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Consumer trust in e-commerce: A study of consumer perceptions in Pakistan

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This cross sectional field survey is aimed at exploring the factors which determine consumers' trust in online purchases. Using data from 311 employees in various organizations, we found out that all the studied factors significantly determined consumers' trust as well as word of mouth generation. The unique contribution of this study is significant in the sense that it tried to establish how word of mouth seeking moderates the relationship between influencing factors and word of mouth generation. Managerial implications and future research directions were given at the end of the study.

Key words: Perceived trust, user web experience, perceived risk, perceived site quality, perceived technical trustworthiness, word of mouth, Pakistan.

INTRODUCTION

Electronic commerce (e-commerce) refers to a wide range of online business activities involving the buying and selling of products and services (Rosen, 2000). Commonly, the Internet is used for buying and selling goods and services which involve the transfer of ownership and rights of usage of those goods or services through a computer-mediated network (Mesenbourg, 2001). E-commerce uses electronic communications such as the Internet and digital information processing technology in business transactions to create, transform and maintain long-term relationships for value creation between B2B and B2C transactions (Andam, 2003). E-commerce has realized the idea of globalized, reliable and cheapest way of doing business. Its technical structure is based on a universal collection of integrated

network using a set of protocols to share electronic information (Industry Canada, 2002).

Pakistan faced quite a number of complexities while adopting this practice. The barriers to this e-commerce in Pakistan include insufficient infrastructure such as scarcity of telephone lines, frequent electric shutdown, few internet users and insecurity of online transactions. Security is a major concern for e-commerce in Pakistan and as such the Pakistani government is taking measures to control this problem. Internet users in Pakistan grew to 10 million in 2005, hence, telecom deregulation resulted in an increase in the country's tele-density, especially in mobile telephony. Such efforts by the government to improve security for e-commerce are intended to encourage the use of the Internet and e-commerce in the country (Bardalai, 2006).

During the early years of e-commerce, the Internet was utilized for commercial purposes. For example, companies used private networks such as the Electronic Data Interchange to transact business with one another. Installation and maintenance of private networks was very expensive, but with the Internet, e-commerce spread rapidly; also, due to the lower costs involved, the Internet became quite common based on open standards (Andam, 2003). While making a transaction online, a buyer may not be conscious of trust, but it is an important

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Abbreviations: **SNDP**, Sustainable networking development program; **PERCTRUS**, perceived trust; **PERCRISK**, perceived risk; **PERCSITE**, perceived site quality; **USRWEBEX**, user's web experience; **PERCTECH**, perceived technical trustworthiness; **WOMS**, word of mouth seeking; **WOMG**, word of mouth generation.

factor when we enter into a transaction. At the back of every consumer's mind lays a thought about whether to continue and complete the transaction or to cancel it due to the trust factor (Sisson, 2000). Trust is not something which is present in a vendor's website from the inception; it is a characteristic that develops with the passage of time as consumers make return purchases from the same vendor. If this experience of consumers turns out to be positive, it results in trust and ultimately the perception of a particular vendor turns out to be good in the mind of consumers (Sisson, 2000). Buyer and seller must decide to trust each other when making a transaction. Most often, the buyer's decision is conscious and at other times, it is unconscious, based on his internal feelings of trustworthiness about the merchant. On the other hand, many people do not only trust the merchant based on their beliefs and feelings, but work on to gather positive feedback from others in terms of positive experiences and testimonials. Such positive experiences and testimonials are the word of mouth seeking (WOMS) behavior, the major determinant of consumer trust in any transaction (Sisson, 2000). A good symbol of a trustworthy website includes professionalism of website design, prolonged existence, service by the vendor, selection, and positive comments from other users about personal experience with the website and vendor. A poor quality website has a negative symbol which includes anything that violates a user's expectations such as unprofessional design, novelty, complex interface, difficulty in finding product and poor comments by other users (Sisson, 2000). So, consumer trust in online sites and WOMS could be the major area of concern for the scholars and practitioners in the field. This research is aimed at exploring the factors which may contribute to consumer trust in e-commerce. The restraining role of WOMS is a major factor in predicting WOMG and consumer trust.

THEORY AND HYPOTHESES

According to Ganguly et al. (2009), web interface can be made full of sociability and human warmth by integrating the two things. Consumers can only be influenced to do online shopping when they sense sociability in the Internet domain. Negative attitudes of consumers stem from the act of asking for buyers' personal information by a company. Such an act makes the customer hesitant in sharing personal information, raising a concern about how the personal information will be used. That is why consumers are much concerned about website privacy when the company is asking for this. Consumers' trust in e-commerce is a factor of the word of mouth for the newcomers, which plays a vital role in developing trust in consumers because of their serious concerns for the privacy of the information which they provide on the website for a specific transaction. This interaction makes this model conceptually valid for studying the restraining

role played by WOMS in the relationship between trust influencing factors and WOMG. Egger (2001) in his research opined that website graphic design and usability in terms of ease of use and friendliness gives the site visitor a first impression of the system. When a consumer visits a site for the first time, the features of the website may lead the consumer to re-assess the site and may strengthen trust. As one examines in detail, recognizing other factors such as the company's competence, risk of a transaction or the website's credibility, one's level of trust is bound to change. Aschmoneit and Lenz (2001) stated that trust in the technological world is not just about bits or bytes. It is all about a social relationship and building of networks that deliver reliable information, a promise, a product, collaboration, or simply a consumer's testimonial. Bauer et al. (2004) claimed that for an organization, trust does not just represent the basis of long-term strategic partnerships; it is the single most powerful marketing-relationship tool available to a company. E-commerce is incomplete without trust and cannot reach its potential without trust.

Metzger (2004) argued that the concern about privacy makes many consumers hesitant to provide information while doing business online. Thus, in order to reduce consumer tensions related to online transactions, researchers have proposed and tested a model of web-based disclosure that emphasizes trust. Companies should be sensitive to consumers' concern for privacy and find ways to communicate this sensitivity on their websites. A presentation of previous consumers' testimonials and an oath by the organization on the website is an attempt to portray a positive gesture towards consumers' concern for privacy. According to LeGresley (2004), consumers remain concerned about issues of risk relating to personal information, privacy and security, and their level of trust is influenced by the public image and attributes of a business. A consumer's perception that personal information and data in online retailers' data banks will be respected and protected creates a positive image in the consumer's mind and strengthens his trust in e-commerce. In view the works reviewed so far, we conclude that a website's technical trustworthiness involves consumers' security of personal information like name, address, NIC or credit card number. If a website vendor does not maintain such security measures for its online buyers, it will not leave a positive image of the business, and will ultimately, lose consumer trust. Thus, a website must be technically sound to promote consumer trust. The more a company is perceived trustworthy by users. Ultimately, this will lead to winning a consumer's confidence. Based on the foregoing views, we propose the following hypothesis relative to a consumer's perception of a company and its website:

H₁: Perceived technical trustworthiness is positively related to the level of perceived trust.

According to Gallivan and Depledge (2003), managers

often use the term "trust" which means that they have confidence in another party's behavior. Confidence in a partner is achieved through a combination of trust in and control over the partner's behavior. Walczuch et al. (2001) found out that perception-based factors such as trust, perceived risk and perceived technical trustworthiness seem to have the greatest influence on consumer trust in electronic retailing (e-retailing). Receiving feedback on the reputation of the company from various sources, perceived similarity, perceived control, and the perceived familiarity with e-retailing are the factors that determine online consumer trust. For an online business, this is rather good news since these factors can be influenced at least to an extent. Marketing initiatives or simply good business practices help in supporting a positive word of mouth among consumers.

McKnight et al. (2002) opined that the variable that is of vital interest to a web-based vendor is consumers' behavior, particularly their intentions to do business transactions through the Web. The resolve to trust, keenness to trust and perceived web risk all influence consumers' intentions to engage in specific purchase related behaviors. Bedi and Banati (2006) suggested that during a web-transaction in which a user experiences a sense of security, privacy, integrity, competence, third party recognition and legal protection, it becomes mandatory for trust to be maintained. Users' personal experiences, familiarity with the web, affiliation and belongingness, transparency, factual signals and heuristic cues have been mentioned as trust provoking elements. In the aforementioned study, it was observed that trusting a website was significantly affected by the design of that website, especially the features of the site. Consumers who experience a good recovery of their purchase will show enhanced levels of satisfaction and increased future purchase intentions of doing online business (Ong and Singh, 2009). Consumers' positive and easy navigation experiences with e-commerce websites allow them to develop trust in the website and the company. A good web experience by the user will lead to the development of trust. The following hypothesis is proposed in respect of the relationship between user web experience and trust in the given website.

H₂: User web experience is positively related to the degree of perceived trust.

Corritore et al. (2005) in their research found out that a web design of the best quality is a perfect way to convey trustworthiness to users. Specific design features of the websites have been found to have an effect on online trustworthiness. Such features include ease of navigation, good use of visual design elements, the overall professional look of the website and ease of carrying out transactions. Contents that are appropriate and useful to the target audience have been identified as a strong factor for trustworthiness, while mixing advertisements and content is a negative one. Conveying expertise,

providing comprehensive information, and projecting honesty, lack of bias and shared values between a website and its user promote the perception of trustworthiness. In contrast, poor website maintenance appears to affect the perception of trustworthiness negatively. According to the aforementioned literature, the interface of the website is very important in portraying a professional image of the business. Professional image of a website attracts a greater number of traffic and eventually develops trust in consumers' minds. The following hypothesis is proposed in respect of the relationship between perceived site quality and perceived trust.

H₃: Perceived site quality is positively related to trust.

Garbarino and Strahilevitz (2004) observed that perceived risk is the result of the perception of the likelihood that something will go wrong and the perception of the seriousness of the consequences if it does. As soon as a consumer's perceived risk of purchasing decreases, his willingness to buy increases. According to Chen and Dhillon (2003), a consumer's trust on e-commerce develops, builds and declines with the passage of time. Consumer trust hence has different levels under different conditions. A firm that has both online and offline presence has a greater advantage than firms that have online presence only. Trust built in the bricks and mortar business can be transferred to the online store. Hence, it is important to consider the online and offline presence of a firm as essential issues in building trust.

Nguyen et al. (2000) claim that e-commerce growth has been slowed down due to consumers' fears and concerns about the privacy and risks, either real or perceived. E-commerce may not reach its full potential unless consumers perceive that electronic transactions are secure and associated risks have been reduced to an acceptable level. Online users are open to buy a variety of products on the Internet, but often, they do not do so because of the fear of insecurity. A consumer's mind can never be free from fears that e-commerce is insecure; however, these fears can only be reduced by increasing positive perceived trust and lowering perceived risk. If companies are successful in lowering consumers' risk perceptions, it will lead to perceived trust in the company. The following hypothesis is proposed in regard to the relationship between perceived risk and perceived trust.

H₄: Perceived risk is negatively associated with the level of perceived trust.

Walker (2001) argues that consumers are usually involved in word of mouth for high-risk products, particularly services, to gain information that will reduce their risks in making online transactions, help them make comparisons between or among service alternatives or help them understand the service prior to delivery and consumption. Alexandru (2010) found out that the impact of word of mouth is higher for evaluating the credence

attributes of a web-retailer's products and services than information or experience attributes. Credible attributes are the least transparent and most difficult to assess, so there are greater chances that the seller might cheat or mislead consumers to achieve his goal. In order to avoid a seller's potential misleading act, consumers adopt WOMS behavior as a form of a trustworthy source of information to decide whether to act or not. The aforementioned literature argues that word of mouth strongly influences consumer trust in e-commerce. Consumers prefer the testimonies of their friends and acquaintances to make sure they do not bear much financial and psychological loss after making transactions online. The following hypothesis is proposed on the basis of the relationship between WOMS and consumer trust.

H₅: WOMS is positively related to perceived trust in e-commerce.

Yayli and Bayram (2009) stated that traditional word of mouth, when compared to the electronic word of mouth, has the benefit of spreading extensive information, which is instantly received as anonymous. On the other hand, word of mouth or product information available in online forums has greater credibility and relevance, and is more likely to evoke empathy in consumers than information on marketer-designed websites. Davis and Khazanchi (2007) stated that the power and impact of electronic word of mouth has substantially increased due to advances in information technology (IT). Specially designed message boards and online communities for posting information and exchanging opinions are available. Some companies have decided to include forums for exchanging word of mouth on their product pages. This use of online word of mouth has the potential of impacting product sales. The availability of the Secure Socket Layer (SSL) technology and testimonial page on a web-retailer's site puts a strong image of e-commerce in a consumer's mind. Advances in IT increases consumers' perceived technical trustworthiness through secure web transactions, and hence, generates positive word of mouth. The following hypothesis is proposed in view of the relationship between technical trustworthiness and WOMG:

H₆: Perceived technical trustworthiness is positively related to WOMG.

Hahn and Kauffman (2003) stated in their research study that effectively designed websites not only create a positive effect on the financial performance of a firm but also possess the potential to develop a unique and sustainable competitive advantage for internet-based sellers and e-commerce firms. The attractive design of websites promotes the quality of customer experience with the site. Word of mouth is an effective method of developing the reputation of a business which is available only online. Once consumers become skillful at making

web transactions, they start sending positive word of mouth without any hesitation. Hence, users' good experiences with a web-retailer's site will earn web-based vendors a good reputation and ultimately generate word of mouth.

H₇: User web experience is positively related to WOMG.

Dellarocas (2001) found out that to make word of mouth an effective means of developing trust, online reputation systems also known as recommender or feedback systems attempt to engineer word of mouth networks in online environments. Its main purpose is to signal quality and induce good behavior in the presence of asymmetries in information. The best practicing vendors integrate the features of an online feedback system into their website as a means of building trust in consumers' minds. Koufaris and Hampton-Sosa (2002) found out that once companies start e-commerce, online vendors create websites to replace salespersons. A good presentation of a site develops positive customer experience and perception of the website which ultimately influences their assumption about the nature of the company and its trustworthiness. A company's website is considered to be the control mechanism which can make or break consumers' trust in it. Keeping in view the foregoing, we believe that consumers' beliefs in perceived usefulness and perceived ease of use of a website will have a positive effect on consumer trust in the online company itself. If perceived site quality is high, then there are more chances that existing users will generate positive word of mouth for the company. From the literatures reviewed so far, it could be found that the professional appearance given to a website leaves a positive impression in consumers' minds. Businesses that strongly prefer the e-commerce system create fully functional websites with value added features. So, in order for web-based vendors to generate good amounts of sales, they must rely on website quality.

This implies that the professional appearance and quality of web-retailers' sites will generate greater word of mouth. The following hypothesis is proposed relative to the relationship between site quality and WOMG:

H₈: Perceived site quality is positively related to WOMG.

Jih et al. (2005) discovered that consumers' satisfactory experiences could reduce perceived risks, leading to enhanced brand loyalty. Consumers who make online purchases prefer to shop at trustworthy stores and look out for trusted third party recommendations in order to prevent themselves from personal and financial losses. Other measures taken to reduce perceived risks include word of mouth, brand loyalty, in-store browsing, store image and efficiency of information searching. Huang, Chou and Lan (2007) stated that in a service context, word of mouth communication through online forums can have a two-way impact on consumer buying behavior.

The classification of services on the basis of their perceived risk and whether messages contain an affective or instrumental perspective allows us to examine the impact of message content and perceived risk on opinion acceptance, boycott intentions and transmission intentions. According to the aforementioned literature, perceived risk can make or mar the reputation of e-commerce as word of mouth is the building block of consumer decision about online purchasing. Positive or negative word of mouth can generate good or bad word of mouth. The following hypothesis is proposed in respect of the relationship between perceived risk and WOMG.

H₉: Perceived risk is negatively related to WOMG.

Chuan and Aiwu (2009) suggested that the proficiency of the word of mouth sender affects the purchase decision of the word of mouth receivers. If the sender's proficiency has positive associations with the receiver's decision, it means that the web retailing business will grow successfully. Senders of word of mouth information will be more influential if the experts in some particular products deal out more information about products for sale so that their opinions will be searched by more people. More so, the more abundant the experts' knowledge, the better will be the opinions of consumers about a product or brand. Therefore, we can suggest that the higher the expertise level of the word of mouth sender, the stronger the influence of the word of mouth on receiver's purchase decision. Cheung and Lee (2008) claimed that traditional word of mouth (WOM) plays a major role in consumers' purchase decisions by influencing consumers' choices as well as their post-purchase product perceptions. Positive WOM influences consumer behavior towards frequent online transactions. The idea that electronic WOM is easier to obtain is especially important in online purchasing decisions because of the amount of perceived risk involved. Many potential online buyers often wait to observe the experiences of others who have tried to purchase online before they consider adopting this practice. WOMS is an obvious action when a consumer is new to e-commerce or has no prior experience with a specific retailer. For businesses to improve their reputation or increase customers' goodwill, they have to assure their existing customers of the quality of their service or product. The more strongly the existing users recommend a website, the more the chances that the new user will engage in WOMG.

The following hypothesis is proposed for the relationship between WOMS and WOMG.

H₁₀: WOMS is positively related to WOMG.

Moderating effects of WOMS

Issiyil (2007) claimed that a website's perceived technical trustworthiness is evaluated when consumers send their

personal and financial information to the web-retailer. The expectation of buyers develops based on a company's reputation and the services it offers. Secure transactions, timely response from the vendor and privacy of personal and financial information will enhance a consumer's confidence in the web-based vendor. Corporate reputation is highly dependent on consumers' positive assessment since it has a profound influence on consumers' attitudes toward the usage of web-retailing. Theft of personal and financial information of consumers is a serious drawback to the reputation of e-commerce. However, once consumers are sure of their security, they will say positive things about web-retailing to their friends and acquaintances. If perceived technical trustworthiness is high and the WOM of the users is positive, there will be more chances of WOMG. In a case where the WOM is negative and perceived technical trustworthiness is high, the negative WOM will decrease the positive impact of perceived technical trustworthiness on WOMG. Hence, we propose a moderation of the relationship between perceived technical trustworthiness and WOMG by WOMS.

H₁₁: WOMS moderates the relationship between perceived technical trustworthiness and WOMG.

Huang et al. (2009) in their study found out that WOM is not only a driver of attitudes and behavior but also the outcome of past behavior. The readers of online comments may disseminate relevant information about a given product to friends or re-post the information on other online communities to help other consumers avoid negative experiences and obtain self-enhanced effects of their decisions. Tax (1993) stated that the frequency of WOM information is likely to moderate WOM effects. Frequent and consistent occurrences of WOM might impact consumer decision-making, whereas a single instance is unlikely to influence a loyal customer. In addition, it is likely that in the case of prior favorable experiences, more frequent WOM will be necessary to impact repeat-purchase intentions compared to situations where prior experience is unfavorable. Users who have good or bad experiences with web-retailing will share their experiences to their friends and acquaintances accordingly. The frequency of WOM and intensity of consumers' web experiences affect their decisions to purchase through the web. If a user's web experience is good and the WOM by the user is also positive, there will be more chances of WOMG. In a case where the WOM is negative and the user's web experience is positive, the negative WOM will decrease the positive impact of the user's web experience on WOMG. Hence, we propose a moderation of the relationship between a user's web experience and WOMG through WOMS.

H₁₂: WOMS moderates the relationship between user web experience and WOMG.

Davidow and Leigh (1998) concluded that website quality

and consumers' frequent contact with a company are important in the development of a positive perception of web-retailing. Once a consumer has a problem regarding a web-retailer's products or services, and each time they contact the company through the website, mail or phone their perceived the overall cost of making a complaint increases, this lowers their level of satisfaction and perceived justice redress. Consumers who perceive little chance of successful redress are likely to engage in WOM behavior. Therefore, the more the number times a consumer write(s) or call(s) the company to get a solution to their problem, the more their propensity for engaging in WOM behavior with others. When consumers contact web-retailers through the Website and receive an efficient response, the vendors increase the level of satisfaction of existing consumers. Efficient responses from web-based vendors guarantee good site quality and good site quality ultimately promotes strong positive testimonials for a web-retailer. If perceived site quality is good and the WOM by the users is positive, there will be more chances of WOMG. In a case where WOMG is negative and perceived site quality is good, the negative WOM will decrease the positive impact of site quality on WOMG. Hence, we propose the moderation of the relationship between perceived site quality and word of mouth generation via WOMS.

H₁₃: WOMS moderates the relationship between perceived site quality and WOMG.

Cheong and Morrison (2008) confirmed in their research that WOM effectively manipulates a consumer's mind while making decisions to purchase from the web. This especially happens when consumers search for information related to new and upcoming products and services. Consumers usually seek advice from family, friends and acquaintances to which they talk on every day basis. WOM is considered effective when it is received from personal trustworthy sources which ultimately change consumer behavior towards online shopping. This source of information generally works when consumers decide to purchase newly introduced products or services in the market or when they come across less known web-retailers. Perceived risk closely affects consumer's psychological fears about e-commerce. Positive WOMG reduces perceived risk, negative WOM increases perceived risk about web-retailing. Hence, we propose a moderation of the relationship between perceived risk and WOMG via WOMS.

H₁₄: WOMS moderates the relationship between perceived risk and WOMG.

RESEARCH METHODOLOGY

Sample and data collection

For the analysis of the four factors proposed in our study (Figure 1), 400 questionnaires were distributed to educational institutions,

private service organizations and financial institutions; out of the 400 questionnaires, 311 were returned with a response rate of 77.75%. The entire data collected for this research study is self-reported. Out of 311 (respondents), 73.3% were male. The mean age of respondents was 25 years. Among the 311 respondents, (0.6%) had PhD qualification, 7.7% had MS/Phil, 35.7% had master's degree, 45% had bachelor's degree and 10.9% had intermediate and lower qualifications. Due to the fact that the medium of instruction in Pakistani educational institutions is English, most of our samples comprised graduates and those who possess higher qualifications. Thus, there was no need to translate the questionnaires into our local language. The questionnaire was designed to measure perceived trust, perceived risk, perceived technical trustworthiness, perceived site quality, user web experience, WOMS and WOMG. All the variables were measured on a five-point Likert scale of strongly disagree = 1, disagree = 2, neither agree nor disagree = 3, agree = 4, to strongly agree = 5.

Measures

Perceived trust

We assessed perceived risk by using a four-item scale from McKnight et al. (2002). The alpha reliability of our data was $\alpha = 0.84$. To measure this construct, the sample item included "Web retailing is trustworthy."

Perceived risk

We assessed perceived risk by using a four-item scale from McKnight et al. (2002). The alpha reliability of our data was $\alpha = 0.77$. To measure this construct, the sample item included "Entering credit card information on the Web is unsafe".

Perceived technical trustworthiness

To measure perceived technical trustworthiness, we used a four-item scale from Pavlou (2001). In our data, we found $\alpha = 0.84$. The measurement of this construct included following item: "I believe that inappropriate parties cannot deliberately access the information I provide during my transaction with a web-retailer during transactions".

User web experience

To measure user web experience, we used a four-item scale from Corritore et al. (2005). Our data found $\alpha = 0.72$. To measure this construct, we used the following item: "Learning to operate an e-commerce website is easy for me".

Perceived site quality

To measure site quality, we used a four-item scale from Pavlou (2001). Our data found $\alpha = 0.75$. To measure this construct, the following item was used: "I think e-commerce websites create value for me".

Word of mouth seeking

To measure WOMS, we used a four item-scale from Bailey (2005). Our data found $\alpha = 0.76$. To measure this construct, we used the item: "I often consult other people to help me to choose the best web-retailer".

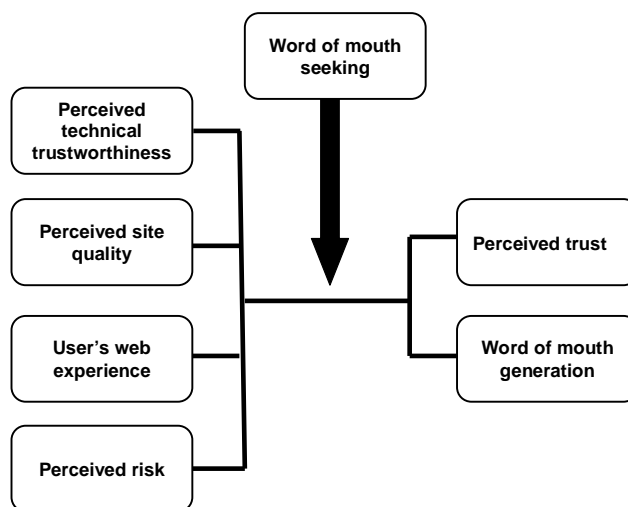


Figure 1. Model of the study.

Table 1. Descriptive statistics.

Parameter	N	Minimum	Maximum	Mean	Std. Deviation
Gender	311	1	2	1.27	0.44
Age	311	18	45	25.05	4.90
Education	311	1	5	2.42	0.81
Comp exp	311	0	20	6.50	3.33
Job nature	311	0	5	2.23	1.61
Income	311	0	4	2.00	1.38
PERCTRUS	311	1	5	3.27	0.86
PERCRISK	311	1.25	5	3.46	0.90
PERCSITE	311	1.25	5	3.59	0.61
USRWEBEX	311	2	5	3.63	0.59
PERCTECH	311	1	5	3.03	0.78
WOMS	311	1.5	5	3.54	0.69
WOMG	311	1	5	3.29	0.75

Word of mouth generation

To measure WOMG, we used a three item-scale from Chung and Shin (2009). Our data found $\alpha = 0.79$. To measure this construct, the following item was used: "I say positive things about online retailing to other people".

Control variable

The literatures reviewed suggested that many studies take age, gender and qualification as control variables. To support this fact, we conducted a one-way analysis of variance (ANOVA) to find out the control variables. ANOVA results showed that only age, gender, education and computer experience significantly influenced trust and WOMG, so they were controlled in our analysis.

RESULTS

In Table 1, the respondents had an average computer

experience of 6.5 years and the average type of job that the majority of the respondents had was office job. The average income level of the surveyed respondents was between the ranges of 16,000 to 30,000 rupees. The mean for perceived trust was 3.27, mean of perceived risk was 3.46, mean of perceived site quality was 3.59, and users' web experience had a mean of 3.63. Perceived technical trustworthiness had a mean of 3.03, word of mouth seeking had a mean of 3.54 and word of mouth generation resulted in a mean of 3.29.

Correlation analysis

Correlation results (Table 2) revealed that perceived risk is negatively correlated with perceived trust ($r = -0.47, p < 0.01$). Perceived site quality is positively associated with perceived trust ($r = 0.49, p < 0.01$), User web experience

Table 2. Correlation analysis.

Var No.	Variable name	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Gender	—												
2	Age	-0.24**	—											
3	Education	-0.10	0.54**	—										
4	Computer experience	-0.21**	0.48**	0.41**	—									
5	Job nature	-0.31**	0.55**	0.33**	0.38**	—								
6	Income	-0.39**	0.56**	0.43**	0.31**	0.78**	—							
7	PERCTRUS	-0.10	-0.02	-0.04	0.01	0.07	0.13*	(0.84)						
8	PERCRISK	0.18**	-0.14*	-0.02	-0.06	-0.16**	-0.23**	-0.47**	(0.77)					
9	PERCSITE	-0.22**	0.11	0.04	0.12*	0.19**	0.22**	0.49**	-0.39**	(0.84)				
10	USRWEBEX	-0.07	0.12*	0.07	0.12*	0.19**	0.22**	0.36**	-0.27**	0.47**	(0.72)			
11	PERCTECH	-0.07	0.07	0.03	0.09	0.07	0.06	0.41**	-0.43**	0.39**	0.21**	(0.75)		
12	WOMS	0.01	0.02	0.08	0.05	0.13*	0.15**	0.37**	-0.18**	0.36**	0.27**	0.16**	(0.76)	
13	WOMG	-0.01	0.08	0.06	0.09	0.10	0.14	0.48**	-0.39**	0.48**	0.37**	0.45**	0.39**	(0.79)

N = 311, α reliabilities are mentioned in parenthesis diagonally. ***: Correlation is significant at the 0.001 level (2-tailed); **: correlation is significant at the 0.01 level (2-tailed); *: correlation is significant at the 0.05 level (2-tailed).

is positively associated with perceived trust ($r = 0.36$, $p < 0.01$). Perceived technical trustworthiness is positively associated with perceived trust ($r = 0.41$, $p < 0.01$).

WOMS is positively associated with perceived trust ($r = 0.37$, $p < 0.01$). WOMG is positively associated with perceived trust ($r = 0.48$, $p < 0.01$). Perceived site quality is negatively associated with perceived risk ($r = -0.39$, $p < 0.01$). User web experience is negatively associated with perceived risk ($r = -0.27$, $p < 0.01$). Perceived technical trustworthiness is negatively associated with perceived risk ($r = -0.43$, $p < 0.01$). WOMS is negatively associated with perceived risk ($r = -0.18$, $p < 0.01$). WOMG is negatively associated with perceived risk ($r = -0.39$, $p < 0.01$), and user web experience is positively associated with perceived site quality ($r = 0.47$, $p < 0.01$). Perceived technical trustworthiness is positively associated with perceived site quality ($r = 0.39$, $p < 0.01$). WOMS is positively associated with perceived site

quality ($r = 0.36$, $p < 0.01$). WOMG is positively associated with perceived site quality ($r = 0.48$, $p < 0.01$). Perceived technical trustworthiness is positively associated with user web experience ($r = 0.21$, $p < 0.01$). WOMS is positively associated with users' web experience ($r = 0.27$, $p < 0.01$). WOMG is positively associated with users' web experience ($r = 0.37$, $p < 0.01$). WOMS is positively associated with perceived technical trustworthiness ($r = 0.16$, $p < 0.01$). WOMG is positively associated with perceived technical trustworthiness ($r = 0.45$, $p < 0.01$). WOMG is positively associated with WOMS ($r = 0.39$, $p < 0.01$).

Regression analysis

According to the first hypothesis of our study, it was proposed that perceived technical trustworthiness is positively related to perceived trust.

Regression results as in shown in Table 3 indicated that $\beta = 0.40$ when $p < 0.001$ and $\Delta R^2 = 0.16$. This explained a 16% unique variance in perceived consumer trust. The aforementioned findings verified this hypothesis. According to the second hypothesis, it was proposed that user web experience is positively related to perceived trust. Regression results showed $\beta = 0.36$ when $p < 0.001$ and $\Delta R^2 = 0.12$. This explained a 12% unique variance in perceived consumer trust, so this hypothesis was accepted.

Hypothesis 3 proposed that perceived site quality is positively related to perceived trust. Regression results indicated that $\beta = 0.50$ when $p < 0.001$ and $\Delta R^2 = 0.23$; this explained a 23% unique variance in perceived consumer trust and as a result, this hypothesis was proven to be true. Hypothesis 4 proposed that perceived risk is negatively related to perceived trust. The regression results showed that $\beta = -0.47$ when $p < 0.001$ and $\Delta R^2 = 0.21$; this explained 21% unique

Table 3. Results of regression analyses of four factors of consumer perception of perceived trust.

Perceived trust			
Predictors	β	R ²	ΔR^2
Step 1			
Control variables		0.014	
Step 2			
Perceived technical trustworthiness	0.40***		0.16***
Perceived site quality	0.50***		0.23***
User web experience	0.36***		0.12***
Perceived risk	-0.47***		0.21***
Word of mouth seeking	0.38***		0.14***

N = 311. Only demographics (age, gender, computer experience and education) were controlled in the analyses, and so were used as control variables. ***: Correlation is significant at the 0.001 level (2-tailed); **: correlation is significant at the 0.01 level (2-tailed); *: correlation is significant at the 0.05 level (2-tailed).

Table 4. Results of regression analyses of four factors of consumer perception of word of mouth generation.

WOMG			
Predictors	β	R ²	ΔR^2
Step 1			
Control variables		0.014	
Step 2			
Perceived technical trustworthiness	0.44***		0.19***
Perceived site quality	0.50***		0.23***
User web experience	0.36***		0.13***
Perceived risk	-0.40***		0.15***
Word of mouth seeking	0.38***		0.14***

N = 311. Only demographics (age, gender, computer experience and education) were controlled in the analyses, and so were used as control variables. ***: Correlation is significant at the 0.001 level (2-tailed); **: correlation is significant at the 0.01 level (2-tailed); *: correlation is significant at the 0.05 level (2-tailed).

variance in perceived consumer trust, thus, the hypothesis was verified. As for Hypothesis 5 which proposed that WOMS is positively related to perceived trust, the regression results showed that $\beta = 0.38$ when $p < 0.001$ and $\Delta R^2 = 0.14$. This explains a 14% unique variance in perceived customer trust. Our findings confirmed this hypothesis.

Hypothesis 6 proposed that perceived technical trustworthiness is positively related to WOMG. The regression results (Table 4) showed that $\beta = 0.44$ when $p < 0.001$ and $\Delta R^2 = 0.1$. They explained a 19% unique variance in WOMG. This hypothesis was verified by our findings.

Hypothesis 7 proposed that user web experience is positively related to WOMG. Regression results showed $\beta = 0.36$ when $p < 0.001$ and $\Delta R^2 = 0.13$. This explained a 13% unique variance in WOMG. So, this hypothesis was accepted.

Hypothesis 8 proposed that perceived site quality is

positively related to WOMG. Regression results showed $\beta = 0.50$ when $p < 0.001$ and $\Delta R^2 = 0.23$. This explained a 23% unique variance in WOMG. This hypothesis was verified.

Hypothesis 9 proposed that perceived risk is negatively related to WOMG. The regression results showed $\beta = -0.40$ when $p < 0.001$ and $\Delta R^2 = 0.15$. They explained a 15% unique variance in WOMG. Thus, this hypothesis was confirmed by the regression results.

Hypothesis 10 proposed that WOMS is positively related to WOMG. Regression results showed $\beta = 0.38$ when $p < 0.001$ and $\Delta R^2 = 0.14$. They explained a 14% unique variance in WOMG. Thus, this hypothesis was accepted.

Moderation analysis

For moderation analysis, we used the criteria of Barron

Table 5. Regression results of WOMS as a moderator of the relationship between consumer perception factors and WOMG.

WOMG			
Predictor	β	R ²	ΔR^2
Step 1			
Control variables		0.014	
Step 2			
Perceived technical trustworthiness	0.39	0.30	0.29
Perceived site quality	0.41	0.29	0.28
User web experience	0.28	0.23	0.22
Perceived risk	-0.33	0.26	0.25
Step 3			
PTT \times WOMS	0.08	0.30	0.00
PSQ \times WOMS	0.86*	0.30	0.01**
UWE \times WOMS	1.0**	0.24	0.01**
PERCRISK \times WOMS	0.14	0.26	0.00

N = 311. Only demographics (age, gender, computer experience and education) were controlled in the analyses, and so were used as control variables. ***: Correlation is significant at the 0.001 level (2-tailed); **: correlation is significant at the 0.01 level (2-tailed); *: correlation is significant at the 0.05 level (2-tailed).

and Kenny (1986). In the first step of the analysis, control variables were entered into a regression equation. In the second step, we entered independent and moderator into an equation, and in the third step, we also entered interaction term into the equation. As shown in Table 5, based on Hypothesis 11, it was proposed that WOMS moderates the relationship between perceived site quality and WOMG. The regression results showed $\beta = 0.86$ when $p < 0.05$ and $\Delta R^2 = 0.01$. This explained 1% unique variance in WOMG. This hypothesis was confirmed.

Hypothesis 13 proposed that WOMS positively moderates the relationship between user web experience and WOMG. The regression results showed $\beta = 1.0$ when $p < 0.01$ and $\Delta R^2 = 0.01$. They explained 1% unique variance in WOMG. This hypothesis was verified by the regression results.

Interaction plot of the moderation of the relationship between perceived site quality and WOMG via WOMS

Hypothesis 12 proposed that WOMS moderates the relationship between perceived technical trustworthiness and WOMG. The regression results showed $\beta = 0.08$ non-significant (ns) and $\Delta R^2 = 0.00$, ns. The moderation results revealed no significant support for this hypothesis (Figure 2). Hypothesis 14 proposed that WOMS moderates the relationship between perceived risk and WOMG. The regression results showed $\beta = 0.14$, ns and $\Delta R^2 = 0.00$, ns. The moderation results revealed no significant support for this hypothesis.

Interaction plot of the moderation of the relationship between user web experience and WOMG via WOMS

We carried out the same moderation analysis for perceived trust and found no significant support from the analysis for WOMS's moderation of the relationship between the four factors and perceived consumer trust (Figure 3). To comprehend the findings of this study, the results and hypotheses related to this relationship were excluded from this study.

DISCUSSION

We used WOMG along with perceived trust which is influenced by consumer perception factors of perceived site quality, users' web experience, perceived technical trustworthiness and word of mouth seeking. In order to find out the reputation of e-commerce in the market and consumers' trust in e-commerce, we studied the four aforementioned consumer perception factors. Since these four factors have a strong influence on consumers' decisions about whether or not to purchase online, their own attitudes, which is, willingness to do online shopping, play a significant role in the success or failure of e-commerce.

Trust is the core element of e-commerce activity; the correlation of perceived technical trustworthiness is strong. The findings of our study suggest that in order to enhance consumer trust in B2C business transactions,

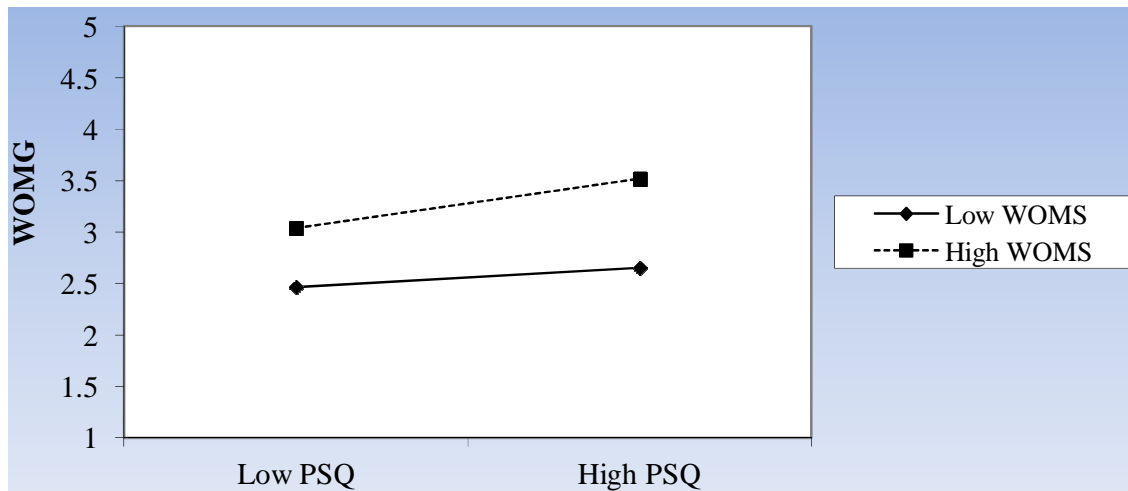


Figure 2. Interaction plot of the moderation of the relationship between perceived site quality and WOMG via WOMS.

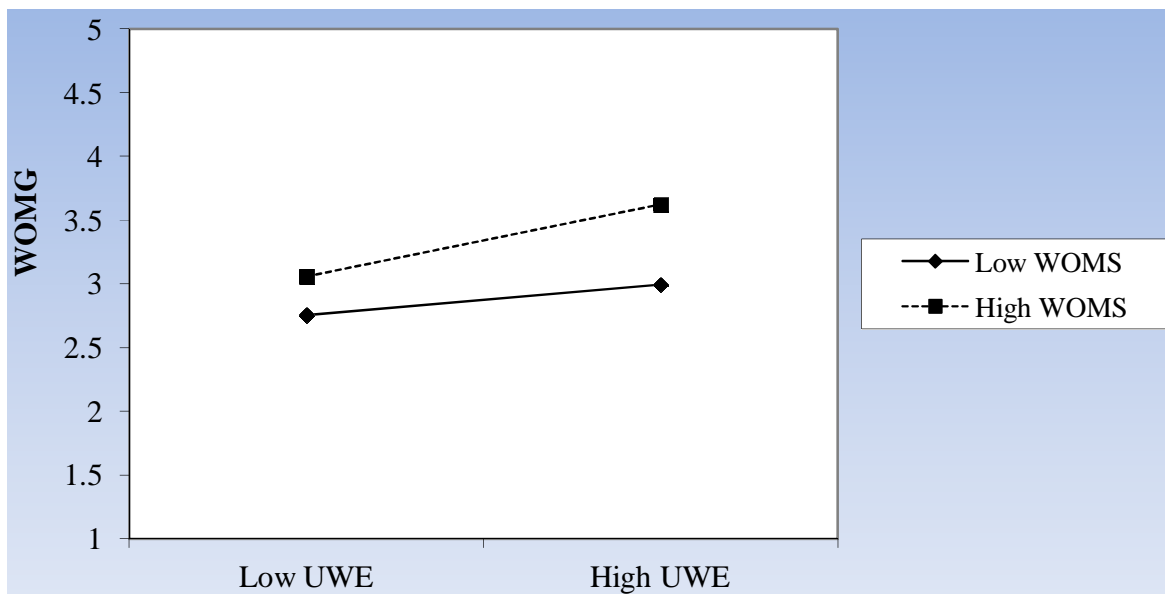


Figure 3. Interaction plot of the moderation of the relationship between user web experience and WOMG via WOMS.

there is the need to focus on technical aspects of websites by ensuring the security and privacy of customers. Such a finding as this was confirmed by Shim et al. (2003) who in their research noted that trust can influence the dedication of the buyer and seller to a relationship. Perceptions of trust are found to influence transactions in an online environment, whereas store trustworthiness and perception of risk influence the willingness to purchase.

Companies need to assure their customers of the security and protection of their personal information to

win their trust. Such a finding as this was also made by Metzger (2006) in her research on the effects of site, vendor and consumer characteristics on website trust and disclosure. She established the fact that website privacy, vendor reputation and consumer security characteristics are predictors of trust in e-commerce. User web experience has a strong correlation with perceived trust on e-commerce. Navigation, graphical design and usability features of e-commerce websites work as the backbone of an individual user's positive experience in respect of their trust in e-commerce. A well

designed, easy to use and fully functional e-commerce site can attract a large number of traffic and eventually leave a professional and trustworthy image in the minds of consumers. The quality of an e-commerce website is reflected by the factor of perceived site quality which is the authenticating feature of an e-commerce website. Grannas (2007) in her research on the factors important for developing a successful e-commerce website found out that to build a successful e-commerce website, web retailers need to focus on web design, graphical design, interaction design and information design.

Perceived site quality and perceived trust have a strong correlation due to the fact that the provision of legitimate content by a website effectively increases consumer trust. Perceived trust and perceived risk have a strong negative correlation. People who regularly engage in e-commerce are not bothered by the fact that it risks the privacy of their personal and financial information. Frequent users may not really care about e-commerce risks, but those who do not use it frequently may be concerned about their privacy and security. Newcomers to this field may totally avoid e-commerce since they will perceive it highly risky, thus reducing their levels of trust.

WOMS has a strong correlation with perceived trust due to the fact that consumers will not stop consulting with their acquaintances, friends and families even if the web-based vendor has a very good reputation in the market. In order to have psychological satisfaction, an assurance of e-commerce should be considered important to avoid performance and financial risks. This means that WOMS directly affects a consumer's perceived trust. As revealed by the findings of this research, WOMS is an important factor for businesses and web retailers as it can be used by them to improve their market reputation. This study recommends that in order to improve market reputation, businesses can provide the testimonials of their existing customers to their new and prospective customers. Sweeney et al. (2005) in their research studied the differences between positive and negative word of mouth-emotion as a differentiator, arguing that businesses or managers who seek to take advantage of WOMS as well as WOMG should ensure that existing customers are satisfied with their companies' products and services. Frequent users of e-commerce will not adhere to WOMG in the case of perceived greater risk. Perceived site quality and user web experience have a strong positive correlation with WOMG. Size of website, detailed availability of true information and easy navigation are the characteristics that may be used for the evaluation of web retailing for good or bad WOMG.

Technically, a strong website can generate greater positive results through WOMG. This study recommends that business sites that are verified by VeriSign or SSL secure website and can assure consumers of their privacy and security.

In our study we tested WOMS as a moderator of the relationship between perceived trust on e-commerce and WOMG. WOMS proved to be insignificant in moderating

the relationship between perceived trust and consumer perception factors, therefore our data could not provide support for this hypothesis. In order to test WOMS in terms how it moderates the relationship between WOMG and consumer perception factors, we formulated two significant hypotheses. First, the moderation that proved to be significant was between perceived site quality and WOMG. Second, the moderation that proved to be significant was between user web experience and WOMG. We recommend that businesses need to specially focus on these two elements when it comes to providing timely service to consumers. WOMS will affect WOMG somehow or the other through these two consumer perception factors. So, in order to save their reputation, businesses need to strongly focus on providing quality testimonials for consumers.

Based on the results of our study, we found out that perceived trust and WOMG are major components in e-commerce which need to be focused on by online businesses. Website quality, design and information presentation to the customer play a vital role in generating trust. Online and offline WOM help to promote a reputation which eventually increases a consumer's purchase intention.

FUTURE RESEARCH DIRECTIONS

Future researches should consider testing the WOMS phenomenon in actual market settings; how WOMS influences the perceptions of buyers of products and services in brick and mortar stores. Other factors of trust should be identified for further study. A combination of WOMS and WOMG is a new idea introduced in this study, which should be tested in different contexts for validation purposes.

REFERENCES

- Alexandru B (2010). The Art and Science of Word of Mouth and Electronic Word of Mouth. *Faculty Manage. Technol. Eng.*, 9(19):4.7-4.16.
- Andam ZR (2003). E-Commerce and E-business. e-ASEAN Task Force UNDP-APDIP. (Retrieved October 22, 2010 from www.apdip.net/publications/iespprimer).
- Aschmoneit P, Lenz M (2001). The Role of Trust in Business-to-Business Electronic Commerce. Seventh Americas Conference on Information Systems. AMCIS 2001 Proceedings, Paper, No.134.
- Bardalal A (2006). Overview of E-commerce in Pakistan. The Economist Intelligence Unit. (Retrieved October 22, 2010 from www.ebusinessforum.com/index.asp...ecommerce...Pakistan).
- Bauer H, Neumann M, Huber F, Haber TE (2004). Determinants and Consequences of Trust in E-Commerce, University of Mannheim.
- Bedi P, Banati H (2006). Assessing User Trust to Improve Web Usability. *J. Comp. Sci.*, 2(3): 283-287.
- Cheong HJ, Morrison MA (2008). Consumers' Reliance on Product Information and Recommendations found in UGC. *J. Int. Advert.*, 8: 38-49.
- Chen SE, Dhillon GS (2003). Interpreting Dimensions of Consumer Trust in E-Commerce. *Info. Tech. Manage.*, 4: 303-318.
- Cheung CMK, Matthew KOL (2008). Online Consumer Reviews: Does Negative Electronic Word-of-Mouth Hurt More? AMCIS Proceedings

- Paper, No.143.
- Chuan H, Aiwu C (2009). The Predict Study on Word-of-mouth Receiver's Purchase Probability Based on Logit Model. In Proceedings of 2009 Summit International Marketing Science and Management Technology Conference.
- Chung KH, Shin, JI (2009). The Relationship Between Site Characteristics, Relationship Quality, and Word of Mouth. *Int. J. Bus. Inform.*, 4(2):137-160.
- Corritore CL, Marble RP, Wiedenbeck S, Kracher B, Chandran A (2005). Measuring Online Trust of Websites: Credibility, Perceived Ease of Use, and Risk. *AMCIS 2005 Proceedings*, Paper, No. 370.
- Davidow M, Leigh JH (1998). The Effects of Organizational Complaint Responses on Consumer Satisfaction, Word of Mouth Activity and Repurchase Intentions. *J. Consum. Satif. Dissatif. Comp Behav.*, 11: 91-102.
- Davis A, Khazanchi D (2007). The Influence of Online Word of Mouth on Product Sales in Retail E-commerce: An Empirical Investigation. *AMCIS 2007 Proceedings*. Paper, No. 176.
- Dellarocas C (2003). The Digitization of Word-of-Mouth: Promise and Challenges of Online Reputation Systems. *Manage. Sci.*, 49(10): 1407-1424.
- Egger FN (2001). Affective Design of E-Commerce User Interfaces: How to Maximize Perceived Trustworthiness. In: Helander M, Khalid HM & Tham (Eds.). *Proceedings of CAHD2001. Conference on Affective Human Factors Design*. Singapore. June 27-29, pp. 317-324.
- Gallivan MJ, Depledge G (2003). Trust, control and the role of interorganizational systems in electronic partnerships. *Inform. Syst. J.*, 13(2):159-190.
- Ganguly B, Dash SB, Cyr D (2009). Website characteristics, Trust and purchase intention in online stores: - An Empirical study in the Indian context. *J. Inform. Sci. Technol.*, 6(2): 22-44.
- Garbarino E, Strahilevitz M (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *J. Bus. Res.*, 57(7): 768- 775.
- Grannas J (2007). What factors are Important in Developing a Successful E-commerce Website? Thesis C level Computer Science. University of Gävle. (Retrieved October 22, 2010 from <http://urn.kb.se/resolve?urn=urn:nbn:se:hig:diva-166>).
- Hahn J, Kauffman R J (2003). Measuring and Comparing the Effectiveness of E-Commerce Website Designs. 2002 Workshop on Information Systems and Economics, Barcelona. Spain.
- Huang LI, Chou YJ, Lan IT (2007). Effects of Perceived Risk, Message Types, and Reading Motives on the Acceptance and Transmission of Electronic Word-of-Mouth Communication. *Cont. Manage. Res.*, 3(4): 299-312.
- Huang JH, Hsiao TT, Chuang ST (2009). The Role of Virtual Community in Disseminating Electronic Word of Mouth. In *Perv. Comp (JCPC)*. 2009 Joint Conferences on 3-5 December.755-760.
- Industry Canada (2002). Review of Canada's Business and Consumer Site. (Retrieved October 22, 2010 from <http://strategis.gc.ca>).
- Issiyil C (2007). Consumer-to-Consumer Websites: The Wor(l)d of Strangers and Their Effect on Consumers' Purchase Decisions. (Retrieved on October 22, 2010 from <http://arno.unimaas.nl/show.cgi?fid=9742>).
- Jih WJ, Wong SY, Chang TB (2005). Effects of Perceived Risks on Adoption of Internet Banking Services: An Empirical Investigation in Taiwan. *Int. J. E-Bus. Res.* 1(1): 70-88.
- Koufaris M, Hampton-Sosa W (2002). Customer Trust Online: Examining the Role of the Experience with the Website. *CIS Working Paper Series*. Zicklin School of Business. Baruch College. New York. (Retrieved October 22, 2010 <<http://cisnet.baruch.cuny.edu/papers>>).
- LeGresley B (2004). Trust: A Key Success Factor in the Online Retail Industry. Project (M.B.A.), Simon Fraser University.
- McKnight DH, Choudhury V, Kacmar C (2002). The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *J. Strateg. Inform. Syst.*, 11(3): 297-323.
- Mesenbourg TL (2001). *Measuring Electronic Business*. U.S. Bureau of the Census.
- Metzger MJ (2004). Privacy, Trust, and Disclosure: Exploring Barriers to Electronic Commerce. *J. Comp. Mediat. Commun.*, 9(4): 00-00.
- Metzger MJ (2006). Effects of Site, Vendor, and Consumer Characteristics on Web Site Trust and Disclosure, *Communication. Res.*, 33(3):155-179.
- Nguyen DD, Kira D (2000). Trust and Quality Assurance in Business-To-Consumer Electronic Commerce: Enhancing Consumer Acceptance and Participation. *PACIS 2000 Proceedings Paper No. 38*.
- Ong CE, Singh M (2009). The Role of Redress in B2C E-Business. *BLED Proceedings Paper, No. 6*.
- Pavlou P (2001). Integrating Trust in Electronic Commerce with the Technology Acceptance Model: Model Development and Validation. *AMCIS 2001 Proceedings Paper, No. 159*.
- Pavlou PA, Chai L (2002). What Drives Electronic Commerce Across Cultures? A Cross Cultural Empirical Investigation of the Theory of Planned Behavior. *J. Electronic Commer. Res.*, 3(4): 240-253.
- Rosen A (2000). *The E-commerce Question and Answer Book: A Survival Guide for Business Managers*. USA: American Management Association.
- Shim JT, Slyke C.V, Jiang JJ, Johnson RD (2004). Does Trust Reduce Concern for Information Privacy in E-Commerce? *SAIS 2004 Proceedings Paper No. 37*.
- Sisson D (2000). Trust and Trustworthiness. (Retrieved 22 October, 2010 from <http://philosophie.com/ecommerce/trust/>).
- Tax SS, Chandrashekar M, Christiansen T (1993). Word of Mouth in Consumer Decision-Making: An Agenda for Research. *J. Consumer. Satif. Dissatif. Comp. Behav.*, 6: 74-80.
- Walczuch R, Seelen J, Lundgren H (2001). Psychological Determinants for Consumer Trust in E-Retailing. In *Proceedings of the Eighth Research Symposium on Emerging Electronic Markets*, Maastricht, The Netherlands.
- Yayli A, Bayram M (2010). eWOM: The Effects of Online Consumer Reviews on Purchasing Decision of Electronic Goods. (Retrieved 22 October, from http://www.marketing-trends.congress.com/2010_cp/Materiali/Paper/Fr/Yayli_Bayrami.pdf).