

Seller Product Information vs. Electronic Word-of-Mouth: An Empirical Study on Online Buyers' Preferences

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Abstract: - Online buyers rely heavily on information delivered online to make their purchase decisions. In a typical online marketplace, multiple sellers are often selling items of the same brand. Prospective buyers who are interested in buying one item of a specific brand have access to two typical types of information: (1) product information provided by the sellers; and (2) seller reputation scores provided by other buyers (electronic word-of-mouth or eWOM). Prior studies have shown that involvement can moderate the effects of eWOM on consumer information processing and decision-making process. In this study, we aim to answer two important research questions. First, when product information from sellers and eWOM of the sellers are both presented, which information has the greater impact on online shoppers' final preferences? Second, how does involvement with a specific product affect the relative importance of these two types of information? We conducted a conjoint experiment to answer these research questions. We used opera ticket as a low-involvement product and used bicycle as a high-involvement product and designed eight hypothetical seller profiles for each of the two products. These eight seller profiles were ranked and rated by the participants based on their preferences. The results show that when a product is perceived as a high-involvement product, seller reputation is more important than the product information offered by the seller and even price. On the other hand, if a product is perceived to be a low-involvement one, product information offered by the seller is more important than the seller's reputation. Therefore, we conclude that that product involvement moderates the relative impacts of word-of-mouth and product information on consumers' preferences. For both products, price is the least important factor.

Key-Words: word-of-mouth; involvement; conjoint analysis

1 Introduction

Consumers often perceive that purchasing a product online is risky, although online shopping also provides many benefits, including greater flexibility,

less time spent and saved money. According to Roselius (1971) and Jacoby and Kaplan (1972), there are six different types of risks in a typical shopping transaction: financial, performance,

physical, psychological, social, and time lost. All these risks are present in online shopping, often to a greater extent for several reasons. First, buyers may not receive their products on time when they buy them online. Alternatively, they may not get refunds if they do not receive their products. Second, it is more likely that the products' performance and conditions may be different from that stated by the sellers or expected by the buyers because online buyers cannot physically examine or try out online products before buying them. They must wait until they receive the products. Third, although some online marketplaces do offer their customers certain buyer protection policies, these policies typically expire in a short period. Even when these policies cover the products, solving any dispute with online sellers can be inconvenient, time-consuming, and often frustrating as well. For example, recently one of the authors brought a motion tracker on eBay, but he did not receive the product for nearly a month even though he communicated with the seller multiple times. The seller firmly insisted he had sent the package which of course never arrived. Later it took the buyer a tremendous amount of time and effort to get the refund from eBay. A browse of the buyers' reviews in most online marketplaces could show that many online buyers have shared this kind of negative experience.

Previous studies have found that these risks associated with online shopping negatively influence consumers' attitudes toward Internet shopping (ex. Fenech & O'Cass, 2001; Shih, 2004), the intention to shop using the Internet (ex. Liao & Cheung, 2001; Pavlou, 2003; Chen & Thadani, 2012), and actual Internet shopping behavior (ex. Park, Lee, & Ahn, 2004; Korgaonkar & Karson, 2007; Aishad et al., 2015).

Facing these risks associated with online shopping and unable to examine a product of interest before purchase, online buyers will rely heavily on the informational cues available online to make their purchase decision. Nowadays most online marketplaces provide their prospective buyers three different types of information. First, sellers of a brand or model describe its attributes, price, and shipping cost, etc. For used products, the sellers also describe the items' current physical conditions. Second, previous customers who have purchased products from these sellers can post quantitative reviews based on their purchase experiences with these sellers, typically using a 5-star scale. Third, previous customers can post quantitative reviews on their experiences with the model or brand, again typically using a 5-star scale, with or without optional verbal comments or

images. This second and third types of information provided to potential buyers by other buyers are referred to as electronic word-of-mouth (eWOM).

For an online buyer who has already chosen one specific brand or model and has decided to buy one item online, there are often multiple items offered by different sellers. The prospective buyer needs to decide from which seller she buys the product. Therefore, the first and second kinds of information are pertinent to her choice of the seller and therefore the item. This study investigates the effects of these two types of information, i.e. sellers' reputation and the product information, on online buyers' preference. Particularly, it identifies the conditions wherein one type of information is more important to buyers than the other is.

2 Literature Review and Research Questions

Previous studies have found that word-of-mouth (WOM) has a significant impact on consumers' purchase decisions in the traditional retailing context (Katz & Lazarfeld, 1955; Engel et al., 1969; Richins & Root-Shaffer, 1988, Martin & Lueg, 2013; Chompunuch & Beise-Zee, 2015). Consumers believe that WOM is more trustworthy and persuasive than advertisements on traditional media such as TV, radio, and print (Chen & Thadani, 2012). They believe that WOM is more credible and objective than the marketing information provided by sellers, independent of selling intents and, therefore, free of conflict of interest (Katz & Lazarfeld, 1955; Day, 1971; Murray, 1991).

In the context of online shopping, numerous studies have been conducted to show that electronic word-of-mouth (eWOM) has a significant impact on online marketing at both the market level and individual level. At the market level, WOM can affect sales of a variety of products sold online. For example, Chevalier and Mayzlin (2006) found that WOM affects the sales of books online. Liu (2006) found that WOM also affects box office movie revenue. At the individual level, eWOM has also been proven to be highly important to online shoppers. Prior studies have investigated factors associated with stimuli, communicators, receivers, responses, and context factors (see Chen & Thadani, 2012 for an overview).

In the literature of eWOM, the elaboration likelihood model (ELM) of persuasion has been widely used to explain eWOM's effects on consumers (Sher and Lee, 2009; Lee et al., 2008; Park & Lee, 2008; Part et al., 2007; Chen & Thadani, 2012). Developed by Petty and Cacioppo

(1986), ELM explains how different stimuli change people's attitude. There are two alternative routes in ELM to persuasion: the central route and the peripheral route. People's motivation and ability to evaluate the stimuli determine which route they will take and how much elaboration they will engage in. The central route applies when people are motivated to and able to evaluate the stimulus. They apply a significant amount of cognitive effort to thoughtfully consider the stimulus. The change in their attitude typically is more enduring. On the other hand, when people are not motivated and unable to evaluate the stimulus, they will take the peripheral route. People will be persuaded by making simple inferences about the stimulus or associating peripheral cues, which are not logically related, with the stimulus.

Defined as how important consumers perceive the consequences of their purchase (Soloman, Marshall, & Stuart, 2015), involvement has been long defined by the marketing literature to be a major factor that affects consumer decisions. Particularly, involvement affects consumers' selection of the two alternative routes in the ELM. When consumers make high-involvement purchases, they are more motivated to engage in cognitive activities through the central route which takes more effort. When consumers have buying product with lower involvement, they are more likely to rely on peripheral cues to process information (Lee et al., 2008; Park & Lee, 2008; Part et al., 2007; Chen & Thadani, 2012).

Prior studies have shown that involvement can moderate the effects of different attributes of eWOM on consumer information processing and decision-making process. Lee et al. (2008) found that consumers conform to negative online consumer review and involvement interacts with the effect of the quality of eWOM on consumers' attitude change. When involvement is high, high-quality negative eWOM has a greater effect than low-quality negative eWOM; when involvement is low, the quality of negative eWOM does not affect the conformity effect. Park and Lee (2008) reported that involvement plays a moderating role in the effects of eWOM's informant role and recommender role. High-involvement consumers are more likely to consider the informant role to be more important than the recommender role while low-involvement consumers consider the recommender role as being more important.

However, when making purchases online, eWOM is only one of multiple stimuli online consumers are exposed to. In addition to eWOM, online consumers can also find sellers' description

of the products' attributes, cosmetic and functional conditions, and price. Few previous studies have considered how these stimuli affect consumers' preferences when they are all present.

Based on the discussion above, some interesting questions arise, namely, when the product information from sellers and the eWOM of the sellers are both presented, which information has the greater impact on online shoppers' final preferences? How does involvement with a specific product affect the relative importance of these two types of information? The same questions also apply to the relative importance of eWOM and price.

3 Research Method

We conducted a conjoint experiment to answer these research questions. Widely used in marketing research, conjoint analyzes how consumer choices are determined using different product attributes and prices assigned by the sellers. It assumes that consumer preference or the utility of a product is the sum of separate amounts of utility for each distinct attribute of a particular product, called a part-worth in a conjoint analysis. One reason for the popularity of this method is that conjoint analysis requires respondents to trade off different product attributes, one against another, the way consumers typically do in the real-world setting (Green & Srinivasan, 1990). When conducting a conjoint analysis, we first need to create multiple hypothetical seller profiles with attributes set at different pre-selected levels. Then respondents can rate or rank these product profiles to show their preferences. Based on these rankings or ratings, we can measure how the importance of each of these attributes relates to the respondents' preferences by examining the respective individual part-worths.

We conducted a pilot study, identifying opera ticket as a low-involvement product and a used bicycle as a high-involvement product. We designed 2 (high vs. low reputation score) \times 2 (positive vs. balanced product information by the seller) \times 2 (high vs. low price) conjoint experiments for the opera ticket and the used bicycle respectively. Table 1a shows the two selected levels of the seller's reputation score, the product conditions of the used bicycle and opera ticket provided by the sellers, and the prices, respectively. Table 1b shows the eight hypothetical seller profiles for both the used bicycle and the opera ticket.

Table 1a: List of Seller Profile Attributes

Attribute	Level 1	Level 2
Seller reputation score	High: 4.9/5	Low: 3.5/5
Product information: Used bicycle	Positive: 90% new, without any problem	Balanced: 90% new with some scratches; the paddles were broken but fixed.
Product information: Opera ticket	Positive: A-class; middle and front seat	Balanced: B-class; more back seats on either the right or left side.
Price: Used bicycle	High: ¥ 300	Low: ¥ 250
Price: Opera ticket	High: ¥ 550	Low: ¥ 450

Note: During the study, the exchange rate for the US Dollar and Chinese Yuan was approximately 1 to 6.20. The selected prices of these two products were based on prices of typically comparable items sold online in China.

Table 1b: List of Bicycle and Opera Ticket Seller Profiles

Seller Profile No.	Seller reputation score (eWOM)	Product information	Price
1	High	Positive	High
2	Low	Positive	High
3	Low	Balanced	Low
4	High	Positive	Low
5	High	Balanced	High
6	Low	Balanced	High
7	Low	Positive	Low
8	High	Balanced	Low

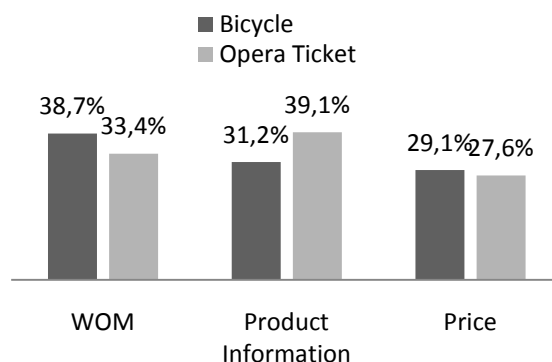
In total, 97 college students from 15 universities in China participated in this study. All the

participants had had an online shopping experience in the six months right before the study and had purchased used products online at least once. The eight seller profiles for each of the two products were presented to the participants as an electronic questionnaire online. For each product, the participants were asked to rank eight online sellers based on their preference from 1 (most preferred) to 8 (least preferred) and rate how favorable each of the sellers was toward buying them on a 9-point scale from 1 (unlikely to buy at all) to 9 (highly likely to buy).

4 Data Analysis and Results

Paired sample t-test results confirmed that the used bicycle was perceived to have higher involvement than the opera ticket ($p < 0.001$). We used a conjoint analysis to analyze the ranking of the respondents' preferences for the eight seller profiles. The relative importance of the sellers' reputation score (WOM), product information provided by the sellers and the price is shown in Figure 1.

Figure 1: Individual Relative Importance (%)



As we can see from the analysis, when buying the used bicycle, eWOM was the most important consideration for the respondents, followed by product information. In contrast, product information was the most important consideration when people were buying an opera ticket. Price was the least important factor for both products.

The estimated part-worths for three levels of the three features for these two products are presented in Table 2. These part-worths show similar results to those displayed in Figure 1. eWOM was more important for making the decision for the bicycle than for the opera ticket. On the other hand, product information played a more important role for the opera ticket than it did for the bicycle.

To evaluate the impact of the three attributes on the respondents' ratings of seller profiles, we proposed a model using the three factors as independent variables and the rating as a dependent variable. The basic regression model using these four variables was:

$$\text{Rating of Seller} = \beta_0 + \beta_1 \text{Seller Reputation Score (eWOM)} + \beta_2 \text{Product Information} + \beta_3 \text{Price} + \varepsilon$$

Table 2: Estimated Part-Worths

Feature	Level	Bicycle	Ticket
Seller Reputation Score (WOM)	Low	.000(.000)	.000(.000)
	High	-1.758(.298)	-1.500(.332)
Product Information	Balanced	.000(.000)	.000(.000)
	Positive	-1.418(.298)	-1.67(.322)
Price	High	.000(.000)	.000(.000)
	Low	0.825(.298)	1.222(.322)

Note: Standard errors are shown in parentheses.

Table 3: Results of the Regression

	Bicycle		Opera Ticket	
	Coefficient (β_i)	P-Value	Coefficient (β_i)	P-Value
Intercept	3.923	0.000	3.691	0.000
Seller WOM	1.405	0.000	1.170	0.000
Product Information	0.802	0.000	1.242	0.000
Price	0.771	0.000	0.928	0.000
F-statistics	54.584		65.796	
P-value	0.000		0.000	

Table 4: Average Rating of Bicycle and Opera Ticket Seller Profiles (Out of 9)

Seller Profile No.	1	2	3	4	5	6	7	8
Bicycle	6.1	4.7	4.7	6.9	5.4	3.9	5.5	6.1
Opera Ticket	6.0	5.0	4.6	7.1	4.9	3.7	5.8	5.8

Table 3 shows the output of the regression analysis for the used bicycle and the opera ticket. As we can see, the coefficients for the two models show

that eWOM is the most important factor in the decision for the used bicycle, while product

Information offered by the seller played the most important role for the opera ticket.

Also, it is interesting to examine the average ratings of these seller profiles as shown in Table 4. Special attention should be paid to the average ratings of two pairs of these seller profiles, i.e., seller #2 vs. seller #5 and seller #7 vs. seller #8, because the rating for each of these two pairs requires the customers to make a tradeoff between two attributes, WOM, and product information.

As Table 4 shows, while both offered a low price, seller #2 had a low eWOM score but provided positive product information while seller #5 had a high eWOM score but offered only neutral product information. When selling the bicycle, a high-involvement product, seller #5 had a higher rating than did seller #2 (5.4/9.0 vs. 4.7/9.0, $p=0.004$). However, when selling the opera ticket, seller #2 was slightly more preferred although the difference was not significant (5.0/9.0 vs. 4.9/9.0, $p=0.493$). Similarly, when the price was high, seller #7 had a low eWOM and positive product information while seller #8 had a high eWOM score and balanced product information. A comparison of this pair reveals the same pattern. When selling the used bicycle, seller #8 was more preferred than seller #7 (6.1/9.0 vs. 5.5/9.0, $p=0.015$). Again, they had almost the same rating when selling the opera ticket (5.8/9.0 vs. 5.8/9.0, $p=0.936$). The changes in the relative preferences of these seller profiles again clearly demonstrate that when we changed the type of product from bicycle to opera ticket, and as the involvement went from a higher level to a lower one, the product information provided by the seller became more important to these customers.

5 Discussion and Conclusion

By testing the relative importance and effect of seller reputation and product information on online buyers' preferences, this study contributes to the marketing literature. We find that product involvement moderates the relative impacts of word-of-mouth, price, and product information on consumers' preferences. When a product is perceived as a high-involvement product, seller reputation is more important than the product information offered by the seller and even price. On the other hand, if a product is perceived to be a low-involvement one, product information offered by the seller is more important than the seller's reputation. For both products, price is the least important factor. This study proves once again that WOM is highly

important for consumers' decision-making, particularly for high-involvement products. Based on the results of this study, sellers should not only be truthful when they describe the conditions of a product they offer for sale; they should also continuously keep their customers satisfied to earn and maintain good WOM as well.

This study has several limitations. The sample consists of students in a university in China, which limits the external validity of the conclusions. The participants did not commit their money to the products. We assumed that there are relatively small differences among the prices offered by different sellers, which may result in price's lower importance in consumers' choices. Further studies are recommended to use real transaction records of multiple products and from different countries.

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