

E-TAM Model: A Comprehensive Approach to Understand the Adoption of Electronic Shopping

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ABSTRACT

Developing a new technology might be an easy task but developing new attitude is tough one. Customers show high inertia and remain resistant towards adoption of new technology. Electronic shopping is facing the same situation and despite the tremendous efforts of online firms, the adoption of this new technology is low. The current study extends the traditional TAM (technology acceptance model) by incorporating different variables to understand the adoption of electronic shopping. All these variables are identified and the paths are developed based on a comprehensive review of previous literature. The new E-TAM examines the role of E-Attitude, E-Usefulness, E-Ease of Use, E-Enjoyment, E-Risk, E-Self Efficacy and E-Trust in developing the behavioral intentions of the customers towards electronic shopping. E-Attitude, E-Enjoyment and E-Risk are found significant predictors of electronic shopping intentions. E-Usefulness and E-Ease of use directly while E-Self Efficacy and E-Trust indirectly affects the E-Attitude. All the variables are found significant and the final model captures 71% variations in the intentions of the customers towards electronic shopping.

KEYWORDS: Electronic Shopping, E-Attitude, E-Usefulness, E-Ease of Use, E-Enjoyment, E-Risk, E-Trust, E-Self Efficacy

1. INTRODUCTION

Electronic shopping (e-tailing) has been enjoyed a phenomenal growth during the last decades because of its discrete benefits for both customers and firms. The major benefits involved in electronic shopping are less dependency on brick and mortar stores visit, round the clock ease, broad range of products, decreasing overhead expenses, payment ease and supporting customer relations. Even though the possible consequences of financial crisis of 2008 such as weakening economies, reducing customer confidence and affecting shopping budgets were expected to distort the trend of electronic shopping, the current evidences shows that it has been increasing with the same pace and remain a attractive alternative for traditional shopping. The recent global reports confirm that the total number of online shoppers reached 875 million in 2007 (13 percent of world population), where the total number of online shoppers were 627 million in 2005 (Nielsen Media Research, 2008).

Recent reports shows that more than 85 percent of the online users has been ordered product and services through internet and these online shoppers are over 40 percent of the adult population of South Korea, Australia, UK, Japan, Denmark and Norway (ACNielsen, 2008). However, these electronic sales are still a small fraction of total retail sales in these top countries. For example, the total electronic sales in USA in 2007 are still only 6 percent of the total retail sales. On the other side the situation in developing countries are worst. According to ACNielsen (2008), only 4 percent of the adult population is doing electronic shopping in Pakistan and Egypt. In Turkey, the total online shoppers are 5.6 million but they are only 8 percent of the Turkish population. In this situation, these electronic firms have been realized that their efforts to attract more customers towards electronic shopping and retaining these customers would become a big challenge for them. The situation becomes more critical with the increased competition and due to over crowded market.

To develop new marketing strategies for the success of electronic shopping requires studying the factors that enhance the adoption of this new medium of shopping. Lack of consistency between the empirical evidences of these factors is prominent. Researcher tries to understand this phenomenon from two perspectives; technology oriented view and customer oriented view. Technology oriented view describe the adoption of electronic shopping

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with respect to the technological features and customer oriented view describe the different personal factors that increase the adoption of electronic shopping.

The technology acceptance model (TAM) by Davis *et al.* (1989) remains most prominent and extensively used model to understand the process of electronic shopping from customer point of view. Many studies adopt this model to understand the adoption of new technologies due to its parsimony. The TAM explains the adoption of new technology is dependent on the behavioral intentions of the customers. These behavioral intentions are influenced by the attitude of the customer towards new technology. Moreover, the attitude is highly conditioned by the perception of usefulness and ease of use of the new technology.

The main objectives of the study are two folds. The first objective is to study the level of adoption of electronic shopping in Pakistan. Despite the exponential growth of internet users in Pakistan, there is lack of adoption of electronic shopping. The number of internet users increased from 4 million in 2002 to 31 million in 2010 (U.S. Census Bureau, 2011). Pakistan has been ranked on fourth position according to the broadband growth rate but Pakistan has been the second slowest adopter of electronic shopping after Egypt (Nielsen Media Research, 2008). The current study tries to examine and understand the role of different factors in adoption of electronic shopping.

The second objective of the study is to develop a comprehensive model for the adoption of electronic shopping. Many researchers criticize the parsimony of the TAM and object that it explains only small proportion of customer intentions towards adoption of new technology (Venkatesh, 2000). Many other models have been developed to cope this discrepancy of TAM like TAM2 (Venkatesh & Davis 2000), Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh *et al.*, 2003 and TAM3 (Venkatesh & Bala 2008). Although, these models increased the predictability and capture more variation in behavioral intentions but these models are more complex and require integrating many variables like UTAUT used 41 independent variables and 4 moderating variables (Bagozzi, 2007). The current study tries to develop a new model based on TAM, which includes some other variables that are verified and tested in many previous studies. This new model for explaining the intentions of customers towards electronic shopping is called E-TAM.

2. LITERATURE REVIEW AND RESEARCH MODEL

Online shopping is a modern mode of shopping where the customers visit various sites, choose the product to purchase, order the product, made payment through credit card or bank transfer and finally the seller delivered the product to the consumer. Now a day it becomes a prominent mode of shopping due to the exponential growth of internet. There are many discrete benefits for the customers to purchase electronically that includes a wide range of products available over internet, the customers can compare prices easily, they can save their time and many other costs like travelling cost (Brown, Pope and Voges, 2002). The electronic shopping will dominate the traditional shopping due to advancement in information technology and customer's interest in this new mode of shopping (Oinas, 2002).

875 million customers over the world use this shopping medium that is 40 percent more compare with 627 million in 2006 (Nielsen Media Research, 2008). The number of online customers that made at least one purchase electronically is now 85 percent of total online population. The volume of electronic sales was 572.5 billion US dollars in 2010, which is expected to reach at a level of 963 billion US dollar in 2013 (Goldman Sachs).

2.1 Technology Acceptance Model

Technology Acceptance Model (TAM) has been considered the most prominent and used model in the previous literature to understand the customer acceptance of this new electronic mode of shopping over the two decades (Benbasat and Barki, 2007). It has been used, extended and replicated in many researches to understand the customer's reactions and adoption with respect to this new technology. Many researchers used this model across different product categories and in different environment, which includes office technologies, use of personal computers, email systems, spreadsheets and digital libraries. The TAM model is based on Theory of Reasoned action and Theory of Planned behavior given by Ajzen and Fishbein (1980) and Ajzen (1985). TRA describe that the specific behavior of a person can be judged by his or her intention to perform the behavior and these intentions are function of attitude and subjective norms. Attitude is the subjective judgment of the person regarding the behavior that can be favorable or unfavorable and subjective norms is the perception of the person about the approval of the behavior by the society (Fishbein and Ajzen, 1975). Davis (1989) replaced the construct of subjective norms with personal beliefs called perceived usefulness and ease of use. TAM express that the customer's two beliefs of usefulness and ease of new technology develop the attitude towards new technology that leads to his intention to adopt it (Davis *et al.*, 1989). The beliefs of usefulness refer to the degree that the customer believes that using this new technology increase his efficiency and performance. However, ease of use refers to the extent of efforts that are

needed to use the new technology. These two beliefs develop the attitude of the customer towards new technology (Karahanna and Straub, 2003).

A significant number of researches provide empirical support for the validation of the constructs include in TAM and considered it a parsimonious approach to study the adoption of new technology. These researches found it useful in both mandatory and voluntary settings (Celik, 2008; Chenet al., 2002; Suh and Han, 2003). Many researchers criticize it parsimony and call for inclusion of other variables to increase its predictability (Venkatesh, 2000). In reply to this call many studies incorporated different variables in TAM to increase its predictability in the intentions of the customers to use online shopping. The current study try to include different other variables in the TAM to make it more accurate and valid.

2.2 E-Attitude

The construct of Attitude reflects the overall favorability or un-favorability towards any external stimulus (Fishbein, 1963). Attitude is an indicator of liking or disliking of a customer regarding any external stimulus. The values and beliefs of a customer develop this attitude that store in the mind of the customers that help him in decision-making. Different theories used this construct to explain the process of actual behavior like expectancy-value theory and theory of reasoned action. According to these theories, the actual behavior of a person can be forecast with the help of attitude and they propose that there is close link between the behavioral intentions and attitude of the customers. In the context of online shopping this attitude can be refer as E-Attitude that explain the liking or disliking of the customers about online shopping.

May studies found that the E-Attitude is a strong predictor of online shopping intentions. The E-Attitude of the customer has a significant impact on the behavioral intentions to use the internet for online shopping (Liao and Shi, 2009). E-Attitude of the customers towards online shopping predicts the customer use of internet for information search and it finally impact the online shopping intentions (Shim et al., 2001). Many other studies confirm the same results and report the empirical support for the relationship between E-Attitude and online shopping intentions (Hernandez et al., 2011; To et al., 2008). Therefore, the current study proposes that:

H1: There is a significant positive relationship between E-Attitude and Online Shopping Intentions

2.3 E-Usefulness and E-Ease of Use

Usefulness is the perception of the customers that this new electronic medium of shopping will enhance or improve his performance (Davis, 1989). We can explain this construct in the online shopping context that it is the perception of the customers that this new shopping medium is more useful for him and if he use this medium the results will help him to improve his overall performance in the shape of a good deal. In this way, it is the perception of the customer that this new electronic medium is beneficial and valuable for him and we call it Electronic Perceived Usefulness (E-PUSF). Therefore, the perception of electronic usefulness influences the customer attitude and drives him to perform the behavior (Akhlaq and Ahmed, 2011; Chiu et al., 2009).

Perceive ease of use refers to the customer perception that this new electronic medium for shopping is easy for him and does not require extra efforts to complete the task of online shopping (Davis, 1989). If the customer believes that he can easily handle the process of online shopping and it does not require additional efforts of developing skills that is needed to complete the process, he is more prone to do online shopping (Chiu et al., 2009). Therefore, this ease of use is the perception of the customers regarding the electronic process of completing the task of online shopping and can be refers as Electronic Perceived ease of use (E-PEOU). The both beliefs of E-PUSF and E-PEOU are different in a sense that the E-PEOU is the required input in the shape of resources and skills that are needed to complete the task while E-PUSF is the outcome of the process in the shape of a good deal (Venkatesh, 2000). More simply we can say that, E-PEOU explain the simplicity of the new electronic medium that make the purchase an easy task for the customer, while E-PUSF is the efficiency of the electronic medium (Liao and Shui, 2009; Lu and Su, 2009). The significant impact of E-PEOU on the E-Attitude was confirmed by many studies in the past (Thong et al., 2006; Pavlou, 2003; Devaraf et al., 2002; Sheikhi, 2012). Based on above discussion, the current study hypothesizes that:

H2: There is a significant positive relationship between E-PEOU and E-Attitude

H3: There is a significant positive relationship between E-PUSF and E-Attitude

2.4 E-Enjoyment

Enjoyment can be described as the intrinsic drive to use new information technology (Baroudi et al., 1996). Enjoyment refers to the degree to which the user perceived that the activity of using the system or process is enjoyable for him (Davis, 1989; Cheema et al., 2013). Enjoyment is different from usefulness that is an extrinsic motivation where the enjoyment is an intrinsic motivation to use the information system or application (Pikkarainen

et al., 2004). As the traditional Brick and mortar shopping is enjoyable for many customers (Blakney and Skeley, 1994) similarly, the online shopping is also enjoyable activity for many customers and it has a significant effect on online shopping intentions (Jarvenpaa and Todd, 1997). Many studies used other construct like perceived fun (Igbaria et al, 1994) and perceived playfulness (Moon and Kim, 2001) they are quite similar and reflect the same meanings of enjoyment. Electronic Enjoyment (E-ENJ) is the degree of fun and enjoyment the customers feel during the process of electronic shopping. Previous studies confirm that this perception influence the customer intention of online shopping (Moon and Kim, 2001; Pikkariainen et al, 2004). Therefore, the current study hypothesizes that:

H4: E-Enjoyment has a significant positive impact on Online shopping intentions

2.5 E-Risk

It is normal that the customers are anxious about the possible risk associated with new technology and this perception of risk influence their adoption of new technology (Keeney, 1999). Regarding customer perception, there are many risks involved in electronic shopping and it is refers as Electronic Risk (E-Risk). This perception of risk with new electronic medium significantly influences their intention to use the new medium of shopping (Park, Lennon and Stoel, 2005). The privacy is an important issue and it leads to customer's hesitation to do online shopping because they fear that their information can be used for other purposes (Cunningham et al., 2005; Liao and Cheung, 2001). Many other studies also highlight the same issue and confirm that this E-Risk can influence the intentions of the customers to use online shopping (Malhotra et al, 2004). Many other risks are associated with this electronic mode of shopping like quality of the product, safety concerns, social risk and after sale services risk. The customers cannot judge the quality of the products electronically and this perception negatively affects their intentions (Park et al., 2005). Social, psychological, security and privacy risks are the major factors that lead towards hesitation to electronic shopping (Rehman et al., 2011). The current study hypothesizes that

H5: E-Risk negatively affects the online shopping intentions

2.6 E-Trust

The construct of trust has been used in the studies of various disciplines like psychology, sociology, social psychology, economics, commerce and marketing (Deutsch, 1960; Strub and Priest, 1976; Dasgupta, 1988; Moorman et al., 1992; Talat, Azar & Yousaf, 2013). Trust assumes the existence of relationship between two parties and the expectations of one party about the behavior of other party. In the context of online shopping, it is the expectation of the customers regarding the behavior of the online firms. In online shopping, the relationship is electronic so we can call it Electronic Trust (E-Trust).

Davis (1989) calls for inclusion of several other variables in TAM that can influence the perception of usefulness and ease of use. According to Chircu et al., (2000) E-Trust of the customers in electronic shopping increased their perception of ease of use. Development in web based technologies and expansion in web contents, electronic shopping becomes more complex (Lee and Shiu, 2004). Purchasing products electronically requires many skills such as searching products and information, understanding them and learning of the process to complete the purchase. These irritating tasks can negatively influence perception of ease of use if the E-Trust is lacking.

E-Usefulness in electronic shopping is the tendency of the customers regarding the level of trust in online shopping mall (Davis, 1989). The customer's perception of usefulness will increase if they believe that the shopping mall is honest and effectively manage the activities of purchase (Reichheld and Schefer, 2000). E-Trust enhances the perception of usefulness of electronic shopping (Chircu et al., 2000; Gefen et al., 2003). The perception of E-Usefulness can be classified into two types, first is the usefulness of the technology and second is the net benefits in the shape of receiving the product purchase electronically. E-Trust is expected to increase the E-usefulness in a case when shopping mall is honest and the customer trust on the information provided by them. The current study develops the following hypotheses:

H6: E-Trust has a significant positive effect on E-PUSF

H7: E-Trust has a significant positive effect on E-PEOU

2.7 E-Self Efficacy

Self-efficacy defines the beliefs of an individual with respect to his or her capability to act in a particular way and to obtain the desired results (Bandura, 1977). Applying this concept in the electronic commerce means that the customers feel themselves competent to search information and make purchase over the internet and remain comfortable and safe during the process (Wu et al., 2007).

E-Ease of use describes the degree to which a customer feels that using internet for shopping is easy for him and do not requires lot of efforts. While E-Self efficacy (E-SEF) is the user's perception of being effective, efficient and satisfactory during the process of electronic shopping. Self efficacy has been used in different context, a related

construct computer self efficacy was examined in different information system literature (Compeau and Higgins, 1995; Compeau et al., 1999; Hong et al., 2001). Computer self efficacy refers to the judgment of a user with the level of comfort while using computer (Compeau and Higgins, 1995). In electronic commerce, we refer this self-efficacy as Electronic Self Efficacy (E-SEF). There are empirical proof of direct link between computer self efficacy and perception of ease of use (Venkatesh and Davis, 1996; Agarwal et al., 2000). The computer self efficacy affects customer's computer anxiety and which in turn impact on perception of usefulness and ease of use. The current study will test the following hypotheses:

H8: E-Self Efficacy significantly affects E-Usefulness

H9: E-Self Efficacy significantly affects E-Ease of Use

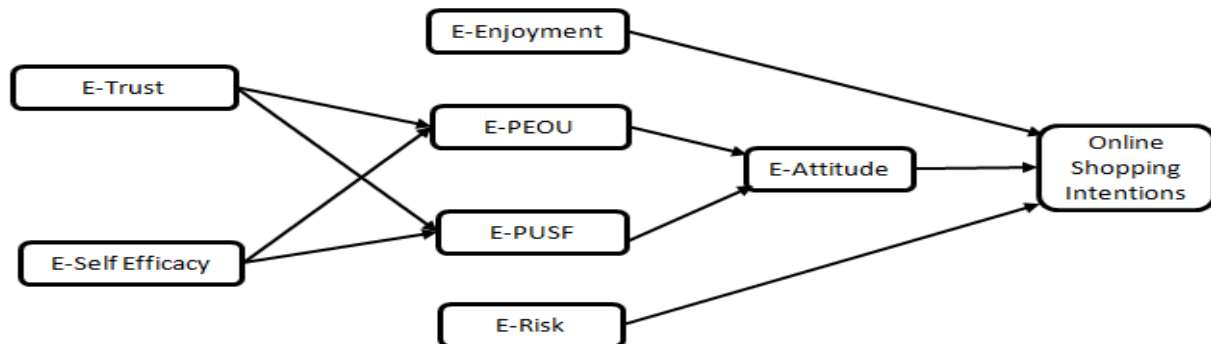


Figure 1. Proposed E-TAM Model

3. METHODOLOGY

3.1 Sample Data Collection

Data for the current study was collected from 500 respondents from different cities. The current study utilizes the non-probability sampling method and convenience-sampling technique was used to collect data. Convenience sampling is more efficient method compare with other methods in management and business studies (Lym et al., 2010). Among the distributed questionnaires, 489 questionnaires were returned and finally 465 questionnaires were used in data analysis, while rest of the questionnaires were not used due to incomplete or invalid responses. The complete descriptive results are given in Table I.

3.2 Scales/Measures

All the scales of the current study were adopted from the previous studies and were measured on five point likert scale. The scale items for Online Shopping Intentions were adopted from Yu et al. (2005). There were three items to measure the online shopping intentions (e.g. I will probably buy a product on the internet soon). The scale for E-Attitude was adopted from Yu et al. (2005) and the total items were three (e.g. Using the internet to do my shopping is a good idea). E-Enjoyment was measured by using the scale developed by Moon and Kim (2001) and the total items were four (e.g. I really enjoy my shopping over the internet). Scale for E-Risk was adopted from Akhlaq and Ahmed (2011) with seven items (e.g. I would incur high maintenance costs). The E-PUSF and E-PEOU were measured by using the scale of Yu et al. (2005) both scales were having three items (e.g. Using the internet to buy a product would be easy to do for me and Using the internet to acquire a product would be useful to do my shopping). The construct of E-Trust was measure by the scale of Dash and Saji (2007) and the scale consists of seven items. E-Self efficacy was measured by using the scale of Seneler et al., (2010), the total items were five (e.g. I can easily purchase product over the internet).

Table I. Profile of the Respondents

Measure	Frequency	Percentage
Gender		
Male	282	61%
Female	183	39%
Age		
Less than 20	65	14%
20-30	223	48%
30-40	134	29%
40-50	28	6%
50 and Above	15	3%
Education		
Bachelor	168	36%
Master	275	59%
Post Graduate	22	5%
Status		
Student	234	50%
Employee	108	23%
Self Employed	123	27%

3.3 Reliability Analysis

Cronbach's Alpha technique was used to check the reliabilities of the constructs. All the constructs have alpha value greater than the recommended level of 0.7 (Nunnally, 1978). Hence, we concluded that all the constructs of the model had sufficient reliabilities and we can proceed for further analysis. Table II summarizes the results of cronbach alpha.

Table II. Reliabilities of Constructs

Scales	Items	Cronbach's Alpha
E-PEOU	3	0.825
E-PUSF	3	0.811
E-Attitude	3	0.86
E-Risk	7	0.84
E-Enjoyment	4	0.803
E-Trust	7	0.794
E-Self Efficacy	5	0.844
Online Shopping Intentions	3	0.837

3.4 Validation of the Model

Confirmatory factor analysis was conducted to validate the measurement model. AMOS 18.0 was used to check the E-TAM for goodness of fit model. The current study yield a high significance level ($\chi^2 = 488.849$; degree of freedom = 429; probability level = 0.21). The appropriate distributional assumptions were met and we conclude that the model is correct. The departure of the data from the model is significant at the $p > 0.05$ level.

Table III 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.

Table III. Results of Model Fit indices for the model

Model Fit Indices	Values	Suggested Guidelines
	1.139	Less than 3.0
χ^2/df		
CFI	0.925	equals/be greater than 0.9
IFI	0.914	equals/be greater than 0.9
GFI	0.965	equals/be greater than 0.9
AGFI	0.937	equals/be greater than 0.9
TLI	0.986	equals/be greater than 0.9
RMSEA	0.028	0.05 or below / Good fit; below 0.08 / Fair fit
Source: Arbuckle (2006), Mc Donald & Ho (2002), Bentler (1992)		

4. RESULTS

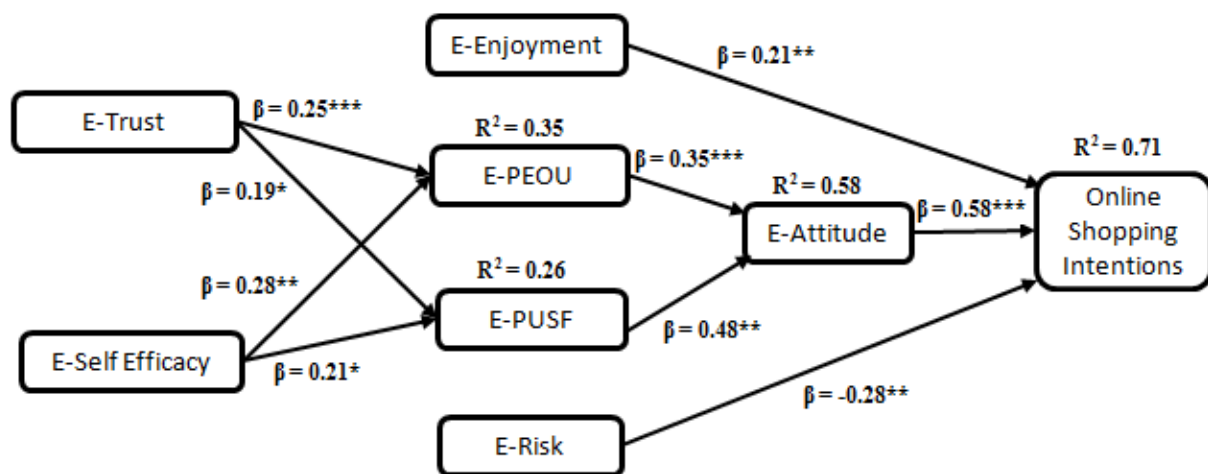
This section of the study finally tests the hypotheses of the model. Regression analysis of the study shows that all the hypotheses are valid and significant on 0.05 level. In SEM analysis, the R-square values of endogenous variables are examined to check the explanatory power of the structural model. The results of the structural model are showed in Figure 2. Linear regression techniques were used to check the direct effects and as well as indirect effects of the variables on online shopping intentions. Table IV summarizes the results of regression analysis.

The total variation in the online shopping intentions explained by the model is 0.71, which is quite good. Results indicate that all the paths are significant at 0.05 level. The current study model reveals that E-Attitude, E-Enjoyment and E-Risk are direct, E-Usefulness, E-Ease of Use, E-Trust and E-Self efficacy are indirect determinants of online shopping intentions. Additionally, the E-PUSF and E-PEOU are antecedents of E-Attitude, E-Trust and E-Self efficacy has an influence on E-PUSF and E-PEOU.

Among all the variables, E-Attitude has the strongest and E-Enjoyment has the weakest influence on online shopping intentions although it is still significant. The hypothesis regarding the influence of E-Attitude on online shopping intentions was supported with a high beta coefficient (0.58) at a low significant level. According to this result, the customer attitude regarding the online shopping strongly influences his intentions to do online shopping (Carlsson et al., 2006). Furthermore, the impact of E-Enjoyment and E-Risk on online shopping intentions is supported with 0.21 and -0.28 beta coefficients at 0.01 significance level. The antecedents of E-Attitude are E-PUSF and E-PEOU with 0.48 and 0.35 beta coefficients and 0.01 and 0.00 significance level respectively. The impact of E-PUSF is stronger than E-PEOU and this demonstrate that the attitude of the customer is more influenced by the usefulness of the online shopping. This finding is consistent with the results of previous studies where many researchers find the stronger effect of usefulness compare with 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.

Table IV. Results of Regression Analysis

R ²	Dependent	Independent	Standardized Beta	Sig
0.71	Online Shopping Intentions	E-Enjoyment	0.21	0.006
		E-Risk	-0.28	0.004
		E-Attitude	0.58	0.000
0.58	E-Attitude	E-PUSF	0.48	0.002
		E-PEOU	0.35	0.000
0.26	E-PUSF	E-Trust	0.19	0.042
		E-Self Efficacy	0.21	0.028
0.35	E-PEOU	E-Trust	0.25	0.000
		E-Self Efficacy	0.28	0.003



Notes: * $p > 0.05$; ** $p > 0.01$; *** $p > 0.001$

Figure 2. Structural Model Results

The impact of E-Trust is also significant on E-PUSF and E-PEOU with 0.19 and 0.25 respectively with 0.01 and 0.001 significance level. That means the customer's trust on online firms increase the perception of usefulness and ease of use. E-Self efficacy also significantly affects the E-PUSF and E-PEOU with 0.21 and 0.28 beta coefficients with 0.05 and 0.01 significance level.

5. DISCUSSION

The prime objective of the current study is to understand and predict the phenomenon of online shopping intentions. This study develops Electronic TAM with the help of classical variables that were used in the traditional TAM model and some new variables are integrated with the help of previous literature. Finally, the study presented the theoretically developed and empirically tested model that explain and predicts the customer's intentions of electronic shopping.

The technology acceptance model was extensively used in the previous literature for understanding the adoption of new technologies, specifically for online shopping (Deng et al., 2005). Many researchers used and appreciate the TAM due to its parsimony and explaining a substantial part of customer's intentions (Bagozzi, 2007). Many researchers criticize the parsimony of the TAM and call for inclusion of other variables to increase the predictive power of the model (Venkatesh, 2000). In response many researchers extend the original TAM and include many variables to predict the variation in the customer intentions like TAM2 (Venkatesh & Davis 2000), Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al., 2003 and TAM3 (Venkatesh & Bala 2008). Many studies used these models, report a better R², and claim that these models have better predictive power as compare to original TAM. There are two main criticism on these models that they are good in mandatory settings and a better R² can be achieved on the cost of parsimony (Raaij, and Schepers, 2008). In UTAUT the improved predictive power can be achieved with the help of 41 independent variables and 4 moderating variables, that make this model more complex (Bagozzi, 2007). Therefore, this study was aimed to provide a less complex model with the help of few variables that were proved to be more relevant and valid in the previous literature.

According to the results, the E-Attitude was proved a significant predictor of online shopping intentions. This results confirm the findings of the previous literature that attitude is a strong antecedent of online shopping intentions (George, 2002; Kim et al., 2003; To et al., 2008; Lu et al., 2009; Rizwan et al., 2012). Customers with more favorable attitude are more prone to online shopping. Further, the E-Attitude is highly conditioned with the positive perceptions of E-Usefulness, E-Ease of use, E-Enjoyment and E-Risk. Although all these variables are strong predictors of E-Attitude, E-Usefulness remain the highest contributor towards E-Attitude. Several previous studies report the same findings that E-Usefulness has the strongest effect on E-Attitude as compare to other variables (Seneler, Basoglu and Daim, 2010; Hernandez, Jimenez and Martin 2011; Celik, 2011). These findings suggest that more the customer feel the usefulness of online shopping, more he is ready to adopt it. Beside E-Usefulness, E-Ease of use has significant effect on E-Attitude. As the customers feel the process of online shopping is an easy task, more is the chance of adoption of online shopping.

E-Enjoyment and E-Risk are also significant antecedents of online shopping intentions. According to Van der Heijden (2004), there are two types of information technologies: Hedonic and Utilitarian. Hedonic systems provide the self-fulfilling values to the customers; on the other hand, Utilitarian systems provide instrumental values for customers. Customers not only use the new technology to get benefits from it but also to enjoy the process. Enjoyment has a direct effect on behavioral intentions (Davis, 1989). That means, the customers are not only concerned with the final benefits of the electronic shopping rather they also perceive it an enjoyable and fun activity. Therefore, the online retailers should give importance to this factor and develop the process of online shopping in a way that the customers enjoy and amuse during the online shopping. E-Risk remains a big challenge in adoption of new technologies. As the customers perceive that online shopping is a risky phenomenon and they are uncertain about the final outcomes of the process, the adoption of online shopping will remain low (Liao and Wong, 2008; Liao and Cheung, 2001; Cunningham et al., 2005). E-Risk negatively affects the adoption of online shopping.

E-Trust and E-Self Efficacy have significant effects on E-Usefulness and E-Ease of use. If the customers trust the online firms it will positively enhance the perception of E-Usefulness and E-Ease of use. The customers perceive that if the other party is trustworthy there is no need to learn and develop more skills to avoid negative consequences and both parties will gain benefits from the relationship. The self-confidence of the customers in the shape of E-Self efficacy also effects the perception of E-Usefulness and E-Ease of use. Therefore, the electronic firms should develop the services in a way that enhance the confidence of the customers.

6. Limitations and Future Research

The current study has some limitations that open the doors for future research. First, the respondents of the study are from a particular region, future studies are required to examine the model in other countries to increase its generalizability. Second, the constructs in the model are chosen from the previous literature, where inclusion of other variables can enhance the predictability of the model. Third, future studies should apply this model in different context e.g. product category to compare the results.

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REFERENCES

1. ACNielsen (2008), Trends in Online Shopping :A Global Nielsen Report, The Nielsen Company, Vienna, available at:acnielsen.co.at/GlobalOnlineShoppingReportFeb08.pdf
2. (accessed 7 November 2012).
3. Ajzen, I. &Fishbein, M. (1980), Understanding Attitudes & Predicting Behaviour, New York: Prentice-Hall.
4. Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior, in Action Control: From Cognition to Behavior, ed. Julius Kuhl& Jürgen Beckmann, Heidelberg: Springer.
5. Akhlaq, A. & Ahmed, E. (2011). Intention Towards Online Shopping: A Pakistan Based Study. *UK Academy for Information Systems Conference Proceedings 2011*.Paper 1.<http://aisel.aisnet.org/ukais2011/1>
6. Arbuckle, J. (2006). Amos 7.0 User's Guide.Amos Development Corporation: Spring House.
7. Bagozzi, R., P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems*, 8(4), 244–254
8. Bandura, A. (1997), Self-efficacy: The exercise of control. New York: W.H. Freeman &Co, Publishers
9. Benbasat, I. and H. Barki (2007). "Quo Vadis, TAM?" *Journal of the Association for Information systems*, 8(4): 211-218.
10. Bentler, P. M. (1992). On the fit of models to covariances and methodology to the Bulletin.*Psychological Bulletin*, 112, 400-404.
11. Brown, M., Pope, N. & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations & online purchase intention. *European Journal of Marketing*, 37(11), 1666-87.
12. Carlson, D. S., Kacmar, M. K., Wayne, J. H., &Grzywacz, J. G. (2006).Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale. *Journal of Vocational Behavior*, 68(1), 131-164.
13. Celik, H., (2011). Influence of social norms, perceived playfulness & online shopping anxiety on customers' adoption of online retail shopping: An empirical study in the Turkish context.*International Journal of Retail & Distribution Management*, 39(6), 390 – 413.
14. Cheema, U., Rizwan, M., Jalal, R., Durrani, F. &Sohail, N. (2013) The Trend of Online Shopping in 21st Century: Impact of Enjoyment in TAM Model, *Asian Journal of Empirical Research*, 3(2), 131-141
15. Chen, L., Gillenson, M.L. &Sherrell, D.L. (2002).Enticing online consumers: an extended technology acceptance perspective.*Information & Management*, 39, 705-19.
16. Chiu C. M., Chang C. C., Cheng, H. L. and Fang Y. H. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, 33(4), 761-784.
17. Cunningham, L.F., Gerlach, J.H., Harper, M.D. & Young, C.E. (2005).Perceived risk & the consumer buying process: internet airline reservations.*International Journal of Service IndustryManagement*, 16, 357-72.
18. Dash, S.B. and Saji, K.B. (2007) 'Role of self-efficacy and website social-presence in customers' adoption of b2c online shopping: an empirical study in the Indian context', *Journal of International Consumer Marketing*, Vol. 20, No. 2, pp.33–48

19. Davis, F.D. (1989), "Perceived usefulness, perceived ease of use and user acceptance of computer technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-37.
20. Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 932-1003.
21. Fishbein, M. (1963). An investigation of the relationships between beliefs about an object & the attitude toward the object. *Human Relations*, 16, 233-40.
22. Gefen, D., Karahanna, E. and Straub, D.W. (2003) 'Trust and TAM in online shopping: An integrated model', *MIS Quarterly*, 27(1), 51-90.
23. George, H.F. (2002). Influences on the internet to make purchases. *Internet Research*, 12(2), 165-80.
24. Goldman Sachs (2011). Global E-commerce Sales. www.internetretailer.com/trends/sales accessed on 1 January, 2012.
25. Hernandez, B. Jimenez, J. & Martin, M. J. (2011). Age, gender and income: do they really moderate online shopping behaviour? *Online Information Review*, 35(1), 113-133.
26. Igbaria M., Parasuraman Saroj, and Baroudi. Jack J. "A motivational model of microcomputer usage," *Journal of Management Information Systems* ; Armonk; Summer 1996;
27. Jarvenpaa, S.L. & Todd, P.A. (1997). Consumer reactions to electronic shopping on the world wide web. *Journal of Electronic Commerce*, 1(2), 59-88.
28. Karahanna, E. & Straub, D.W. (2003). Trust & TAM in online shopping: an integrated model. *MIS Quarterly*, 27(1), 51-90.
29. Keeney, R.L. (1999). The value of internet commerce to the customer. *Management Science*, 45(4), 533-43.
30. Kim, S., Williams, R. & Lee, Y. (2003). Attitude toward online shopping & retail website quality: a comparison of US & Korean consumers. *Journal of International Consumer Marketing*, 16(1), 89-111.
31. Liao, Z. & Cheung, M.T. (2001). Internet-based e-shopping & consumer attitudes: an empirical study. *Information & Management*, 38(5), 299-306.
32. Liao, Z., & Shi, X. (2009). Consumer perceptions of internet-based e-retailing: an empirical research in Hong Kong. *Journal of Services Marketing*, 23(1), 24-30.
33. Liao, Z., and Wong, W.K. (2008). The determinants of customer interactions with internet-enabled e-banking services, *Journal of the Operational Research Society*, 59(9), 1201-10.
34. Lu, H. P. & Su, Y. J. P. (2009). Factors affecting purchase intention on mobile shopping web sites. *Internet Research*, 19(4), 442-458.
35. Malhotra, N.K., Kim, S.S. & Agarwal, J. (2004). Internet Users' Information Privacy Concerns (IUIPC): the construct, the scale, & a causal model. *Information Systems Research*, 15, 336-352.
36. McDonald, R. P. and Ho, M. H. R. (2002). Principles and Practice in Reporting Statistical Equation Analyses. *Psychological Methods*, 7(1), 64-82.
37. Moon, J., & Kim, Y. (2001). Extending the TAM for a World Wide Web context. *Information & Management*, 38, 217-230.
38. Nielsen Media Research (2008), Trends in Online Shopping, The Nielsen Company, New York, NY, available at: <http://www.davealston.com/copy/GlobalOnlineShoppingReportFeb08.pdf> (accessed 1 November 2012).
39. Nunnally, J.C. (1970). Introduction to Psychological Measurement. New York: McGraw-Hill.
40. Oinas, P. (2002). Towards understanding network relationships in online retailing. *Int.rev of Retail, Distribution & Consumer Research*, 12(July), 319-355.
41. Park, J., Lennon, S.J. & Stoel, L. (2005). Online product presentation: effects on mood, perceived risk, & purchase intention. *Psychology & Marketing*, 22, 695-715.
42. Pikkarainen, T., Pikkarainen, K., Karjaluoto, H. and Pahnala, S., (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, 14(3), 224-235.
43. Pavlou, P. (2003). Consumer acceptance of electronic commerce: integrating trust & risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 101-134.

44. Raaij, E., M., V. and J. J. L. Schepers J., J., L. (2008). The acceptance and use of a virtual learning environment in China. *Computers & Education*, 50(3), 838–852
45. Rehman, K., Rehman, I., Ashfaq, M. & Ansari, S. (2011). Examining online Purchasing Behavior: A case of Pakistan. *International Conference on Social Science and Humanity Conference Proceeding* 2011.
46. Rizwan, M., Mir, I. A. & Rehman, K., (2012). An Extended Technology Acceptance Model To Understand Online Shopping. *International Journal of Research in Computer Application and Management*, 2(5), 16-20.
47. Seneler, C. O., Basoglu, N. & Daim, T. (2010). An empirical analysis of the antecedents of adoption of online services: A prototype-based framework. *Journal of Enterprise Information Management*, 23(4), 417 – 438.
48. Sheikhi, Z. (2012). Study the Adoption of Electronic Banking Levels on the basis of Technology Acceptance Model (TAM), *Journal of Basic and Applied Scientific Research*, 2(10), 10726-10730.
49. Shim, S., Eastlick, M., Lotz, S. & Warrington, P. (2001). An online prepurchase intentions model: the role of intention to search. *Journal of Retailing*, 77(3), 397-416.
50. Suh, B. & Han, I. (2003). The impact of customer trust & perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce*, 7(3), 135-61.
51. Talat, A., Azar, S. & Yousaf, M. W. (2013). Investigating Social Commerce as an Alternate Model for Online Commerce in Developing Countries: a case of Pakistani Economy, *Pakistan Journal of Commerce and Social Sciences*, 7(1), 223-242
52. Thong, J.Y.L., Hong, W. & Tam, K.Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information continuance. *International Journal of Human-Computer Studies*, 64(9), 799-810.
53. To, P.L., Liao, C.C., Chiang, J.C., Shih, M.L. & Chang, C.Y. (2008). An empirical investigation of the factors affecting the adoption of instant messaging in organizations. *Computer Standards & Interfaces*, 30, 148-56.
54. U.S. Census Beauru (2011). 2010 population estimates obtained from U.S. Census Bureau International Data Base. <http://www.census.gov/compendia/statab/2012/tables/1s1392.pdf> accessed on 30 September 2012
55. Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic motivation & emotion into the technology acceptance model. *Information Systems Research*, 11(2), 342-65.
56. Venkatesh, V. and Bala, H. (2008), "Technology Acceptance Model 3 and a Research Agenda on Interventions, *Decision Sciences*, 39(2), 273–315
57. Venkatesh, V. and Davis, F. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186-204
58. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27, 425–478
59. Yu, C.M., Wu, L.Y., Chiao, Y.C. & Tai, H.S. (2005). Perceived quality, customer satisfaction, and customer loyalty: the case of Lexus in Taiwan. *Total Quality Management & Business Excellence*, 16(6), 707-19.