Online Consumer Reviews on Using E-Shopping Service of E-Commerce

R Hurriyati*, Lisnawati2 and F Rhamdani3

Faculty Economic and Business Education, Universitas Pendidikan Indonesia, Bandung 40161 Indonesia

*ratih@upi.edu

Abstract. The Internet has become the primary source of information for a large number of consumers and it enables consumers to share their opinions and experiences about goods and services. Online consumer reviews provide information and recommendations for prospective buyers and are helpful for decision-making on purchases. The purpose of this study is to assess the impact of online consumer reviews on a decision of using e-commerce services. Sample size has been conducted among 435 respondents of e-commerce customers who use google play, to test the research hypothesis path analysis. The result indicates that Positive and negative statements in reviews are strong influence consumers whether to use the services that offered by e-commerce, online consumer reviews have an impact on the consumer decision of using e-commerce services. Finally, some practical valuable feedback for future research and practical contribution has been made.

1. Introduction

Internet has rapidly grown during the past decade and it has changed consumer behavior in shopping pattern from a conventional to digital market as e-commerce. As the use of the internet has spread rapidly, consumers are shifted from a passive to an active and informed consumers. Electronic media, such as online discussion forum, electronic bulletin board systems, and news groups, are important sources of informational influence facilitating information exchange among consumers. Web-based technologies have created numerous opportunities for electronic word-of-mouth (eWOM) communication. With the help of internet, consumers can find many information they need about goods and services that provided by other consumers or to share their opinions and experiences of using goods and services with multitude of other consumers. The prospective consumers trust online reviews posted by unknown consumers more than they trust traditional media, just like they listen to a personal recommendation from friends or family. This phenomenon of online orientation impacts retailers as this easily accessible information could greatly affect the consumer behavior on their consumption decision.[1]

Research has shown that desire for social interaction, desire for economic incentives, concern for other consumers and the potential to enhance their own self-worth are the primary factors that motivate consumers to read-and-write online reviews which are helpful on decision-making. In addition, user-generated content (UGC) in the form of online consumer reviews was found to significantly influence consumer purchasing decisions. The reputation of a product, service or...
company is no longer defined by what they report or how they say they stand for. Instead, they are increasingly defined by the shared opinions and experiences of social connected consumers.[2]

A lot of research has been done in field of online reviews. However, in current research of online reviews, many are concerned about the impact of online reviews on product sales as well as the effectiveness of online reviews. The main objective of this study is to assess the impact of the online consumer reviews on consumer decision of using e-commerce services. The study also contributes to the knowledge of marketers by providing insight into consumers behavior, which can potentially be used by marketers to develop a better strategy of marketing.

2. Literature Review

2.1. Consumer Buying Decision
Theories and concepts of online consumer reviews that are used in research conducted adopting and modifying the theories and concepts derived from the idea which may help explain the various factors of online consumer reviews that have influence on the decision to use the consumer. Online consumer reviews are part of the information that users create websites that have bought the product targets. Online consumer reviews contain information and recommendations on products from a consumer perspective. Some dimensions of online consumer reviews were used in this study is the quality argument, source credibility, timeliness, valence and volume, these dimensions can influence consumer decisions. In this case the concepts and theories used in this study concerning the definition and indicators of online consumer reviews.[3]

2.2. Online Consumer Reviews
Online consumer reviews are user-generated content which contain any positive, neutral, and negative comments or reviews of products or services based on consumers experiences. This consumer-created information is helpful for decision-making on purchase because it provides consumers with indirect experiences. Online consumer reviews are increasingly being relied upon by consumers as a low cost means of making more informed purchasing decisions. In the online shopping environment, online consumer reviews play a role of recommendations and word-of-mouth. It has been shown that they can be used to reduce consumers’ perceived risk of online shopping and stimulate their purchase intention by providing useful product information. An online consumer reviews as a route for social influence plays two roles, as informant and recommender. As an informant role, the online consumer reviews deliver additional user-oriented information, as a recommender role, it provides a positive or negative signal of the product its popularity.[4]

Due to its information asymmetry setting, the online consumer reviews are very important in the e-commerce context. This due the fact that the online retailer has a lot more information about the product than the consumer has. Compared to traditional shopping, online consumers can’t use all of their senses (e.g. touching, smelling) to evaluate the product when they are buying online. This forces consumer to make a buying decision based on the information the retailer provides on his website or elsewhere. Online consumer reviews provide these information-seeking consumers with indirect products and services experiences. Since the fast and still increasingly adoption of buying products or services online, online consumer reviews have become increasingly more important. This leads to our following hypothesis “Online Consumer Reviews has a significant partial and stimulant effect on the consumer decision of using e-commerce services”.[5]

3. Methodology

3.1. Sample and Data Collection
Data was collected during May 2016. This short period of time is related to the limited timeframe. The given questionnaire, conducted in the online research tool Google Form, has been distributed by different media platforms such as Facebook, Twitter, KasKus and send by email to contacts of the
researcher that has been using e-commerce services within ages 18 to 40 years old. The respondents were able to decide if they would participate in the questionnaire or not. Finally, a number of 405 respondents were identified. The respondents provided a representative profile of men and women in Indonesia all begin comfortable with spending time and buying products online. Based on the distribution channel and respondents, a convenience sample was used.

3.2. Measurements and Methods

We developed questionnaire items to measure each construct in the research model adapted from prior literature. The questionnaire consisted out of three parts: Part (1) the general introduction to identify general characteristics which contains questions with regards to the demographic aspects, the daily time spending online, the amount and products of buying online. Part (2) the question if the participant ever used online reviews in their buying decision and the experiences of consumers buying products using e-commerce services. Part (3) the questions about the online reviews on the buying decision and each item was measured on a 7-point Likert scale, ranging from (1) strongly not influenced to (7) strongly influenced. Questions in the questionnaire were formatted as dichotomous questions (e.g. gender), multiple-choice questions (e.g. age, time spending online, amount of yearly purchases online, type of products buying online) and rating scale questions (impact of online consumer reviews on the buying decision).

3.3. Data Analysis

Before analyzing the data of the questionnaire, the collected data was exported to an IBM SPSS format. First the invalid data, due not completed questionnaires, were identified and removed from the database. To provide a clear overview of the demographic aspects, the daily time spending online, the amount products buying online and the type of products buying online, frequency tables about the questions in the general introduction of the questionnaire were created. Second the respondents who never used an online review were eliminated from the sample because they did not participate in Part 3 of the questionnaire. The results this, and the result of removing invalid data lead to a total sample of 405 useful respondents.

4. Results

4.1. Profiles of Respondents

An online questionnaire was administered, and 405 valid questionnaires were used to test the research hypotheses (Table 1). The first part of the questionnaire contains the general descriptive data for the research that provides some valuable information about the sample.

| Table 1. Profile of Respondents (N=405) |
4.2. Result of Path Analysis

Before evaluating the measurement model in a path analysis on the influence of online consumer reviews on the decision to use, there should be a classic assumption test consisting of normality test, linearity, heteroscedasticity test and autocorrelation test. Output normality test can be seen in the image below:

![Normal P-P Plot Regression Standardized Residual](image)

**Figure 1. Normal P-P Plot Regression Standardized Residual**

The figure above shows that data is spread across the diagonal line and follow the diagonal direction. Thus, we can conclude the population regression meet the assumption of normal distribution. In addition to further strengthen the evidence that the research data were normally distributed or not, the researchers tested for normality using the Kolmogorov-Smirnov Test. Results of testing for normality using the Kolmogorov-Smirnov Test can be seen in the following table:

**Table 2. One-Sample Kolmogorov-Smirnov Test**
In the table above shows that normality test results with the Kolmogorov-Smirnov Test values obtained test statistic of 0.047 Asymp. Sig. of 0.341 or > 0.05 it can be concluded that the data were normally distributed. After performing twice normality test with a different method then it confirms that the research data was completely normal distribution.

Furthermore, to be seen whether the two variables actually have a linear relationship, it is necessary to test for linearity regression is intended to determine the possibility of the existence of a linear relationship between the online consumer reviews on the decision to use.

Table 3. Coefficients Dependent Variable Decision to use

| Coefficients* | Unstandardized Coefficients | Standardized Coefficients |
|---------------|-----------------------------|---------------------------|
| Model         | B | Std. Error | Beta | t | Sig. |
| 1             |   |            |      |   |     |
| (Constant)    | 5.003 | 1.950 | 2.565 | .011 |
| AQ            | .580 | .097 | .270 | 5.975 | .000 |
| SC            | .421 | .126 | .139 | 3.325 | .001 |
| TL            | .733 | .142 | .226 | 5.154 | .000 |
| Vsc           | .943 | .184 | .220 | 5.125 | .000 |
| Vlm           | .419 | .162 | .111 | 2.560 | .010 |

a. Dependent Variable: UB

Based on the test results show that the value of t_count which is greater than t_table (1,965) means that the overall model is fit and there is a linear relationship between the variables of online consumer reviews on the decision to use so that regression can be used to predict consumer decisions. Based on the linearity test results, it can be said that the data generated meet the assumption of linearity.

A good regression model is that homoscedasticity or did not happen heteroskedasticity. In this study, heteroscedasticity test performed using a scatter plot graph analysis between the predicted value of the dependent variable ZPRED with residual SRESID This scatter plot graph results presented in Figure below:
Figure 2. Scatterplot

The figure shows that the sample data are randomly distributed and do not form a particular pattern. Data is dispersed either be above or below the number 0 on the axis Y. This shows there is no heteroscedasticity in regression models were used. It can be concluded that there is no heteroscedasticity in regression models. Furthermore, to test the autocorrelation symptoms in this study, we used Durbin-Watson test. With autocorrelation test criteria are as follows:

Table 4. Model Summary Dependent Variable Decision to use

| Model | R    | R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|------|----------|----------------------------|---------------|
| 1     | .750 | .563     | .557                       | 2.186         |

a. Predictors: (Constant), Vim, SC, TL, Vlc, AQ
b. Dependent Variable: UB

The above table shows that then the value of T = 405, k = 2. Then in the tables above find the value of dL and dU at T = 400 and k = 2, the value of dL = dU = 1.83089 and 1.84091. Value d = 2.137, then the value (4 - d) = 1.863. The result DW: 2.186 > DU: 1.84091 then there is positive autocorrelation. Negative autocorrelation detection with the results of 4-DW: 1.863> DU: 1.84091, then there is no negative autocorrelation. It can be concluded that the path analysis there is no positive autocorrelation and there is no negative autocorrelation can be concluded that there is absolutely no autocorrelation so the regression equation fit for use. In this study to test whether there is the influence of the independent variable on the dependent variable, is using path analysis methods.

The hypothesis tested in this study is the online consumer review that consisted of argument quality, source credibility, timeliness, valence, and volume to using behavior. Partial testing can be done after it was confirmed the significant influence of online consumer reviews of the behavior using the simultaneous test. The correlation between the quality argument, source credibility, timeliness, valence, and the volume of the formation using behavior following Table 5.
Table 5 shows the relationship of each sub-variable online consumer reviews of argument quality, source credibility, timeliness, valence, and volume. Based on the results of the correlation matrix between the performance of online consumer reviews by using behavior. While those with the lowest correlation value is the volume in behavior using e-commerce shopping services to obtain the lowest correlation is equal to (0.520). That's because the volumes in the use of online consumer reviews about less intense done by consumers, not all users of consumer give his review on the applications they use, and content information from the review are often incomplete.

The figure below explains fully the effect of each variable sub online consumer reviews of argument quality, source credibility, timeliness, valence, and the volume of the behavior using e-commerce shopping services.

![Path Diagram](image)

Figure 3. Path Diagram Effect Hypothesis Testing Using Online Consumer Reviews Toward Using Behaviour

Table 6 describes the calculation results of the partial testing of Online Consumer Reviews such as argument quality, source credibility, timeliness, valence, and the volume Toward Using Behavior the following:

| Alternative Hypothesis                        | T Count | T Table | Significance | Result   |
|-----------------------------------------------|---------|---------|--------------|----------|
| Argument Quality Determine to Using Behavior  | 5.975   | 1.960   | 0.000        | H0 rejected |
| Source Credibility Determine to Using Behavior| 3.339   | 1.960   | 0.001        | H0 rejected |
| Timeliness Determine to Using Behavior        | 5.154   | 1.960   | 0.000        | H0 rejected |
| Valence Determine to Using Behavior           | 5.125   | 1.960   | 0.000        | H0 rejected |
| Volume Determine to Using Behavior            | 2.580   | 1.960   | 0.010        | H0 rejected |

Table 5. Matrix Correlation Between Online Consumer Reviews with Using Behaviour

|     | AQ     | SC     | TL      | Vlc     | Vlm     | UB     |
|-----|--------|--------|---------|---------|---------|--------|
| AQ  | 1      | 0.540  | 0.568   | 0.483   | 0.483   | 0.634  |
| SC  | 0.540  | 1      | 0.506   | 0.420   | 0.323   | 0.528  |
| TL  | 0.568  | 0.506  | 1       | 0.429   | 0.484   | 0.598  |
| Vlc | 0.483  | 0.420  | 0.429   | 1       | 0.564   | 0.568  |
| Vlm | 0.483  | 0.323  | 0.484   | 0.564   | 1       | 0.520  |
| UB  | 0.634  | 0.528  | 0.598   | 0.568   | 0.520   | 1      |
Based on the above table it can be seen that argument quality, source credibility, timeliness, valence, and volume variables significantly influence behavior using where tcount > by tTable with significant levels of ≤ 0.05. This means that there is influence between the performance of online consumer reviews which consists of argument quality, source credibility, timeliness, valence, and volume to using behavior.

Based on hypothesis testing path diagram in Figure below, the calculation to determine the direct and indirect influence between the dimensions presented in Table 7. below:

**Tabel 7. Path Coefficient Test Results Effect of Direct and Indirect of Online Consumer Reviews Against Using Behavior**

| Online Consumer Reviews | Direct Effect | Online Consumer Reviews | TOTAL |
|-------------------------|---------------|-------------------------|-------|
|                         | X1 | X2 | X3 | X4 | X5 |
| Argument Quality        | 0.0729 | 1 | 0.020266 | 0.034659 | 0.02869 | 0.014476 | 0.170991 |
| Source Credibility      | 0.019321 | 0.020266 | 1 | 0.015895 | 0.012844 | 0.004984 | 0.07331 |
| Timeliness              | 0.051076 | 0.034659 | 0.015895 | 1 | 0.02133 | 0.012142 | 0.135102 |
| Valence                 | 0.0484 | 0.02869 | 0.012844 | 0.02133 | 1 | 0.013773 | 0.125037 |
| Volume                  | 0.012321 | 0.014476 | 0.004984 | 0.012142 | 0.013773 | 1 | 0.057695 |

Based on Table 7, it can be seen that the effect of directly or indirectly between the dimensions of online consumer reviews on shopping service behavior using e-commerce greatest effect partial influence of the quality argument against using behavior amounted to 17.1%, compared Timeliness, Valence, Source Credibility and Volume. There is evidence that relatively consistently that when processed carefully strong argument produces more changes in attitudes and beliefs than with the argument that a weak. At a time when consumers process information in a way that is rigorous, arguments to get the most favorable consideration is considered strong, while the argument to get the most consideration are less well considered weak.

Based on Table 7. also, can be seen that the total path coefficient of online consumer reviews on using behavior shopping service e-commerce by 0.562 so that it can be seen the value of the coefficient of residual argument quality, source credibility, timeliness, valence, and volume simultaneously affect the using behavior at service shopping e-commerce amounted to 56.2% and the remaining 43.8% influenced by other variables that are not included in this study.

Based on the results of the research were found to be a relationship and influence of online consumer reviews against decisions using a supported theory and research of some experts that the e-commerce services in influencing customers to use the services of online shopping sites they are affected by several factors, one of them influence the consumer's decision to use e-commerce is the online consumer reviews.

**5. Conclusion**

The purpose of this research was to highlight the importance of the online consumer reviews for e-commerce’s as well as to test the conducted questionnaire investigation the online consumer reviews influences the consumer decision of using e-commerce services. It contributes to existing literature by identifying and determining the magnitude of the different factors on the consumer decision process and can be improved in order to support future studies. Former research has empirically validated the impact of online consumer reviews on consumer purchasing decisions whereby consumer purchasing behavior is important in terms of a company’s profitability and sales, and influenced by the reading of online consumer reviews. Therefore, it is importance to understand the impact of reviews on purchasing decisions. The conducted survey of this research confirms that reviews are highly used by the population. However, online reviews influence consumer purchasing decisions only when consumers’ reliance on online reviews is sufficiently high when they make purchase decisions.
Consumers’ reliance on reviews is dependent on and affected by the format characteristics of the review and the online review system’s design.

The finding of this research shows that online consumer reviews has a positive and significant effect on consumer decision making, so the hypothesis of this research was accepted. This result indicates that consumers’ decision on using e-commerce services is strongly influenced by the information they acquired from online reviews. By effectively using online reviews, organizations can have an influence on the buying decision of consumers.

The completeness of the research framework, the design of research method and data collection has been limited by the factors of time, funding, and personal knowledge. There were no random samplings, which resulted in a sample where the majority of the respondents were between 18 and 40 years and all have the Indonesian nationality. Also, the considerable low sample size prohibited a good generalization of the founded results for an entire population which is significantly lower than the total potential market of consumers who buy online and use online reviews. Since our questionnaire was limited to identify and determining the magnitude of the factors of online reviews that influence the consumer buying decision, it did not consider which stage of the buying process was in influences the most. It also did not consider from which platform reviews were consulted and which platform have the most influence. Furthermore, the questionnaire was limited to participants who used an online review in their purchase decision. Therefore, it fails to discover why consumers do not use online reviews.

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