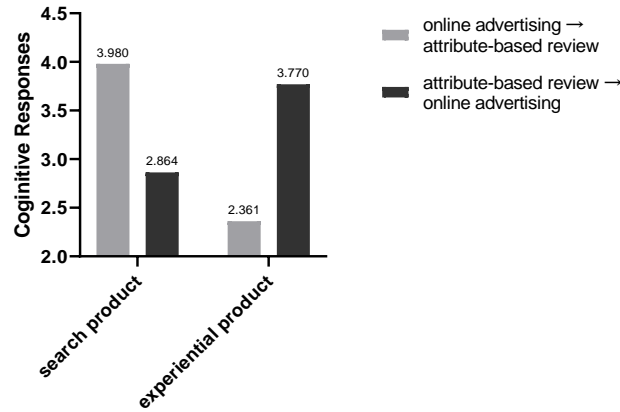


Figure 3: Cognitive Responses as the Function of the Interaction of Sequence and Product Type (Experiment 1)

Mediation Effects

We used Process (Model 8) to verify the mediating role of cognitive response. Information order was taken as an independent variable, product type as moderating variable, cognitive response as mediating variable, and brand attitude and purchase intention as the dependent variable. When brand attitude is a dependent variable: the matching effect of product type and information order mediated by cognitive responses ($b = -0.29$, boot SE = 0.05; 95% bias-corrected bootstrap confidence intervals (BCBCI) $[-0.503, -0.056]$), index of moderated mediation ($b = -0.35$, boot SE = 0.06; 95% BCBCI $[-0.547, -0.12]$). And the direct effect does not include 0 (BCBCI $[-0.802, -0.110]$), it is complete mediation. When purchase intention is the dependent variable, cognitive responses also mediates the matching effect of product type and information order ($b = -0.24$, boot SE = 0.07; 95% BCBCI $[-0.427, -0.061]$), index of moderated mediation ($b = -0.31$, boot SE = 0.04; 95% BCBCI $[-0.461, -0.112]$). And the direct effect does not include 0 (BCBCI $[-0.639, -0.151]$), it is complete mediation. Controlling for participants' product category involvement, the results are still significant. Results support H3a and H4a.

The content of online interactive media is mainly divided into attribute-based reviews and experience-based reviews. In experiment 1, the matching effect of information order (online advertising and attribute-based review order) with product category and the mediating effect of cognitive responses were proved. In Experiment 2, we will consider experience-based reviews, further demonstrate the matching effect of information order and product category, and explore new mediating mechanisms.

4. Experiment 2

Experiment 2 also adopted a 2 (product category: experience vs. search) \times 2 (information order: experience-based review \rightarrow online advertising vs. online advertising \rightarrow experience-based review) experimental design. Participants were randomly recruited to collect data to verify H1b, H2b, H3b, and H4b, that is, the matching effect of online media content order and product category (experience- experience -based review \rightarrow online advertising; search- online advertising \rightarrow experience -based review) and the mediation role of cognitive/affective responses. Still use smartphones as search products and tourism as experiential products.

4.1. Pretest

Similar to experiment 1, we also obtained experience-based reviews through a pre-test.

We followed similar steps as experiment 1 to extract experience-based reviews. We used python to crawl and extract nearly 100 comments for each product; non-product-related comments (e.g., transaction and transportation-related reviews) were removed. Second, based on the definition of experience-based review, we asked four graduate students to choose 40 experience-based reviews. Third, to keep comments similar in length, we removed extremely long or short comments. We finally extracted a fixed number of comments for each product (i.e., 10 experience-based reviews each for smartphone and tourism).

4.2. Design & Participants

2 (product category: experience vs. search) \times 2 (information order: experience-based review \rightarrow online advertising vs. online advertising \rightarrow experience-based review) was used in the experiment2. A university in east China recruited 200 MBA students, with an average age of 35.8 and 51% male, who often obtain product information

through multiple channels in daily life. About 50 participants participated in each scenario.

4.3. Procedure & Measurement

The experimental process is the same as experiment 1, but the difference lies in the product information. Attribute-based review in Experiment 1 is replaced with experience-based review. The affective response measurement was added to the measurement content. The affective response was measured with three 7-point items: “the online product information was very enjoyable,” “the online product information was very likeable,” and “the online product information was very interesting.” (Peck and Wiggins, 2006). The rest is identical to experiment 1.

4.4. Results

Manipulation Checks

ANOVA confirmed the successful manipulation of product type. In the pretest, smartphones and tourism were used as the search and experiential products, respectively. Smartphones ($M_{\text{experience}} = 4.42$, $M_{\text{search}} = 5.37$, $p < 0.001$) were classified as the search product and tourism ($M_{\text{experience}} = 5.78$, $M_{\text{search}} = 4.25$, $p < 0.001$) as the experiential product.

Matching Effects

Firstly, participants’ product category involvement does not differ by product type ($F(1, 198) = 0.080$, $p = 0.777$).

As the experiment 1, product category and information order have no significant influence on the brand attitude ($F_{\text{product category}}(1, 198) = 1.713$; $p = 0.121$; $F_{\text{information order}}(1, 198) = 0.020$; $p = 0.888$) or purchase intention ($F_{\text{product category}}(1, 198) = 0.014$; $p = 0.908$; $F_{\text{information order}}(1, 198) = 3.047$; $p = 0.082$). Two-factor ANOVA showed that the interaction between product type and information order was significant ($F_{\text{Brand Attitude}}(1, 196) = 7.126$, $p < 0.001$; $F_{\text{Purchase Intention}}(1, 196) = 11.026$, $p < 0.001$) (see Figure 4). For search products (smart phones), when online ads were presented first followed by experience-based reviews, participants had a more positive brand attitude ($M_{\text{online advertising} \rightarrow \text{experience-based review}} = 5.123$, $M_{\text{experience-based review} \rightarrow \text{online advertising}} = 4.657$; $F(1, 196) = 5.077$, $p < 0.05$) and a higher purchase intention ($M_{\text{online advertising} \rightarrow \text{experience-based review}} = 5.352$, $M_{\text{experience-based review} \rightarrow \text{online advertising}} = 4.922$; $F(1, 196) = 7.186$, $p < 0.01$). For experiential products (tourism), when experience-based reviews were presented first followed by online advertising, participants had a more positive brand attitude ($M_{\text{online advertising} \rightarrow \text{experience-based review}} = 4.448$, $M_{\text{experience-based review} \rightarrow \text{online advertising}} = 5.186$; $F(1, 196) = 17.758$, $p < 0.001$) and a higher purchase intention ($M_{\text{online advertising} \rightarrow \text{experience-based review}} = 4.199$, $M_{\text{experience-based review} \rightarrow \text{online advertising}} = 5.301$; $F(1, 196) = 28.427$, $p < 0.001$). Controlling for participants’ product category involvement, the results are still significant. Therefore, H1b and H2b are supported.

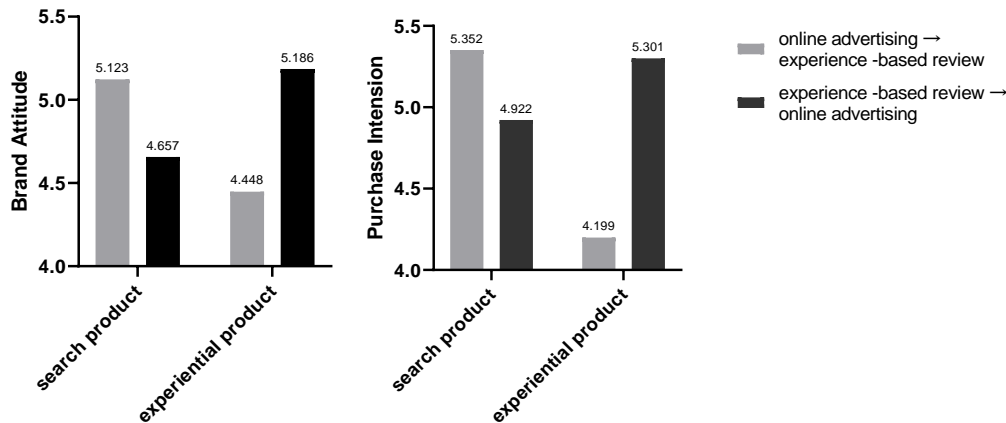


Figure 4: Brand Attitude and Purchase Intention as the Function of the Interaction of Sequence and Product Type (Experiment 2)

Mediation Effects

We used Process (Model 8) to verify the mediating role of cognitive response/affective responses respectively. The order of information was taken as the independent variable, product type as the moderating variable, cognitive responses and affective responses as the mediating variable, brand attitude and purchase intention as the dependent variable. When brand attitude is the dependent variable, the cognitive response has a significant mediating effect on search products ($b = -0.22$, boot SE = 0.06; 95% BCBCI [-0.427, -0.023]), index of moderated mediation ($b = -0.26$, boot SE = 0.07; 95% BCBCI [-0.411, -0.042]) and the direct effect does not include 0 (BCBCI [-0.842, -0.064]), it

is complete mediation; for experiential products, affective responses play a significant mediating role ($b = -0.29$, boot SE = 0.06; 95% BCBCI [-0.501, -0.093]), index of moderated mediation ($b = -0.35$, boot SE = 0.07; 95% BCBCI [-0.521, -0.188]) and the direct effect includes 0 (BCBCI [-0.648, 0.112]), it is partial mediation. When purchase intention is used as the dependent variable, the results are consistent with the above: for search products, cognitive responses play a significant mediating role ($b = -0.08$, boot SE = 0.04; 95% BCBCI [-0.166, -0.024]), index of moderated mediation ($b = -0.11$, boot SE = 0.05; 95% BCBCI [-0.206, -0.047]) and the direct effect does not include 0 (BCBCI [-0.754, -0.006]), it is complete mediation; for experiential products, affective responses plays a significant mediating role ($b = -0.36$, boot SE = 0.08; 95% BCBCI [-0.554, -0.192]), index of moderated mediation ($b = -0.39$, boot SE = 0.08; 95% BCBCI [-0.581, -0.204]) and the direct effect does not include 0 (BCBCI [-0.770, -0.004]), it is complete mediation. Controlling for participants' product category involvement, the results are still significant. Therefore, H3b and H4b are supported.

5. Discussion

Researchers have studied the synergy effect and the sequence effect created by different online media on consumer persuasion (Assael, 2011; Dong and Li, 2018). Although exploring the synergy effect created by the combination of online broadcasting media and online interactive media and the sequence effect created by its sequence has made a great theoretical contribution to integrated communication, previous studies did not distinguish the content of online interactive media product information. Because the content published by online interactive media includes attribute-based review and experience-based review, the synergy between their respective combinations with online advertising will be different (Huang et al., 2013). This study constructed a model in which consumers' cognitive responses, affective responses, and message responses (brand attitude and purchase intention) are influenced by the sequence of online product information and product type according to the media congruency hypothesis, and primacy effect, respectively.

Our hypotheses were supported by two experiments. Experiment 1 showed that, the congruity between the sequence of online product information and product type (e.g., the congruity between the online advertising → attribute-based review sequence and search products; the congruity between the attribute-based review → online advertising sequence and experience products) led to more positive cognitive responses and message responses; cognitive responses exhibited a mediating role in the relationship between the sequence of online product information and product type for message responses. Experiment 2 revealed that the congruity between the sequence of online product information and product type (e.g., the congruity between the online advertising → experience-based review sequence and search products and that between the experience-based review → online advertising sequence and experience products) led to significant differences in cognitive responses, affective responses, and message responses; cognitive responses and affective responses exhibited mediating role in the relationship between the sequence of online product information and product type for message responses. Overall, both experiments demonstrated how the sequence of online product information and product type influences consumer persuasion, and the mechanism underlying this influence.

Although the relationships between the sequence of online product information and consumer persuasion have also been discussed in previous studies, the current study differs from them in three aspects. First, this study distinguished the reviews published by online interactive media into attribute-based review and experience-based review, which create different synergy effect based on their sequence in relation to online advertising. Although previous studies have captured the effects of the sequence of online advertising and online reviews on consumer persuasion, the conclusions of these studies are inconsistent (Camilleri, 2020). By classifying online reviews, this study systematically determines the effects of the sequence of online product information on consumer persuasion. Second, this study adopted cognitive responses as the mediating mechanism underlying the relationships between the sequence of online product information and consumers' message responses. In a cognitive structure model, cognitive responses play a critical role in the influence of product information on consumer persuasion (Olson et al., 1982). Third, this study also examined the mediating effects of affective responses. In advertising studies, affective responses have always been regarded as an important response variable for advertising information; however, past studies on the sequence of product information ignore affective responses (Bellman et al., 2019).

5.1. Theoretical Contributions

This study offers the following theoretical contributions. First, it expands the previous research on the sequence of online media. Although previous research has already shown that congruity between online media sequence and product type would produce greater cognitive responses and message responses (Dong and Li, 2018), our results were based on different types of media that published different types of product information. This study further classified online reviews of online interactive media into attribute-based review and experience-based review, and tested the

sequence effect created by the sequence of online advertising and attribute-based review, and online advertising and experience-based review, which supplements and extends the related literature on sequence effect.

Second, by revealing the mediating mechanism between cognitive responses and affective responses in the sequence of online product information and consumer persuasion, this study further develops the related literature on sequential effect. Previous studies have explained the effects of media sequence on consumer persuasion mainly from the cognitive perspective, such as consumer message acceptance, to identify the persuasion effect of information on consumers. Advertising researchers aimed at affective responses, which are regarded as an important mediator of the effect of advertising information on consumer persuasion (Batra and Ray, 1986). This study also explored the mechanism of cognitive responses and affective responses and tested their mediating role in the effect of the sequence of online advertising and experience-based review on message responses.

Third, this study enriches the research on the media congruence hypothesis. Previous research has mainly investigated the media congruence effect caused by congruity between media and product type based on a single medium (Loda and Coleman, 2005). According to the current study, as regards the relationship between the sequence of online product information and consumer persuasion, when consumers are influenced by two sets of product information, the media congruence effect will arise as long as the media are congruent with the product type.

5.2. Managerial Implications

This research offers three main management insights to enterprises interested in integrated online marketing communications. First, the results of this study show that the sequence of online product information consisting of online advertising and attribute-based review or online advertising and experience-based review creates the sequence effect. Marketers can implement marketing communication plans based on three aspects: information source, information content, and time. Publishing different types of information content through different information sources at different points in time will produce positive outcomes (Dong et al., 2017). Specifically, online broadcasting media and online interactive media are two types of online media; within online interactive media, there is a difference in information source between enterprise release information and user-generated content; in terms of information content, marketers can further distinguish between online review types, including attribute-based review and experience-based review; in terms of time, the sequence of time will produce sequence effect.

Second, our findings show that the congruity between the sequence of online product information and product type causes the media congruence effect, thereby producing greater cognitive responses, affective responses, and message responses. The result provides guidance for marketers to choose suitable online media for communication. In addition, marketers need to consider the channel of information, that is, the type of online media, because online media is the contact point between consumers and the enterprise/brand. When the product category is a search product, the marketer can consider online broadcasting media such as online banner advertising, to gain more attention from consumers and generate stronger message responses. When the product is an experience product, the preferred communication channel is social media such as online interactive media; it is more likely to drive consumers' attention to the experience, which leads to stronger message responses.

Third, the results also show that there are differences in the mechanisms through which online advertising produces sequence effects with different types of online reviews. Specifically, the sequence of online advertising and attribute-based review mainly affects message responses through cognitive responses; the sequence of online advertising and experience-based review affects message responses through cognitive responses or affective responses. Based on this, a marketer can determine the content of product information according to the communication target. The marketer can also guide consumers to publish corresponding information content on social media to achieve marketing goals.

5.3. Limitations and Future Research

The findings of this study may provide several possible directions for future research. First, the current study mainly explores the psychological mechanism of the sequence of online product information on consumer persuasion. Although we try to overcome this defect by employing MBA participants, there are some shortcomings of the external validity of the results.

Secondly, the product information on both online advertising and attribute-based review or online advertising and experience-based review is positive, and its effects on consumer persuasion satisfied the boundary condition that the congruity between media messages and product types caused the media congruency hypothesis, increased consumers' attention, and subsequently enhanced the consumer persuasion effects. Future research can also examine the effects of the sequence of online advertising and negative online reviews on consumer persuasion. If negative online reviews exist, the communication of online advertising and negative online reviews would influence consumer persuasion due to the selective attention caused by information inconsistency and perceived threats (Duhachek et al., 2007).

Thirdly, the results show that the congruity between product type and the sequence of online product information increases the consumer persuasion effect. Other factors may also promote the persuasion effect of the sequence of

online product information. For instance, brand familiarity enhances consumers' understanding of information but also lowers their hierarchical information processing (Campbell et al., 2003). In addition, the source of information published in social media will also have an effect on the sequence of online product information, because in social media, both consumers and enterprises can post information, which is published by the product information of different sources within social media also produces synergies. Therefore, information sources can be considered an important moderating factor (Danaher and Dagger, 2013).

Finally, the results of this study confirmed the mediating role of affective responses in the relationship between the sequence of online product information and consumer persuasion effects. However, this study mainly aimed at the general effect of online product information on consumers. Future research can further consider the specific emotions induced by online product information (Poels and Dewitte, 2019), such as warmth, pleasure, guilt, and so on, which are often discussed in advertising research (Edell and Burke, 1987). These specific emotions are more explanatory than the general effect for specific consumer behavior (Underhill, 1999).

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Appendix A. Details of the Experience-Based Review

Online attribute-based review (OAR), Chinese Version.



外形外观: 外观颜值很高, 非常不错, 很好 特别是配上专用的外壳, 更好看
屏幕音效: 屏幕不愧是2k屏, 很有质感, 使用起来感觉很不错, 反应灵敏, 音效方面, 双扬声器, 非常好, 音质不错
拍照效果: 拍照效果杠杠的, 120倍变焦, 非常满意
运行速度: 运行快, 特别是安装APP时, 瞬间完成
待机时间: 5000毫安, 待机还是不错的, 值得推荐

Online attribute-based review (OAR), English Version



Appearance: Appearance is very beautiful, very good, especially with a dedicated shell, better look.
Screen & Sound: 2K screen, very textured, good to use; Sound effects have dual speakers, sound quality is good.
Photo performance: The photo performance is great, 120x zoom.
Speed: Fast running, especially when installing APP, instant completion.
Standby time: 5000 mAh, good standby, recommended.

Online experience-based review (OER), Chinese Version.



首先肯定一下京东的包装, 很到位, 东西保护的很好。然后就是重头戏了, 安卓之光, 这个手机真的漂亮, 拿到手机的感觉很美妙, 很丝滑, 开机以后更加迷人, 屏幕真的是近期手机屏幕的天花板, 开机可以更新一版系统, 更新完没啥区别, 使用了一下wifi6
下载速度也是杠杠的, 总之买了不后悔

Online experience-based review (OER), English Version.



First of all, confirm the packaging of Jingdong, things are well protected. This phone is really beautiful and comfortable to touch. I am very satisfied with the screen, which automatically updates the system when it is turned on. Download speed is also fast, do not regret buying it.