

## **A Study on the Effects of Online Consumer Reviews on Purchasing Decision**

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### **ABSTRACT**

*One of the main changes in modern consumer behavior has been the transition from a passive to an active and informed consumer. Internet enables customers to share their opinions on, and experiences with, goods and services with a multitude of other consumers. Online consumer reviews are used by prospective buyers of related products who are interested in obtaining more information from people who have purchased and used a product of interest. Word-of-mouth (WOM) is one of the most important information sources when a consumer is making a purchase decision as it is also a new trend of marketing. The arrival and expansion of the Internet has extended consumers' options for gathering product information by including other consumers' comments, posted on the Internet, and has provided consumers opportunities to offer their own consumption-related advice by engaging in electronic word-of-mouth (eWOM). eWOM can be defined as all informal communications directed at consumers through Internet-based technology related to the usage or characteristics of particular goods and services, or their sellers. The aim of this study is to assess the impact of, one type of electronic word-of-mouth (eWOM), the online consumer review, on purchasing decision of electronic products. This empirical study also focuses on the relationship between reviews and purchasing behavior. An instrument was prepared to measure the proposed constructs, with questionnaire items taken from prior studies but adapted to fit the context of e-commerce. The survey was applied to academicians in Tamil Nadu through internet. The data was analyzed using the SPSS package. The results show that consumer reviews have a causal impact on consumer purchasing behavior and they have an effect on choosing the products by consumer. Finally, the results and their implications are discussed.*

**Key words:** Electronic Word-of-Mouth, Online Consumer Review, Internet Marketing, Consumer Behavior

### **INTRODUCTION**

The arrival and expansion of the Internet has extended consumers' options for gathering product information by including other consumers' comments, posted on the Internet, and has provided consumers opportunities to offer their own consumption-related advice by engaging in electronic word-of mouth (eWOM). With

the help of the Internet, information is no longer only controlled by news media or large businesses. The value of complex information goods is hard to assess because it is only possible to value them after either trying them or understanding its content. In other words, many information and cultural goods are experience goods that a consumer needs to taste before assessing its quality and its location with respect to his or her ideal product. While a steady research stream into the impact of eWOM on online sales has emerged in recent years, there are still many unanswered questions. Research has shown that consumers are motivated to read and write eWOM for decision making and social benefits, and this undoubtedly affects the purchasing decision. However, very little is known as to how certain types of eWOM, such as online text reviews or numerical ratings, affect the purchasing decision, and by how much. The main objective of the study is to assess the impact of the online consumer review, on purchasing decision of electronic goods. The study also contributes to the knowledge of marketers by providing insights into consumers' attitudes and behavior, which can potentially be used by marketers to better respond to, and target, these consumers in order to overcome barriers to consumer choice.

## **LITERATURE REVIEW**

Word-of-mouth (WOM) has been recognized as one of the most influential resources of information transmission since the beginning of human society (Godes and Mayzlin 2004; Maxham and Netemeyer 2002). Prior to the Internet era, consumers shared each others' product-related experiences through traditional WOM (e.g. discussions with friends and family) (Sundaram et.al, 1998). The Internet's global nature has created a medium for electronic word-of-mouth (eWOM) communication between consumers who have never met (Gruen et al., 2006). Today, the Internet makes it possible for consumers to share experiences and opinions about a product via eWOM activity. The eWOM phenomenon has been changing people's behavior because of the growth of Internet usage. People often make offline decisions on the basis of online information; furthermore, they tend to rely on the opinions of other consumers when making decisions about matters such as which movie to watch or what stocks to invest in (Dellarocas, 2003). The online market enables customers to write recommendations that influence potential consumers (Lee et al., 2008). The electronic word-of-mouth is network user's information exchange and discussions on some products or services by network media (Sun et. al., 2006). Hennig-Thurau et al.,(2004:39) refer to eWOM as any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet. Similarly, Godes and Mayzlin (2004) define eWOM that is measurable since comments on a product are written and available in the websites.

## **METHODOLOGY**

In order to remain consistent with prior studies, measures were adopted or transferred from previous studies and associated theories. 44 total measures were utilized in order to capture the various latent constructs, in which responses were measured by a 5-point Likert-type scale ranging from 1 = disagree to 5= fully agree. In

## *Effect of on-line Consumer Reviews*

order to validate the instrument, 75 academicians in five different universities assessed the relevance of the instruments. Some modifications were made to the questionnaire, on the basis of the comments collected throughout this pilot study. After the pilot study a final questionnaire was developed and administered to 604 academicians was randomly selected from Tamil Nadu with using surveymonkey.com is an online survey tool that enables users to create their own Web-based surveys. The research was conducted during the summer semester of the 2009 academic year. The questionnaires were prepared in two parts. One part of the questionnaires was related to the demographic information of the academicians and the other part was related to the online consumer reviews perception of them. The reliability coefficient for the construct ranged 0.81, which exceeded the recommended level of 0.70 (Nunnally, 1978). In total, 750 questionnaires were distributed to the selected samples, of which 675 (87.3%) were completed by the respondents. 604 (80.5%) questionnaires were finally adopted for further data analysis, after eliminating any questionnaires that had not been properly completed. The data analysis was carried out with using SPSS 13.0 package. In order to reduce data and to classify variables, factor analysis was applied. Factor analysis is one of the good tools used to verify the construct validation for a model. Before factor analysis, the adequacy of data for factor analyze should be examined. For this purpose, Kaiser-Meyer-Okin (KMO) and Bartlett test was conducted. KMO value is calculated as 0,896 for adequate of sample. Kaiser (1974) recommends accepting values greater than 0.5 as acceptable. So the KMO value shows that data are suitable of factor analysis. According to the results of Bartlett test, Approx. Chi-Square was calculated as 6902, 847 and highly significant level was  $p=000$ . The results show that sample and data are adequate for factor analysis and therefore factor analysis is appropriate.

## **FINDINGS**

**Table 1 summarizes characteristics of the 604 respondents**

| Characteristics                    | Frequency |            |
|------------------------------------|-----------|------------|
|                                    | Number    | Percentage |
| <b>Age</b>                         |           |            |
| 21-30                              | 181       | 30.0       |
| 31-40                              | 263       | 43.0       |
| 41 or older                        | 163       | 27.0       |
| <b>Gender</b>                      |           |            |
| Male                               | 369       | 61.1       |
| Female                             | 235       | 38.9       |
| <b>Monthly Income (TL)</b>         |           |            |
| 1001-1500                          | 60        | 9.9        |
| 1501-2000                          | 252       | 41.7       |
| 2001-2500                          | 109       | 18.3       |
| 2501 or more                       | 183       | 30.3       |
| <b>Academic Field</b>              |           |            |
| Natural Science                    | 216       | 35.8       |
| Social Science                     | 328       | 54.3       |
| Medical Science                    | 60        | 9.9        |
| <b>Frequency of Internet Usage</b> |           |            |
| Less than one hour                 | 4         | 0.7        |
| 1-5 hours                          | 76        | 12.6       |

|                  |     |      |
|------------------|-----|------|
| 5-10 hours       | 107 | 17.7 |
| 10-20 hours      | 165 | 27.3 |
| 20 or more hours | 252 | 41.7 |

369 respondents (61.1%) were male and 235 (38.9%) were female. Most (n= 263, 43.0%) were 31–40 years old. A significant number of respondents (n=328, 54.3%) studied in social sciences field. The average frequency of internet usage was 20 or more hours in a week. Furthermore, majority of respondents (n= 505, 83.6%) have made an online purchase from internet before. Approximately, 272 respondents (45.0%) buy electronic goods online more than once a year.

To describe the relationship between factors and 27 variables, Principal Components Analysis was conducted. As a result of the component analysis, rotated component matrix table was formed. Table 2 shows the variables and their related factor. Six factors were defined according to their relationship with variables which are; (1) Related to reviews' characteristics; (2) Related to reviewer (writer of review); (3) Related to web site that present the reviews; (4) Related to significance of reviews; (5) Related to the type of advice and (6) Related to product.

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## *Effect of on-line Consumer Reviews*

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According to the table 2 and table 3, twenty seven percent of variance shows that buyers' perception has a positive relationship with reviews' characteristics such as, helpful for buyers, make them confident, positive and negative reviews, regency of reviews, consistency of other reviews, received high ratings for product .Five percent of variance shows that the web site that present the reviews has a positive relationship with reliability of the site, popularity of the web site, company's site and internationality of the web site.

**Table 2: Rotated Component Matrix**

| Items  | Loadings on Factors |       |       |        |       |       |
|--|---------------------|-------|-------|--------|-------|-------|
|  | 1                   | 2     | 3     | 4      | 5     | 6     |
| To what extent do product review website influences your Online purchase decision?   | .206                | .064  | .106  | .700   | .029  | .277  |
| How important do you think online product reviews are for consumers?   | .371                | -.041 | .079  | .719   | -.066 | -.022 |
| How many online consumer reviews do you read before purchase?  | .200                | .021  | .083  | .757   | .179  | -.155 |
| Does affect the price of product to visit the online consumer reviews?   | .279                | .052  | .106  | .215   | -.144 | .687  |
| Which of the following items about product on the web do you most affect?  | .227                | -.041 | .118  | .287   | -.268 | -.540 |
| If I have little experience with a product, I often search information on the web about the product                                      | .481                | -.105 | .196  | .013   | .403  | -.034 |
| When I buy a product online, the reviews presented on the website are helpful for my decision making                                     | .731                | -.014 | .200  | .322   | .066  | -.007 |
| When I buy a product online the reviews presented on the website make me confident in purchasing the product.                            | .728                | .024  | .127  | .256   | .033  | -.053 |
| When I buy a product online, the impact of positive reviews on the web effect is greater for electronic goods on my purchasing decision. | .727                | .086  | .076  | .185   | -.042 | .148  |
| When I buy a product online, the impact of negative review on the web effect is greater for electronic goods on my purchasing decision   | .642                | .068  | .114  | .185   | .111  | .114  |
| Simple recommendation reviews are subjective emotional and have no support for arguments.  | -.068               | .098  | .043  | .071   | .785  | -.029 |
| Attribute – Value recommendations are specific, clear and heaving reasons for arguments.   | .444                | -.009 | .063  | .043   | .589  | .095  |
| Recency of product reviews posted on the website affect my purchase decision   | -.047               | .400  | .233  | - .001 | .002  | .152  |
| Consistency of other reviews posted on the website affect my purchase decision   | .538                | .316  | .308  | .010   | .094  | -.034 |
| The number of product reviews affect my purchase decision  | .632                | .091. | .251  | .263   | .132  | .014  |
| Received high ratings for product affect my purchase decision  | .441                | .419  | .159  | .251   | -.083 | -.182 |
| The reviewer age affect my purchase decision.  | .524                | .260  | .209  | - .130 | -.224 | -.158 |
| The reviewer gender affects my purchase decision.  | .195                | .679  | .061  | - .061 | .076  | -.075 |
| The reviewer residence affects my purchase decision.   | .072                | .744  | -.168 | - .113 | -.007 | .059  |

**Exaction Method: Principal Component Analysis. Rotation Method: Quartimax with Kaiser Normalization. A Rotation Converged in 6 Iterations.**

As a result of the factor analysis, the six factors were determined. The six factors and their variances were given in the Table 3. According to the Table 3, the six factors explained the 56,3% of the total variance. It means the six factors can represent 27 variables.

**Table 3: Total Variance Explained**

| Initial Eigen Values |                          |       |        | Extraction sums of squared Loadings |       |        | Rotation Sums of Squared Loadings |       |        |              |
|----------------------|--------------------------|-------|--------|-------------------------------------|-------|--------|-----------------------------------|-------|--------|--------------|
|                      | Component Total          | Total | % Var. | Cumulative Var.                     | Total | % Var. | Cumulative %                      | Total | % var. | Cumulative % |
| 1                    | review's characteristics | 7.263 | 26.901 | 26.901                              | 7.263 | 26.901 | 26.901                            | 4.525 | 16.758 | 16.758       |
| 2                    | Related to reviewer      | 2.969 | 10.997 | 37.898                              | 2.969 | 10.997 | 37.898                            | 3.407 | 12.618 | 29.376       |
| 3                    | Related to website       | 1.474 | 5.459  | 43.357                              | 1.474 | 5.459  | 43.357                            | 2.546 | 9.428  | 38.804       |
| 4                    | Significance of reviews  | 1.352 | 5.009  | 48.366                              | 1.352 | 5.009  | 48.366                            | 2.241 | 8.302  | 47.106       |
| 5                    | Type of advice           | 1.142 | 4.230  | 52.596                              | 1.142 | 4.230  | 52.596                            | 1.443 | 5.344  | 52.450       |
| 6                    | Related to product       | 1.002 | 3.710  | 56.306                              | 1.002 | 3.710  | 56.306                            | 1.041 | 3.856  | 56.306       |

**Extraction Method: Principal Component Analysis**

**Table 4: ANOVA results**

|                                | <i>Reading review before purchase</i> |                          |
|--------------------------------|---------------------------------------|--------------------------|
|                                | <b>F</b>                              | <b>P</b>                 |
| Age                            | 1460                                  | .233                     |
| Gender                         | 164                                   | .685                     |
| Internet usages time           | 4380                                  | .002                     |
| Purchase frequency             | 4898                                  | .000                     |
| Product price                  | 15152                                 | .000                     |
|                                |                                       |                          |
|                                |                                       | <i>Purchase decision</i> |
|                                |                                       |                          |
| Number of review               | 45719                                 | .000                     |
| Recent reviews                 | 7031                                  | .000                     |
| Consistency of reviews         | 22153                                 | .000                     |
| High rating for product        | 2759                                  | .027                     |
| Grammar mistake in reviews     | 1127                                  | .343                     |
| Attribute value recommendation | 19628                                 | .000                     |
| Simple recommendation reviews  | 757                                   | .554                     |

In order to examine the relationship (0.05) between the reading reviews and characteristics of respondents a one-way MANOVA analysis was performed. The results (Table 4) showed that there were significant main effects of the reading reviews before purchasing and buyers' purchase frequency. In addition, there was a significant interaction effect between product price and reading reviews before purchasing. Also there was a significant difference between buyers' internet usage time and reading reviews. Furthermore Table 4 showed that there were significant differences between buyers 'purchase decision and number of reviews, regency and consistency of reviews and attribute – value reviews. Twelve propositions were

## Effect of on-line Consumer Reviews

developed to identify perceptions of respondent about consumer reviews, and the participation level of the respondents regarding the propositions was identified by means of a five-item Likert scale. According to Table 5, the participation level of the respondents in predetermined propositions was found to be quite high. This indicates that the participants agree to characteristics of reviews are effective on purchasing decision. Specially, it's seen that consistency of other reviews posted on the website really affect on buyers' purchase decision. The factor of spelling or grammar mistakes in product review is assessed with the least effectiveness on purchasing decision.

**Table 5: Statements of respondents about consumer reviews**

| Statements   | Mean | SD    | N   |
|--|------|-------|-----|
| Consistency of other reviews posted on the website affect my purchase decision.  | 3.91 | .806  | 604 |
| When I buy a product online, the reviews presented on the website are helpful for my decision making.                                    | 3.83 | .847  | 604 |
| Attribute –value recommendations are specific, clear and having reasons for arguments.   | 3.74 | .882  | 604 |
| Recency of product reviews posted on the website affect my purchase decision.  | 3.64 | .894  | 604 |
| When I buy a product online, the reviews presented on the website make me confident in purchasing the product.                           | 3.59 | .896  | 604 |
| When I buy a product online, the impact of negative reviews on the web effect is greater for electronic goods on my purchasing decision  | 3.55 | .939  | 604 |
| When I buy a product online, the impact of Positive reviews on the web effect is greater for electronic goods on my purchasing decision. | 3.50 | .921  | 604 |
| Simple- recommendation reviews are subjective, emotional and have no support for arguments.  | 3.47 | .1070 | 604 |
| Received high ratings for product affect my purchase decision.   | 3.23 | .977  | 604 |
| The number of product reviews affects my purchase decision.  | 3.14 | 1.027 | 604 |
| If I don't read the reviews presented on the website when I buy a product online. I worry about my decision.                             | 2.96 | 1.034 | 604 |
| Spelling or grammar mistakes in product review affect my purchase decision.  | 2.80 | 1.149 | 604 |

**1 = disagree to 5= fully agree**

Table 6 shows that respondents attitudes for the reviewers (writer of reviews). According to the results are given in Table 6, in order of the arithmetical average, other reviewers' rating of usefulness of the review is regarded as more important than other statements. Therefore, it's suggested that other reviewers' evaluations should be presented on web sites. The factor of reviewer gender and residence are assessed with the least effectiveness on purchasing decision. It can be said that buyers don't consider demographic profile of reviewers as a significant factor.

**Table 6: Statements of respondents about the reviewer**

| Statements   | Mean | SD    | N   |
|--|------|-------|-----|
| Other reviewers' rating of usefulness of the review affect my purchase decision  | 3.35 | .939  | 604 |
| If the reviewers use the nick name of the real name affect my purchase decision. | 2.81 | 1.115 | 604 |
| The reviewer's frequency of posting reviews affects my purchase decision.        | 2.79 | .991  | 604 |
| The reviewer age affect my purchase decision                                     | 2.72 | 1.008 | 604 |
| The reviewer residence affects my purchase decision.                             | 2.33 | .910  | 604 |
| The reviewer gender affects my purchase decision.                                | 2.20 | .908  | 604 |

**1 = disagree to 5= fully agree**

Statements of respondents about website that present the reviews are analyzed in Table 7. As the table Table 7 shows, the participation level of the respondents in predetermined propositions was found to be quite high. This indicates that the participants agree to importance of reliability of web site. Therefore, it can be recommended that reliability, internationality and popularity of web site is critical for consumer.

**Table 7: Statements of Respondents about website that present the reviews**

| Statements   | Mean | SD   | N   |
|--|------|------|-----|
| Reliability of the site that present the reviews affect my purchase decision.  | 4.12 | .840 | 604 |
| Internationality of the web site that present the reviews affect my purchase decision                                | 4.01 | .843 | 604 |
| Popularity of the web site that present the reviews affect my purchase decision                                      | 3.67 | .932 | 604 |
| If the web site that present the reviews concern to company whose product I want to buy. affect my purchase decision | 3.61 | .977 | 604 |

## DISCUSSION

Today, many consumers turn to the internet to research products—whether they buy on the Web site or later in-store. As they conduct their research, the critical first-step in the purchase decision, consumers assign more credibility to the opinions of other consumers than to paid experts or sell copy. For this reason, the major contribution of this study is to explore impact of the online consumer reviews, one type of eWOM, on purchasing decision. Besides this, several conclusions can be drawn from these analyses. First, the result of the research has revealed that there were significant main effects of the reading reviews before purchasing and buyers’ purchase frequency. Second, number of reviews has a significant effect on buyers’ purchasing decision due to the increases the perceived popularity of a product. According to the results approximately 209 (34,6%) respondents read between 4-7 number of reviews before purchasing product. These research findings confirm that there were significant differences between buyers ‘purchase decision and number of reviews. Third, this study shows that participants agree to characteristics of reviews are effective on purchasing decision. Specifically, consistency and regency of reviews are more effective on purchasing decision. It can be said that consumers are more worried about whether the reviews are true or manipulated. Hence, it is clear that trust plays a role in online consumer behavior. In addition to participants assess the attribute-value reviews as clear and specific. Fourth, other reviewers’ rating of usefulness of the review is regarded as an important factor that influences the buyers purchasing decision. And therefore, it’s suggested that other reviewers’ evaluations should be presented on web sites. Fifth, as a expected result, it’s confirmed that buyers don’t consider demographic profiles (such as age, gender and residence) of reviewers as a significant factor in purchasing process. Sixth, the results of the study indicate that most of the surveyed participants agree to importance of reliability of web site. Therefore, it can be said that reliability, internationality and popularity of web site is critical for consumer decision. Seventh, also there was a significant difference between buyers’ internet usage time and reading reviews. Findings show that participants who use internet too read more online reviews than others. One more finding of this study is that there was a significant interaction effect between product price and reading reviews before purchasing. Most

## *Effect of on-line Consumer Reviews*

participants base a recommendation on price and convenience. This is especially true in the current economic climate, where shoppers are increasingly intent upon finding deals. These findings help marketers to develop strategic plans for future applications. In addition, under the network environment, the electronic word-of-mouth is the truest reflection of consumers' product evaluation; enterprises should concern about the electronic word-of-mouth and get consumers' opinion of the brand to improve brand competition force constantly.

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