Impact of Online Customer Reviews and Incentives on the Product Sales at the Online Retail Store: An Empirical Study on Video Game Titles at Amazon.com

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Abstract

This study investigates the impact of the customer reviews and the incentives on the product sales at the online retail store. Two customer review factors (i.e. average review ratings and the number of reviews) and two customer incentives factors (i.e. price discounts and special shipping offers) are used for the regression analysis. With the sales ranking data collected from the video game titles at Amazon.com, this study analyzes both the direct effects of the four factors and the interaction effects between the customer review factors and the incentives factors towards the product sales. The analysis result reveals the relationships mostly exist as hypothesized. The findings support both the direct and interaction effects of the customer reviews and the incentive factors on the product sales. Based upon the findings, discussions are provided with regard to the academic and practical contributions.

Keywords

e-commerce, online customer reviews, incentives, online word-of-mouth, e-WOM

1. Introduction

In the past decades, e-commerce has thrived fast along with the development of the digital economy. According to the Nielsen Global Online Survey on Internet shopping habits, more than 85% of the world’s online population has experienced e-commerce (Nielson 2008). Accordingly, researchers attempted to examine what factors influence the product sales at online stores. Among the various factors, the online word-of-mouth (also known as e-WOM) has gathered substantial attention from the researchers (Li and Hitt 2010). Indeed, the power of the Internet has enabled the customers to share information about the products with others through the online WOM (Duan, Gu, and Whinston 2008). The online WOM happens at many different places on the web, including web customer forums, blogs, social media, and so on. Amongst them, most influential network communication method is the customers’ product reviews at the online store (Duan et al. 2008; Li and Hitt 2010). Customers’ decision to purchase a product at the online retail store could be influenced by the other customers’ reviews on the product. Other than the online reviews, of course, there are several significant factors that can influence the customers’ purchase decisions in e-commerce environments. Those factors, which can be called the incentives factors, include the price discounts and the free (or discounted) expedited delivery offers (Hermann, Huber, and Coulter 1997).

Many studies attempted to find the factors that influence the online product sales such as product reviews at online stores (Dabholkar 2006; Duan et al. 2008; Hu, Liu, and Zhang 2008). However, the findings were mixed (Duan et al 2008). One of the reasons of the inconsistent results might be that the previous studies failed to develop a comprehensive model that incorporates online WOM and other factors. Given that there is a dearth of comprehensive models describing how online reviews and other significant incentives factors (i.e. price discount and free shipping offers) influence the sales simultaneously, it is necessary to fill the gap of knowledge. Therefore, this study tries to shed a light to building a model of relationships between the product sales and the factors associated with online WOM and incentives at the
online retail stores. Specifically, using empirical data gathered from a specific product category (i.e. video game titles) at a large online retail store (i.e. Amazon.com), this study will build a comprehensive model that incorporates the relationships between the product sales and the four factors, namely, the customer review ratings, the number of customer reviews, the price discount, and the free shipping offer. The rest of the paper is composed as follows. Section 2 will probe the theoretical foundation related to the online customer reviews and incentives, which builds a basis of the research model of the study. In section 3, the research methods, including data collection, statistical analysis, and the results of the analysis will be presented. Then, discussions and conclusions for the study will be provided.

2. Theoretical Foundation and Research Model

A number of previous literatures tried to explain the mechanism of online customer reviews and other related factors towards the product sales. Various models suggested factors affecting product sales in the e-commerce environments. Previous studies revealed that some factors are more important to determine the sales at online stores than at offline stores (Chatterjee 2001; Chen, Wu, and Yoon 2004; Dellarocas 2003; Forman, Ghose, and Wiesenfeld 2008). In this section, a comprehensive research model will be developed by incorporating essential factors that can affect the product sales at the online retail store based upon theoretical foundation from the previous literature.

2.1. Online Customer Reviews

WOM is one of the most significant factors that can influence the product sales (Duan et al. 2008; Godes and Mayzlin 2004). Affirmative words from trustworthy people on a product would help the potential customers build a positive perception toward the product, which ultimately leads higher possibility to purchase the product. Previous research investigated that customer reviews can influence on sales positively (Chevalier and Mayzlin 2006; Clemons, Gao, and Hitt 2006; Mudambi and Schuff 2010). Positive product reviews would give good impressions to people who consider purchasing the product. Especially, potential customers accept the product reviews as a proxy of the actual product quality (Gu and Lin 2006; Li and Hitt 2008). It was also shown that customer reviews are the major source of product information for online customers, supplementing and substituting the offline communications about the product quality (Chevalier and Mayzlin 2006; Zhu and Zhang 2010). Many online retail stores (e.g. Amazon.com) allow and encourage their customers to write reviews on the products so that the potential customers can read them. In the e-commerce environments, customers rarely have a hands-on experience to examine the product prior to the actual purchase due to the physical limitation of online stores. Thus, it is more likely that the customers who shop at the online retail stores heavily rely on the opinions from those who have already purchased and/or experienced the product. Consequently, it is more likely that they will purchase the products that received good review ratings from the existing customers. In this line of reasoning, the first hypothesis in this study is proposed as H1 below:

\[ H1: \text{The degree of overall review ratings on a product will positively affect the sales of the products at the online retail store.} \]

Customers' opinions about a product may be conflicting. Some people might be satisfied with a product so that they leave positive reviews. In contrast, some people might be dissatisfied with the product so they post critical reviews. Sometimes they may argue one another, which consequently make them to add more evidences to support their arguments. Throughout those various reviewing activities, richer information about the product can be accumulated. Eventually, the more reviews on a product are posted; the richer information about the product would be available to the potential customers. Therefore, it would be more likely that people purchase the products of which more information is available than the ones with less information. As Chen, Wu, and Yoon (2004) pointed out, customers would have more trust when they have an increase in information sources. They showed that the increasing number of customer reviews leads the overall rating to converge to the true quality (Chen et al. 2004). Also Zhu and Zhang (2010) claimed that the large number of reviews would affect customers. They confirmed the number of reviews affects the sales especially for less popular products. Given that the number of reviews can represent the popularity of the product, customers would choose more popular products to minimize their potential risk (Zhu and Zhang 2010). Moreover, customers interpret the large market share of a product as a signal of the product’s high quality (Caminal and Vives 1996). Overall, it could be concluded customers tend to purchase products that have more reviews posted than those with fewer reviews at the online store. Thus,
the number of the reviews on a product, regardless that the contents of the reviews are positive or negative, would lead more sales of the product. Accordingly, the second hypothesis is proposed as H2 below:

\[ H2: \text{The number of product reviews will positively affect the sales of the products at the online store.} \]

2.2. Customer Incentives

The other factor that influences the product sales at the online store is the incentives offered to the potential customers. Offering incentives is prevailing to promote the sales at online stores. Common types of incentives given to the customers in the e-commerce context are the price discounts and the exemption of shipping/handling charges.

Generally people will pursue monetary benefits. Thus, they want to pay as less as possible. Hermann et al. (1997) showed that the more discount the retailer offer, the more purchase intention of customers will happen. Especially, Degeratu, Rangaswamy, and Wu (2000) found that consumers are more sensitive to the price discount at the online than offline environment. One of the reasons why customers shop at an online store is that online stores mostly offer lower prices compared to the offline stores. Thus, given that the lower price is a strong driver for the customers to shop online, it is more likely that the customers at the online retail store would choose a product with larger price discounts. To clarify, the price discount refers to the difference between the actual selling price and the list price presented at the store. For example, in case that a product is sold at $10 at an online store while the list price of the product is $15, the price discount is $5, and the price discount ratio is 33%. The third hypothesis of this study is proposed as H3 below:

\[ H3: \text{The price discount of the product will affect positively on the sales of the product at an online store.} \]

Another factor that affects the product sales at the online retail store is the shipping charge. The goal-oriented (contrary to the experiential) consumers shop online is that online shopping can provide them convenience and accessibility (Wolfinbarger and Gilly 2001). Online shoppers don’t have to travel to the physical store during the business hours. Rather they can shop virtually anytime/anywhere. However, this attribute of e-commerce bears an inevitable drawback. In e-commerce environments, where a substantial geographical distance exists between customers and the retailers, the merchandise must be transported from the retailer to the customer through various shipping methods. In most cases, customers are responsible for the shipping and handling charges. The additional charge to the product price could be a hindrance for a customer to shop at the online retail store. To alleviate this problem, many online retailers provide various types of incentives related to the shipping/handling charges to their customers. As shipping cost is one of the major complaints of customers toward online shopping (Cho, Im, Hiltz, and Fjermestad 2002), providing special offers such as exemption of shipping charges (i.e. free shipping) could be an effective way to increase sales at the online stores. Kim and Kim (2004) confirmed that no or low shipping and handling charge play an important role for customers’ intentions to purchase in the online clothing stores. In this line of reasoning, the fourth hypothesis is proposed as H4 below:

\[ H4: \text{Special shipping offers will positively affect the sale of the product at the online retail store.} \]

2.3. Interaction Effects of Online Reviews and Incentives

In the previous section, four different factors, namely, the review ratings, the number of reviews, price discounts, and special shipping offers, are listed for the plausibility of affecting the product sales directly at the online retail store. Besides the direct effects on the sales, there could be interaction effects among the factors. First, customers might expect incentives, such as price discounts and/or special shipping offers for the product, if the reviews of the product do not meet their expectation. Meanwhile, they might not be concerned much about the incentives if the product reviews are good. As mentioned previously, the online customer reviews could be perceived as a proxy of quality to the potential customers (Gu and Lin 2006; Li and Hitt 2008). When people find that a product receives quite a good review rating, they are likely to purchase the product regardless of incentives because people are willing to pay a premium price
for the products or vendors which they trust (Reichheld and Schefter 2000). To the contrary, when customers find the product review rating is not good enough, the price discount would be more important to those who seek for a compensation for their anxiety about the uncertain quality. Overall, when customers make a decision whether to purchase a product at the online retail store, if the review ratings of the product are relatively low, they are more likely to seek for incentives. On the other hand, if the overall review ratings are relatively high, customers would not concern much about the incentives. Therefore, the average review ratings are expected to have moderating effects on the relationship between the price discount and the sales, and on the relationship between the special shipping offer and the sales, respectively. In this line of reasoning, two hypotheses are proposed as H5a and H5b below:

**H5a:** The price discount of a product will positively affect the sales of the product at the online store with the greater extent when the average review ratings of the product are lower at the online retail store, and vice versa.

**H5b:** The special shipping offers will positively affect the sales of a product at the online store with the greater extent when the average review ratings of the product are lower at the online retail store, and vice versa.

Similarly, the number of reviews is also expected to have moderating effects on the relationships between the incentives (i.e. price discounts and special shipping offers) and the product sales. A large number of customer reviews could signal a popularity of the product to the potential customers. Consumers generally tend to trust on the product with popularity because they feel relief when they choose a popular product. In addition, as Zhu and Zhang (2010) claimed, customers tend to look for the online reviews for popular products more frequently. Being exposed to a popular product, potential customers could be led to an affective status, which eventually makes them purchase the product (Bornstein 1989). Therefore, customers don’t seek for the incentives much for the product with a large number of reviews. Conversely, when the number of reviews is relatively small, customers seek for incentives. The small number of the reviews signals substantial amount of uncertainty to the potential customers so they would like to be rewarded the uncertainty by the incentives. Therefore, two hypotheses are proposed as H6a and H6b below:

**H6a:** The price discount will positively affect the sales of the product at the online store with the greater extent when the number of reviews of the product is smaller at the online retail store, and vice versa.

**H6b:** The special shipping offers will positively affect the sales of the product at the online store with the greater extent when the number of reviews of the product is smaller at the online retail store, and vice versa.

![Figure 1. Research model for sales in the online store](image)

A comprehensive research model incorporating the eight hypotheses is described in Figure 1. The four direct relationships, namely, the effect of price discounts, special shipping offers, average review ratings, and number of product reviews, on the product sales as well as the four interaction effects at the online store.
retail store are proposed in the research model. With the research model, analysis will be performed and findings presented in the following section.

3. Research Methods

3.1. Data

Data for analysis was collected at Amazon.com in April 2011. Amazon.com is the biggest online retail store in the world (Loeb 2013). Amazon.com allows its customers to write/read product reviews on every product they sell. Customers can write reviews on a product with ease and read the existing reviews with no restrictions. The online retailer also allows its customers to rate the product when they write a product review. Customers who write a review on a product need to enter their rating on the product in 1 to 5 stars scale. An example of product review page at Amazon.com is presented in Figure 2.

![Figure 2. An exemplar customer review screen at Amazon.com](image)

For data collection, a product category (i.e. Video game – Wii platform – Action genre) was chosen. Video game titles have taken a significant status in e-commerce. They are the third of the most purchased products at online stores along with DVD titles next to books and apparels (Nielsen 2008). Moreover, video games are usually considered as an experiential good. The quality of video game is quite subjective (Mudambi and Schuff 2010), so the other customers’ reviews could play an important role in the potential customers’ purchase decision. Using an automated web script, the web pages of all the products under the category were retrieved. Initially, 351 game titles were found. Relevant information of each product such as product description, customer review ratings, the number of reviews, price (original price and discounts), and special shipping offers was extracted from the webpages. Among 351 products, 130 products were excluded from the analysis due to the incomplete information or other inappropriateness for the analysis. For example, some game titles are bundled with hardware such as remote controller, add-on accessories, etc. These products were excluded from the analysis because customers would have a different set of evaluation criteria such as durability or compatibility of the hardware when they consider purchasing those bundled products other than the game title itself. Some products are not to be shipped physically but only available for digital download. In this case, customers would also have different purchase decision process from the regular game titles which are in physical packages to be shipped to the customers. Thus, I concluded that it is inappropriate to include those bundled products and download only products in the analysis. In addition, some products that are obviously misclassified into the product category by Amazon.com were also excluded from the analysis. After the data refining process, total 227 products were available for the statistical analysis.
### 3.2. Statistical Analysis

Several data preparation processes were done prior to the statistical analysis. First, the actual sales volume of each product is not explicitly revealed at Amazon.com. Instead, the retailer provides the best-selling product rankings. A best-selling ranking at Amazon.com is a list of the products in a particular product category sorted based on the past sales history. To clarify, a product with no. 1 sales ranking means that the product has been sold more than any other products with a larger sales ranking number. In this study, this sales rank is used as the surrogate of the sales volumes of the products, which is also used as the dependent variable of the regression analysis. In general, rankings are uniformly distributed by its nature (i.e. only one product corresponds to each rank number), which is not suitable for a dependent variable in the regression analysis. Thus, the rank transformation technique (Cohen, Cohen, West, and Aiken 2003) was used to transform sales ranking number (Sales_rank) to a variable with a standard normal distribution.

Second, the numbers of reviews of each game title and the average review ratings are reviewed. The numbers of reviews variable were converted to a new variable (Num_review_ln) by natural log transformation due to its far right skewed distribution. The average review ratings (Avg_rating) are used in the regression analysis with original data. Third, at Amazon.com, customers may have a special shipping offer if they join a prime membership program. A customer who has the prime membership can receive their orders shipped via 2-day expedited shipping with free of charge if the product is eligible for the Amazon prime program. A dummy variable (Prime_shipping) is used to record whether the product is eligible for the prime shipping so the customer can have the product shipped faster and cheaper.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales_rank</td>
<td>Lower rank represents more sales; rank transformation</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Avg_rating</td>
<td>Average review ratings from all the reviews on the product</td>
<td>3.65</td>
<td>0.88</td>
</tr>
<tr>
<td>Num_review_ln</td>
<td>Number of reviews on the product; log transformation</td>
<td>2.77</td>
<td>1.47</td>
</tr>
<tr>
<td>Prime_shipping</td>
<td>Dummy variable; 1 if eligible for prime shipping , otherwise 0</td>
<td>0.63</td>
<td>0.48</td>
</tr>
<tr>
<td>DC_ratio</td>
<td>Ratio of discount pricing over the original list price</td>
<td>0.25</td>
<td>0.24</td>
</tr>
</tbody>
</table>

#### Table 1. Description of variables

Lastly, many products are available at discounted prices compared to the original price. On each product page, Amazon.com provides customers the original price and the discounted price at the same time, so the customers can find how much the product price is discounted. For example, the list price of “Super Mario Galaxy 2” was presented $49.99 at Amazon.com as of April 21, 2010. The retailer offers $5.65 of price discount for the product so the customers can actually purchase the product at $44.34, which is 11.3% less than the original list price. The price discount ratio (DC_ratio) is the variable that captures the percentage of the amount discounted compared to the original list price, which is .113 (or 11.3%) in the example above.

Table 1 summarizes the descriptions of the variables used in the analysis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sales_rank</th>
<th>Avg_rating</th>
<th>Num_review_ln</th>
<th>Prime_shipping</th>
<th>DC_ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales_rank</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg_rating</td>
<td>–0.356***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Num_review_ln</td>
<td>–0.721**</td>
<td>0.345**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prime_shipping</td>
<td>–0.546***</td>
<td>0.054*n.s.</td>
<td>0.227**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>DC_ratio</td>
<td>–0.135*n.s.</td>
<td>–0.155*</td>
<td>–0.115*n.s.</td>
<td>0.109*n.s.</td>
<td>1</td>
</tr>
</tbody>
</table>

***: p < 0.001, **: p < 0.01, *: p < 0.05, n.s.: non-significant

#### Table 2. Correlation matrix among variables

Table 2 is the correlation matrix among the variables. Three independent variables (Avg_rating, Num_review_ln, and Prime_shipping) are correlated to the dependent variable (Sales_rank) with a
statistical significance (p < 0.001). In addition, average review ratings variable (Avg_rating) is correlated with the number of reviews variable (Num_review_ln) and price discount variable (DC_ratio) with a statistical significance (p < 0.001 and p < 0.05, respectively).

3.3. Analysis Results

A multiple regression analysis is used to test the hypotheses proposed. For this purpose, the first model includes the four basic variables (average review ratings, number of reviews, special shipping offers, and price discount) as the regression predictors to check the direct relationships. As shown in the model 1 of the Table 3, all four variables have significant relationship with product sales with all the negative standardized coefficients, which shows all four variables positively affect the product sales. This supports all the hypotheses for direct relationships between the four variables and the product sales (H1, H2, H3, and H4). The reported adjusted R-square value of model 1 is .716.

Then the interaction terms between the review variables and the incentive variables were added one by one. The table 3 summarizes the incremental change of R-square value of the regression models by adding each interaction terms, which shows significant increases in R-square values in all the regression models.

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. coeff.</td>
<td>p-value</td>
<td>Std. coeff.</td>
<td>p-value</td>
<td>Std. coeff.</td>
</tr>
<tr>
<td>Avg_rating</td>
<td>-.157</td>
<td>.000</td>
<td>.150</td>
<td>.013</td>
<td>.005</td>
</tr>
<tr>
<td>Num_review_ln</td>
<td>-.602</td>
<td>.000</td>
<td>-.571</td>
<td>.000</td>
<td>-.571</td>
</tr>
<tr>
<td>DC_ratio</td>
<td>-.186</td>
<td>.000</td>
<td>-.137</td>
<td>.000</td>
<td>-.628</td>
</tr>
<tr>
<td>Prime_shipping</td>
<td>-.381</td>
<td>.000</td>
<td>.826</td>
<td>.000</td>
<td>.838</td>
</tr>
<tr>
<td>Avg_rating x Prime_shipping</td>
<td>-1.296</td>
<td>.000</td>
<td>-1.339</td>
<td>.000</td>
<td>-1.622</td>
</tr>
<tr>
<td>Avg_rating x DC_ratio</td>
<td></td>
<td></td>
<td></td>
<td>.512</td>
<td>.001</td>
</tr>
<tr>
<td>Num_review_ln x Prime_shipping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.625</td>
</tr>
<tr>
<td>Num_review_ln x DC_ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression model p-value</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>R²</td>
<td>.722</td>
<td>.722</td>
<td>.780</td>
<td>.058</td>
<td>.795</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>.716</td>
<td>.716</td>
<td>.774</td>
<td>.058</td>
<td>.788</td>
</tr>
<tr>
<td>F change Sig. F change</td>
<td>110.45</td>
<td>.000</td>
<td>44.575</td>
<td>.000</td>
<td>12.508</td>
</tr>
</tbody>
</table>

*Dependent Variable: Sales_Rank

Table 3. Regression analysis results

A detailed examination of the moderating effects of the two review variables on the relationship between the incentive variables and the product sales follows. The two review variables were grouped into three levels (low, medium and high) based on distance from the mean compared to the standard deviation. Then the four interaction effects between the review variables and the incentive variables were plotted as Figure 3. The three different lines represent the different levels of review variables and their linear relationship between the incentive variables and the product sales ranking. The two left columns in the Figure 3 shows the moderating effects of the average review ratings and the number of reviews on prime shipping. It is found that the slopes of the linear relationship of the high level review variables are steeper than the low or medium level of review variables. The higher levels of reviews are more subject to the special shipping offers toward the product sales. This is not consistent with the hypotheses proposed (H5b,
H6b). On the other hand, the two right columns in the Figure 3 shows the moderating effects of the review variables on the price discount exists in a way that the lower levels of reviews variables are more influential to the product sales. This supports the hypotheses H5a and H6a.

![Figure 3. Plotted interaction effects](image)

4. Discussions

The result of the analysis in the previous section confirms that product reviews and customer incentives are strong predictors of the product sales at the online retail store. In Model 1 of Table 3, the standardized coefficients of each independent variable are all negative, which shows all the four factors affect the sales positively when they are considered simultaneously. This successfully provides a comprehensive model to predict the product sales at the online retail store. Among them, the number of reviews has the largest impact, implying that customers who consider purchasing a product at the online retail store are more likely to buy the product as they get more information from the various reviews on the product. Customers are likely to purchase products with many reviews because more reviews would provide various points of views on the product – both positive and negative – even though they cannot experience the products. This also can be supported by the claim that customers tend to lean on the popular products (Zhu and Zhang 2010). When the customers don’t know about the popularity of products, they could consider the number of reviews as a proxy of the popularity.

Another point that should be addressed is that the interaction effects between the product reviews and the incentives on the sales. While the hypotheses for the moderation effects of review variables on the special
shipping variables (i.e. prime shipping) are not supported, the hypotheses for the moderating effect of the review variables on the price discounts are fully supported. The fact that H5b and H6b failed to be supported could provide a new viewpoint of the issue. That is, customers more sensitively act in purchasing a product with the special shipping offer when the product has a good review rating or many reviews than it has medium or low levels in terms of the ratings and the numbers. This could be understood in a sense that customers are more dependent on the reviews than the incentives. So when the retailer combines the two things, for example, offering special shipping on a product with good reviews or large review counts, potential customers will be more likely to decide to purchase the product. On the contrary, for a product with low level of reviews it would be not much effective to offer special shipping in any way because the customers are not much interested in the product.

On the other hand, the results show that it is an effective way to attract customers to provide price discounts when the review levels of the products are low. This emphasizes the importance of providing the price discounts to the customers at the online store when the product review rating is low or the number of reviews is relatively few. As Ba and Pavlou (2002) claimed that positive seller ratings have a strong impact on price premium in electronic markets, this study also confirms that customers perceived risks play a significant role to determine their purchase decision especially by the expected price level. If potential customers believe they might take a risk by purchasing a product due to the low review ratings or few existing reviews, they give a significant weight to the price of the product to be compensated the risk.

For business practices, this study bears several values. First, through this study, the importance of product reviews at the online retail store is confirmed. It is necessary that online retail stores provide a sophisticated review system in which the customers can leave and read product reviews with ease and convenience. Second, based on the findings of this study, managers of online retail stores can develop a better strategy to use the incentives for the customers. Different incentives could be provided for the different products. For instance, for the products with relatively few reviews and/or low review ratings, aggressive price discounts could be offered to increase the sales effectively. Meanwhile, for the products with many reviews and good review ratings, a special shipping offer would be offered than price discount.

The limitations of this study follows. This study is based on the cross-sectional data to reveal the relationship between the relevant factors and the sales at a specific point of time. In a realistic perspective, those variables such as the sales and the number of reviews have a cumulative nature. Thus, in order to confirm the findings, future studies could be done with a longitudinal model. The data sample of this study has also limitation. Although the online retail store and the product category used in this study is chosen with a careful consideration, this study is only focused on a specific online store and product category. Thus the results of this study may not be replicated in the different context, especially such a product that is not prone to WOM. If future studies are done in various settings and confirm the findings of this study, it would produce more generalizability.

Another point to be noted is that the sources of online WOM effect are not only limited to the customer reviews posted to the online store website, but customers also could get information from various sources, such as private forums, third party review sites, social media, etc. Nevertheless, the result of the analysis shows that the customer reviews in the online store website has significant impact on the sales of the products, which suggests that they are still the main source of the customers’ product information gathering.

5. Conclusions

Recently online customer reviews have gained a lot of interests. There were numerous attempts to understand the mechanisms that the online customer reviews influence the product sales. However, there are still unexplained parts in the previous literature. This study gives contributions to the academic area by filling the gaps with a comprehensive model incorporating the impact of the online customer reviews and the incentives offered by online retail stores on the product sales. By doing so, it successfully reveals that both the customer reviews and the incentives are important for the product sales at the online store. The findings in this study show that the product sales at the online store significantly depends on the customers review ratings, the number of reviews, the special shipping offerings, and the price discount. In addition, it also discloses the existence of interactions between customer reviews and incentives toward
the product sales. Practitioners may utilize these findings at online retail stores when they build strategies to promote product sales by optimizing marketing techniques such as price discounts and/or special shipping offers with considerations of the product reviews.

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