

An Analysis of Technology Acceptance of Electronic Commerce among Young Age Group

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Abstract

This study investigates the consumer's technology adoption toward electronic commerce. In addition to the variables perceived usefulness and perceived ease of use derived from TAM, the study included and tested factors like perceived cost, perceived risk and social influence. A questionnaire was developed primarily based on the available scales in the already published literature. All model constructs requested participants to indicate their perceptions on seven-point Likert-style responses ranging from 1 (strongly disagree), through 3 (undecided) to 5 (strongly agree). The data analysis was executed using Smart PLS to test the validity and reliability of the measurement instrument. The study results suggest that consumer's attitudes toward e-commerce are significantly impacted by perceived cost perceived and social influence and an extended TAM model framework was proposed and empirically tested using the data collected from the survey. The study gives electronic commerce firms vital indications on to not only focus entirely on the quantifiable utility of their services but also every other factor influencing use. They should, also, try to give users the cost the social influence factor more and thereby focusing on the loyalty of the customers. This is one of the few studies which include variables like perceived cost and social influence factors in an emerging economy context by using the extended Technology Adoption Model framework.

Keywords : Technology, e-commerce, framework, economy.

Introduction

Electronic commerce is about core business activities that involve purchasing and selling services, products and data online[1][2]. The term e-commerce is coined to denote a wide range of online business processes for goods and services. . E-commerce is the deployment of electronic communications and digital data processing technology in business activities to build, alter and reanalyse relationships to add value between organisations and individuals[3][4]. Electronic commerce (e-commerce), which is a part of the information technology revolution is used widely in world trade generally and especially in the Indian economy. Due to the tremendous progress in technology, methodologies for business transactions have undergone change. India being one of the fast adaptors of technology is getting to used with the current scenario of electronic data exchange sand has taken to e-commerce[5][6][7]. India is exhibiting considerable development in E-commerce. The cheap availability of the PC and the increasing usage of the Internet are some favourable factors[8]. Awareness about the opportunities offered by e-commerce has increased amidst the business communities prevalent in India[9][10]. The e-commerce market in India has increased by 34 percent in the past seven years. It was estimated to be about USD 600 million in 2011-12 and is anticipated to reach USD 9 billion by 2016 and touch USD 70 billion by 2020.

Challenge Faced in E-Commerce are

1. Indian customers are more likely to return much of the products they buy over the internet.
2. In most cases, Cash on delivery is preferred by the customers.
3. Payment gate ways have got a high failure rate.

4. Internet penetration is less.
5. Feature phones still dominate. Kaur and Kaur (2015b) Panigrahi et al. (2016)

This study focuses on analysing the main factors that may block or enhance the adoption of electronics in the Indian context. This research aims to redefine the relationship that exists between crucial background factors before the idea of adoption of electronic commerce, stressing to assess the sole aim of adopting this service by current Indian users of mobiles. This study contributes to research on consumer behaviour, where many authors, through various models and factors, have tried to elucidate the action of individual people in the face of technological innovations. The current study makes use of the TAM theory as a beginning point to answer the question proposed.

Review of literature

TAM was employed for empirical validation, and our results showed that all variables except perceived ease of use affected users' behavioral intent considerably of all the compatibility had the most potent influence. Also, a striking, and the somewhat skeptical finding was the excellent impact of perceived risk on behavioural intention to use.

Yang (2005) The study applies the Technology Acceptance Model (TAM) to probe into factors affecting Singapore-Ō attitude toward this arising mobile technology and applications. Most of the positive relationships between PU, PEOU, AT, innovativeness, adoption behaviour and demographics are backed up by the empirical data. Findings also strengthen the applicability of TAM and its extension to analyse M-commerce adoption.

Wu and Wang (2005) This paper investigates how the warmth of humans and amiability can be consolidated using the web interface to positively influence the attitudes of customers towards online shopping. An empirical study was carried out to explore the effect of different levels of socially rich text and picture design elements on the discernment of online social presence and its consequent impact on antecedents of attitudes towards websites. Higher levels of discerned social presence are found to positively influence the perceived benefit, trust and amusement of shopping websites, heading to more and more approving consumer attitudes.

Hassanein & (2007) This article consolidates the quality of e-shopping, enjoyment, and trust into a technology acceptance model (TAM) to perceive consumer acceptance of e-shopping. E-shopping quality for clothing products comprises of four dimensions: web site design, customer service, privacy/ security, and finally atmospheric/experiential. Consumer discernments of effectiveness and attitude toward e-shopping impact intention to shop online, where as perceived ease of use does not impact attitude toward e-shopping. Shopping pleasure and assurance play crucial roles in the adoption of e-shopping by consumers.

Ha and Stoel (2009) Perceived usefulness (PU), was identified to be the most significant factor which might affect the intention of Internet shopping. Consumers are widely impacted by the effectiveness of the products instead of its ease of use, and this research supports that. Perceived ease of use (EOU) had a good influence on the Internet shopping intention, but not so effective like the usefulness predictor. Perceived Enjoyment (PE) as well as Subjective Norms (SN) are emphatically associated with the intention yet partially.

Mandilaset al. (2013); Agrebi and Jallais (2015) The study aims to examine the key factors that impact users' behavioural intention to make use of e-commerce transactions by empirically exploring the causal relationship that prevails between perceived security and privacy, perceived risks and perceived trust with behavioural intention to deploy e-commerce. Findings of Structural Equation Modeling (SEM) elucidate that perceived security and privacy and also perceived risks have got an important relationship with behavioural intention, while perceived trust ex- habits contrary result. This research aspires to suggest an extended Technology Acceptance Model (TAM) that will furnish better apprehension of the acceptance of purchasing via smart phones. The structural model analysis has underlined two differences that exist between the profile software individuals. The first difference is the favourable and vital impact of perceived enjoyment on the intention to make use of smart phones to

buy products since it is only significant among the buyers. These differences are the effect of satisfaction on the intention to use smart phones for shopping, which is significant only among the purchasers. Managerial suggestions are discussed further.

Hidayahetal.(2015) The outcomes of this study indicated that fact or slake efficiency, system availability, fulfillment, privacy, satisfaction, trust and commitment directly or indirectly impact the loyalty of m-commerce customer in Malaysia. Fascinatingly, most substantial influence on satisfaction is made by efficiency, which in turn impacts customer loyalty. Furthermore, Commitment has a more significant effect on customer loyalty when compared to Satisfaction and trust. This research becomes apart of customer loyalty research stream by consolidating service quality and relationship quality constructs in thee-commerce context.

Onn and Soon(2015) This study uses an extended technology acceptance model(TAM) and the theory of diffusion of innovations(DOI) To perceive the intention to use mobile commerce applications for purchasing purposes. The variables - perceived pleasure, perceived risk and personal innovativeness were included in the original model. The price sensitivity criterion was forecasted using the variables- perceived risk, personal innovativeness, satisfaction and the intention to employ. Outcomes of this research show that personal creativeness and perceived risk have got a significant role in determining the intention to use mobile shopping applications. Customers who are very innovative and with a higher purpose to use mobile shopping applications are seldom sensitive to price. Natarajan et al.(2016)

The formulations of TAM, perceived ease of use (PEOU) and perceived usefulness (PU) were found to be chiefly explored by researchers. Besides, other construct slike perceived risk, perceived enjoyment, personal innovativeness, self-efficacy, trust, security and perceived cost have been extensively examined. The rapid rise in the usage of mobile applications is one of the primary reasons behind this. Users are now more conscious about their privacy and security while carrying out transactions on their mobile devices. Chhonkeret al.(2017)

Theoretical Background and Hypothesis Development

1. Theoretical background Technology Acceptance Model(TAM)

Koufaris (2002) assessed the other literature in TAM and figured out that the TAM can be Employed to analyse the attitude of customer toward e-commerce and its impacts and the acceptance to shop online. This attitude is influenced mainly by two factors: usefulness of e-commerce and ease of use of e-commerce. For usefulness the customer wishes to get many advantages from an online purchase like saving money, time and the comfort of selecting from a wide range of products or services. For Ease of use, which is concerned to obtain the stated benefits, the customer must be capable of doing the following tasks effort lessly: data search, ordering and making use of customer services. (Makameetal.,2014; Alametal.,2011;Sebora,2009). This study states that customers who think that purchasing over the internet is useful and those people who are capable of doing it quickly, adopt e-commerce. This results in the following hypotheses:

H1: Perceived usefulness influences e-commerce behavioural intention favourably.

H2: Perceived ease of use impacts e-commerce behavioural intention positively.

2. Perceived risk and e-commerce behavioural intention

This is one of the significant constructs in e-commerce research; it denotes the degree of customer believes that the employment of e-commerce is not secure. Perceived risk is a blend of Information Misuse, Failure to Gain Product Benefit and Functionality Inefficiency Risk (Glover and Benbasat, 2011). When customers purchase from the web, they furnish their personal and financial information. There is probability that both the information is given to the network might be misused. Furthermore, during online Shopping the customer might face challenges such as the purchased product may not fulfill the expectations because the customer did not check properly beforehand. The most common problem is the delay in delivery. The customer can also face difficulties like finding, choosing, ordering, paying, receiving, returning, exchanging, and maintaining anything purchased via e-commerce (Glover and Benbasat, 2011; Pavlou, 2003; Miyazaki and Fernandez, 2001; Pavlou et al.,

2007). As regards to our research, consumers who trust that the level of perceived risk is less are more likely to adopt e-commerce. This forms the following hypotheses:

H3: Perceived risk has a negative influence on e-commerce behavioural intention

3. Perceived Cost and E-Commerce Behavioural Intention

According to behavioural decision theory, the perceived cost (PCST) pattern is crucial to perceived usefulness as well as perceived ease of use. As Chen et al. pointed out, consumers must put up with non-negligible prices while switching between various brands of goods or related services in different markets [5]. Changing from wired electronic services to mobile commerce costs some additional expenditure. Equipment costs, access cost, and transaction fees are the three significant elements that make mobile commerce use more costly when compared to wired electronic services. Besides, disappointing experiences like slow connections, poor quality, out dated content, missing links and defects have frustrated online users [7]. It is true that perceived cost has got a significant impact on behavioural intention [13]. This leads to the following hypothesis:

H4: Perceived cost impacts e-commerce behavioural intention in a positive way.

P. Luarn and H. H. Lin, "Toward an understanding of the behavioural intention to use mobile banking," *Computers in Human Behavior*, vol. 21, 2005, pp. 873-891.

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Social Influence and E-Commerce Behavioural Intention

SI is stated as the extent to which an individual perceives how significant others believe he or she should make use of the new system (Venkatesh et al., 2003). SI as a direct determinant of BI is constituted as subjective standard in Theory of Reasoned Action (TRA), social elements in the Model of PC Utilisation (MPCU) and image in innovation diffusion theory (IDT). Though they have different labels, every construct has got the explicit or implicit belief that the behaviour of individuals is affected by the way in which they think others will them as a result of using the technology. The construct of SI has been employed by researchers to probe into customers' usage intention of technologies linked to the internet, online purchases, online banking, mobile chat and mobile banking (Amin, 2008; Kleijnen et al., 2004; Nysveen, 2005; Venkatesh et al., 2012).

H5 : Perceived cost will have a positive effect on e-commerce behavioural intention

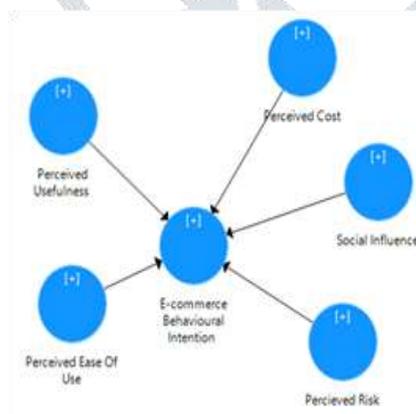


Figure 1: Proposed Research Model

Fig. 1. Research model

Source: Author

Research Method

The research methodology involved two steps: qualitative and quantitative research. Qualitative research was conducted with a sample of 20 people. To notice the defects of the INSTRUMENT. The second period of the official research was carried out as soon as the question was edited from the test

results. Respondents were selected by convenient methods with a sample size of 140 people (88 males and 52 females). Their ages were from 18 to 30 years old and all were university students.

The survey replied by respondents is the core tool to collect data. The questionnaire contained questions about the technology acceptance of the customer concerning the usage of e-commerce.

The survey was conducted on JULY 09, 2019. Data processing and statistical analysis software is used by SmartPLS. The reliability and validity of the scale were tested by Cronbach's Alpha, Average Variance Extracted (Pvc) and Composite Reliability (Pc). Followed by a linear structural model, SEM was used to test the research hypotheses.

Results

Structural Equation Modeling (SEM) is used in the theoretical framework. Partial Least Square method can handle many independent variables, even when multi co linearity exists. PLS can be implemented as a regression model, predicting one or more dependent variables from a set of one or additional independent variables, or it can be implemented as a path model. Partial Least Square (PLS) method can associate with the set of independent variables to multiple dependent variables. Consistency and Reliability

In this reflective model, convergent validity is tested through composite reliability or Cronbach's alpha. Composite reliability is the measure of reliability since Cronbach's alpha sometimes underestimates the scale reliability. Table-2 shows that composite reliability varies from 0.876 to 0.900, which is above the preferred value of 0.5. This proves that the model is internally consistent. To check whether the indicators for variables display convergent validity, Cronbach's alpha is used. From Table 2, it can be observed that all the factors are reliable (>0.60) and $Pvc > 0.5$.

Table 1 Reliability Table

	Cronbach's Alpha	rhoA	Composite Reliability	Average Variance Extracted (AVE)
E-commerce Behavioural Intention	0.881	0.885	0.926	0.807
Perceived Cost_	0.888	0.9	0.917	0.69
Perceived Ease of Use	0.847	0.873	0.891	0.623
Perceived Usefulness	0.897	0.907	0.928	0.764
Perceived Risk	0.855	0.886	0.904	0.706
Social Influence_	0.847	0.885	0.907	0.766

Source: Author

Structural Equation Modeling (SEM)

SEM results in the first showed that the model is compatible with data research. The behavioural intention is affected by perceived usefulness, perceived ease of use perceived cost and social influence. The perceived risk is not relative with customer behavioural intention as Table 3(Fig.2).

Fig. 2. Structural Equation Modeling (SEM) in the first

Source: Author

Structural Equation Modeling(SEM)i

SEM results showed that the model is compatible with data research: SRMR, d ULS value is below 0.08 (Fig. 2 and Table 3). Table 3

Figure 2 SEM Results

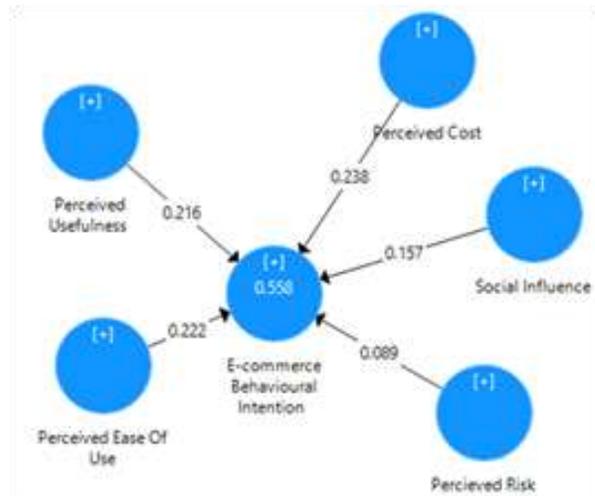


Table 2 SEM Result Beta Values

	E-commerce Behavioural Intention
Perceived Cost_	0.238
Perceived Ease Of Use	0.222
Perceived Usefulness	0.216
Perceived Risk	0.089
Social Influence_	0.157

Table 3 Model Fit Criteria

	Saturated Model	Estimated Model
SRMR	0.054	0.049
NFI	0.903	0.886

Source: Author

In bootstrapping, re sampling methods are used to compute the significance of PLS co efficient. The output of significance levels can be retrieved from the boot-strapping option. Table 4 shows the results of hypotheses testing; all the t values above 1.96 are significant at the .05 level. Hypotheses H1, H2, H4 and H5 were supported. The results indicated a positive ($\beta = 0.238$) and significant ($p < 0.05$) association between perceived cost and behavioural intention (Table 5).

Outer Loadings were higher than 0.5 ($P < 0.05$), so they are significant
 Outer Weights were lower than 0.05 ($P < 0.05$) so they are supported Table 4

Table 4: p-values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Perceived Cost_ -> E-commerce Behavioural Intention	0.238	0.24	0.03	7.835	0
Perceived Ease of Use -> E-commerce Behavioural Intention	0.222	0.226	0.041	5.362	0
Perceived Usefulness -> E-commerce Behavioural Intention	0.216	0.215	0.044	4.905	0
Perceived Risk -> E-commerce Behavioural Intention	0.089	0.089	0.032	2.813	0.005
Social Influence_ -> E-commerce Behavioural Intention	0.157	0.154	0.033	4.809	0

Conclusion

The study results suggest that consumers attitudes toward e-commerce are significantly impacted by perceived cost perceived and social influence and an extended TAM model framework was proposed and empirically tested using the data collected from the survey. Seeing the vital role of social influence and price saving factors it is suggested that the marketers should focus on affiliation marketing approach, which enables them to attach with the customers and should concentrate on offering various cost-efficient deals to save money and make a win-win situation. The above findings can provide useful insights for marketers as considering the basic constructs of technology acceptance can be cooperative in developing and filtering new technologies which can lead to the high acceptance of e-commerce apps among students. This study also subsidies to the existing literature by giving new insights into the factors affecting the adoption of apps among the travelers.

Managerial implications Limitations and Suggestions for Further Research

Theoretically, this research unlocks new ways to examine the use of technology in the commerce industry and the results may direct academicians informing their future research models in more efficient ways. The study gives marketers an idea of purchase expectations from the apps and electronic ways. Marketers end to emphasis entirely on the quantifiable utility of their apps, ignoring every other factor influencing use. Our results propose that there is a significant impact of consumers habit on personal technology use when they face a varied environment and ever-varying and therefore, target audience habit must be analysed before creating the technology platform. We recommend examining different phases of shopping, like before and during the purchase to determine how well such associations happen in other financial prudence. It can also be a well-meant pursuit in the upcoming to focus on shopping places and time.

Besides the implications, this research has some limitations. The scope of this research has some limitations which apply to how broadly its outcomes can be applied. These limitations must be acknowledged to add context to the conclusions from the research results. Firstly, this questionnaire used in this research was answered by respondents studying in university only. According to the result of this research and the limitations above, further research may consider the following points: This research's result is applied only to Pondicherry University. The same findings may not occur in other places because of culture differences. Further research could apply the findings of this thesis as an example to the Internet market in other countries. In addition to get a clear picture and better understanding of customer loyalty, further research may investigate other factors such as the impact of cultural differences on different countries. Future research may also study different and additional variables that could influence customer loyalty. In brief, the findings of this research provided direction for e-commerce firms to determine which attributes to focus on enhancing overall customer behavioural intention. The research has value because it proposed and justify a theoretical model to explain customer behavioural intention to accept e-commerce in the context of Pondicherry University.

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