

Moderating Role of Perceived Risk and Innovativeness between Online Shopping Attitude and Intention

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Received: August 10 2013

Accepted: September 30 2013

ABSTRACT

Lack of customer acceptance remains a big challenge for the successful adoption of new technology. Online shopping is a new medium of shopping where customers purchase products and services directly from the sellers using internet as a medium. The purpose of the current study is two folds: First is to check the moderating effect of innovativeness and perceived risk on the relationship of attitude and intention towards online shopping. The second purpose of the study is to investigate the acceptance of online shopping in Pakistan while accommodating the above purpose. Results of the current study reveals that the effect of perceived usefulness and perceived ease of use is significant on online shopping attitude where attitude significantly impact on shopping intentions. An important contribution of the current study is incorporating perceived risk and innovativeness as moderators, which was not studied (as a moderator) in the previous literature. As per our expectation, the perceived risk hypothesis was validated by a significant negative effect of the interaction between perceived risk and attitude on intention. While, current study did not find innovativeness as a moderator between attitude and intention.

KEYWORDS: Online Shopping, Perceived Risk, Innovativeness, TAM, Pakistan

1. INTRODUCTION

Despite the phenomenal growth of internet users in Pakistan, the adoption of online shopping is extremely slow. According to broadband internet growth, Pakistan is on fourth rank in the world. The number of internet users increase dramatically during the last years, only 4 million in 2002, where 31 millions in 2010 (U.S. Census Bureau, 2011). Pakistan has been considered the second slowest adopter of online shopping after Egypt (Nielsen Media Research, 2008). The world's most frequent internet shoppers are from South Korea with 99% of internet users have shopped online. Amazingly, South Korea ranked 11th position with 41 million internet users and Pakistan is on 15th position with 31 million internet users (U.S. Census Bureau, 2011).

Online shopping is a process where customers purchase products and services directly from the sellers using internet as a medium (Koivumaki, 2001). Somebody call it laziness or what so ever, people from different corners of the world are shopping while sitting down at their home or office. Shopping over internet, enable them to buy books, apparels, groceries, cars and even houses from their favorite place without going anywhere from home. Online shopping has been experienced an amazing escalation during the recent years because of its discrete benefits for both retailers and consumers. These benefits includes broad range of products (services), round the clock ease, less dependence on store visits, travel costs, decreasing overhead expenses and many others (Brown, Pope and Voges, 2003). Many researchers have observed that online retailing has been emerging as a vital form of retailing (Childers, Carr, Peck & Carson, 2001; Parasuraman, Zeithaml & Malhotra, 2005). Although the success factors of online shopping emerge over the time, it is important that these retailers pay attention towards the needs and concerns of the customers while making their strategies. Parasuraman *et al.* (2005) stressed that the low price and high internet penetration rate were the former drivers of success, the issue of quality soon become important.

People round the world are continuously engaging in online shopping. A worldwide online retail sale in 2010 was 572.5 billion US dollars, which will reach to 963 Billion US dollars in 2013 (Goldman Sachs). Customers prefer to purchase online due to it convenience, time saving, variety, cost savings and price comparison. Books are the favorite category for online purchases in 2010 followed by apparels, airline tickets, electronic equipments, hotel bookings and cosmetics.

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This instant success of online shopping has invited widespread research on understanding the drivers of online shopping and different other factors that motivate a person to become online shopper. Among all the theories and models, the technology acceptance model (TAM) has been viewed the commonly used and the most prominent model for understanding the electronic commerce from a consumer oriented view. Many researchers in the field of online shopping broadly use the TAM (McKechnie, Winklhofer&Ennew, 2006). For studying consumer acceptance of online shopping, TAM proved to be an extremely valid approach. The customer's perception about the resultant benefits of their behaviors, self-efficacy and ability to control the external and internal factors in performing these intended behaviors led to the emergence of Theory of Reasoned Action (TRA), theory of Planned Behavior (TPB) and Technology Acceptance Model (TAM). From an online shopping perspective, understanding these theories could help us in explaining and predicting customers' intention towards adoption of online shopping (Choi and Geistfeld, 2004; Salisbury, Pearson, Pearson and Miller, 2001; Bobbit and Dabholkar, 2001).

The technology acceptance model by Davis (1989) and by Davis, Bagozzi&Warshaw (1989) used to explain the acceptance of new information technology for various tasks and can be used to predict the intention of online shopping (McKechnie *et al.*, 2006). This model explains that the customers' intention to use a new technology can be explained by their attitude towards that technology. This attitude eventually explains by their perception about the usefulness of that technology and its ease of use. Perceived usefulness and perceived ease of use are the basic factors in developing favorable attitude of the user for accepting the new information technology.

Innovativeness is a conception related to the adoption process of new products and ideas that received great attention from researchers (Hirschman, 1980; Midgley and Dowling, 1978). This personality factor of a customer shows the degree of adoption of new products and idea relatively new in his or her personal experience. From previous studies, we can conclude that with other factors, the degree of innovativeness is also important determinant that how quickly a simple internet user becomes internet shopper (Vrechopoulos, Siomkos&Doukidis, 2001; Citrin, Sprott, Silverman, Steven and Stem, 2000). Even though the success and growth of online shopping are witnessed in previous years, few negative factors are also appears with this alternative purchasing method. Customers are worried about the safety and security features of online shopping (Park, Lennon and Stoel, 2005). The activity of purchasing a product from a faceless seller and no opportunity of physical examining the product creates a degree of risk for these customers (Ko, Jung, Kim and Shim, 2004).

In different studies related to online shopping, customer behavior constructs and related theories are proposed and tested in developed countries such as USA, UK, France, Germany and Australia. As a result, the validity of these theories, models and results are culturally bound and difficult to generalize in other countries, especially in developing countries (Alam, Bakar, Ismail and Ahsan, 2008; Park and Jun, 2003; Spanos *et al.*, 2002). The original TAM and its relationships with other constructs are developed in specific countries, mostly the USA market, consequently the validity of these relationships in other markets required to be validated. Earlier studies have suggested that different other variables like economic situations and cultural values are suppose to greatly influence the adoption of internet for the use of online shopping (Brashear, Kashyap, Musante and Donthu, 2009; Park and Jun, 2003). Although many previous studies have focused on online shopping in the world but still we need for in depth inquiry of the internet shopping intention in particular countries (Goldsmith, 2002).

In view of that online shopping is still on its beginning stage of development in Pakistan, few things are known about the behaviors of consumers in adoption of this new shopping medium and the important factors that can influence the behavior. For that reason, we choose the TAM model in our study to investigate the buying intention of inter users by evaluating and understanding the major factors that influence the purchase intention and attitude towards online shopping in a developing country like Pakistan. These understanding would help us to gain better insights into the customers' internet shopping motivation and developing effective strategies to increase the internet traffic flow.

2. PAST LITERATURE

2.1 Online Shopping

Online shopping is a new form of trade that takes place on the internet where customers visit various websites offering different products for sale, select a product, order that product, makes payment via internet with the help of credit card, and finally the seller physically delivered the product to the customers. The current growth in the volume of online shopping is due to the development of internet. The success of online shopping is result of the ease of getting information about the product attributes, price comparison, time convenience and availability (Brown, Pope and Voges, 2003). Due to the advancement in the information technology and customers' attraction toward this new mode of shopping, the internet shopping will become more dominant in contrast to traditional shopping (Oinas, 2002).

2.2 Technology Acceptance Model (TAM)

Davis introduced the technology acceptance model in 1989 to explain the acceptance of new information technology. This model relied on theory of reasoned action (TRA) and theory of planned behavior and their contents

of intention and behavior to adopt a new information system. The two salient beliefs in this model are user perception of usefulness and ease of use. An important objective of the TAM is to identify the effect of external factors on internal beliefs, attitude and behavior intention to use the new technology. The two important beliefs i.e. perceived usefulness (PUFN) and perceived ease of use (PEU) are key factors for new technology acceptance like computer and internet (Davis, Bagozzi & Warshaw, 1989). PUSF and PEU are influential in determining the user's attitude toward that system and these factors predict their intention to use the system as well. TAM also considers a link between the usefulness and ease of use that the users' perception about the level of difficulty and ease also influence their perception about the usefulness of that technology.

Different researchers used this model to explain the individual differences for online shopping and identify the factors that influence the customers' intention to shop online. These factors are demographics, shopping orientation and previous web experience (Xu and Paulins, 2005; Choi and Park, 2006).

2.3 Perceived Usefulness (PUFN) and Perceived Ease of Use (PEU)

Usefulness refers to the user perception that using this new technology will improve or enhance his or her performance (Davis, 1989). Using this definition in the context of online shopping means it is the customer perception that he believes by using this new technology of internet can enhance his performance. The performance is the outcome of their shopping experience and the customer believes that online shopping is helpful and valuable. This perception affects the customer attitude towards the online shopping and ultimately derives him to perform the behavior (Akhalq and Ahmed, 2011).

PEU refers to the customer perception that using this technology is free of efforts (Davis, 1989). Using the given definition in the context of online shopping means the customer believes that he or she can easily use the internet as a medium for shopping and it does not require a lot of efforts to accomplish the task of internet shopping (Chiu *et al.*, 2009). The both beliefs differ in a way that ease of use defines the required input for web purchase in the shape of skills and resources whereas usefulness defines the output of the process in the shape of a good purchase (Venkatesh, 2000). In a more simple way, ease of use describes the simplicity of internet as a new shopping medium that does not require a lot of efforts and skills. On the other side usefulness is how efficiently internet helps the customer to complete the task (Liao and Shui, 2009; Lu and Su, 2009).

2.4 Attitude towards Online Shopping

Many researchers studied attitude in the past to understand its function in the framework of human behavior. The word "Attitude" symbolizes the overall level of favorability or un-favorability toward any external stimulus (Fishbein, 1963). Attitude is an indicator that reflects the liking or disliking of a person regarding any object (Ajzen and Fishbein, 1980, p.64). In another comprehensive definition attitude is an evaluative statement of a person about any external object based on his values and beliefs. People attitude towards a particular object is shaped, store in their mind and easily accessible which help them in their decision- making and enhance their ability to make quality decision.

According to TAM, the beliefs of usefulness and ease of use of the new technology are the main factors for the acceptance of new technology. These factors determine the user behavior towards the new technology. In the given model, they predict the user behavior through their attitude towards the new shopping channel. As explain earlier, Davis *et al.* (1989) explain the perception of usefulness as the potential customers' prejudiced likelihood that their performance in the given context will definitely enhanced due to use of this new system and ease of use is the level of comfort or discomfort about using the new system (Liao and Shi, 2009).

In different studies, individual attitude was a significant predictor for online shopping intentions. The attitude towards internet shopping had the significant impact on the intention to web purchase (Liao and Shi, 2009). An empirical study by Shim *et al.* (2001), attitude towards online shopping forecast the customer use of internet for information search and it ultimately affect the internet shopping intentions. The customers who had favorable attitude for internet shopping had more intention to buy clothing over the web. Different other studies also confirm the similar results and demonstrate the empirical results for the relationship between attitude and online shopping intentions (To *et al.*, 2008; Hernandez *et al.*, 2011).

2.5 Attitude and Intention Relationship

Past researches used the construct of attitude to measure the intention of an individual to perform a particular behavior. While many researchers argue that although the attitude is a good proxy for measuring intention but still many external variable influence the intention of a person to perform the behavior. Many researchers like Liska (1984) and Sheppard *et al.* (1988) argue that the theory of reasoned action does not consider the behaviors that need skills, resources and cooperation. Later on Ajzen (1985) introduce an adjusted model of "theory of planned behavior" that incorporates the factor of behavioral controls.

Previously, many studies confirm that, despite the favorable attitude of a person towards a particular object, it is difficult to perform the actual behavior when there are difficulties to do so (Chen, 2007). The attitude and

intention relationship is inconsistent due to external factors that influence the purchase of organic food such as price. Kim and Chung (2011) extended the theory of planned behavior by introducing the factor of behavioral control that moderate the relationship between attitude and intention in purchasing organic food items. Habit is an important variable in predicting behavior that decreases the importance of other variables to estimate the behavioral intention. The predictive power of attitude will decrease, when an individual in a habit of performing a behavior (Trafimow, 2000). Norman and Conner (2006) also confirm the result in their study that the past behavior of an individual moderate the relationship of attitude and intention in a way that as the frequency of past behavior increase the attitude intention relationship decrease. The moderating effect of past behavior was not found in the intention-behavior relationship for exercise behavior (Norman *et al.*, 2000).

That inconsistent results call for further investigations to understand the moderating effect in intention-behavior relationship. Different situational factors can moderate the relationship between attitude and intention in the context of online shopping such as time pressure, geographical distance, lack of mobility, need for special items and attractiveness of other alternatives (Monzuwe, Dellaert and Ruyter, 2004). In online grocery shopping, the situational factors such as having a baby, health problems and driving restriction for women influence the intentions towards online grocery shopping (Hand *et al.*, 2009; Maghrabi and Dennis, 2011).

2.6 Innovativeness

Innovativeness is a conception related to the adoption of new ideas and products (services) and it receive substantial consideration in the past by many researches (Midgley and Dowling, 1978; Hirschman, 1980). The previous work on the adoption of new product among the customers discovers many theories (Rogers, 1962; Bass, 1969) and suggests methods to identify the different segments of the customers based on their adoption speed (Brown, 1982; Eastlick and Lotz, 1999). Innovativeness also declares as a personality trait, which reflects the level of adoption of new ideas and products in their personal experience.

General innovativeness represents the openness of an individual and he seeks for new practices, and this general innovativeness is a strong predictor for intention of shopping (Joseph and Vyas, 1984; Craig and Ginter, 1975). A critical problem and limitation with the definition of innovativeness is associated abstraction and its general nature because this innovativeness can be linked with a particular idea or product in spite of declaring an inbuilt trait of customer personality.

Due to this limitation, Goldsmith and Hofacker (1991, p. 219) define a new measurement scale for estimating the construct in a particular domain. Domain specific innovation represents the quality of a customer to test and adopt a new idea or product in relevant area (Goldsmith and Hofacker, 1991). This new measure is more relevant and predictive to estimate the degree of innovativeness for the purchase of innovative products rather than global innovativeness (Goldsmith *et al.*, 1995). After this research, many researches apply this domain specific innovativeness in their studies and find a significant positive correlation with the intention with the intention to search a product on web and their behavioral decision to buy the product from the internet (Goldsmith, 2001; Citrinet *et al.*, 2000). Many other researches relate this domain specific innovativeness with the customer adoption of new products and using new methods of buying a product. In a study by Eastlick and Lotz (1999) demonstrate the same results that innovators are intense users of web shopping and it is strong indicator of a customer to use interactive electronic shopping media for their purchases. They also explain that the strong predictor of prospective innovator cluster is their perception of the advantage of the online shopping as compare to the traditional mode of shopping.

Citrinet *et al.* (2000) also confirm the same conclusion that the frequency of internet usage of the customers and their degree of domain specific innovativeness affect their adoption behavior of online shopping and its compatibility with their lifestyles.

2.7 Perceived Risk

It is common that the individuals are anxious about the possible risk linked with a new information system. In the case of online shopping the perception of risk significantly affect the customer intention (Park, Lennon and Stoel, 2005). Among the risks that are associated with online shopping the privacy is an issue. Customers may hesitate to shop online due to the fear that their personal information can be used for any other purpose (Keeney, 1999). Several studies prove the relation of perceived risk with the purchase intention of the customers (Cunningham *et al.*, 2005). Hence, the online shopping system should be design to protect the customers form these concerns. The customer data should be kept at safe side and ensure the security of these personal information.

In order to increase the service credibility and reducing the perceived anxiety, the electronic retailers try to secure their operations and protect the customer data from any misuse (Liao and Cheung, 2001). Several researches elaborate the security concerns of the customers such as misuse of their personal information and credit card influence the customer decision to do online shopping (Rizwanet *et al.*, 2013; Malhotraet *et al.*, 2004; Forsythe and Shi, 2003). These security threats are influenced the experiences of the customers during the purchasing on the internet or from other indirect channels. These risks related to internet shopping create an uncertainty in the mind of the

customers and they hesitate to give their financial and personal information over the internet that influences their behavior not to purchase from electronic channel.

In this way those customers who believe that there is low risk while purchasing over the internet have positive intention to purchase online and the other customers who believe that it is very risky to purchase online have negative intention to purchase online and consequently they postpone their purchase or finally drop it.

The customers are also concerned about the physical quality of the product that they are purchasing on internet (Park *et al.*, 2005). The customers perceive a purchase more risky when they are incapable to trial or physically examine the product before they finally purchase it (Ko, Jung, Kim and Shim, 2004). Products vary due to their nature of evaluation, some products can easily judge over the internet while the others are not. Park *et al.* (2005) suggest for the garment companies to display their garments by rotating on the customer screen. By doing this they can reduce the perceived risk of the customer about the physical aspect of their products. Privacy, security, psychological and social risk are the major factors which leads towards hesitation to make online purchase in Pakistan (Rehman *et al.*, 2011).

The items of perceived risk are psychological, social, physical, financial, Performance, time and overall risk, as describe by many researchers in their studies (Jacoby and Kaplan, 1972; Kaplan *et al.*, 1974; Shimp and Bearden, 1982; Garner, 1986; Kim and Lennon, 2000).

3. Hypotheses and Research Model

On the basis of above literature review, the current study tests the following hypotheses:

- H1:** Perceived Usefulness has a significant positive impact on customer attitude towards online shopping
- H2:** Perceived Ease of Use has a significant positive impact on customer attitude towards online shopping
- H3:** Customer attitude towards online shopping positively impact on the customer future online shopping intentions
- H4:** Perceived risk act as a moderator between attitude towards online shopping and future online shopping intention
- H5:** Innovativeness act as a moderator between attitude towards online shopping and future online shopping behavior

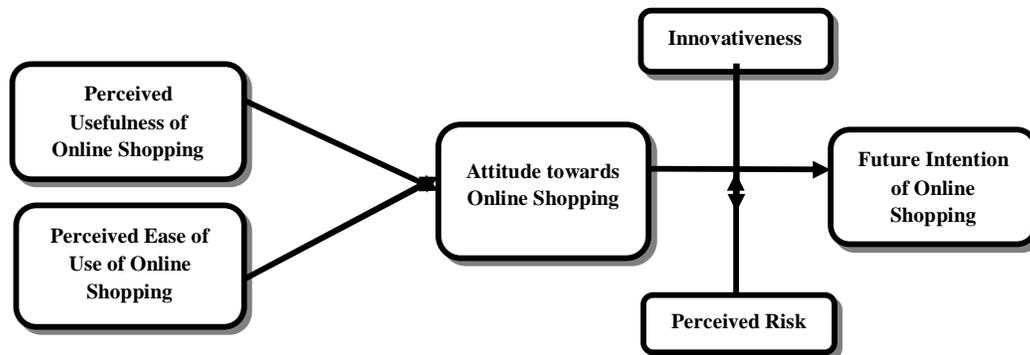


Figure1: Hypothetical Model for the current research

4. RESEARCH METHODOLOGY

The current research is descriptive in its nature. Descriptive research can be explained as describing something, some phenomenon or any particular situation. Descriptive researches are those researches that describe the existing situation instead of interpreting and making judgments (Creswell, 1994). The main objective of the descriptive research is verification of the developed hypotheses that reflect the current situation. This type of research provides information about the current scenario and focus on past or present for example quality of life in a community or customer attitudes towards any marketing activity (Kumar, 2005).

4.1 Sample/Data

In order to collect the data for understanding the situation about adoption of online shopping, a sample of 300 respondents were asked to participate in a self-administered questionnaire. The population for the current research was internet users in Pakistan.

The current study utilizes a non-probability sampling technique that is convenience sampling. Convenience sampling is a sampling technique that obtains and collects the relevant information from the sample or the unit of the study that are conveniently available (Zikmund, 1997). Convenience sampling is normally used for collecting a large number of completed surveys speedily and with economy (Lym *et al.*, 2010).

We select these sample members from different metropolitan cities of Pakistan. Two main clusters will target to collect the sample data like university students and working professionals. The selection of students and working professionals are based on the previous results of the studies on online shopping. According to Wood (2002), young adults are more interested in online shopping as compare to others. Young people can easily learn the skills needed for online shopping (Hubona and Kennick, 1996). Income is also an important factor for the adoption of online shopping (Shin, 2009). The questionnaire was distributed among 300 respondents in Islamabad, Lahore, Multan, Karachi and Bahawalpur. These respondents were selected based on the criteria above mentioned. Before giving the questionnaire, the purpose of study and questions were explained to the respondents so they can easily fill the questionnaire with relevant responses. A total of 250 questionnaires were selected and rest of the questionnaires was not included in the further analysis due to incomplete or invalid responses. After collecting the completed questionnaires, these questionnaires were coded and entered into SPSS sheet for further analysis.

4.2 Instrument and Measures

The survey instrument of the current study address two major purposes: First is to analyze the relationship of different variables in the adoption of online shopping. Second, to collect information about the different characteristics of the respondents that can be used to understand the variations in different categories.

The survey instrument contains two sections. Section 1 includes different personal and demographic variables. This section will obtain the respondent's information about gender, age, income, education, status, frequency of internet use and possible product to be purchased in the future.

Section 2 includes the latent variables that are important in the current study. These variables includes perceived usefulness, perceived ease of use, attitude, future intention, perceived risk and innovativeness. This section of the study is developed based on the past literature and already used questionnaires.

The scales of the study were adopted from the previous literature and published studies. The first three variables of the study was perceived ease of use, perceived usefulness and online shopping attitude. Each variable have three items and these scales were taken from Yu *et al.* (2005). The next variable is Future online shopping intentions having three items was taken from Moon and Kim (2001). The next variable is perceived risk with seven items and that was taken from the study by Akhlaq and Ahmed. The scale of Innovativeness with four items was taken from Goldsmith and Hofacker (1991).

4.4 Reliability Analysis

Overall Cronbach's alpha of Online Shopping questionnaire items were 0.821 that is more than acceptable and recommended value 0.50 by Nunnally (1970) and 0.60 by Moss *et al.* (1998). This shows that all the 27 items were reliable and valid to measure the opinions of consumers towards Online Shopping (Table 1).

Table 1: Reliability of Measurements Instrument

Scales	Items	Cronbach Alpha
Perceived Ease of Use	3	0.819
Perceived Usefulness	3	0.797
Online Shopping Attitude	3	0.850
Future Online Shopping Behavior	3	0.846
Perceived Risk	7	0.831
Innovativeness	4	0.793

4.5 Convergent and Discriminant Validity

Construct validity is checked by establishment of convergent and discriminant validity (Gefen and Straub, 2005). Convergent validity is shown when each measurement item (i.e. indicator) "correlates strongly with its assumed theoretical construct", while discriminant validity is shown when each measurement item correlates "less strongly with all other constructs except for the one to which it is theoretically associated" (Gefen and Straub, 2005). Table 2 lists the square root of AVE on the diagonal with the correlations between the constructs. All the values on the diagonal exceed the correlations between the constructs; therefore, the test for discriminant validity was acceptable. For convergent validity, the AVE of the constructs should be greater than 0.5 (Fornell & Larcker, 1981). While checking the convergent validity all composite reliabilities are greater than 0.7 and AVE are greater than the recommended level of 0.5.

Table 2: Convergent and Discriminant Validity

	CR	AVE	PEOU	PUSF	Attitude	Intention	Risk	Innovativeness
PEOU	0.819	0.602	0.776					
PUSF	0.797	0.567	0.091	0.753				
Attitude	0.85	0.655	0.333	0.418	0.809			
Intention	0.847	0.65	0.21	0.285	0.567	0.806		
Risk	0.832	0.589	-0.207	-0.191	-0.266	-0.368	0.644	
Innovativeness	0.795	0.623	0.143	0.268	0.259	0.310	-0.231	0.702

Notes: Diagonal elements show the square root of the Average Variance Extracted (AVE)

5. Hypotheses Testing

5.1 Profile of the Respondents

Personal and demographic information such as gender, age, income, education level and status are presented in the following table (Table 3).

Table 3: Profile of the Respondents

Variable	Category	Frequency	Percentage
Gender	Male	187	74.8
	Female	63	25.2
Age	20-25 Years	95	38
	25-30 Years	88	35.2
	30-35 Years	41	16.4
	35-40 Years	21	8.4
	Above 40 Years	5	2
Income	Below 15000	75	30
	15000-25000	37	14.8
	25000-35000	60	24
	35000-45000	29	11.6
	45000-55000	27	10.8
	Above 55000	22	8.8
Education	Bachelor	40	16
	Master	184	73.6
	MS / M. Phill	26	10.4
	PHD	-	-
Status	Student	74	29.6
	Employeed	124	49.6
	Businessman	52	20.8

5.2 Structural Equation Modeling and Hypothesis Testing

This section of the study finally tests the model after satisfying the requirements of reliability and validity. The research model of the study was tested into two steps. In first step, the casual relationships of the independent variables were measured on dependent variables. In second step, the impact of moderating variables was tested among the independent variable and dependent variable.

5.2.1 Evaluation of the measurement model

AMOS 18.0 was used to check the goodness of fit of the online shopping model. According to this method we obtain a value of chi square statistics (χ^2) to compare the actual results with the statistically generated expected results to confirm that there is a statistically significant difference between the both results (Cohen, Manion, & Morrison, 2007). The maximum likelihood parameter computes the associated degree of freedom and a probability value. This study yield a high significance level ($\chi^2 = 9.350$; degree of freedom = 9; probability level = 0.406). The appropriate distributional assumptions were met and the model is correct. The departure of the data from the model is significant at the $p > 0.05$ level.

5.2.2 Model fit Indices

To obtain CMIN/DF, Chi-square is divided by the degree of freedom. CMIN/DF is the minimum sample discrepancy divided by degrees of freedom. This model yields $\chi^2 = 9.350$ and the degree of freedom = 9. Hence CMIN/DF ($9.350/9 = 1.039$) ($p > 0.05$), which indicates a favorable value (Cheung and Rensvold, 2002). In reference to model fit, numerous indicators of goodness-of-fit were used. Some common fit indexes are the Incremental Fit Index (IFI), Comparative Fit Index (CFI), Normed Fit Index (NFI), Non-Normed Fit Index (NNFI,

also known as TLI), and root mean square error of approximation (RMSEA). In general, if the vast majority of the indexes indicate a good fit, then there is probably a good fit.

Traditionally, the value of Incremental Fit Index (IFI) should be equal or greater than 0.9 to accept the model (McDonald & Ho, 2002). The IFI of this model equals 0.998. Comparative Fit Index (CFI) indicates the proportion in the improvement of the overall fit of the study model relate to a null model (Bentler, 1983). The null model is an independence model in which the observed variables are assumed to be uncorrelated. The critical value for CFI is 0.9 or above in evaluating model fit (Bentler, 1990; Thompson, 2000). The CFI of this model equals 0.998 so the relative overall fit of the study model is 99% better than that of the null model estimated with the same sample data. Goodness Fit Index (GFI) of model was 0.990, Adjusted Goodness of Fit (AGFI) was 0.968 means good model fit, Comparative fit index (CFI) was 0.998 and Tucker-Lewis coefficient (TLI) was 0.996. CFI and TLI scores are close to 1.0 where a value of 1.0 as suggested by (Bentler, 1992; Bentler and Bonett, 1987) represents a perfect fit. While, RMSEA is based on the non-centrality parameter and is provided for fit index precision within construct of confidence intervals. The suggested value is 0.05 or below/good fit; below 0.08/fair fit. The current study had a RMSEA of 0.013, indicating a good fit.

Table 6 shows both the results of indices for the current model and suggested guidelines for evaluating model fit (Arbuckle, 2006; McDonald & Ho, 2002; Bentler, 1992). Modification indices do not provide any indication of misfit of the structural model suggesting that there is no need for model modification or inclusion of any new path between the constructs of the model.

Table4: Results of Model Fit indices for the Measurement model

Model Fit Indices	Values	Suggested Guidelines
<i>Absolute Fit Measures</i>		
CMIN (χ^2)	9.350	
Df	9	
CMIN (χ^2)/df	1.039	Less than 3.0
GFI	0.990	equals/be greater than 0.9
RMSEA	0.013	0.05 or below / Good fit; below 0.08 / Fair fit
<i>Incremental Fit Measures</i>		
CFI	0.998	equals/be greater than 0.9
AGFI	0.968	equals/be greater than 0.9
IFI	0.998	equals/be greater than 0.9
NFI	0.961	equals/be greater than 0.9
RFI	0.908	equals/be greater than 0.9
TLI	0.996	equals/be greater than 0.9
Source: Arbuckle (2006), Mc Donald & Ho (2002), Bentler (1992)		

5.3 Hypothesis Testing

5.3.1 Perceived Usefulness, Perceived Ease of Use and Attitude

According to the results of the study, the both variables of Perceived Usefulness and Perceived Ease of Use have a significant positive relationship with Online Shopping Attitude. Specifically, the Perceived Usefulness has a significant positive relationship with ($\beta=0.305$) and ($p < 0.01$). That means the Perceived Usefulness contribute more than 30% to Online Shopping Attitude. The regression results of Perceived Ease of Use with Online Shopping Attitude is also significant with ($\beta=0.249$) and ($p < 0.01$). Results of the current study validate the H2a and H2b.

5.3.2 Attitude and Online Shopping Intention

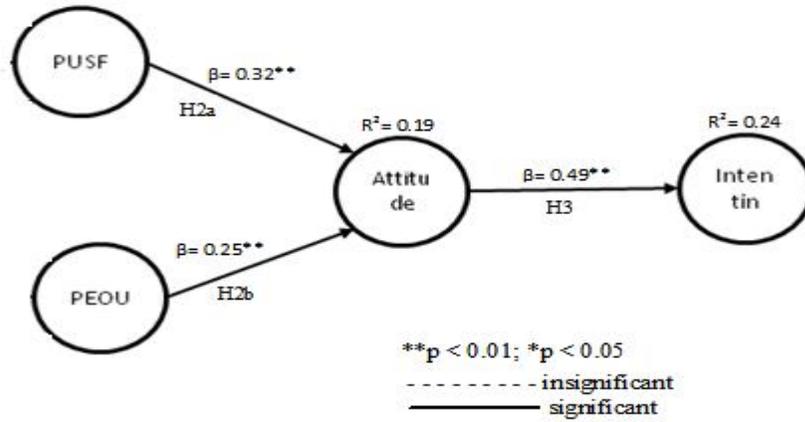
The regression results of the study confirm the significant positive relationship between Online Shopping Attitude and Online Shopping Intention with ($\beta=0.573$) and ($p < 0.01$). According to these results, Online Shopping Attitude contributes more than 57% to Online Shopping Intention. These results of the study validate H3.

Table 5 summarizes the regression results of the study and Figure 2 shows the graphical presentation of the structural model.

Table 5: Regression Results

Hypothesis	Model Variables	Estimate	S.E.	C.R.	P	Results
H1	Attitude ← PUSF	0.305	0.054	5.609	***	Supported
H2	Attitude ← PEOU	0.249	0.056	4.431	***	
H3	Intention ← Attitude	0.573	0.065	8.759	***	Supported

Note: χ^2 /df=1.039, CFI=0.998, TLI=0.996, IFI=0.998, GFI=0.990, AGFI=0.968, RMR=0.019, RMSEA=0.013



Note: $\chi^2/df=1.039$, CFI=0.998, TLI=0.996, IFI=0.998, GFI=0.990, AGFI=0.968, RMR=0.019, RMSEA=0.013

Figure 2: Structural Model Results

5.4 Testing Moderator Hypotheses and Results

After testing the simple model, this section tests the hypotheses regarding the Perceived Risk and Innovativeness on the relation between Online Shopping Attitude and Online Shopping Intention. Measuring the moderated effect means an interaction term (Holmbeck, 1997). For testing these hypotheses, the current study develops two separate models for each moderating variable because for testing the moderating effect, the standardized scores of these variables are used. Amos 18.0 used to test these moderating hypotheses. In this process, the dependent variable was regressed on independent variable, moderating variable and interaction term. This interaction term created by multiplying the scores obtained from independent and moderating variables. To avoid the multicollinearity problem, the standardized values of these variables are used as suggested by Aiken and West (1991). In this way, the significant correlation between these variables and interaction-term does not make problem in testing the moderating variables (Ozdogan and Altintas, 2010).

5.4.1 Moderator: Perceived Risk

To test the moderating effect of Perceived Risk, all the variables including independent variable (Standardized Online Shopping Attitude), moderating variable (Standardized Perceived Risk) and Interaction term (Online Shopping Attitudes Standardized scores x Perceived Risk standardized scores) was regressed on dependent variable. To validate the moderating hypothesis, all these effect should be significant. Table 4.4 shows the results of the analysis. There is a significant positive relationship between independent variable and dependent variable with ($\beta=0.441$) and ($p < 0.01$). The relationship between moderator variable and dependent variable is also significant with ($\beta= -0.138$) and ($p < 0.05$). While the interaction term is also significant with ($\beta = -0.125$) and ($p < 0.05$). Table 8 summarizes the regression results of the study and Figure 3 shows the graphical presentation of the structural model.

Table 8: Regression Results (Moderator: Risk)

Hypothesis	Model Variables	Estimate	S.E.	C.R.	P	Results
H4	Intention ← Attitude	0.401	0.050	8.077	***	Supported
	Intention ← Per Risk	-0.150	0.050	-2.968	0.003	
	Intention ← Atti *Risk (Interaction)	-0.125	0.052	-2.418	0.016	

Note: $\chi^2/df=1.039$, $p=0.308$ TLI=0.998, RFI=0.948, GFI=0.998, AGFI=0.979, RMR=0.024, RMSEA=0.012

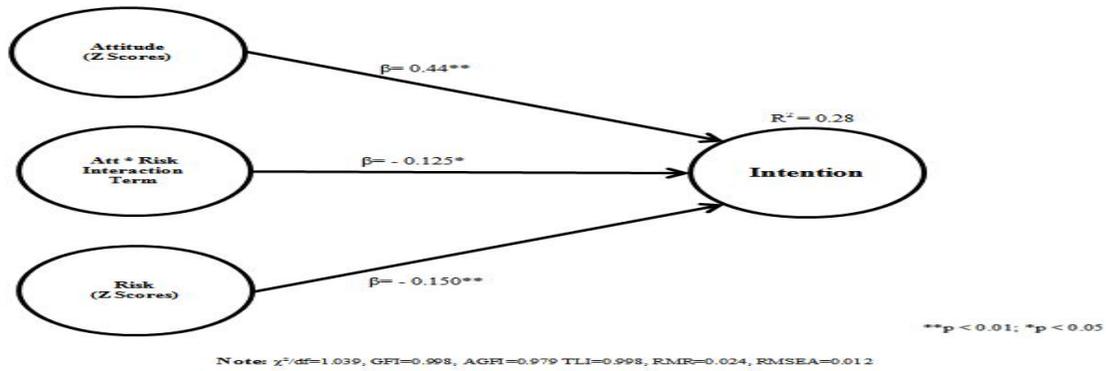


Figure 3: Structural Model Results for Moderator Hypothesis

Figure 4: Impact of Moderator Variable (Risk)

5.4.2 Moderator: Innovativeness

To test the moderating effect of Innovativeness, all the variables including independent variable (Standardized scores of Online Shopping Attitude), moderating variable (Standardized scores of Innovativeness) and Interaction term (Online Shopping Attitudes Standardized scores x Innovativeness standardized scores) was regressed on dependent variable. To validate the moderating hypothesis, all these effect should be significant. Table 4.5 shows the results of the analysis. There is a significant positive relationship between independent variable and dependent variable with ($\beta=0.453$) and ($p < 0.01$). The relationship between moderator variable and dependent variable is also significant with ($\beta= 0.133$) and ($p < 0.05$). While the interaction term is not significant with ($\beta = 0.063$) and ($p > 0.05$). Therefore, we reject the H5 because the interaction term does not significantly affect dependent variable.

Table 8: Regression Results (Moderator: Innovativeness)

Hypothesis	Model Variables	Estimate	S.E.	C.R.	P	Results
H5	Intention ← Attitude	0.453	0.055	8.278	***	Not Supported
	Intention ← Innovativeness	0.133	0.055	2.426	0.015	
	Intention ← Att * Innovat (Interaction Term)	0.063	0.053	1.175	0.240	

6. DISCUSSION

The prime objective of the study has been to study the technology acceptance model in the context of a developing country in contrast to the vast research that was conducted in developed countries (Park and Jun, 2003). Pakistan has been an ideal country for that due to high penetration of internet, more than sufficient internet users but still online shopping is at infant stage. Current study formulated an extended technology acceptance model to include two moderating variables i.e. perceived risk and innovativeness between online shopping attitude and online shopping intention. The results obtained from the analysis permitted us to verify the established hypotheses and to understand the relationship between different variables of technology acceptance model. Now individually we discuss these finding and their implications in the following section.

The classical TAM variables and their inter relationships are discussed first. Previous studies confirm the impact of Perceived Usefulness (PUSF) and Perceived Ease of Use (PEOU) on Online Shopping Attitude (Yu *et al.*, 2005; Hsu and Chiu, 2004; To *et al.*, 2008). The effect of both variables is significant on online shopping attitude, which demonstrate that the attitude of the users is highly conditioned by the perception that how useful and easy to use the internet channel for shopping. The results of the current study is in line with the previous studies reporting that perceived usefulness has stronger effect on attitude as compare to perceived ease of use (Seneler, Basoglu and Daim, 2010; Hernandez, Jimenez and Martin 2011; Celik, 2011). This finding suggests that more the customers think the new technology is useful more the customers are ready to adopt it. Moreover, after the first adoption if the customer feel the new technology is not easy to use there is a chance that the customers do not adopt the new technology.

Additionally, perceived usefulness is also a major criterion for the customers to select online stores and enhance the customers' satisfaction with the virtual store (Chen *et al.*, 2002). Based on the results of current study, these variables are important for enhancing the favorable attitude of the customers towards online shopping. Perceived usefulness and perceived ease of use influence the attitude of the user towards online shopping (Kwon and Lee, 2003). Further this favorable attitude increase the intention of the user to purchase over the internet (George, 2002; Kim *et al.*, 2003; To *et al.*, 2008; Lu and Su, 2009). Current study also finds a significant positive relationship between attitude and future intention. This study is consistent with the previous studies that positive attitude of the

customers results in stronger buying intention (Hsu and Chiu, 2004; Pavlou, 2006). While some researchers also demonstrated that, the attitude did not significantly affect the customer intention. According to Davis *et al.* (1989), the role of attitude is more important in the early stages of new technology use while after that the customers may be using the technology due to its usefulness or ease of use rather than their attitude towards the technology. This argument supports the results of the study because the sample in the current study is non-user of online shopping. As a result, their intention towards online shopping is also affected by their attitude as well as the usefulness and ease of use of online shopping.

In the previous literature, many studies confirm that, in the case of online shopping the perception of risk significantly affect the customer intention (Liao and Wong, 2008; Liao and Cheung, 2001; Cunningham *et al.*, 2005). Current study includes the perceived risk as a moderator, which was not studied (as a moderator) in the previous literature. Results of the study confirm the perceived risk as a moderator between the relationship of attitude and intention. The hypothesis of the study proposes that the positive effect of attitude on intention would be weaker when perceived risk of online shopping increases. As per our expectation, the hypothesis was validated by a significant negative effect of the interaction between perceived risk and attitude on intention. In contrast, the relationship of attitude and intention would be stronger when perceived risk is low.

The study finds that perceived risk negatively moderates the relationship between attitude and intention or high level of perceived risk leads to a lower predictive power of customer attitude on intention. These findings suggests that perceived risk not only directly affect on purchase intention as described by many studies (Cunningham *et al.*, 2005; Liao and Wong, 2008; Liao and Cheung, 2008; Rehman *et al.*, 2011) but also affect the relationship between attitude and intention. This empirical evidence supports the concept that considering only building a favorable attitude would not help to develop a positive intention towards use of a new technology rather several other variables can influence the intention that are uncontrollable to the selected customers. In the context of online shopping, up to our knowledge no previous study considers the role of moderator between the relationship of attitude and intention. Therefore, that can be an instrumental contribution towards the literature of online shopping.

In adoption of new technology, innovativeness plays an important role, as not all customers adopted it with similar degree. From previous studies, we can conclude that with other factors, the degree of innovativeness is also an important determinant that shows how quickly a simple internet user becomes internet shopper (Blake *et al.*, 2003; Vrechopouloset *al.*, 2001; Citrinet *al.*, 2000; Goldsmith, 2000). According to Yi *et al.* (2006), individual innovativeness play an important role in adoption of online shopping. In the current study, innovativeness found to be an important variable than influence intention to online shopping but the results of the study did not confirm it as a moderator between the relationship of attitude and intention. One of the possible reasons can be the insignificant relationship between attitude and innovativeness. A surprising fact of the study that people with higher attitude does not possess the higher level of innovativeness. That means respondents of the study do not have strong attitude due to innovativeness but other variables are more important in adoption of online shopping like usefulness and ease of use. Therefore, the innovativeness does not qualify to be a moderator between attitude and intention but still the degree of innovativeness has significant relationship with purchase intention.

7. Incremental Contribution

The current study has important contributions to the existing literature. The current study include the perceived risk as a moderator, which was not studied (as a moderator in the context of online shopping) in the previous literature. Results of the study confirm the perceived risk as a moderator between the relationship of attitude and intention. The hypothesis of the study proposes that the positive effect of attitude on intention would be weaker when perceived risk of online shopping increases. As per our expectation, the hypothesis was validated by a significant negative effect of the interaction between perceived risk and attitude on intention. In contrast, the relationship of attitude and intention would be stronger when perceived risk is low. These results not only support the argument that the attitude intention relationship is not straightforward as assumed in the past literature but also confirm the presence of risk as a moderator between attitude and intention. The managerial implications of these contributions are discussed along with the other findings in the section of recommendations.

8. Recommendations

The results of the study open several implication for the electronic retailers (e-tailers) in Pakistan. First, perceived usefulness and perceived ease of use have strong effect on attitude, which in turn influence intention towards online shopping. The stronger influence of perceived usefulness on online shopping attitude highlights the primary role of perceived usefulness of the internet for adoption of this new shopping channel.

This particular result has major managerial implications in the context of a developing country where the adoption of online shopping is extremely low. If an e-commerce firm wishes to increase its customer base, it should highlight the usefulness of this shopping channel. For this, an important thing is to consider the preferences of the targeted group because online shopping can be useful in different way. A customer can find it useful due to broad range of products from which he can compare and choose the best. While for a busy person, it can be useful due to

time convenience where he can save time and definitely overhead cost. In this way, multiple benefits can be derived but the firm should highlight the most required. Perceived ease of use is also important because usefulness can compel a person to visit a shopping website but if it is not user friendly to facilitate the purchase, the customer will lost. So these firms, in addition to maintaining the service and quality level, focus on developing user-friendly websites that facilitate the purchase process.

Pakistani e-tailers focus on creating their virtual storefronts that are easily accessible, informative, short transaction time, visually attractive interfaces, after sale services, convenient payment methods and language friendly. Language can be a problem for ordinary customers, as they cannot fully understand English. These firms can counter this problem by the extensive use of images. Development of such interfaces requires increased attention towards consumer research to align the online shopping experience with customer expectations. In short, usefulness connects the customers with online seller while ease of use retains the customer.

The confirmation of the moderator effect of perceived risk in the attitude intention relationship provides an important insight into the mechanism forming intention from attitude, in which perceived risk act as a major barrier. This indicates that attitude may fail to predict attitude under the situation of high risk. Developing customer attitude towards online shopping has been considered as a vital step for online companies but it is not enough to influence customers' intentions especially in the presence of high risk. Many electronic retailers' failures in the past are the results of underestimation of perceived risk in an electronic environment. Mortgage.com failed just after two months of its starting because customers thought that mortgage from a start-up firm was highly risky. Similarly, Beautyjungle.com failed because customers perceived that choosing the color online is extremely risky.

These examples and other like that provide a point of caution for the online firms that reducing the risk with online purchase is crucial for their success. Electronic word of mouth can be a solution for this problem. The comments from the satisfied customers on their website or other social media websites decrease the perception of risk for the other potential customers. In this regards, innovators can help the firm to reduce the risk for other customers. Results of the current study prove that the innovators have high intentions towards online shopping. The marketing managers of the firm should target their advertising campaigns towards the more innovative users. These innovators provide great feedback to the companies and become a supporter that can influence other customers.

9. Limitations and Future Research

Besides these findings, the current study open several areas to be explored in the future research. The current study only focus on attitude and intention, which do not always become actual behavior, therefore, future research could obtain results from experienced internet shoppers to contrast the results of the proposed model.

The current study does not study the differences among the product categories whether these scores and results differ on different categories. Future research can capture and explain the differences in product categories or concentrate on single category like cloths, books or electronics.

Another limitation of the current study is that it only focuses on two moderating variables between the relationship of attitude and intention. Several other variables can be study to check their importance in the given relationship such as culture, income, purchase involvement, type of product and other personality variables.

Acknowledgment

The authors declare that they have no conflicts of interest in this research.

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