THE EFFECT OF PRODUCT REVIEW PRESENTATION AND PRODUCT TYPE ON CUSTOMER EVALUATIONS

Liqiang Huang, University of Science and Technology of China & City University of Hong Kong Joint Advanced Research Center, Tat Chee Avenue, Kowloon, Hong Kong, P.R.C, China., hlq@mail.ustc.edu.cn

Chuan-Hoo Tan, Department of Information Systems, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, P.R.C, China., ch.tan@cityu.edu.hk

Kwok-Kee Wei, Department of Information Systems, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, P.R.C, China., isweikk@cityu.edu.hk

Abstract

This research examines how the different presentations of attribute-based and experience-based online product reviews and the focal product they describe jointly influence potential consumers’ evaluations. Drawing on theories of information processing, we propose that different presentation ways would influence consumers’ evaluations, and such effect would be also affected by the focal product (i.e., either search product or experience product) the reviews describe. We design two studies to test our proposition. In Study 1, emphasizing on the primary effect and recency effect in information processing, the results of our experiment reveal that the reviews in the experience-based reviews first treatment are evaluated as more helpful for search product; and the reviews in the attribute-based review first treatment are evaluated as more helpful for experience product. In Study 2, focusing on the wrap effect, our results suggest that experience based reviews are wrapped by attribute based reviews are more helpful for search product, and the experience based reviews wrap attribute based reviews are more helpful for experience product. Theoretical and practical implications are discussed.

Keywords: Online product review, information processing theories, review presentation, product type
INTRODUCTION

Online consumer product review has been considered an effective way to influence potential consumers’ product judgment and decision (Li and Zhan 2011; Mudambi and Schuff 2010). A recent industrial report\(^1\) indicates that more than 92% of potential consumers look for and read product reviews posted by prior buyers or users. This leads managers to pay great attention to product reviews, where the managers try to screen and present helpful ones to potential customers thus facilitating their purchase decision. Although a considerable amount of current research focuses on examining what type of reviews would be helpful to potential consumers and generate interesting findings (Cao et al. 2011; Ghose and Ipeirotis 2010; Jin and Liu 2010; Pan and Zhang 2011; Schindler and Bickart 2012), they typically emphasize on identifying one piece of review only, while neglecting that a consumer’s judgment or decision making is typically determined by a series of reviews. This leads us to consider how to present a series of reviews to potential consumers, thus make their decision much easier.

Product reviews are generally classified as attribute-based and experience-based (Mantel and Kardes 1999; Pan and Zhang 2011; Xia and Bechwati 2008). An attribute-based review focuses on talking about the product attributes and characteristics, e.g., the hard disk capacity of a computer. An experience-based review expresses subjective or affective evaluations of the product, which is more related to a consumer’s holistic evaluations, e.g., the good design of a smartphone. With different expressions on evaluating a product, these two types of reviews are considered as sending different information to potential consumers and, thus being perceived as different helpful. Other than the review type which influence a consumer’s evaluation, researchers also argue that such evaluation should also be affected by the specific product type (either search or experience product) the reviews describe (Huang et al. 2009; Mudambi and Schuff 2010; Zhu and Zhang 2010). A search product refers to the product that a consumer could evaluate its quality through the introduction of its attributes (e.g., notebook computer); while for an experience product, on the contrary, a consumer is difficult to assess its quality by the introduction of its attributes. To this end, taking into consideration of both the review type and product type, we seek to understand how to present the attribute-based and experience-based reviews to either search or experience product would be perceived as helpful by potential consumers?

Drawing on the information processing literature regarding the primary effect, recency effect as well as wrap effect, we propose that the presentation of both the attribute-based and experience-based reviews jointly influence a consumer’s evaluation on the review helpfulness. We conduct two experiments with different ways of manipulations to test the proposition. This work contributes to the current literature in three important facets. First, although a large quantity of prior studies have tried to identify helpful review, they typically focus on examining one piece of review only. This study, as the first attempt, investigates and validates that presenting a series of attribute-based and experience-based reviews to potential consumers would be perceived as helpfulness in different levels. Second, mixed and inconsistent findings are generated from information processing studies in relation to the primary and recency effect. Specifically, some of the studies argue that a consumer’s information processing is greatly influenced by the primary effect, while others support the opposite. Through the investigation of this study, we apply and verify that a consumer in comprehending reviews is significantly influenced by the recency effect. Third, although the different ways of presentation of both the attribute-based and experience based review do bring the different perceptions to consumers, the effects of these ways to consumers’ evaluations on the review helpfulness are typically contingent on the focal product the reviews describe, thus extending the current understanding.

2 THEORETICAL FOUNDATIONS

2.1 Online product reviews

Online product reviews is always considered as one of the most important sources for consumers to search for product and using related information (Chevalier and Mayzlin 2006; Duan et al. 2008; Forman et al. 2008). Realizing that the important role of product reviews plays in influencing the consumers’ judgment and decision made, managers have successfully presented the reviews in the online shopping websites. Meanwhile, in order to facilitate the potential consumers to learn the product and persuade them to buy on the platforms, they also try to identify and present the helpful reviews to potential consumers (Korfiatis et al. 2012; Otterbacher 2009). A helpful review refers to the review which could help potential consumers to learn the product and understand the performance and quality of the product. Based on the big commercial value of presenting the helpful reviews to potential customers, researchers pay their great attentions on this interesting research area. Cao et al. (2011) suggest that semantic characteristics are influential in the review helpfulness, and reviews with extreme opinions receive more helpfulness votes than those with mixed or neutral opinions. Li and Zhan (2011), through the minding method, identify that some characteristics (e.g., review length, review sentence length) included in the reviews rated as helpfulness on Amazon. Moreover, Willemsen et al (2011) find that both the density and diversity serve as a significant predictor of perceived usefulness and, review valence impacts the helpfulness evaluation but moderated by the type of product (search or experience).

Much is gained from these studies regarding the review helpfulness examination. They typically neglect that the nature of the review itself, that is, how the review-writer gives his/her evaluations. A review writer could express his opinions on a product in two ways, through focus on talking about the attributes of the focal product or emphasizing on his/her overall experience (Mantel and Kardes 1999; Sujan 1985). For instance, in evaluating a notebook computer, he or she may assess it based on its various attributes, such as its memory capability, battery, CPU. Such a review, talking about the attributes or functions, is an attribute-based evaluation. In contract, experience-based review refers to a consumer’s overall evaluation of the product from a subjective perspective, such as “I like it so much, I promise this is the best one I bought before”. With different means of a review writer expresses his/her evaluations of a focal product, the potential consumers typically learn the product from these reviews. However, it is argued that these two types of review do transmit different information signals to potential consumers (Xia and Bechwati 2008), thus leading consumers to the different usefulness perceptions to the consumers in purchasing different types of product, i.e., search product and experience product.

The essential difference between a search product and an experience product is whether a consumer could do a judgment of the product quality or performance before purchase (Huang et al. 2009; Nelson 1974). For a search product, like notebook computer, a consumer would be easily to make an evaluation of the product by the introduction of its attributes, such as the hard disk, display cards. On the contrary, for an experience product, like skill dress, a consumer would be relatively difficult to make an evaluation on it even though the attributes are presented. Such essential difference between the search product and experience product requires consumers to have different types of information in judgment or decision making (Bei et al. 2004; Weathers et al. 2007). Based on the fact that online product review is the key source of potential consumers to learn the performance of a product, researchers have argued that there is a match between the review and the product it describes in influencing a consumer’s helpfulness evaluation, i.e., the attribute-based reviews would be more helpful for judging a search product; while the experience-based reviews would be more helpful for judging an experience product (Mantel and Kardes 1999; Xia and Bechwati 2008). Based on this proposition, this study seeks to understand how to present the attribute-based and experience-based
reviews to either the search or experience product, thus eliciting consumers’ favorable evaluations on them.

2.2 Information processing theories

It is widely conceived and suggested that the sequence of the information presentation would influence a consumer’s attitude formation and judgment (Bruine de Bruin and Keren 2003; Mantonakis et al. 2009). By presenting different types of information with various sequences, researchers have successfully demonstrated a series of effects which influence consumers’ information processing, which include the primary effect, the recency effect and wrap effect. Primary effect is posited by researchers that, with the provision of different types of information, the information presented in the front of all the information would mostly influence consumers’ judgment and decision making, as well as their memory on it (Howard and Kahana 1999; Klein and Ahluwalia 2005). For instance, in advertising research context, marketing researchers always use this effect through presenting the most useful and attractive information at the beginning of the whole advertisement in order to impress the potential consumers and improve the effectiveness of the advertisement. The recency effect, which is the inverse of the primary effect, refers to a cognitive bias that the information processor would be more likely to be impacted by the information positioned at the end of the provision of a series of different types of information (Baddeley and Hitch 1993; Maxham III and Netemeyer 2002). Different from both the primary effect and recency effect, researchers also argue that the most effective way to improve consumers’ memory of a type of information is presenting them at both the beginning and the end, which is also called the wrap effect.

A considerable amount of studies have been conducted and much is gained from the prior work (Beaman and Morton 2000; Keller 1991; Murphy et al. 2006), but researchers have not reached a consistent agreement regarding which type of effect would play the decisive role in influencing a consumer’s judgment or decision making. Even though there is no consistent agreement in relation to what type of effect would dominate a consumer’s information processing, the central idea is that the different presentation of different types of information do influence a consumer’s information processing and judgment. Based on these arguments and relating to the specific context of information processing, we argue that a consumer’s evaluation of the review information as helpfulness should also be influenced by the different presentation of the reviews. As mentioned earlier, according to the nature of review, reviews are classified as attribute-based and experience-based types. In addition, the theory also suggests that a consumer’s different purchase purpose of either a search product or an experience product would influence his/her information searching behavior. Therefore, we propose the following proposition (see Figure 1 of the research model):

Overarching proposition: A consumer’s evaluation of the reviews as helpful is typically influenced by the different presentation ways of reviews and the focal product the reviews describe.

Figure 1. Research Model

3 STUDY 1

Drawing on the theory of primary effect and recency effect in information processing, the design of this study seeks to explore how the different presentations (i.e., attribute-based review first and experience-based reviews first) influence consumers’ evaluations on the reviews as helpfulness describing for different types of product, i.e., a search product or an experience product. We design a
laboratory experiment to test the proposition. Before conducting the experiment, we perform a pretest to find out what product is appropriate for this experiment.

3.1 Pretest

The objective of this pretest is to identify the product which we would use in the experiment to represent search and experience product. We do this because our review of the prior literature suggests that there is an inconsistency of product classification. For instance, digital camera is considered as a search product in some studies, while taken as an experience in other studies (Huang et al. 2009; Mudambi and Schuff 2010). In this pretest, we recruited 10 students (who did not attend the main experiment but from the sample pool with the subjects who attended the main experiment). They were firstly told the definitions of search and experience product. Subsequently, they were asked to list some of products they consider which belong to these two categories in their daily life. Although a variety of products they listed, most of them referred the electronic product and clothing. In the next step, we recruited another 10 students to confirm the product classifications. After they were told the definitions of these two types of products, they were asked to evaluate notebook computer and clothing. The result showed that all of them successfully classify them. Therefore, in our main experiment, we would use the notebook computer and clothing to represent the search and experience product.

3.2 Experimental design

This research employs a 2 by 2 between-subject treatment design to examine how the review presentation and product type jointly influence consumers' evaluation on the review helpfulness. Table 1 lists the four treatments in the experiment. In treatment 1 and 2, we design the reviews as putting the attribute-based reviews ahead of the experience-based reviews for search and experience product. And in treatment 3 and 4, on the contrary, we put the experience based reviews ahead of attribute based ones for search and experience product. With respect to how many reviews we use in each treatment, we interview 10 students in the same sample. Generally, they read two pages of reviews when they tend to buy a product. Therefore, in each treatment, we use 10 pieces of attribute based reviews and 10 pieces of experience based reviews.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Search product</th>
<th>Experience product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1</td>
<td>Attribute based + experience based</td>
<td>Treatment 1</td>
</tr>
<tr>
<td>Treatment 2</td>
<td>Attribute based + experience based</td>
<td>Treatment 2</td>
</tr>
<tr>
<td>Treatment 3</td>
<td>Experience based + attribute based</td>
<td>Treatment 3</td>
</tr>
<tr>
<td>Treatment 4</td>
<td>Experience based + attribute based</td>
<td>Treatment 4</td>
</tr>
</tbody>
</table>

*Table 1. The treatments of the experiment*

3.3 Manipulation and variables

As referred earlier, the independent variables were manipulated by putting the attribute-based and experience-based reviews with different orders. While for the product type, we provided these two types of presentation of reviews for both the search and experience products. As regard to the review helpfulness, we adopted the items from the current research to keep the validity. The following items adopted from Connors et al. (2011) were used: 1).The reviews improve my ability to make a decision on whether or not to buy this product; 2).The reviews give me insights into whether or not I would like this product; and 3).The reviews contain useful information about this product.

3.4 Procedure

A total of 160 students were recruited for the experiment. They were randomly and evenly assigned to the four treatments (i.e., 40 subjects for each treatment). The subjects were recruited by campus bulletin and campus internal forum. Upon arrival, the subjects were randomly assigned into the four treatments. They were instructed of the details regarding the experiment. They were asked to image
that it was a real online shopping experience. After the instruction, the subjects were asked to open the online shopping system and commence the experiment (screenshot in Figure 2). To avoid the careless in the experiment, the subjects were informed that they would be able to leave when all the subjects had finished it. At the end of the experiment, they were asked to finish a questionnaire in relation to their evaluations on the reviews. After finishing the whole experiment, the subjects were debriefed and thanked. Meanwhile, they were also given the cash payment.

Figure 2. Screenshot of review system

3.5 Data analysis

We control the personal characteristics which may influence an individual’s decision making process. The control check indicates that the age, gender, as well as subjects’ shopping experience did not significantly influence the result. Adopting the items from Xia and Bechwati’s study (2008), their evaluations on either the attribute-based and experience-based reviews also showed that they were significantly different. As predicated, our ANOVA result suggested that there was an interaction effect between the different presentation (i.e., attribute-based reviews first and experience-based reviews first) and the product type in influencing consumers’ helpfulness evaluations (F=29.889, p<0.001). The means are listed in Table 2. To examine the nature of the interaction effect, we performed a simple effect analysis. Specifically, we plotted the whole data according the product type (i.e., search and experience product category). The results indicated when describing for a search product, the presentation as experience-based reviews first were perceived as more helpful than attribute-based reviews first (t=3.473, p=0.001). On the contrary, when these two types of reviews describing for an experience product, the reviews in the treatment that attribute-based reviews first were perceived as more helpful than experience-based first (t=4.432, p<0.001).

<table>
<thead>
<tr>
<th>Search product</th>
<th>Attribute-based reviews first</th>
<th>Experience-based reviews first</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>5.492</td>
<td>4.700</td>
</tr>
<tr>
<td>SD</td>
<td>0.769</td>
<td>1.219</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience product</th>
<th>Attribute-based reviews first</th>
<th>Experience-based reviews first</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.992</td>
<td>5.783</td>
</tr>
<tr>
<td>SD</td>
<td>0.808</td>
<td>0.790</td>
</tr>
</tbody>
</table>

Table 2. Means of each treatment

3.6 Discussion

The results reveal that there is a match between the review presentation, i.e., either the attribute based first or the experience based first, and the product type the reviews describe in influencing consumers’ evaluations on the review helpfulness, thus supporting our proposition. Through this experiment design and conduction, we identify that, in the review comprehension context, the recency effect, rather than the primary effect, significantly influences consumers’ information processing and product judgment. This finding extends our understanding of the primary and recency effects in the review comprehension context. Generally, in Study 1, the proposition is supported under the situation of designing the primary and recency effect. In Study 2, we extend the current understanding and try to explore how the wrap effect plays in such context.
4 STUDY 2

Based on the theory of wrap effect in information processing, this study seeks to explore how the presentations of attribute based reviews wrapping experience based reviews and experience based reviews wrapping attribute based reviews influence consumers’ evaluation of the reviews; and how such effect would be contingent on the product reviews describe.

4.1 Experimental design

The experiment employs a 2 by 2 between subject treatment design to examine another type of review presentation and product type jointly influence consumers’ evaluation on the review helpfulness. Table 3 lists the four treatments in the experiment. In treatment 1 and 2, we design the reviews as using the attribute-based reviews to wrap the experience-based ones for search and experience product. And in treatment 3 and 4, on the contrary, we utilize the experience-based reviews to wrap the attribute-based ones for search and experience product. As suggested by the interview results in Study 1, in this study, we still use 20 pieces of reviews in the design. Specifically, in treatment 1 and 2, we use 5 attribute reviews at the beginning and at the end respectively, while use 10 pieces of experience reviews in the middle. On the contrary, in treatment 3 and 4, we use 10 pieces of experience-based reviews to wrap 10 attribute-based ones.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Search product</th>
<th>Experience product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 1</td>
<td>Attribute based + experience based + attribute based</td>
<td>Treatment 2</td>
</tr>
<tr>
<td>Treatment 3</td>
<td>Experience based + attribute based + experience based</td>
<td>Treatment 4</td>
</tr>
</tbody>
</table>

*Table 3. The treatments of the experiment*

4.2 Variables and procedure

The variable measurement and the procedure are the same as we introduced in Study 1.

4.3 Results

ANOVA result suggested that there was an interaction effect between the different presentation (i.e., attribute-based reviews wrapping experience based reviews and experience-based reviews wrapping attribute-based ones) and the product type in influencing consumers’ helpfulness evaluations (F=19.445, p<0.001). The means are listed in Table 4. To examine the nature of the interaction effect, we performed a simple effect analysis. Specifically, we plotted the whole data according the product type (i.e., search and experience product category). The results indicated when describing for a search product, the presentation as attribute-based reviews wrapping experience based ones were perceived as more helpful than experience-based reviews wrapping attribute-based ones (t=-3.539, p<0.01). On the contrary, when these two types of reviews describing for an experience product, the reviews in the treatment that attribute-based reviews wrapping experience based reviews were perceived as less helpful than attribute-based reviews wrapping experience based ones (t=-2.766, p<0.01).

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Attribute-based reviews wrapping experience based ones</th>
<th>Experience-based reviews wrapping attribute-based ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search product</td>
<td>Mean 5.349</td>
<td>Mean 4.533</td>
</tr>
<tr>
<td>SD</td>
<td>1.007</td>
<td>1.056</td>
</tr>
<tr>
<td>Experience product</td>
<td>Mean 4.825</td>
<td>Mean 5.558</td>
</tr>
<tr>
<td>SD</td>
<td>1.186</td>
<td>1.185</td>
</tr>
</tbody>
</table>

*Table 4. Means of each treatment*
5 GENERAL DISCUSSION

Through the conduction of these two experiments, the findings suggest that a consumer’s evaluation on the reviews as helpfulness is jointly determined by the review presentation and the focal product the reviews describe. Specifically, when the attribute-based reviews are presented after the experience-based reviews, such type of reviews are perceived as more helpful for a search product; while when the attribute-based reviews are presented before the experience-based reviews, then the reviews would be perceived as more helpful for an experience product comparing for a search product. Although prior studies have advocated that the primary effect would play a significant role in influencing a consumer’s information processing and judgment, in the review comprehension research context, we identify that the recency effect plays the decisive role. Moreover, the findings also reinforce the argument regarding the wrap effect. That is, based on the assumption that attribute-based review is more helpful for search product and experience-based review is more helpful for experience product, the findings indicate that the attribute-based reviews wrapping experience-based ones are more helpful to a search product, and the experience-based reviews wrapping attribute-based ones are more helpful to an experience product.

This work contributes the both the current literature and practice as the following aspects. First, it offers a new lens to see how the reviews would be perceived as helpful to consumers. Although past studies have explored and identified a series of characteristics of reviews in influencing the review helpfulness (Liu et al. 2008; Zhang and Tran 2011), they typically focus on investigating one piece of review only. As a matter of fact, a consumer’s information judgment and decision making is affected by a set of review together. This is the first attempt to design and test how a series of reviews would be perceived as helpful with different presentation ways. Second, to our best knowledge, there is no study emphasizing on examining how the reviews influence a consumer’s information processing, especially there is no focus on which effect would play in the review comprehension process, i.e., the primary effect or the recency effect. Our study investigates and validates that in information comprehension process, the recency effect would be more significant in affecting a consumer’s information processing. Third, by identifying that the different presentation of the reviews would influence a consumer’s evaluation on the reviews as helpfulness, and such effect would be also influenced by the focal product the reviews describe. This guides mangers to caution that when they are screening and presenting helpful reviews to the potential customers, the match between the review type (i.e., attribute-based and experience-based) and the product type must be taken into the consideration. Moreover, they had better to consider how to present the reviews to the potential consumer with a way which could be perceived as more helpful.

As with all research studies, this work also has its limitations. For instance, when we test the primary effect and recency effect, we only consider one situation of the review division, that is, we use ten pieces of attribute-based reviews and ten pieces of experience-based reviews. Actually, to fully understand how the recency effect plays its role, the best way is testing other situations, like considering nine pieces of attribute based reviews and eleven experience based reviews. We hope the future research could focus on this interesting topic and gain more much interesting findings. In addition, although we obtain consumers’ overall evaluations regarding the review helpfulness, we have not tested consumers’ perception in the process where they perceive the reviews as most helpfulness. Future research could also trace the process regarding how a consumer evaluates and comprehends the reviews.

References


