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An Examination of Consumer Attitudes on Online User Reviews

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ABSTRACT

With increasing numbers of Internet shoppers, many product review websites have been established to collect consumer opinions about a variety of products. However, many aspects of user behavior towards the usage of online reviews are still not well understood. This study aims at exploring factors underlying the acceptance of consumers' online review usage when considering purchasing an item. The study results provide insight into the factors that affect online customers' use of online reviews prior to a purchase. It furthers the online reviews body of knowledge and provides results that can allow e-businesses to adapt their business model to better fit consumers' expectations.

KEYWORDS: Online Reviews, Ecommerce, Review Usage

INTRODUCTION

With the rapid expansion and proliferation of e-commerce innovations, consumers are now able to use the Internet for a variety of purposes such as research, communication, online banking, and shopping. Many online shoppers are attracted to the ease and convenience that shopping via the Internet can provide (Shang, Chen, & Shen, 2005). Pew Internet, Inc. (2014) reported that 86% of American adults used the Internet in 2013, up from 14% in 1995.

With increasing numbers of Internet shoppers, many product review websites (e.g., epinions.com, Rateitall.com, cnet.com) have been established to collect consumer opinions about a variety of products (Wei et al. 2010). Also, many ecommerce websites have included product reviews on the same page of the products that sell. The availability of many perspectives can benefit customers' decision-making regarding product purchases. In the past, critics generally reviewed popular products that had wide-spread interest. Currently, online product reviews not only allows for niche products to be reviewed, but also allows for many more perspectives to be expressed. Online product reviews have emerged as influential sources of information which affect customers' pre-purchase perspectives of a product. Since online shopping does not allow for the level of touch and interaction with a product which may be present in traditional retail outlets, online retailers seek to provide product evaluations online as an alternative to physically interacting with a product.

Although consumers have become familiar with the use of online product reviews, many aspects of user behavior towards the usage of online reviews are still not well understood. This study, therefore, aims at exploring the factors underlying the usage of online reviews systems in pre-purchase decision-making. The study results should provide insight into what factors

encourage or discourage users from using online reviews. This study should further the body of knowledge that deals with online reviews and thus allow e-businesses to adapt their business model to better fit consumers' expectations. Also, since the use of online reviews affects purchasing behavior (Mo et al., 2015), it is important to understand what factors affect the use of online reviews.

LITERATURE REVIEW

There are various aspects of product reviews that affect the level of sales. Some studies found that the volume of user reviews positively affects sales (Duan et al., 2008; Liu, 2006). Another study found that higher quality online reviews are positively related to buying intentions (Obiedat, 2013). Similarly, the perceived quality of online reviews as well as the quantity positively affects purchasing intention (Park et al., 2007). One report found that 88% of customers who read reviews were influenced by reviews in their buying decisions (Dimensional Research, 2013). Also, a study examining hotel reviews, found that the average price difference was \$45 higher for hotels that were rated one rating unit higher, and the number of reviews was less important than the actual rating (Jang et al., 2012). Thus, a financial incentive exists for companies to have products with high ratings.

Because of these financial incentives, sometimes reviews have been written by the manufacturer of a product and related third parties, such as contracted marketing firms. Thus, customers are faced with determining if reviews are trustworthy. Previous research has found that people find it difficult to identify fraudulent reviews (Ott et al., 2011) as customers do not know if a review was written by an altruistic reviewer wishing to share experiences. Indeed, quite a few companies have been caught trying to manipulate potential customers' perspectives by paying to have positive reviews written (Jansen et al., 2013). Some companies have been fined by government regulators for posting phony reviews as it is false advertising (Streitfeld, 2013). Thus, potential buyers experience the daunting task of separating the credible reviews from those that are not in order to avoid manipulative reviews or reviews with incorrect information. This causes a wide variety of perspectives regarding the helpfulness of reviews.

While some reviews are fraudulently written by people who have never used the product, other reviews are written by people who have received some form of benefit. For example, some reviewers receive a small payment for their review while others will give discounts on future purchases, free products, partial refunds, and other incentives (Streitfeld 2012). Providing incentives to potential reviewers has led to more helpful reviews, but not necessarily objective feedback (Stephen et al., 2012). Disclosing the incentive made customers doubt product quality and post-experience product evaluations (Stephen et al., 2012).

The possibility of fraudulent or misleading reviews as well as reviewers receiving something in exchange for writing a review makes users question their trust in reviews. One report studying various sources of trust found that 92% of consumers trust recommendations from people they know, followed by 70% of consumers trusting opinions posted online. The level of trust on paid advertisements was quite lower with only 47% of consumers trusting TV ads and 29% of consumers trusting text ads on mobile phones (Nielsen, 2012). However, even though consumers tend to trust opinions posted online, 40% of online customers did not trust most or all of reviewers' comments as accurate (Sterling, 2013), implying that many consumers do not naively believe all reviews. Reviewer credibility affects perceptions of quality more than purchase intention. The purchase intention seemed to be affected more by perceived importance of owning a product rather than online reviews (Jensen et al., 2013).

There also are varying perspectives on the helpfulness of reviews. The review rating, the content of reviews, and the reviewer's credibility affect the perceived helpfulness of a review (Baek, et al., 2013). In addition, if a reviewer is shown as a top-ranked reviewer or if the website indicates that the real name of the reviewer is shown, the review is perceived as more helpful (Baek et al., 2013). Furthermore, the greater the difference between the average rating of the product and the actual review rating, the less helpful a review becomes (Baek et al., 2013). Most reviews are unidimensional ratings on a scale of one to five. However, it has been found that unidimensional ratings are biased by price and correlated more with product value than with product quality (Li, 2010). Multidimensional ratings are perceived as less-biased, but take more effort for both the reviewer to assess and the reader to sort through (Li, 2010).

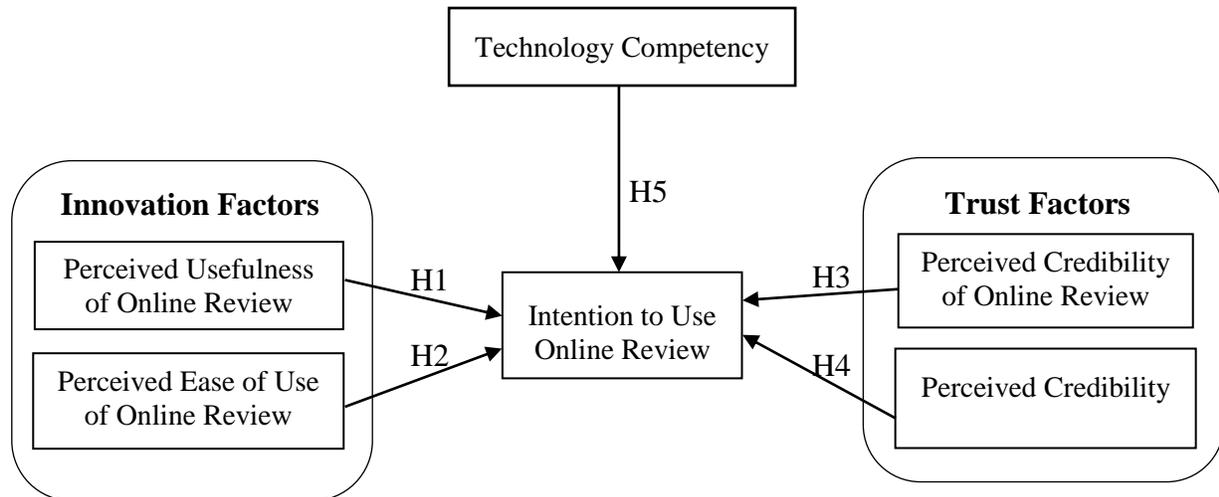
Research has shown that there are ways to increase and decrease the perceived credibility of a review. If a review is two-sided (addressing both positive and negative issues), reviewer credibility increases (Jensen et al., 2013). However, reviewer credibility decreases when there is higher affect intensity (emotion) in the review. Also, when a review uses language that violates sociological and cultural expectations, such as being too aggressive, the review is perceived as less credible (Jensen et al., 2013). As this was studied in anonymous reviews, however, it is possible that online vendors creating categories of reviewers ("Top 100 Reviewer", etc.), would not be discredited for using higher affect intensity (Jensen et al., 2013).

Consumers are more likely to read reviews if the price of an item is higher and these reviews are read in greater detail (Baek et al., 2013). For online customers which don't desire to read reviews are affected by the quantity rather than quality of reviews while high-involvement customers are affected by quantity only when the quality is high (Park et al., 2007).

THEORETICAL DEVELOPMENT

The Technology Acceptance Model (TAM) has been widely used to study users' acceptance of a new technology and is the most cited theory for modeling user acceptance of information systems (Bagozzi 2007; Davis et al., 1989). In regards to online user review systems, we propose that Perceived Usefulness and Perceived Ease of Use from TAM will help explain the intention to use online review systems. However, we also propose that trust is very important to consider. Even though a system may work great, the quality of the reviews and the reputation of the ecommerce company likely will impact whether people want to use the reviews. Thus we add Perceived Credibility of Online Review and Perceived Credibility to our model. In addition, we propose that the perceived Technology Competency of the individual who is using the online review system will likely impact the decision an individual makes on whether to use an online review system. The proposed research model is shown in Figure 1 below.

Figure 1. Research model



Perceived Usefulness of Online Review (PUOR)

The construct perceived usefulness is defined as the prospective users' subjective probability that using a specific application system will increase his or her job performance within an organizational context (Davis et al., 1989). This factor has a significant effect on usage intention (Agarwal & Prasad 1999; Davis et al., 1989; Venkatesh & Davis, 2000). We define PUOR as the users' subjective probability that using the online review will be valuable for his or her online purchase decision making. Perceived usefulness is, thus, predicted to be a positive driver for the online review usage. We thus propose the following hypothesis:

H1: Perceived usefulness of online review (PUOR) positively affects customers' intention to use online reviews.

Perceived Ease of Use of Online Review (PEUOR)

The construct perceived ease of use is defined as the degree to which the prospective user expects the target system to be free of effort (Davis et al., 1989). This factor plays a crucial role in understanding individual response to information technology (Agarwal & Karahanna, 2000; Chau & Hu, 2001; Hong et al., 2001). Research over the past decade provides evidence of the significant effect perceived ease of use has had on usage intention (Agarwal & Prasad 1999; Venkatesh & Davis, 2000). We therefore posit:

H2: Perceived ease of use of online review (PEUOR) positively affects subjects' intention to use online review.

Perceived Credibility of Online Review (PCOR)

Credibility has been defined and examined in prior studies. However, very few studies have examined the credibility of online reviews. One study looked at several different aspects of

reviews and found that a review that is two-sided affects perceived credibility to the greatest extent (Jensen et al, 2013). As it appears that a user has considered both positive and negatives aspects of a product, a two-sided review appears to have greater credibility. In this paper, we are not seeking to determine what affects perceived credibility, but rather we seek to understand the impact that perceived credibility has on the intention to use online reviews. Thus our third hypothesis is:

H3: Perceived credibility of online review (PCOR) positively affects subjects' intention to use online review.

Perceived Credibility (PC)

Some ecommerce companies are in the news because of the decisions they make on their online reviews systems. For example, Amazon.com deletes reviews that they believe are fake or written by those with a financial interest in the item (Charman-Anderson 2012) and Amazon.com has sued people that create fake reviews of products (Roberts 2015). The perceived credibility of the company is likely affected by news about a company, information from friends, and prior experience with the company. We propose that customers that think that a company is credible will also more likely choose to use the online reviews systems of the company. Thus hypothesis 4 is:

H4: Perceived credibility (PC) of the company positively affects subjects' intention to use online review.

Technology Competency (TC)

Technology Competency is defined as the extent to which an individual is knowledgeable about and effectively utilizes Information Technology to manage information (Tippins & Sohi, 2003). Typically, consumers with a high level of self-efficacy are more motivated to use technology-based services. Moreover, they have a more positive attitude and intent to use technology-based services than consumers with a low level of technology self-efficacy. High technology competence consumers are more likely to use a system than low technology competence consumers (Yang, 2010). Therefore, consumers with a high technology self-efficacy are expected to have positive attitude and behavioral intentions to using online review systems. We, therefore posit:

H5: Technology competency (TC) of subjects positively affects intention to use online review.

RESEARCH METHODOLOGY

A questionnaire was designed for this study based on instruments and scales developed from previous studies. The TAM questions were adapted from two TAM studies (Venkatesh and Davis, 2000; Venkatesh et al., 2003). The questions used to measure the other additional constructs were adapted from other studies (Intana et al., 2013; Pikkarainen et al., 2004; Vijayasarathy, 2004; Wong and Hsu, 2008). The questionnaire consisted of thirty-seven (37) questions. Twenty-six (26) questions with a six point Likert scale were designed to measure subjects' perceptions and the usage of online review. The remaining eleven (11) questions were asked to gather some demographic data of the subjects. To validate the clarity of these questions, three professors and three research assistants were asked to read through the survey questions. Revisions to the survey were made based on the feedback received.

Three hundred and eighty (380) subjects participated in this study. The data were collected from a direct survey administered to students in a university in the U.S. Of the three hundred and eighty (380) subjects, three hundred and sixty-six (366) responses were valid. Subjects' demographics are shown in Table 1 below.

Table 1. Subject Demographics

Gender						
Male: 166 (45.36%)		Female: 200 (54.64%)			No Answer: 0 (0%)	
Age						
Under 18: 0 (0.00%)	18-25: 325 (88.80%)	26-35: 31 (8.47%)	36-45: 8 (2.19%)	46 and up: 2 (0.55%)	No Answer: 0 (0%)	
Highest Education						
High School: 4 (1.09%)	Associate's Degree: 46 (12.57%)		Bachelors: 41 (11.20%)	Master's & up: 10 (2.73%)	No answer: 3 (0.82%)	
Age (in years)						
Full-time: 54 (14.75%)	Part-time: 159 (43.44%)		Not-employed: 152 (41.53%)		No Answer: 1 (0.27%)	
Ethnicity						
Anglo: 35 (9.56%)	Hispanic 143 (39.07%)	Asian 32 (8.74%)	African American 28 (7.65%)	Other 21 (5.74%)	No Answer: 4 (1.09%)	
Have Credit or Debit Card						
Yes: 355 (96.99%)		No: 10 (2.73%)		No Answer: 1 (0.27%)		
Annual Income						
Under \$20000 307 (83.88%)	\$20000-\$40000 38 (10.38%)	\$40000-\$60000 4 (1.09%)	\$60000-\$80000 9 (2.46%)	\$80000-\$100000 5 (1.37%)	Over \$100,000 0 (0.00%)	No Answer: 3 (0.82%)
Average Amount of Online Order per Order						
\$1-\$20 43 (11.75%)	\$21-\$40 111 (30.33%)	\$41-\$60 102 (27.87%)	\$61-\$100 55 (15.03%)	\$101-\$200 35 (9.56%)	More than \$200 19 (5.19%)	No Answer: 1 (0.27%)
Number of Online Orders per Month						
0 79 (21.58%)	1-2: 161 (43.99%)	3-5: 87 (23.77%)	6-9: 24 (6.56%)	10-20: 5 (1.37%)	More than 20: 7 (1.91%)	No Answer: 3 (0.82%)

Number of Online Orders per Year						
0 9 (2.46%)	1-2: 44 (12.02%)	3-5: 79 (21.58%)	6-9: 74 (20.22%)	10-20: 87 (23.77%)	More than 20: 73 (19.95%)	No Answer: 0 (0.00%)
Return						
Yes: 169 (46.17%)		No: 194 (53.01%)			No Answer: 3 (0.82%)	
Student						
Undergraduate 337 (92.08%)		Graduate 26 (7.10%)		Not a Student 1 (0.27%)		No Answer: 1 (0.27%)

DATA ANALYSIS AND DISCUSSION

In order to examine the internal consistency of the research instrument, a reliability test was conducted. The test confirms the reliability of the research items with Cronbach's alpha coefficient of 0.922.

The measurement model for the five constructs was assessed by a confirmatory factor analysis with Varimax rotation in order to test whether the questionnaire items produced the expected number of factors and whether each item was loaded on their appropriated factor. As shown in Table 2 below, results from the factor analysis indicates that all items are loaded into six (6) factors. The minimum loading factor from the result is at 0.565 which meets the minimum acceptance threshold of 0.5 (Hair et al., 1998).

The measurement model was further assessed for construct reliability. The composite reliability for all the constructs was above 0.7, conforming to an acceptable threshold suggested by Nunnally and Bernstein (1994). Table 2 below presents the mean, standard deviation, factor loading, and composite reliability of all items assessed in this study.

Table 2. Summary of Measurement Scales

Constructs	M	SD	Factor Loading*	Reliability
Perceived Usefulness of Online Review				0.945
PUOR1	4.81	1.09	0.565	
PUOR2	4.73	1.09	0.571	
PUOR3	4.64	1.15	0.597	
PUOR4	4.71	1.10	0.567	
Perceived Ease of Use of Online Review				0.915
PEUOR1	4.61	1.06	0.741	
PEUOR2	4.75	1.10	0.764	
PEUOR3	4.97	1.00	0.800	
PEUOR4	4.84	1.08	0.784	
Perceived Credibility of Online Review				0.982
PCOR1	3.77	1.15	0.855	
PCOR2	4.03	1.07	0.786	
PCOR3	3.99	1.12	0.810	
PCOR4	3.83	1.09	0.753	
Perceived Credibility				0.938
PC1	5.12	1.89	0.860	
PC2	5.04	1.06	0.886	
PC3	5.10	1.02	0.894	
PC4	5.13	1.00	0.867	
PC5	5.04	1.08	0.812	
Technology Competency				0.882
TC1	5.39	0.89	0.826	
TC2	5.17	0.96	0.868	
TC3	5.40	0.82	0.815	
TC4	5.37	0.91	0.635	
TC5	4.90	1.11	0.770	
Intention to Use Online Reviews				0.960
INT1	5.08	1.39	0.871	
INT2	5.06	2.55	0.887	
INT3	4.29	1.31	0.879	
INT4	4.42	1.32	0.905	

* Rotation Method: Varimax with Kaiser Normalization

A multiple regression analysis was conducted to test the five (5) hypotheses. The independent variables are perceived usefulness of online review (PUOR), perceived ease of use of online review (PEUOR), perceived credibility of online review (PCOR), Perceived credibility (PC) and technology competency (TC). The dependent variable is the intention to use online review (INT).

The results from Table 3 show the R² and Adjusted R² of 46.2% and 45.5% respectively, indicating that the factors investigated are suitable to explain the attitude towards the usage of online review systems. The F-stat was reported to be at 62.116 and was significant at 0.1% significant level. This also indicates that the combined factors are able to simultaneously explain the attitude quite well.

Table 3: Multiple Regression Analysis

Hypotheses	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	β	Std. Error	Beta			Tolerance	VIF
(Constant)	.098	.396		-.247	.805		
H1: PUOR	.759	.075	.617	10.147	.000	.403	2.479
H2: PEUOR	-.215	.071	-.161	-2.792	.006	.447	2.236
H3: PCOR	.181	.071	.140	2.568	.011	.502	1.992
H4: PC	.186	.057	.414	3.257	.001	.791	1.265
H5: TC	.064	.073	.038	0.884	.377	.786	1.272

R-Square = 0.462

Adj. R-Square = 0.455

F-stat = 62.116*

* Significance at p-value <0.001

Regarding each factor, the results from the multiple regression analysis demonstrates that four out of the five factors are significant determinants on whether subjects intend to use online review. These factors are perceived usefulness of online review (PUOR; $\beta = 0.759$, perceived ease of use of online review (PEUOR; $\beta = -0.215$), perceived credibility of online review (PCOR; $\beta = 0.181$), and perceived credibility (PC; $\beta = 0.186$). In contrast, the results show that the factors technological competency (TC; $\beta = 0.064$) does not significantly affect subjects' intention to use online review.

The Variance Inflation Factors (VIF) for all factors range between 1.265 and 2.479, which are not greater than 10, indicating that there is no problem of multicollinearity (Hair et al., 2006; Diamantopoulos et al. 2008).

DISCUSSION AND CONCLUSION

In this study, five factors are predicted to influence the intention towards the usage of online reviews. Besides the two factors (perceived usefulness and perceived ease of use) included in the original TAM model, the proposed model of this paper included three (3) additional factors as determinants of subjects' intention to use online reviews. These factors are perceived credibility of online review (PCOR), perceived credibility (PC), and subjects' technology competency (TC).

The results of this study reveal that four out of five factors examined in the proposed research model play an important role in explaining users' intention to use online reviews. The first factor is "perceived usefulness of online review". It is clear from the result that if subjects perceive online reviews as providing beneficial information, there is a high likelihood that they will use the online review system.

The second factor is "perceived ease of use of online review". It is interesting to find that although this factor significantly impacts subjects' intention to use online reviews, the beta is negative. In examining the data further, it was found that there is a significantly positive correlation between perceived ease of use of online review and the intention to use the online reviews. However, multiple regression gives coefficients while controlling for the rest of the variables. Thus if all of the remaining constructs are held constant, then there is a slight negative relationship between the perceived ease of use of online reviews.

Both the third hypothesis examining Perceived Credibility of Online Review and the fourth hypothesis examining Perceived Credibility both had significant results. This indicates that trust is important to consider as both the credibility of the online reviews as well as the credibility of the company impacts whether customers want to use an online review system. This finding expands on previous literature by establishing that trust is important to consider in the use of online review systems.

The result of the final hypothesis regarding technology competency did not show significant results. Thus there is no support for the technology competency of a customer impacting the use of online review systems. Thus even though a customer may be technologically competent with using computers and the internet, this is not an important consideration for whether the customer will use online review systems. While this may impact whether or not a customer decides to purchase online, there is no support for it affecting whether or not a customer uses the online review system when purchasing online.

As with many empirical studies, there is an inherent limitation due to the sample. The sample in this research was limited to subjects in one university. As students tend to be heavy users of the Internet for shopping and thus appropriate as subjects in this research, future research should consider expanding demographics to include non-student subjects as well as users in countries beyond the U.S.. A future study may examine these factors in a cross cultural context. In addition, further investigation may be conducted in more detail regarding which features of online review systems can encourage users to use the reviews.

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Appendix 1. Research Questionnaire

Perceived Usefulness of Online Review (PUOR)

Online consumer reviews are a useful tool for online shopping

Online reviews provide useful information

I find that online reviews are valuable for my online purchase decisions

The online consumer review systems are useful

Perceived Ease of Use of Online Review (PEUOR)

Overall, online consumer review systems are easy to use

It is not difficult to figure out how to use online reviews

It is easy to read online reviews about a product

It is very simple for me to use online review systems

Perceived Credibility of Online Review (PCOR)

Online consumer reviews overall are trustworthy

Most of the time, online consumer reviews seem credible to me

Overall, I believe I can trust the online reviews

Online reviews are written by people who honestly state their product views

Perceived Credibility (PC)

I can trust the company from which I purchased the product

I don't have any concern about the credibility of the company I purchased the product from

The company that I purchased the product from has a good reputation

I am satisfied with the level of service I received by the ecommerce company

I am satisfied with the speed by which the ecommerce company shipped out the product

Technology Competency (TC)

I like using a computer

I feel confident with my ability to use computers

I am confident with my ability to find information on the Internet

I am confident in my ability to purchase items online

I enjoy working with computers

Intention to Use Online Reviews (ATT)

I definitely will use online reviews for future purchases

I intend to use online reviews to help guide my purchases

I will use online reviews again

I think that it's worth the effort to read online reviews prior to purchasing