A study on identifying the factors that motivate customers to choose E-commerce websites

Srilakshminarayana G.
Assistant Professor - Quantitative Methods
lakshminarayana@sdmimd.ac.in

Nilanjan Sengupta
Professor – HRM & OB
nilanjan@sdmimd.ac.in

Mousumi Sengupta
Chairperson - SDM RCMS &
Professor - HRM & OB
mousumi@sdmimd.ac.in

Shri Dharmasthala Manjunatheshwara
Institute for Management Development

ISBN : 978-93-83302-21-5

Note :

All views expressed in this work are that of the author(s). SDM RCMS does not take any responsibility for the views expressed herein by the author(s).

Preface

SDM Research Center for Management Studies (RCMS), since inception, has endeavored to promote research in the field of management education, in various ways. In this direction, in order to promote applied research, the Research Center has taken a unique initiative to encourage the faculty members to carry out various projects in the areas of management.

After completion of the projects, based on the peer review, reports are published with an ISBN number, by the Institute. The projects help the faculty members, and the students, who assist the faculty members for these projects, in various aspects, to gain practical knowledge, in the field of management.

The institute takes into account the time and resources required by the faculty members to carry out such projects, and, fully sponsors them to cover the various costs of the project work (for data collection, travel, etc).

From the academic viewpoint, these projects provide a unique opportunity to the faculty members and the students to get a first-hand experience, in investigating issues and concerns of targeted organizations or sectors, on a face to face basis, thereby, helping in knowledge creation and its transfer.

Mousumi Sengupta

Chairperson – SDM RCMS

Page is left intentionally blank

Acknowledgement

We sincerely thank the Director, Dr. N.R.Parasuraman for his constant support and encouragement throughout the project.

We thank the Deputy Director, Dr. H. Gayathri for her encouragement to take up research projects for betterment learning.

We thank all the students who have participated in the survey and provided their valuable responses.

We thank Prof. Guruprasad of Pooja Bhagavat Mahajana College, Prof. Balaji and Prof. Somashekar of Vidya Vardhaka College of Engineering, Prof. Mahesh of BIMS, Prof. Aparna and Prof. Usha of GSSS, Prof. Savitha of JSSCMS, Prof. Govinda Sharma of VLEAD, Prof Gayathri of Bhavan's Priyamvada Birla Institute of Management and Prof.Radha Ramani of Gudlavalleru Engineering College, AP, for helping us in collecting data from their students.

We thank all our colleagues for the healthy discussions on the concepts used for data analysis, in this study.

We thank all the non-teaching staff for their support throughout the project.

We thank the SDME trust and the Management for their constant support and encouragement by providing all the help needed for successful completion of the project.

We thank our families for their support in completion of the project.

Srilakshminarayana G.
Nilanjan Sengupta
Mousumi Sengupta

Page is left intentionally blank

Table of Contents

Page is left intentionally blank

Executive summary

E-commerce is a platform that is giving an opportunity for the customers to purchase the products online. It had slowly replaced the traditional way of purchase and has given customers an opportunity to select the products of choice from varieties of products available online. Previously customers use to visit a physical store, select the desired products, make payment and purchase the products. With the development of technology and increase in the usage of internet, companies have designed virtual stores that reduces the effort of the customers in purchasing the products. Customers use to select the products, place the order, but, make the payment at the time of delivery and this paved path for the development of E-commerce. With changing times, the E-commerce companies have improved their technology, and have provided options of making payment online, by connecting the customers to either internet banking or through their credit/debit cards. Also, they have increased the number of product categories starting from apparels, electronic appliances and so on. Customers have got freedom of choice and also several alternatives with respect to the products they wish to purchase. Online shopping has replaced the traditional means in some of the product categories like electronic items, books, gift items etc. A customer, who wishes to purchase a product, choose an appropriate website for selection and purchase. He/she expects that the entire process of purchase, from selection, payment to delivery, will be smooth and gives a good purchase experience. Even the E-commerce companies make necessary changes in the website designs such that, customers get the best purchase experience, which ultimately results in repeat purchase. The companies also have given an option of return on purchase, if the products do not meet the expectations of the customers. They have created processes, that are hassle free and customers could easily get back their money back on return of the product. Over the years, E-commerce has become an internal part of the society and also has become a first choice for purchase. This change in the behavior of the customers has attracted the academia to conduct research on, finding the factors that are motivating customers to choose E-commerce for purchase to traditional means. In the process of finding the factors, researchers have understood that individual's perception towards the E-commerce and attitude play a role (refer to the literature review section) in selection of E-commerce for purchase. This has motivated one to use the models available in the intention theories, like Theory of Reasoned action (TRA), Theory of Planned Behavior (TPB), and Technology Acceptance Model (TAM) etc., to find the motivating factors. E-commerce Adoption Model (EAM) is the next development in the model development process.

Taking these developments as motivation, we have considered the challenge of building a model, to understand the behavioral traits of the customers, in choosing the E-commerce for purchase. The target population for the study is, the students pursuing MBA/PGDM at selected reputed B-schools. These B-schools are selected based on the availability and acceptance of the students to participate in the survey. The proposed model includes, perceived usefulness (PU), perceived ease of use (PEU), perceived trust (PT), perceived risk (PR), social presence (SP), behavioral intention (BI) and actual behavior (AB) of the customers. PU, PEU, PT and PR are the exogenous (independent) factors, and, BI and AB are the endogenous (dependent) factors. The variables appropriate to measure the factors, are measured using a well-designed questionnaire. The questionnaire was circulated to the sample of customers chosen and the responses are taken as measurements to measure the variables. The set of variables under each of the factors is identified using literature review and experience of the researchers. Using the data collected, the variables are processed using exploratory factor analysis (EFA) to find the association between the set of variables and the factors. For this purpose, two rounds of pilot study were conducted. Using EFA and the pilot sample, the set of variables identified under each factor were checked for association with the factors. We have identified that, few variables were not associated with the factors and we have re-built the model. After each round of pilot study, the questionnaire was tested for its reliability and found that it was above the required cut-off points. Finally, using the results of EFA, the final questionnaire was built, and, the final sample survey was conducted. The sample size estimated was 750 and successfully collected responses from 773 respondents. The final questionnaire also has the required reliability levels. The final sample is used to build the model and the final EFA results have confirmed that the variables finally identified, have good association with the factors. Confirmatory factor analysis was used to build a measurement model, which confirms the significant associations between the variables and the exogenous factors and also association between the exogenous

variables. The measurement model was improved by making adjustments to the regression paths and the same is used to build the final model. The final model links the exogenous factors with the endogenous factors. Structural equation modeling (SEM) is used to build the final model and the significance of associations between the PU, BI, SP, PP and the AB are tested. The results have shown that all the relations are significant. Also, the associations between PU, PEU, PR, PT and BI are significant.

From the SEM analysis, we found that PU and AB are negatively associated with the impact of PU on AB at the level of -0.671. This indicates that, one cannot expect a direct positive effect of PU on AB. The association of BI and AB is positive and the impact of BI on AB is at the level of 0.977. This indicates that, a website that creates a strong intention in the minds of the customers, that it is the right website for purchase will lead to the actual purchase through that website. Social presence is positively associated with AB and the impact level is 0.612. This indicates that a website that provides a customer to interact with other customers, will be able to make the customer purchase through the website. The association between PP and AB is significant and the impact is negative, -0.368. This indicates that, one cannot make a customer directly purchase even if a website assure that it protects the privacy of the customer. Note that, even though the paths are significant, based on the degree of impact levels, one should be able to say whether the actual purchase happens or not. **Note that, the conclusions drawn should be studied taking into consideration the questions considered under each factor.** The impact of PEU on BI is significant but the impact levels are low and negative -0.253. This indicates that, if a website is very easy for use, then it may not create a strong intention of purchase. **Again, the conclusions have to be judged taking into consideration the questions considered in the study**. Similarly, PR and BI are significantly associated and the impact is low positive, 0.107. But, PT and PU are significantly associated with BI respectively. The impacts are, respectively, 0.601 and 0.678.

The sub-factors, Banking and Modern way of purchase, are significantly associated with BI. Web-retailers, Transaction and Mobile payment are significantly associated with PT, Personal touch and Networking are significantly associated with SP. Shared information and Payment are significantly associated with Perceived risk. Selection and Payment are significantly associated with perceived usefulness.

Note that, the indirect effect of PU on Ab, mediated by BI is significant at an impact level of 0.663. This indicates that, if a website creates a perception that it is useful and if that leads to a strong intention in the mind of the customer to use the website, then a customer will use the website for purchase. Similarly, the indirect effect of Perceived trust on AB, mediated by BI, is 0.587, Perceived risk on AB, mediated by BI is 0.104, and PEU on AB, mediated by BI is -0.247. Similar interpretation can be given as in the case on PU.

One can also note that, all the variables identified for each of the factors are significantly associated with the factors. We finally conclude that model built can be used to understanding the behavior of the customers with respect to the use of websites. The main limitation of the study, which can be taken up by others, is expansion of the population to customers belonging to other customers.

List of abbreviations

Abbreviation	Full form
PU	Perceived Usefulness
PEU	Perceived Ease of Use
PT	Perceived Trust
PR	Perceived Risk
PP	Perceived Privacy
SP	Social Presence
AB	Actual Behavior
BI	Behavioral Intention
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
SEM	Structural Equation Modeling
GFI	Goodness-of-fit
AGFI	Adjusted Goodness-of-fit
RMR	Room mean square residual
RMSEA	Room mean square error approximation
NFI	Normed fit index
RFI	Relative fit index
IFI	Incremental fit index
TLI	Tucker-Lewis index
CFI	Comparative fit index
M.I.	Modification index
DF	Degrees of freedom

List of Tables

List of Figures and Graphs

List of Figures

List of graphs

Section I : Introduction

"E-commerce", is an important revolution in the markets, as it has changed the entire purchase behavior of the customers. A customer who wishes to purchase a product, use to visit a physical store, inspect the products and purchase the product. He/she has got a limited option, as the physical store keeps limited brands in the store. Even if it is available, the customer had to wait days to receive the product. With changing times, the attitude of the seller and buyer has changed and a customer is treated as an important part of the business. Sellers have started giving top priority to the customers and have started to diversify the products, to enhance the customers' selection basket. We define the "selection basket" as the one, that has a collection of products of different brands, different prices, varieties etc. A customer, in most of the times has limited options in the selection basket. But, the dynamics have changed and stores have started expanding the selection basket, by expanding the space of the stores. For example, a super market, where a customer can select the products that he/she wants to have at home and buy them with ease. The transition is from a departmental store to a super market, where the products are chosen as per the choice of the customer. With increase in the number of such markets, the attitude of customers has changed and slowly customers started feeling to have more freedom of selection. In a traditional departmental store, a customer, usually, doesn't have an option of having a physical touch of the product as per hi/her choice. This is because, the store keeper gives the product the customer chooses, and the customer misses out of looking at alternative options. In this type of setup, the store keeper has the freedom of identifying the product the customer is looking for. With introduction of super markets, the customer is given freedom of selection and he/she can also reject the product if it doesn't satisfy the needs. The basket was enhanced, which has increased the freedom of selection and also has changed the attitude towards the entire purchase cycle. Due to competition, sellers have started giving various offers and discounts to attract the customers and increase their market share. Having a higher market share is seen as an indicator of good business and even customers have started looking for those products that are famous in the market. The markets have started reacting to this change and have given utmost importance to providing varieties of products to the customers. The later developments in the market, like introduction of home delivery has made the customer feel more comfortable and have started placing order from home. Slowly store owners have started creating catalogs containing the details of the products, to enable customers to choose the basket of products from the same. All these have slowly culminated into a trend, and, both customers and sellers have accepted this trend. After the developments in the technology and introduction of internet, sellers have understood that they can place the products online and customers can choose the products online and place the orders online. Though, it is initially a fiction, slowly has culminated into reality.

E-commerce was made possible with the development of electronic data interchange (EDI), where business documents from one computer to another was transferred in a standard format. EDI originated in the mid-1960s, when companies in transportation and some retail industries were attempting to create "paperless" offices. In the mid-1970s, EDI was formalized by the Accredited Standards Committee of industry representatives, and more varied companies began to adopt EDI through the 1970s and 1980s. As the first generation of e-commerce, EDI allowed companies to exchange information, place orders, and conduct electronic funds transfer through computers. The second generation of e-commerce is characterized by the transaction of goods and services through the Internet, which started as a research tool, but has generally evolved into a commercial tool. The inception of the Internet can be traced back to the 1960s, when the Advanced Research Projects Agency Computer Network (ARPANET), the precursor to the Internet, was established for research in high technology areas. The nodes of ARPANET increased from 4 in 1969 to 15 in 1971. The term Internet actually did not come into use until 1982, when the number of hosts on the ARPANET rose to 213.

Amazon and eBay are the two companies, responsible for revolutionizing e-commerce. Amazon in particular created one of the first full-scale business models for online retail. Jim Bezos, Amazon's founder and CEO, sold the company's first ever book in July 1995. Within its first month of business, Amazon had sold books to shoppers in every state and 45 countries. Though there are many reasons for Amazon's success, one of the most significant was timing: Bezos got into e-commerce when the time was right. He had virtually no competition and was able to tap into a booming market. Amazon was also able to create a customer-oriented e-commerce site with searchable titles, browsing by category and

user-generated reviews. After going public in 1997, Amazon continued to expand its inventory beyond books and now sells almost anything users can think of, from electronics to clothing, movies and more. Even furniture is being sold on Amazon. Flipkart is the next revolution, in the Indian context, founded in the year 2007 by Sachin Bansal and Binny Bansal.

Several challenges were faced by E-commerce like, security, privacy, advertising, information overload, severe competition, etc. Customers have concerns over security of the information shared online, concerns over security related to payment options etc. Most of the customers have opted cash on delivery, due to these issues. But, with the changes in the technology and taking into consideration the security measures taken by the E-commerce companies, customer have started trusting them, mainly with respect to payments. The testimonials provided by the customers and also reviews provided by other customers have made customer trust the websites. The E-commerce companies have started designing the websites in such-a-way that, the security is automatically assured. Even the payment options have been increased: cash on delivery, card payment, internet banking. Recent developments have included Paytm, UPI etc. Latest developments include purchase of products through mobile-apps and these have totally reduced the efforts of the customer in purchasing the products. The customers are able to select the products online and are able to get them to their door steps. This trend is not restricted to few products and has included even vegetables and groceries. Big basket is the best example for online grocery store. All these have proven that the attitude of the customers is changing and the current day customer wishes to have all at his/her doorsteps. In all the cases, websites used for the transaction play an important role and there are several alternatives available to a customer for purchase. The selection of the website depends on the perception the customer creates on the website.

Several researchers have conducted research on finding the factors responsible for the selection of a website for purchase. For example, the attitude a customer has towards website, makes the customer to purchase the products through that website. Also, the intention that the customer creates on the website, may change the decision on the use of a website for purchase. Researchers have started using intention theories to understand the behaviour of the customers. Among these, Technology Acceptance Model (TAM) is widely used, to understand the behaviour of the customer on the selection of the website, via two important factors. The first factor is Perceived Usefulness (PU) and the second Perceived Ease of use (PEU). Later, few more factors have been included in the TAM. The details of earlier works are presented in the literature review section.

Taking the need to develop a contemporary model, we have considered the current study, where other factors that were not considered in TAM are included. For example, perceived trust, perceived privacy etc., are included in the model. We discuss the details in the section 1.3.-proposed work. The conclusions drawn such that, the E-commerce companies can use them to understand the behaviour of the customers better. This need has aroused due to the increase of the E-commerce users and also due changes in the attitudes of the customers. Continuous monitoring of the customer's attitude may help the E-commerce companies to take appropriate decisions. We now present the statistics related to growth of E-commerce users and the corresponding discussion, in brief. These details will help the users to understand the need for a study as we have considered. Hence, it has become important for one to build a model and find the significance of the factors on the actual behaviour of the users in using the website for purchase. We propose to build the model by linking the contemporary factors that make one to understand the behaviour of the customers.

Statistics related to E-commerce (Source: Statista.com)

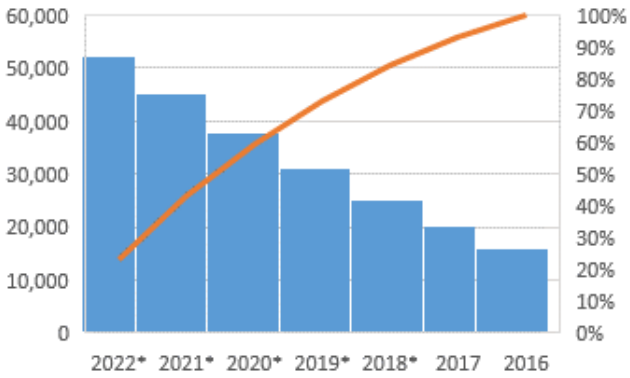
- Revenue in the "E-Commerce" market amounts to US$1,690,361m in 2018.
- Revenue is expected to show an annual growth rate (CAGR 2018-2022) of 9.9 % resulting in a market volume of US$2,464,543m in 2022.
- The market's largest segment is the segment "Fashion" with a market volume of US$472,131m in 2018.
- User penetration is at 37.4 % in 2018 and is expected to hit 48.0 % in 2022.
- The average revenue per user (ARPU) currently amounts to US$880.97.

According to Business.com, the 10 largest e-commerce markets in the world are,

1. China: $672 billion
2. United States: $340 billion

3. United Kingdom: $99 billion
4. Japan: $79 billion
5. Germany: $73 billion
6. France: $43 billion
7. South Korea: $37 billion
8. Canada: $30 billion
9. Russia: $20 billion
10. Brazil: $19 billion

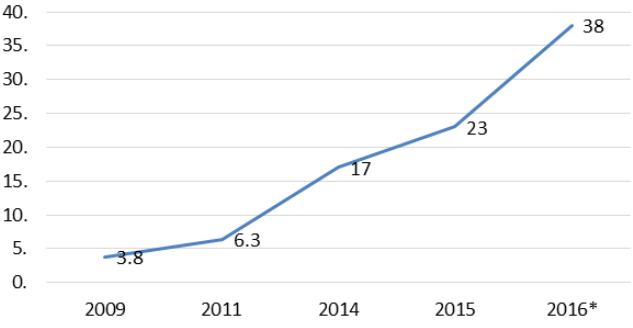
The following graphs give the details of the users.



Graph-A1 : Retail e-commerce sales in India from 2016 to 2022 (in million U.S. dollars)

Source: https://www.statista.com/statistics/289770/india-retail-e-commerce-sales-retieved on 06.02.2018

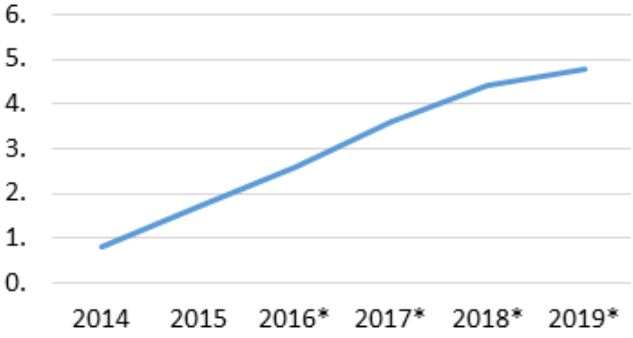
This statistic provides the retail e-commerce volume in India from 2016 to 2022. In 2016, the sale of physical goods via digital channels in India amounted to 16.07 billion U.S. dollars in revenues.



Graph-A2 : Revenue in billion U.S. dollars

Source: https://www.statista.com/statistics/255359/online-retail-sales-in-india-retrieved on 06.02.2018

This timeline shows the online retail e-commerce sales figures in India from 2009 to 2015 and a forecast regarding 2016, in billion U.S. dollars. Online shopping sales in India totaled 23 billion US dollars in 2015 and are expected to surpass 38 billion U.S. dollars by 2016.



Graph-A3 : Percentage of e-commerce sales

Source: https://www.statista.com/statistics/379167/e-commerce-share-of-retail-sales-in-india-retieved on 06.02.2018

This statistic shows retail e-commerce sales as a percent of total retail sales in India from 2014 to 2015, and a forecast until 2019. In 2015, e-retail sales accounted for 1.7 percent of all retail sales in India, this figure is expected to reach 4.4 percent in 2019.

The above statistics show the growth of E-commerce in India. Taking these into consideration, we felt that it will be useful to the E-commerce companies to know about the behavior of the customers. Knowing this will help to appropriately design the websites, to attract the customers. We now present the details of the intention theories in brief, followed by the proposed work.

Intention theories

Under this, we discuss the importance of intention theories and their role in the behavior of an individual. We present the details of three main theories that discusses the factors that lead to one's beliefs, intention and behavior. It is very important for the current study to note these theories, as it also looks at the behavioral and perceptual factors that make one to choose E-commerce websites for online purchase. We start our discussion with theory of reasoned action (TRA) proposed by Fishbein and Ajzen (1975) followed by theory of planned behavior (TPB) proposed by Ajzen (1985), and technology acceptance model (TAM) proposed by Davis (1989). We only present the basic definitions of these theories. But, present in the literature section the application of TAM in E-commerce.

Theory of Reasoned Action (TRA)

TRA looks to understanding an individual's voluntary behavior at a given situation. For an individual to

behave in a particular way, there has to be a motivation and he/she draws that motivation from his/her intention. A strong intention forms as a driving force for one to behave in a particular fashion.

According to TRA, intention to perform precedes the actual behavior (AB). This intention is known as behavioral intention (BI) and this is determined by one's attitudes and subjective norms. The theory of reasoned action suggests that stronger intentions lead to increased effort to perform the behavior, which also increases the likelihood for the behavior to be performed. Behavioral intention is a function of both attitudes and subjective norms toward that behavior. However, the attitudes and subjective norms are unlikely to be weighted equally in predicting behavior. Depending on the individual and situation, these factors might have different impacts on behavioral intention, thus a weight is associated with each of these factors. The same is expressed as an equation.

$$BI=(A)W_1+(SN)\ W_2$$

where:

- *BI* = behavioral intention.
- (*A*) = one's attitude toward performing the behavior.
- *W* = empirically derived weights.
- *SN* = one's subjective norm related to performing the behavior.

From the above equation, it is very apparent that the BI is influenced by the attitude of the individual towards a behavior and the subjective norms. Note that, there are three conditions that can affect the link between BI and AB. The first is that, to predict a specific behavior, the BI also has to be specific. That is a direct link between BI and AB. If one wishes to study an individual's AB with respect to a given specific situation, then the same individuals BI has to be studied in connection to the same situation. The second condition is that the intention should remain the same between the time that it is given and the time that the behavior is performed. The third is the degree to which carrying out the intention is under the volitional control of the individual. That is, the individual has the control whether to perform the behavior or not.

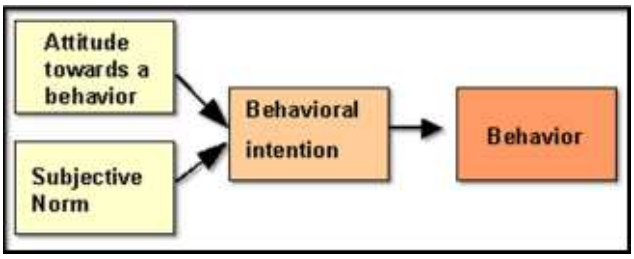


Figure A1 : TRA model

Source: Literature review

The above figure gives the TRA model.

Theory of Planned behavior (TPB)

TRA mainly aims at linking the attitude, subjective norms with the BI. Ajzen (1985) proposed an improved version of TRA by including "Perceived behavioral control". It refers to the degree to which a person believes that they control any given behavior. TPB suggests that individuals are much more likely to intend to enact certain behaviors when they feel that they can enact them successfully. Increased perceived behavioral control is a mix of two dimensions: self-efficacy and controllability. Self-efficacy refers to the level of difficulty that is required to perform the behavior, or one's belief in their own ability to succeed in performing the be havior. Controllability refers to the outside factors, and one's belief that they personally have control over the performance of the behavior, or if it is controlled by externally, uncontrollable factors. If a person has high perceived behavioral control, then they have an increased confidence that they are capable of performing the specific behavior successfully. The following figure give the model

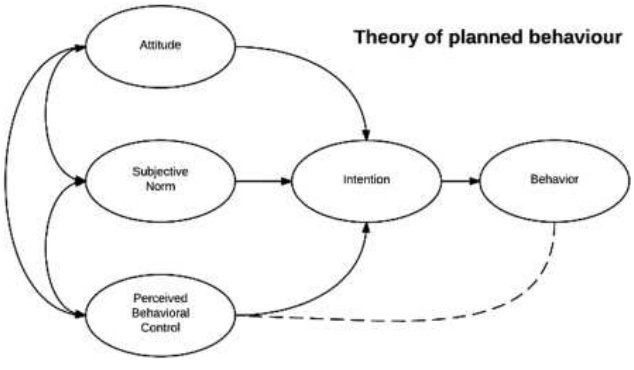


Figure A2 : TPB model

Source: Literature review

Normative beliefs and subjective norms

Normative belief: an individual's perception of social normative pressures, or relevant others' beliefs that he or she should or should not perform such behavior.

Subjective norm: an individual's perception about the particular behavior, which is influenced by the judgment of significant others (e.g., parents, spouse, friends, teachers).

Control beliefs and perceived behavioral control

Control beliefs: an individual's beliefs about the presence of factors that may facilitate or hinder performance of the behavior. The concept of perceived behavioral control is conceptually related to self-efficacy. Perceived behavioral control: an individual's perceived ease or difficulty of performing the particular behavior. It is assumed that perceived behavioral control is determined by the total set of accessible control beliefs.

Behavioral intention and behavior

Behavioral intention: an indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior. It is based on attitude toward the behavior, subjective norm, and perceived behavioral control, with each predictor weighted for its importance in relation to the behavior and population of interest. Behavior: an individual's observable response in a given situation with respect to a given target. Ajzen said a behavior is a function of compatible intentions and perceptions of behavioral control in that perceived behavioral control is expected to moderate the effect of intention on behavior, such that a favorable intention produces the behavior only when perceived behavioral control is strong.

Technology Acceptance Model (TAM)

TAM is proposed by Davis e*t al* (1989), is an information systems theory that models how users come to accept and use a technology. Note that, the model is more related to the behavior of the users of a system. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably:

- Perceived usefulness (PU) – This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance".
- Perceived ease-of-use (PEU) – Davis defined this as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989).

Lai (2017) presents a comprehensive literature review of TAM and its developments. The following figure gives the model.

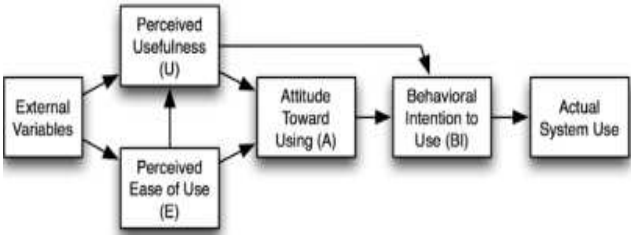


Figure A3 : TAM

Source: Literature review

Later, Venkatesh and Davis (1996) have improved the model by linking directly the PU and PEU to the BI, by eliminating the need for attitude. Venkatesh and Davis (2000) have further improved the model, by providing more detailed explanations for the reasons users found a given system useful at three points in time: pre-implementation, one-month post - implementation, and three-month post-implementation. This model was named as TAM2 and it theorizes that user's mental assessment of the match between important goals at work and the consequences of performing job tasks using the system as a basis for forming perceptions regarding the usefulness of the system. Venkatesh and Bala (2008) have combined TAM2 and the model of the determinants of perceived ease of use (Venkatesh (2000)), and developed the TAM3. But among all the three, TAM developed by Davis *et al* (1989) is being used more prominently in the E-commerce, to study the impact of PU and PEU on intention of the users to use the E-commerce for purchase. We present the relevant literature in the section 2.1.

We now present the details of the current study.

Proposed work

The current study aims at building the model by taking into consideration the most critical factors related to E-commerce. These factors are identified based on the literature review. Note that, the model that we are proposing takes those factors that are considered in TAM and extended TAM literature. Also, few factors are based on the E-commerce adoption models and we call the model as Extended E-commerce website adoption model (EEWAM). Under this, we link the factors found from literature review to the actual purchase behavior of the customer through E-commerce website. This model gives an opportunity to the E-commerce companies

to understand the customers' needs with respect to the design of websites. That is, they will be able to identify the key areas of improvement in the design of the websites. This model will give two inputs to the companies. The first one is, the factors associated with the actual usage and second one is, the variables under each of the factors. The required consistency of the variables in measuring the factors are computed using appropriate statistical procedures and also the significance of each factor and variable will be tested. The model also gives the companies the impact of each factor on the purchase behavior and also the impact of each variable on the factors extracted. Building the model and finding the impact of factors/variables on the model is the main objective of the study. We mainly look at measuring the perceptions of the customers in relation with various factors related to design of the websites and study their impact on the choice of the customers in using the websites for purchase. In order to measure the factors using the variables considered, we build a questionnaire that comprises of the variables, which are measured in the form of responses drawn from the customers. The data on these variables are used to check the consistency of the set of variables in measuring the factors, measure the factors and build the final model. Before drawing the final data, we conduct the pilot study and ensure that the questionnaire is sufficient to meet the objectives of the study. The model is build using Structural equation modeling and the subsequent sections give the complete details.

In section 2 we present literature related to use of TAM in E-commerce and other models built to explain the factors motivating the customers towards E-commerce. In the subsequent sections, we present the important points extracted from the literature, research gap, motivation from the study, problem statement, research questions, objectives of the study, proposed model, research hypothesis, research methodology, construction of the questionnaire, sample size determination, execution of the sample survey, model building, testing of hypotheses, discussion and suggestions, conclusion, and, limitations and future work.

Section II : Literature review

In this section, we present the literature related to the e-commerce adoption for online purchase. We first present, in brief, the literature related to intention theories, followed by literature related to e-commerce adoption. We mainly focus on models and factors that are related to behavioral traits that made/make customers choose e-commerce websites for online purchase. We sequence the literature related to e-commerce in the following way: 1. Technology acceptance model in e-commerce, 2. Factors considered to build the model, 3. Important variables considered under each of the factors, which are used for constructing the questionnaire, and 4. Inter connection between the factors. We use the following abbreviations for the factors in the TAM and extended TAM.

PU: Perceived usefulness; PEU: Perceived Ease of Use; PT: Perceived Trust; PR: Perceived Risk; PP: Perceived Privacy; SP: Social Presence; BI: Behavioral Intention; AB: Actual Behavior.

Technology Acceptance Model (TAM) in E-commerce

In this section we present the literature on the use of TAM to study the factors that are motivating customers to choose the E-commerce for purchase.

TAM is widely used in building a model in E-commerce. Under this, a website is treated as technology and researchers have studied the personality traits that play a role in the selection of the website. Davis (1989) have proposed two important perceptual factors: Perceived Usefulness and Perceived Ease of Use, in connection with the intention of users in using a system. Finally, the model links the intention of the users to the actual behavior towards usage of the system. The model has gained importance, as it is of first kind to propose a measurement scale for predicting user acceptance of computers. Their study proves that perceived usefulness is significantly correlated with both self-reported current usage and self-predicted future usage, and, perceived ease of use was also significantly correlated with current usage. Finally, the study shows that perceived ease of use may actually be a casual antecedent to perceived usefulness. Thereafter, researchers have made attempts to develop the model. Davis *et al* (1989) shows that perceived usefulness strongly influenced people's intentions, perceived ease of use had a small but significant effect on intentions. The study also shows that attitudes only partially mediated the effects of these beliefs on intentions and subjective norms had no effect on intentions. Later, Venkatesh and Davis (1996) proposed a model by leaving attitude towards use and thereafter, the proposed model was taken as a standard TAM. Venkatesh and Davis (2000) also proposed TAM2 and Venkatesh and Bala (2008) have proposed TAM3. TAM, proposed by Davis (1989) is the base for all these models and it

was also used in other areas where technology is involved and E-commerce is not exceptional.

Lee *et al* (2001), proposes an E-commerce adoption model (E-CAM) that examines factors, perceived usefulness, perceived ease of use along with perceived risk with respect to product/services and transactions. They show that PU, PR have significant direct effects on the customer's adoption of E-commerce and that PEU is not directly significant, but has indirect effect on adoption, with PU as mediating factor. But, they do not study the direct effect of PU or PEU or PR of BI. We feel that, studying the direct effect of these on BI, before studying their effect on AB, is important. **In our study, we look at this aspect and aim at studying the direct effect of these factors on BI and the mediation of BI on AB.**

Albert *et al* (2000) show that TAM holds good for World Wide Web. We quote this, to indicate that the model is tested for use of internet and since these are related to E-commerce indirectly, we give details of TAM in internet usage also. James *et al* (2000) studies the effect of PU on the usage of internet and shows that the effect is significant. They suggest that external factors like time spent by an individual on internet makes that individual to surf on internet. **We take this point to select the population for the study. We have assumed that MBA/PGDM students spend more time on internet and may surf on websites for gathering information.**

Gefen and Straub (2000), emphasizes on studying the importance of PEU on the usage of website or IT for purchase and shows that PEU directly affects IT adoption only when the primary task for which the IT is deployed is directly associated with intrinsic IT characteristics, such as when the task itself is an integral part of an IT interface. Extending this proposition to e-commerce, it was hypothesized that when a Web site is used to purchase products, PEU would not affect IT adoption because IT ease-of-use is not an inherent quality of the purchased product. On the other hand, when the Web site is used to inquire about products, PEU should affect IT adoption because the required information is embedded in the IT and thus its quality is directly related to IT ease-of-use. **Taking this point, we build the questionnaire, emphasizing on ease of use of the website with respect to searching, transactions, learning etc.**

van der Heijden (2000), considers a modified TAM that look at a website rather than a system. This acts as motivation for us to consider website as the subject of investigation in the current study. They make an important statement that,

"People who use the Internet are able to compare, evaluate and switch websites at extremely low friction costs. Therefore, a useful or an enjoyable website will not encourage people to revisit the website per se. The website will need to be useful and enjoyable relative to its competing alternatives. This situation, which is quite unlike the traditional information systems in use today, warrants the proposed revisions of the constructs perceived usefulness and perceived enjoyment". From this, we conclude that TAM has to be applied for websites and the factors like PU, PEU etc., may not directly affect the AB and the mediation of BI needs to be studied. **This is the next point that motivated us to consider the current study.**

Apart from the traditional factors considered in the model, one has to also consider other factors related to the purchase through websites. For example, one needs to consider the effect of perceived trust (PT) on the BI of users towards the usage of website. Alina *et al* (2000) studies the direct effects of trust and expertise on BI and the indirect effects through two mediating variables PU and PEU. These effects are hypothesized to be further moderated by the level of transaction complexity. The results partially support both the direct effects model and the indirect effects model, pointing out that trust and expertise are, as hypothesized by academicians and practitioners alike, important in encouraging adoption of electronic commerce technologies. In addition, the results show that trust and expertise become more important in determining the adoption intention as transaction complexity increases.

Johnson and Hignite (2000) shows that PEU has a moderate effect on the use of WWW and effect of PU on the use of WWW. They suggest that designers and developers in the field should strive to dramatically improve the perceived ease of use of the WWW to boost actual use in the future. This will also be increasingly important as users of the WWW begin to develop an enhanced perception of its usefulness in terms of e-commerce. In connection with E-commerce, this paper suggests that design of the website has to be such that, it creates a perception that it is easy to use for purchase. **We take this as a motivation to consider PEU in the current study.**

Pavlou (2001) empirically validates a model to predict the intentions of the customers in using the E-commerce, by integrating PT with TAM. The study shows that PT along with other factors of TAM effects the intentions of the customers in using the E-commerce. Interesting part is PR also is significant in the model built on E-commerce. Among the two, the study shows that PT has indirect effect on BI and PR has direct effect on BI.

Feartherman (2001) suggests that PR has to be an antecedent to TAM and suggests that Future research should attempt to manipulate perceived risk to better understand its influence and fit within TAM. **Hence, in our model proposed, we consider PR as an antecedent to BI.**

Pavlou (2003) conducts two different studies to examine the significance of TAM in e-commerce, amongst students (study-1) and amongst general customers (study-2). The studies take PT and PR as two additional factors to the existing TAM. Study-1 shows that, PT is positively associated with intention to transact, PU was a significant predictor of behavioral intentions, PEU is not-significant effect on intentions to transact. It shows that PEU has a strong effect on usefulness and also that, PR was strongly related to intentions to transact. They conclude that, the integration of trust and perceived risk significantly adds to the explanatory value of TAM when applied to consumer on-line behavior. Similarly, in study-2 they found that, PT was the most influential predictor of BI and PEU, PU, were significantly associated with BI. Finally, they state that, the direct effect of the four major predictors, trust, usefulness, ease of use, and perceived risk on actual transaction behavior was insignificant, suggesting that these independent factors only influence actual behavior indirectly through transaction intentions. The study also shows that BI is significantly associated with AB.

This has motivated us to take up the model to study the behavior of students in E-commerce and also to study the level of indirect impact of these factors on BI.

Gefen *et al* (2003), shows that PT is an important factor to online commerce, along with PE and PEU. Also shows that, PT along with PU and PEU explain a considerable proportion of variance in BI. The study also provides evidence that online trust is built through (1)a belief that the vendor has nothing to gain by cheating, (2) a belief that there are safety mechanisms built into the Web site, and (3) by having a typical interface,(4) one that is, moreover, easy to use.

Klopping and McKinney (2004), treats consumer e-commerce as a technology adoption process and evaluates the suitability of two popular adoption models. It supports the use of the technology acceptance model (TAM) to predict online shopping activity, both the intention to shop online and actual purchases. Two minor alterations are made to the traditional use of TAM—perceived ease of use is not linked to perceived usefulness, and perceived usefulness is directly linked to actual use. **A similar alteration is proposed in the current study (refere to the section on the model).**

Vijayasarathy (2004), makes an attempt to explain consumer intention to use on-line shopping. Besides ease of use and usefulness, compatibility, privacy, security, normative beliefs, and self- efficacy are included in an augmented TAM. The study shows that compatibility, usefulness, ease of use, and security were found to be significant predictors of attitude towards on-line shopping, but privacy was not. Further, intention to use on-line shopping was strongly influenced by attitude toward on-line shopping, normative beliefs, and self-efficacy. **We draw that point that PP is not significant and check whether the same holds good in our model.**

Considering PP as a factor in TAM, Mccloskey (2004) shows that PP is not a significant factor. But shows that, Ease of use was found to have an impact on whether someone would buy a product online and on usefulness. Usefulness had an impact on the number of times a respondent purchased items online. The number of hours spent using the internet per week had a significant impact on all four measures of electronic commerce participation, whether they bought something online, how many times they bought something online, how frequently and how much was spent buying online. **These aspects are considered to design the questionnaire, for the current study.**

Park *et al* (2004), conducts a study on US and Korean customers and proposes an E-commerce adoption model. It combines perceived risk with other factors of TAM and shows that perceived usefulness *(*PU), perceived risk in the context of transaction (PRT), and perceived risk with product/service (PRP) have significant direct effects on consumer's adoption of ecommerce. On the contrary, only the PEU construct of the model in Korean dataset has a significant direct effect on the consumer's purchasing behavior. With regard to the PEU construct, direct effect on the adoption is not significant in the U.S. dataset while

significant direct effect is shown in the Korean dataset. **In the current study, we consider PR with respect to transaction and build the questionnaire accordingly.**

Mei Cao *et al* (2006) attempts to find the factors in TAM, significant with respect to the quality of website. Their study found that, e-commerce web sites should be designed to provide accurate information, reduce loading and searching time, make searching easier, and make the site secure because customers are most concerned with finding accurate information, searching fast and placing order securely. **These points are taken in the design of the questionnaire, for the current study.**

McCloskey (2006), conducts a study on customers between 52 to 87 and builds a modified TAM to show that, Ease of use had significant impacts on usefulness and trust had a significant impact on both ease of use and usefulness. **In the current study, we consider the other extreme age group 23-25 and attempt to check the impact of the factors.**

Tamara and Paul (2006), studies the importance of Privacy in E-commerce. The results suggest that although Internet privacy concerns inhibit e-commerce transactions, the cumulative influence of Internet trust and personal Internet interest are important factors that can outweigh privacy risk perceptions in the decision to disclose personal information when an individual uses the Internet. **This motivated us to consider PR and PT and correlation between them. Also, the corresponding questions are framed according to the ideas presented in this paper.**

Maditinos *et al* (2007), shows that PEU has a strong association with attitude towards using online shopping and PU is positively related to attitude and intention. They also show that PR is a significant factor in explaining attitude and BI. Further, they state that, as long as the majority of their sample consisted of inexperienced participants, it can be argued that the transaction security issues will be more comprehensive and meaningful than the product delivery and services issues. A respondent who has never performed a transaction, is difficult to realize the risks and inconsistencies which come from product delivery and services. On the contrary, one of the major inhibitors of on-line shopping has been the perception of poor security associated with payment methods, confidentiality and the credibility of the online vendors. **Taking these points, we construct the questions related to PR with respect to transaction security.**

Khalil and Micheal (2007), shows that PT is an important factor the has significant impact on the attitude on the use of internet banking and attitude significantly impacts BI. **In the current study, we link PT to BI to study its direct effect.**

The work of Nadim and Noorjahan (2008), intends to propose a conceptual framework that will investigate the effects of perceived usefulness, ease of use, and security and privacy on customer adaptation mediated through customer attitude in the context of e-banking. The results of the study indicate that perceived usefulness, ease of use, security and privacy, and customer attitude are significantly and positively related to customer adaptation. **In our study, we take this as a motivation and consider PP as a factor to study the BI of customers on E-commerce.**

Chiu *et al* (2009), attempt to build an extended TAM by integrating trust and fairness with other factors of TAM. They show that distributive, procedural and interactional fairness were strong predictors of trust, which in turn influenced satisfaction. Distributive fairness and interactional fairness exhibited significant positive effects on satisfaction. Perceived usefulness and satisfaction influenced loyalty intention towards online shopping. Perceived ease of use acts indirectly on loyalty intention through the mediating effect of perceived usefulness. **In the current study, we replicate the questions considered in this paper for PT.**

Sejin and Leslie (2009), conducts a study that integrates e-shopping quality, enjoyment, and trust into a technology acceptance model (TAM) to understand consumer acceptance of e-shopping. They show that e-shopping quality determines perceptions of usefulness, trust, and enjoyment, which in turn influence consumers' attitudes toward e-shopping. Consumer perceptions of usefulness and attitude toward e-shopping influence intention to shop online, while perceived ease of use does not influence attitude toward e-shopping. Shopping enjoyment and trust play significant roles in consumers' adoption of e-shopping. This study provides important implications for etailers whose web site developers must keep in mind that customers are not only web users with trust/safety and information needs, but also shoppers with service and experiential needs. **Taking as base, in the**

current study, we design the questionnaire taking into consideration the quality of the website. That is, the questions are taken such that, they address the quality aspects of each and every factor considered in the model.

Bumm Kim *et al* (2009), studies the role of subjective norms and e-Trust in customers' acceptance of airline B2C e-Commerce websites. The study shows that PEU is a strong predictor of customers' PU. Their findings indicate that perceived ease of use has a more profound effect on attitude toward use than that of customers' perceived usefulness. **Taking this into consideration, we consider to study the direct effect of PEU on BI of the customers**.

Li and Huang (2009), develops the conceptual model to integrate Theory of Perceived Risk (TPR) and Technology Acceptance Model (TAM) to apply in online shopping. The results suggest the need for consideration of perceived risk as an antecedent in the Technology Acceptance Model. **In the current study, we consider PR and study the direct effect of PR and BI.**

Benamati *et al* (2010), suggests to integrate trust with TAM in designing websites for E-commerce. It shows that, PT has a significant impact on interest to use the website. **Motivated by this, we integrate PT with BI in the model.**

Turner *et al* (2010), does a systematic review on the predictability of actual usage through TAM. They show that, BI is likely to be correlated with actual usage. However, the TAM variables perceived ease of use (PEU) and perceived usefulness (PU) are less likely to be correlated with actual usage. **Taking this as motivation, we propose that BI mediates the effect of PU and PEU on AB.**

David and Micheal (2011), proposes to integrate website usability with E-commerce and builds a model by integrating several traits related to website design to the BI to transact. The study found several website usability dimensions that were significant antecedents to other perception outcome variables related to online acceptance of a website. As expected, website usability is more than a one-dimensional measure. Website usability includes multiple aspects of a user's perception of the site, including design specific attributes. The results of this study demonstrated how website usability may be understood, defined, empirically examined, and used in both research and practice as an important tool for understanding B2C e-commerce. Future research could explore other related constructs that better predict ecommerce acceptance, calling for a more comprehensive model of e-commerce adoption. **Taking this paper as base, we have considered these factors to build the questionnaire. For example, we have considered interactivity, responsiveness, perceived risk etc., to build the questionnaire.**

Ankit and Shailendra (2012), extends the TAM in the context of internet banking and shows that perceived risk has a negative impact on behavioral intention of internet banking adoption and trust has a negative impact on perceived risk. A well-designed website was also found to be helpful in facilitating easier use and also minimizing perceived risk concerns regarding internet banking usage. They also include another factor, social influence to the model. **Motivated by this**, i**n our study, we consider a similar extension by linking PT, PR and other factors, with TAM. We also include a factor similar to social influence in the model.**

Maditinos *et al* (2013), attempts to introduce an extended technology acceptance model (TAM) model as a tool for examining the factors that have a significant impact on customers' online banking acceptance. Results provide overall support for the extended TAM model and confirm its robustness in predicting customers' intention of adoption of internet banking. More specifically, results underlined the important impact of perceived usefulness, security risk and performance risk on the intention to use internet banking. On the contrary, the impact of perceived ease of use and quality of the internet connection seemed to have only an indirect effect on internet banking adoption. They also claim that such an extension of the TAM model has never been examined in the relevant literature. **Motivated by this, we make a similar attempt to build an Extended E-commerce adoption model in Indian context.**

Mandilas *et al* (2013) builds an extended TAM for online shopping and shows that PU is the most influential factor in the internet shopping BI. PEU had a positive impact on internet shopping BI, but not so high as PU. PR is negatively associated with BI, perceived enjoyment and subjective norms are also positively associated with BI, but in a partial way. **In the current study, we consider a similar construction.**

Luthfihadi and Dhewanto (2013), builds a model to for an online portal and shows that PT positively affects BI to use the online portal but, PEU has in significant affect towards BI to use portal, and also PR

does not negatively affect BI to use the portal. Seller Status and Reputation indeed has positive affect towards Trust. **We consider a similar model to study the AB of customers towards usage of E-commerce websites.**

Wann-Yih and Ching-Ching (2015), have considered a meta-analytic approach to integrate the findings of previous researchers and to provide a more complete framework of online shopping behavior, based on the models of personality traits, perceived risk, and technology acceptance. They show that effects of PEU on attitude, of perceived risk on attitude, and of personal innovativeness on intention were not significant. Also show that, the effects of personal innovativeness on attitude, of individual playfulness on attitude and intention, and of PEU on trust and intention were all significant. In addition, PU had a significant effect on attitude, on trust, and on intention. Perceived risk had a significant effect on both trust and intention. Trust had a significant effect on attitude, and attitude had a significant effect on intention.

The question can be on, replication of a similar model in Indian context and the current study aims at providing an answer.

Alraja and Aref (2015), builds a model to examine the impact of perceived risk, perceived ease of use, and perceived usefulness on ecommerce acceptance. Drawing on Perceived Riskand Technology Acceptance Model (TAM), the following factors have been investigated to assess the influence of Perceived Risk (Information Misuse Risk (IMR), Failure to Gain Product Benefits Risk (FGPBR), and Functionality Inefficiency Risk (FIR)), perceived ease of use (PEU), and Perceived Usefulness (PU) on customer adoption of e-commerce. It is found that only four out of five constructs (Information Misuse Risk, Failure to Gain Product Benefits Risk, and Functionality Inefficiency Risk, and perceived ease of use) have significant effect on customer acceptance of e-commerce. **But, the model is incomplete as it doesn't link PT to the model and we try to fill the gap by considering PT in the model.**

Cho and Sagynov (2015), examines i) effects of such factors as product information, price, convenience, and perceived product or service quality on perceived usefulness; ii) effects of convenience, perceived product or service quality, and desire to shop without a salesperson on perceived ease of use; iii) effects of perceived ease of use on perceived usefulness; iv) effects of perceived ease of use and usefulness on intentions to shop online; and v) effects of trust on purchase intentions. The results of this study indicate that perceived usefulness, perceived ease of use, and trust had a statistically significant effect on behavioral intention to shop on the Internet. **This study motivated us to conduct a similar study in Indian context.**

Sanda and Popovic (2015), follows the approach of Pavlou (2003), and investigate key drivers for consumers' electronic retailing (e-tailing) acceptance that are integrated into TAM (technology acceptance model). The main purpose of this paper is to explore the relationship between perceived ease of use and perceived usefulness in accepting e-tailing among Croatian consumers. In particular, the focus of the paper is on the areas which inuenced customer commitment and loyalty in e-tailing. The results of the quantitative study among Croatian consumers show that electronic retailing, e.g. purchasing via the Internet, would enhance consumers' eectiveness in getting product information and their eectiveness in purchasing products. **We take this as a motivation to mainly build the model for E-commerce, in the Indian context.**

Nuno Fortes and Rita (2016), aims at analyzing how privacy concerns about the internet, have an impact on the customer's intention to make online purchase. They build a model by linking PP with PT and PR, along with TPB and TAM. They show that all the paths build are significant. **We build a model on similar lines, but exclude the factors of TPB and focus more on TAM. We link PT, PR and PP with Factors of TAM to obtain an extended E-CAM.**

Baozhou *et al* (2016), builds a model in E-commerce by integrating the factors, Social presence, trust, and social commerce purchase intention. They suggest that trust has a positive impact on purchase intention and social presence constructs are strong predicators of trust in seller. The study introduces new set of social antecedent factors of trust beliefs into a model that explains the buyer behavior in the online social commerce market places. **We consider similar set of questions under social presence (SP) and this paper forms the motivation in our study, with respect to SP.**

We conclude the Literature review with this. Note that, there are few papers that we haven't stated here and they all use either TAM or extended TAM to understand the behavior of the customers with

respect to online shopping or internet banking. We have focused on mainly issues related to these two aspects: Online shopping (e-commerce) and internet banking. In most of the papers, the additional factors are perceived trust, social presence, perceived risk, privacy etc. In our study we consider all these to build the model in the Indian context.

Important points extracted from literature review

Table A1 : Important points from literature review

Important Point	Paper	Current Study	Target population	Statistical method used
PU and PU are significantly associated with BI, and, BI is associated with AB of the user of a system.	Davis (1989)	Model built taking this as base	Users of the system.	Correlation and regression analysis.
PU and PR are directly associated with the AB of user with respect to Adoption of E-commerce.	Lee *et al* (2001)	We study the direct effect of PU, PR on BI. Also mediation of BI on PEU with respect to AB. Build hypotheses accordingly.	Undergraduate and MBA students at two major Universities in the United States.	Structural equation modeling.
Time spent by the user on internet makes the user to surf more on internet.	James *et al* (2000)	We take this point to define the population of the study.	senior students in two US AACSB accredited business schools.	Structural equation modeling.
When a website is used to inquire about products, PEU should affect IT adoption.	Gehen and Straub (2000)	We take this point to design the questionnaire.	MBA students at a large business school in the mid-Atlantic region of the United States.	Linear Regression analysis.
A website that is useful and enjoyable relative to its competing alternatives will make users to perceive that it is useful for purchase.	Hans Van der Heijden (2000)	This point is taken while drawing appropriate conclusions related to the hypotheses built of PU.	Review based.	-
Trust and expertise become more important in determining the adoption intention, BI.	Alina *et al* (2000)	This has motivated use to choose PT as a factor in the model, in relation with BI.	MBA students at a major Midwestern university.	Structural equation modeling.
Design of the website has to be such that, it creates a perception that it is easy to use, for purchase.	Johnson and Hignite (2000)	This supported the inclusion of PU in the model, in relation with the design of E-commerce websites.	Students from a large Midwestern university.	Structural equation modeling
PR is strongly related to intentions to transact and also PT is the most influential predictor of BI.	Pavlou (2001) and Pavlou (2003)	We take these as motivation to include PR and PT in the model and build the hypotheses on them in relation with BI	Undergraduate students in a supervised lab. (2000) Under graduate students. 2003)	Regression analysis (2000) Structural equation modeling (2003)

PP is not-significant in the TAM with respect to online shopping.	Vijayasarathy (2004)	We have included PP in the proposed model to test for its significance.	Participants were adults residing in an upper mid-western US city.	Regression analysis.
Although internet privacy concerns inhibit E-commerce transactions, the cumulative influence of internet trust and personal internet interest are important factors that can outweigh privacy risk perceptions in the decision to disclose personal information when an individual user the internet.	Tamara and Paul (2006)	We have used this to hypothesize a correlation between PT and PR.	Individuals in the southeastern United States, including under graduate and graduate students of a large university	Structural equation modeling.
PP and AB are positively associated.	Nadim and Noorjahan (2008)	We have taken this to build the model by linking PP with AB.	Electronic banking users of private commercial banks in Bangladesh	Confirmatory factor analysis
While adopting TAM for predicting the AB, one has to check the direct effect of PEU, PU on BI. Sometimes they have less power for direct prediction.	Turner *et al* (2010)	We have used this to study the mediation of BI on PU and PEU, for studying their impact on AB.	Systematic literature review	-
A well designed website was found to be helpful in facilitating easier use and also minimize perceived risk concerns.	Ankit and Shailendra (2012)	We have used this to include PR and include other factors like PT etc.	Students at a premier business school (one of top 10 B-Schools) in India.	Structural equation modeling.
Social antecedent factors may explain the buyer behavior better.	Baozhou *et al* (2016)	We have used this to introduce SP as a factor in the model.	The MBA and senior undergraduate students in business schools from two universities of China.	Structural equation modeling.

Based on the above points and the literature review, the research gap, proposed model etc., are constructed. One can also note that, not many studies were done in the Indian context, that got recognition at the international standards.

Section III : Research gap

The following are the research gaps, identified from the literature review.

1. Not many studies have been conducted in the Indian context.
2. Inclusion of PR, PT along with factors of TAM, in one model and studying their impact on BI, is missing.
3. Studying the impact of PP and SP on AB is missing.
4. Finding the indirect effect of PU, PEU through BI is missing. Also, measuring the direct effect of PU and BI on AB, is missing.
5. Not many studies were conducted on understanding the behavior of students, with respect to E-commerce websites usage for purchase.

6. Discussion on the utilization of the model built, from the practical point of view, for the Indian customers.

Note that, these are the major research gaps identified and through the current study we make an attempt to fill these gaps.

Section IV : Motivation for the study

The main motivation to conduct the study is to build a complete model that links the factors identified through literature review. Also, knowing the impact of independent factors on dependent factors, will help one to take appropriate decisions on design of the websites. Another important motivation is to build the model from the point of customers and identify the key aspects related to their behavior and suggest the E-commerce companies, with respect to design of the websites. Final motivation is, not much was done in the Indian context.

Section V : Problem statement

E-commerce is an important development that world has seen with respect to trade, where customers have the option of reviewing the products virtually and purchase them, to be delivered at their door steps. The basket of products has increased with changes in the technology and also with changes in the attitude of the customers. The modern day customer wishes that he/she should be able to purchase the product with ease and wishes to have a platform that connects them to the manufacturer of the product directly. The E-commerce websites acts as platform for the customers to get connected to the seller of the products. A customer has got alternate options with respect to websites for purchase and it is important for one to find out the behavioral factors that make the customer to choose a particular website, for purchase. But, the problem that one face is, the cultural difference. Individuals belonging to different cultures may perceive the usage of E-commerce websites for purchase differently. To find the behavior of the customers towards E-commerce usage, researchers have used intention theories, like TRA, TPB and TAM. Among these, TAM is being used more frequently, as it is directly related to technology, and E-commerce websites are also treated as technology. The TAM was built based on PU and PEU and later other factors like PT, PR etc., are added to understand the customers better, through the model.

The main problem lies with building the model based on the cultural differences and not many studies have been built in the Indian context. Also, the link between the factors has to be appropriately built. Unless, the links between the factors are given properly, the final model cannot be built appropriately and the challenge lies in identifying the significant links. Suggestions to the E-commerce companies can be given only if the model is appropriately built. Finally, measuring the total, direct and indirect effects of the independent factors on dependent factors. These are the three main problems; we have identified through the literature review. To provide a solution to the mentioned problems, we have considered the current study.

Based on the literature review and the motivation, we propose to build the following model.

Section VI : Proposed model

In this section, we present the details of the model proposed to build, that ultimately helps in addressing the objectives of the study. The model is an extended technology acceptance model (TAM) and we term it as E-Commerce Website Adoption Model (ECWAM) the following description gives the details of the factors and the inter-connections between them. Note that, in the current study, an e-commerce website is the technology and we make an attempt to build the proposed model and find the significance of the respective factors. Also, the significance of the sub-factors corresponding to each of the factors. Finally, the impact of each of the factors on the behavioral intention and actual behavior.

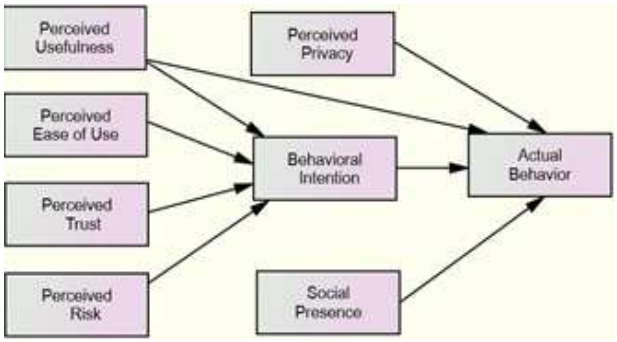


Figure 1 : Extended E-Commerce Website Adoption Model (EECWAM)

Source: Designed by the researcher based on literature review

We now present the description of the model.

1. Perceived Usefulness (PU): Perceived usefulness is defined as the extent to which a person believes that using a particular system will enhance his or her job performance. In the current study, we consider perceived usefulness as the extent to which the

website considered for possible purchase by the customer is useful for purchase.

2. Perceived Ease of Use (PEU): Perceived ease of use is defined as to which a person believes that using a particular system will be free of effort. In the current study we define ease of use as, the belief of the customer that the website is very easy to use for purchase of the products that they are looking for.

3. Perceived Trust (PT): Perceived trust is defined as to which a person believes that the system provides necessary assurance that it creates trust on the system and its usage. In the current study, perceived trust is defined as to the extent of trust the website assures to the customer, while using the same for purchase.

4. Perceived Risk (PR): Perceived risk is defined as to which a person believes that the system provides necessary assurance that usage of the system is risk free/low risk. In the current study, perceived risk is defined as the extent of assurance the website provide to the user that using the same is risk free/ low risk.

5. Perceived Privacy (PP): Perceived privacy is defined as the extent to which the user feels that the information shared is secured, while using the system. In the current study, PP is defined the extent to which the website assures that sharing personal information or other details related to banking etc., is secured.

6. Social Presence (SP): Social presence is the extent to which the user of the system can communicate with other users of the same system. It can be in terms of information shared or received. In the current study, the extent to which the e-commerce websites provide an opportunity for the users to interact with other users of the same website. This can be with respect to the reviews written/read, discussions etc.

7. Behavioral Intention (BI): Intention is an indication of a person's readiness to perform a given behavior, and it is considered to be the immediate antecedent of behavior. In the current study, BI is the strong intention the websites create in the minds of the user/ customer in using the website for purchase.

8. Actual Behavior (AB): Actual behavior is the manifest, observable response in a given situation with respect to a given target. Single behavioral observations can be aggregated across contexts and times to produce a more broadly representative measure of behavior. In the current study, we define the actual behavior as the user's final selection of a website for purchase.

Section VII : Research questions

Based on the literature review and the research gap, we have framed the following questions.

a. Is the behavioral intention of the users significantly associated with the actual behavior of the users?

b. Will there be any significant impact of perceived usefulness on actual behavior of the users?

c. Can one claim that the social presence and perceived privacy of users is significantly impacting the actual behavior of the users?

d. Will perceived usefulness and perceived ease of use impact significantly the intention of the e-commerce websites?

e. Will perceived risk and perceived trust significantly impact the intention of the users?

f. What are the sub-factors that are significantly impacting the factors related to intention and actual behavior of the users of the e-commerce websites?

g. What is the mediating effect of behavioral intention between other factors extracted and actual behavior of the users of the e-commerce websites?

Section VIII : Research objectives

Based on the above questions, we have framed the following objectives of the study.

1. To build a relation between the intention of the users and the actual behavior of the users and check its significance.

2. To build the model to find the significant impact of perceived usefulness and ease of use on intention of the users.

3. To find the significant impact of social presence and perceived privacy on the actual behavior of the users.

4. To find the impact of perceived usefulness and ease of use on intention of the users.

5. To identify the level of impact of perceived risk

and perceived trust on intention.

6. To identify the sub-factors that are significantly associated with the factors considered to measure the intention and actual behavior of the users of the e-commerce websites.

7. To measure the mediating effect of behavioral intention between other factors and actual behavior of the users.

Section IX : Research hypotheses

Based on above discussion, we have constructed the following hypotheses. The hypothesis is constructed for each of the paths in the proposed model (Figure-1). The hypotheses are divided into three sets, based on the paths proposed in the model.

Set-1: Related to actual behavior

H1: Intention and the actual behavior of the user are significantly associated.

H2: Social Presence is significantly associated with actual behavior of the users.

H3: Perceived usefulness is significantly associated with actual behavior of the users.

H4: Perceived Privacy is significantly associated with actual behavior of the users.

Set-2: Related to behavioral intention

H5: Perceived usefulness is significantly associated with intention of the users.

H6: Perceived ease of use is significantly associated with intention of the users.

H7: Perceived risk is associated significantly associated with intention of the users.

H8: Perceived trust is associated significantly associated with intention of the users.

H9: The sub-factors extracted are significantly associated with factors proposed in the model.

Set-3: Related to mediation of BI

H10: Behavioral Intention mediates the relationship between perceived usefulness and the actual behavior.

H11: Behavioral Intention mediates the relationship between perceived ease of use and actual behavior.

H12: Behavioral Intention mediates the relationship between perceived trust and actual behavior.

H13: Behavioral Intention mediates relationship between perceived risk and actual behavior.

Section X : Research methodology

Type of study-research design

In order to achieve the objectives of the study, we have adopted analytical research design. Sometimes it is also referred as explanatory design, under which a researcher attempts to identify any causal links between the factors or variables. Under this, we have mainly adopted the multiple equation method, which includes path analysis and structural equation models (SEM). In the current study, we have used SEM to find the significance of associations between the factors proposed in the model.

Population-source for data collection

In any study, before collecting the data, one has to define the population. It is very important, as the conclusions and the suggestions that one give are directly linked to the population. Also, it gives the reader an idea on who's perspective the researcher is presenting the discussion. As mentioned in the introduction, our study focuses on students' choice of the E-commerce websites and the following gives the definition of the population.

The population for the current project is the students pursuing their Master of Business Administration (MBA)/ Post-Graduate Diploma in Management (PGDM) at reputed B-schools. The reason for selecting them as the population being, their exposure to the subjects related to marketing, digital world etc. and also their learning related to market. Also, the course itself makes a student voluntarily get exposed to the websites and the digital world. Students' exposure to E-commerce websites is not an exception. Taking these into consideration, we have defined the population for the current study, and the responses have been collected from the same. Note that, students of other disciplines also get exposed to online learning and e-commerce websites but, we have particularly chosen only those students who will be studying the management subjects in their course curriculum. One can take-up other populations as a future work.

Sampling design

To conduct the pilot and the final surveys, we have used a non-probability sampling design, usually called as "Convenient" sampling. Note that, the responses are collected based on the acceptance of the respondents in the survey. The sampling units are the students pursuing MBA/PGDM at different B-schools.

Measuring and scaling of the variables

The responses are collected using a well-designed questionnaire. It consists of the set of questions that are designed to capture the opinions of the students, related to the E-commerce websites. The questions considered, form the set of variables that are later used to measure the factors proposed in the model. **These variables are measured on a 5-point rating scale, where 5 indicates the highest weight and 1 indicates the least weight.** The weights indicate the importance levels given by the respondents to each of the aspects related to the E-commerce websites. **Note that, this is not a Likert scale and a rating scale.** Hence, the scaling is an **interval scale** and the statistical methods can be used appropriately.

Pilot study

In order to fulfill the objectives of the study and also build the final model, responses were collected from the students using a well-designed questionnaire. Before, finalizing the questionnaire, three rounds of pilot study were conducted and the results of the pilot study were used to build the final questionnaire and also estimate the final sample size. We present the detailed discussion on how the questionnaire was constructed using factor analysis. This construction gives the reader a methodology on constructing the questionnaire.

The initial questionnaire was constructed based on the literature review (Appendix-1) and has 90 questions, covering various aspects related to e-commerce websites. The first round of pilot study was conducted with a sample of 87 students, the second round of pilot survey was conducted with 62 students and the third round with sample of 50 students. Note that, few students among the 50 (third pilot study) are also the respondents in the second pilot study. The same set is retained to check whether that they have similar opinion on the questions listed or a different opinion. This is checked overall and not individually.

The questionnaire has 90 questions. These questions are related to the factors considered in the model and the number of questions related, are given in the following table.

Sl. No.	Factor	Number of Questions
1	Perceived Usefulness	21
2	Perceived Ease of Use	14
3	Perceived Trust	8
4	Perceived Privacy	4
5	Perceived Risk	13
6	Social Presence	9
7	Behavioral Intention	8
8	Actual Behavior	13

Table 1 : Number of items under each factor considered in the model

Source: From researcher's design based on literature review

Note that, the set of questions measure the factors considered in the model. For example, in order to measure the factor "Perceived Usefulness", 21 questions are considered. There questions measure different aspects related to "Perceived Usefulness", considered as sub-factors in this study, and finally sub-factors are used to measure the factor. But, the question is "Is it necessary to have all the questions to measure the factor/sub factor"? Can one reduce the number of questions with few factors that have the essence of the questions? The answer is provided through factor analysis. The first two rounds are pilot study are conducted to check the consistency levels of the questionnaire in measuring the factors proposed in the model and also to reduce the length of the questionnaire.

The fundamental question that one can ask is, "Will the reduced questionnaire has the required levels of consistency"? To answer this, the results of third round of the pilot study are used. It has two objectives: 1. Check the consistency levels of the questionnaire, 2. To check if the questionnaire has to be rebuild to get the final questionnaire. Note that, we have followed this process to ensure that the questionnaire forms the final scale to measure the factors associated with the model.

Reliability of the questionnaire

In many studies related to understanding the perception of the individuals, it is a regular practice to build a questionnaire containing the variables on which responses are collected. Sometimes, a set of variables together are expected to measure a latent construct and in such cases it is important to have internal consistency among the variables in

measuring the construct. The responses, taken on the variables, are used to measure the internal consistency and this is termed as reliability of the questionnaire. To achieve this, we have used Cronbach alpha proposed by Cronbach (1970), which measures the degree of reliability of the questionnaire considered in the current study. The following table gives the

Cronbach's alpha	Internal consistency
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

cut-off points for Cronbach alpha.

Table 2 : Cronbach alpha levels

Source: Cronbach (1970)

Final questionnaire of the study

The final questionnaire for the survey is designed based on the results of the pilot study. The pilot questionnaire is reduced using factor analysis to construct the final questionnaire. The details of the same are given in section-13, where we discuss the construction of the final questionnaire.

Sample size determination

The sample size required for the study is estimated using the results of the final pilot study. The following formula is used for the same, and the sample size estimated is the minimum sample size required to conclude the results of the study. The confidence level is fixed at the level of 95%.

$$n = \frac{Z_{\frac{\alpha}{2}}^2}{D^2}\,\sigma^2$$

where n is the sample size, á is the level of significance, ó is the standard deviation and D is the degree of precision (Difference between the actual and the estimated). Cochran's (1977) book gives a good description on estimation of sample size.

Testing randomness of the sample

In order to test the randomness of the sample, we use run-test. This is important, as the statistical procedures proposed are developed based on randomness.

Description of the sample

Before getting into addressing the objectives of the study, one has to describe the sample. For example, number of male and female, age-wise distribution etc. That is, describing the sample based on the demographics and other factors, if any. We use the tabular and graphical presentation for the same.

Statistical methods used for model building

In order to build the proposed model, we have mainly used three statistical methods. Exploratory factor analysis (EFA), Confirmatory factor analysis (CFA) and structural equation modeling (SEM). In the following section, we present the details of the three methods.

Structural equation modeling

Structural equation modeling is a collection of methods that helps a researcher to build a model that includes the networks of factors to the data, drawn from a given situation. It is an easy way to link the latent factors and also assess the performance of latent factors on other latent factors. The latent factors are divided into two groups: exogenous and endogenous.

The exogenous factors are synonymous to independent variables and endogenous factors are synonymous to dependent variables. Exogenous factors "cause" variations in the values of other latent factors in the model. The changes in the exogenous factors are not explained by the model and they are treated as factors influenced by the external factors, like gender, age or any other socio-economic factors. Whereas, changes in the endogenous factors are explained by the exogenous factors that influence them.

Before one uses the SEM for building the model, a factor analytic model has to be build. Under this, one gets the covariance structure the links the observed variables to latent factors and also set of latent factors to other latent factors. The variable-factor structure is very crucial because, using this one will be able to build a measurement model that links the latent factors. To achieve this, one can use exploratory factor analysis (EFA), which will identify the set of variables under each of the factors and also give an opportunity for the researcher to build a measurement

model. A measurement model is the one that has a structure, which includes the observed variables and the latent factors extracted. The first stage of the measurement model contains the link between the observed variables and the latent factors and in the second stage, it contains the link between the appropriate latent factors. Usually the link will be between the exogenous factors. Using Confirmatory factor analysis (CFA), one can test the significance of this measurement model. Once the significance is tested, the final structural model is built by linking the exogenous factors to the endogenous factors. The primary objective of SEM is to measure the endogenous factors using the measurement model. A model that contains both a measurement model and a structural model is termed as a full lateen model.

In the current study we have used a full latent model. The measurement model in the current study is the one that links the observed variables related to behavior of the customers in connection with e-commerce websites and the factors proposed in the model, and the relation between the factors.

In building the model using SEM, one has to look at model identification that focuses on whether or not there exists a unique set of parameters that are consistent with the data. There are three categories of identification: just-identified, over identified, and under identified. A just-identified model is one in which there is a one-to-one correspondence between the number of data variances and covariances and the number of parameters to be estimated. An over identified model is one in which the number of estimable parameters is less than the number of data points (i.e., variances and covariances of the observed variables). This situation results in positive degrees of freedom that allow for rejection of the model, thereby rendering it of scientific use. The aim in SEM, then, is to specify a model and such that it meets the criterion of over identification. Finally, an under identified model is one in which the number of parameters to be estimated exceeds the number of variances and covariances (i.e., data points). As such, the model contains insufficient information (from the input data) for the purpose of attaining a determinate solution of parameter estimation; that is, an infinite number of solutions are possible for an under identified model.

The data points in SEM are the sample variance and the covariances, which forms the sample covariance matrix of the observed variables. If we have p variables, then we will be having p(p+1)/2 data points. The degree of freedom is the difference between this and the number of parameters to be estimated. An over identified model contains sufficient number of degrees of freedom. The parameters to be estimated includes error terms, regression weights that are not fixed, variances of the factors, variances of error terms, covariances between the error terms (if any) and covariances between the factors. This determination is very important in SEM.

Once the model is identified, then the actual model building process can start with finding the variable-factor structure, build the measurement model and then build the structural model. After this, one can test the model built and propose the model for use. To test the good ness of fit of the model built finally, one has to look at few indices, which are discussed under the section CFA. These indices need to attain certain cut-off points and to improve the model build, one can look at the modification indices. These indices suggest the possible links between the variables and factors, between the factors, and between the error terms, which are not considered previously in the model. They indicate the link along with the change in the Chi-square test statistic value. The researcher can take a call whether to consider the links, because without the support from the theory with respect to the links, it can lead to spurious correlations. We present a table that gives the indices to be considered and the corresponding cut-off points, towards the end of the discussion on statistical methods. One can refer to Kline (2016) and Byrne (2010) for discussion on SEM.

The main purpose of SEM is to find the total, direct and indirect effects of the exogenous on the endogenous factors. The direct effect is computed when there is a direct path from the exogenous factor to endogenous factor. The Indirect effect is computed when there is a mediator factor that links the exogenous factor and the endogenous factor. Total effect is the sum of direct effect and the indirect effect. In the current study, we study the indirect effect of exogenous factors (PU, PEU, PR, and PT) on AB mediated by BI. Also, the direct effect of exogenous factors (PU, SP, PP, BI) on AB. We compute both indirect effect and the direct effect and draw conclusions related to the actual purchase behaviour of the customers.

Exploratory factor analysis

Exploratory factor analysis (EFA) is used to identify the variable-factor structure, under which the set of variables that have correlation with the latent factors

are identified. This is widely used when the researcher wishes to find the variable-factor structure, prior to building a model. The model built can further be tested to find the significance of each of the variables in measuring the latent constructs. In the current study, we have used EFA to identify the variables that are correlated with the factors proposed in the extended TAM model. That is, identify only that set of variables that have interrelations within and collectively measure the factors. This also helps in excluding those variables that do not have sufficient correlation levels with other variables, that are measuring the factors. In a way it helps in reducing the variables by excluding few variables.

In order to finalize the variable-factor structure, it is important to check whether the levels of few indices meet the cut-off points, check whether the variability in the variables can be explained by the factors identified, check whether the percent of total variability explained by all the factors put together meets the cut-off standards etc. We now present the discussion related to the same.

The first index that one has to look at is, the Kaiser-Meyer-Olkin (KMO) index. KMO index is a measure of support the sample provides to the Factor Analysis. It measures the sampling adequacy for each variable in the model and for the complete model. It measures the proportion of variance among variables that might be common variance. The lower the proportion, the more suited your data is to Factor Analysis. That is, it checks whether the partial correlation is higher or the multiple correlation is higher. It was proposed by Kaiser (1970) to check whether the sample is adequate/supports the conduct of factor analysis. This can be computed for individual variables as well as for the overall model. The following formula is used to compute the KMO/MSA Index for the overall model.

$$MSA = \frac{\sum_{i \neq k} \sum r_{ik}^2}{\sum_{i \neq k} \sum r_{ik}^2 + \sum_{i \neq k} \sum q_{ik}^2}$$

Source: Extracted from the paper of Kaiser and John (1974)

The formula for individual variables is given by

$$MSA(J) = \frac{\sum_{k \neq j} r_{jk}^2}{\sum_{k \neq j} r_{jk}^2 + \sum_{k \neq j} q_{jk}^2}$$

Source: Extracted from the paper of Kaiser and John (1974)

Here, r_{ik} indicates the original correlation and q_{ik} indicates the anti-image correlation matrix. Note that, the following table gives the cut-off values for the KMO Index.

Table 3 : KMO index cut-off values

Sl. No.	Cut-Off point	Level of acceptance
1	In the 0.90s	Marvelous
2	In the 0.80s	Meritorious
3	In the 0.70s	Middling
4	In the 0.60s	Mediocre
5	In the 0.50s	Miserable
6	Below 0.50	Unacceptable

Source: Extracted from the paper of Kaiser and John (1974)

The next aspect, that one needs to look at is, the communalities, which is similar to R-square in regression analysis. It gives the percentage of variance explained in each of the variables by the factors and also the extent to which item correlates with all other items. A cut-off value of 0.5 and above should be a good level of communality. Hair et al (1998) give rules of thumb for assessing the practical significance of standardized factor loadings as denoted by either the component coefficients in the case of principal components, the factor matrix (in a single factor model or an uncorrelated multiple factor model) or the pattern matrix (in a correlated multiple factor model).

On the other hand, Field (2005) advocates the suggestion of Guadagnoli & Velicer (1988) to regard a factor as reliable if it has four or more loadings of at least 0.6 regardless of sample size. Stevens (1992) suggests using a cut-off of 0.4, irrespective of sample size, for interpretative purposes. When the items have different frequency distributions Tabachnick and Fidell (2007) follow Comrey and Lee (1992) in suggesting using more stringent cut-offs going from 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good) or 0.71 (excellent).

MacCallum et al. (1999, 2001) advocate that all items in a factor model should have communalities of over 0.60 or an average communality of 0.7 to justify performing a factor analysis with small sample sizes.

In order to replace the set of variables with the factors extracted, at least 60% of the variation (Hair *et al* (2010)) has to be explained by the factors. The number of factors is decided by the Eigen value >1, proposed by Kaiser (1974).

The next important aspect that one has to look for in EFA, is the factor loadings, which indicate the correlation between the variables and the factors. Based on the loadings, one has to group the variable under a factor. Only those variables that have to be

grouped appropriately under a factor have to be loaded with higher loadings and on other factors they have to load with low loadings. To achieve this, one has to make use of an appropriate rotation technique. There are two ways of rotation techniques: 1. Orthogonal rotation, under which the factors will be un-correlated, 2. Oblique or Promax rotation, under which the factors are correlated (Refer to Field (2010) for more details). We have applied Promax rotation for building the final questionnaire and Varimax rotation for building the model proposed. By applying all the steps, one can get the variable-factor structure that can be used for building the model.

Assumptions association with EFA

Variables used should be metric, sample size should be more than 200. In some cases, sample size may be considered for 5 observations per variable, a sample should be homogenous. Violation of this assumption increases the sample size as the number of variables increases. Reliability analysis is conducted to check the homogeneity between variables. In exploratory factor analysis, multivariate normality is not required. At least 0.30 correlations are required between the research variables. There should be no outliers in the data.

Confirmatory factor analysis

Using the results of EFA, one can build an initial model and tested for its significance using Confirmatory factor analysis (CFA), under which one has to look at the model fit indices. Using these, one can find whether the model built is significant or not. If one proposes to use Structural equation modeling for building the model, then CFA is used to test the significance of the measurement model built based on results of EFA. The measurement model takes into consideration the correlation between all the exogenous factors. It is finally used to build a structural model. But, before that, one has to confirm that the measurement model is a good fit. To achieve this, one has to look at few indices to confirm that they are at the required cut-off levels, to confirm that the measurement model built is a good fit. The following discussion gives the details of the indices that one has to consider to conclude that the measurement model is a good fit.

The first of the fit statistics that one has to look at is, the CMIN/DF. This gives an indication of whether the fit of the data to the proposed model is good or not-good. The hypothesis tested here is "The proposed model is close to the actual model" and the values of CMIN/DF are looked at to test his hypothesis. Values between 2 and 3 indicates that the fit is a good fit (refer to Ullman (2001), Schumacker & Lomax (2010)).

The next set of indices are, Root mean square residual (RMR), Goodness-of fit index (GFI) and Adjusted Goodness-of-fit index (AGFI). A value of RMR close to zero is considered to be a good fit (Hu and Bentler (1999)). Also, the values of GFI and AGFI (see Hu and Bentler (1995) have to be more than 0.90.

The next set of indices that one has to look at are comparative fit index (CFI), proposed by Bentler (1990) and Tucker-Lewis index (TLI), proposed by Tucker and Lewis (1973). In both the cases, a value close to 1 is considered as a good fit. Root mean square error of approximation (RMSEA) was proposed by Steiger and Lind (1980) and a value less than 0.05 (see, Hu and Bentler (1999), Browne and Cudeck (1993)) indicates a good fit between the hypothesized model and the observed data. In addition to this, the PCLOSE value as suggested by Jöreskog and Sörbom (1996a) has to be >0.50, for a model to be a good fit.

Based on the above indices, one can check whether the initial model is best model or it has to be re-build. After one get the final model, then one can use the SEM to test the significance of the associations between the factors proposed in the model. The paths between the factors are usually termed as structural paths. Note that, the same set of indices are used to check the goodness of the structural model built based on SEM analysis.

Validity of the CFA measurement model

Before one adopts the CFA measurement model for building the final model using SEM, it is very important for one to test the validity of the measurement model built. The validity measures look at whether the items/factors proposed to measure the factors are measuring at accurate levels or not. The following discussion gives the details of the validity measures that one has to consider.

Note that, it is very important that, the items that measure a common construct have to be correlated and items of other constructs have to be uncorrelated or at least the correlation has to be of very low degree. In order to justify that the items that measure a common construct are correlated, it is proposed to use **convergent validity**. The minimum cut-off value is 0.5 or more (Hair *et al* (2010)) for one to conclude that convergent validity is attained. The same has to hold for latent factors that measure a common latent factor.

Another aspect that is important, is **discriminant validity**. This looks at whether the factors that should not be correlated are uncorrelated. This is important because this addresses the issue of multi-collinearity. That is, those factors that are measuring different factors should be uncorrelated and the same should hold good for items that measure the factor. While convergent validity is used to justify that the factors/ items that measure the common construct are correlated, discriminant validity is used to justify that the factors/ items that measure different constructs are uncorrelated. The cut-off point for discriminant validity is at least 0.6 (Fornell and Larcker (1981)).

The next aspect that one has to consider is, **construct validity**. It is a way to determine the accuracy of the items in measuring the factor. The minimum cut-off value for this measure is, 0.7 or more (Hair *et al* (2010*).* Along with the above validity measures, one has to provide the levels of average variance explained (extracted). This indicates the amount of variance explained by the factors considered, and higher levels indicate the system of variables can be replaced by the system of factors extracted. The cut-off value for this is above 0.7. If all the factors have more than 0.7 and if one of them have in the acceptable range (0.5-0.7), then still one can consider the system of factors in the model (Hair *et al* (2010). We conclude the discussion with the table that gives the model fit indices along with the cut-off values.

Table 4 : Model fit indices along with cut-off values

Name of category	Name of index	Cut-off value	Index full name
1. Absolute fit	Chi-Square	-	Discrepancy Chi Square
	RMSEA	<0.05	Root Mean Square of Error Approximation
	GFI	>0.90	Goodness of Fit Index
2. Incremental fit	AGFI	>0.90	Adjusted Goodness of Fit
	CFI	>0.90	Comparative Fit Index
	TLI	>0.90	Tucker-Lewis Index
	NFI	>0.90	Normed Fit Index
3.Parsimonious fit	Chisq/ df	<3.0	Chi Square/Degrees of Freedom

Source: From Literature review

Assumptions associated with CFA

The assumptions of a CFA include multivariate normality, a sufficient sample size (n >200), the correct a priori model specification, and data must come from a random sample.

The initial questionnaire

Based on the literature review and the experience of the researcher, the initial questionnaire was built. The justification for considering the questions, is given in the literature review section. The questionnaire is given in appendix-1. Using this, the first two rounds of the pilot study were conducted.

Section XI : Results of pilot study and construction of the final questionnaire

In this section, we present the results of the pilot study and also the construction of the questionnaire. Two aspects play an important role in the construction of the questionnaire. While the first one is Cronbach alpha, the second is the exploratory factor analysis (EFA).

In order to test the reliability or consistency of the questionnaire, we have used Cronbach alpha.

To justify that the set of questions that measure a common construct are consistent, the level of alpha has to be at least 0.7. Note that, the value of alpha will be high if the inter-correlations between the questions measuring the construct are high.

To reduce the number of questions, we have used EFA and the factors extracted will be used to re-build the questionnaire. It is very important that the factors extracted are correlated to obtain better consistency levels with the final questionnaire and useful in measuring the factors proposed in the model. Also, the factors extracted should explain the maximum variance in the variables, so that they can be replaced by the factors.

While using EFA, one has to use a rotation technique to optimize the extraction and among the rotations one can use Varimax rotation or Promax rotation. If one uses the Varimax rotation, then the factors

extracted will be orthogonal and makes the factors uncorrelated. If one wishes to have factors that are correlated, then one has to make use of Promax rotation. In the current study, we wish to have the factors that are correlated. This is because the extracted factors are used to construct the fresh questions and these questions have to be inter-correlated for better consistency levels. Hence, in EFA, we have used Promax rotation.

Results of pilot study-1

The first pilot study was conducted with the sample of 87 students. We first present the results of the reliability, followed by the results of exploratory factor analysis. The overall reliability of the questionnaire is 0.940.

Table 5 : Reliability of the questionnaire-pilot study-1

Sl. No.	Factor	Number of Questions	Cronbach alpha value
1	Perceived Usefulness	21	0.913
2	Perceived Ease of Use	14	0.892
3	Perceived Trust	8	0.864
4	Perceived Privacy	4	0.863
5	Perceived Risk	13	0.860
6	Social Presence	9	0.830
7	Behavioral Intention	8	0.805
8	Actual Behavior	13	0.904

Source: From Researcher's data analysis

From the above table one can note that, the set of variables considered have higher consistency levels. We now use EFA to ensure that the variable-factor structure considered is appropriate.

Table 6 : Results of EFA-KMO, bartlett test, and total variance explained-pilot study-1

	Construct	KMO	Bartlett test	Total variance explained
1	Perceived Usefulness	0.844	0.0001	68%
2	Perceived Ease of Use	0.859	0.0001	63%
3	Perceived Trust	0.785	0.0001	76%
4	Perceived Privacy	0.648	0.0001	71%
5	Perceived Risk	0.869	0.0001	69%
6	Social Presence	0.827	0.0001	69%
7	Behavioral Intention	0.762	0.0001	64%
8	Actual Behavior	0.888	0.0001	71%

Source: From Researcher's data analysis

From the above table, one can note that, the KMO index is more than 0.5 for all the factors and this indicates that the variable-factor structure proposed is supported by the sample. Also from Bartlett test, one can note that, all the p-values indicate that the correlation matrices corresponding to all the factors are significant. This indicates that the variables have significant associations within themselves. The total variance explained in all the cases is more than 60% and indicates that, the number of variables can be replaced by the factors identified. Taking this into consideration, we have re-designed the questionnaire for further testing.

The following table gives the communalities of all the variables retained. The variables have been retained based on level of communalities. Only those variables that have above 0.45 communality have been retained. This is because the factors extracted fail to explain at least 50% of the variation in the variables.

Table 7:Communalities of the variables - pilot study-1

Perceived Usefulness		Perceived Ease of Use		Behavioural Intention		Perceived Trust		Perceived Privacy		Social Presence		Actual Behaviour		Perceived Risk	
Q1	.556	Q22	.612	Q36	.686	Q44	.652	Q52	.641	Q56	.758	Q65	.595	Q78	.780
Q2	.624	Q23	.695	Q37	.827	Q45	.752	Q53	.688	Q57	.673	Q67	.695	Q79	.695
Q3	.571	Q24	.588	Q38	.674	Q46	.756	Q54	.798	Q58	.653	Q68	.780	Q80	.625
Q4	.643	Q26	.661	Q40	.648	Q47	.747	Q55	.711	Q59	.712	Q69	.790	Q81	.610
Q5	.692	Q27	.527	Q41	.641	Q48	.843			Q60	.775	Q70	.656	Q82	.742
Q6	.685	Q28	.630	Q42	.663	Q49	.831			Q62	.566	Q71	.674	Q83	.749
Q8	.732	Q29	.715	Q43	.641	Q50	.724			Q63	.704	Q73	.596	Q84	.732
Q9	.683	Q30	.594							Q64	.687	Q74	.743	Q85	.664
Q10	.752	Q31	.610									Q75	.803	Q86	.604
Q11	.633	Q32	.527									Q76	.758	Q87	.693
Q12	.743	Q33	.579									Q77	.756	Q88	.561
Q13	.595	Q34	.756											Q89	.773
Q14	.643	Q35	.638												
Q15	.728														
Q16	.775														
Q17	.673														
Q18	.600														
Q19	.766														
Q20	.802														
Q21	.712														

Source: From Researcher's data analysis

From the above table, based on the levels of communalities, one can note that few variables have been removed from the analysis and this indicates that, they have less correlation with other variables in measuring the factors proposed in the model. But, before they are removed, the results of the second pilot study were considered and the following gives the same. Note that, the same questionnaire is used in the second pilot study.

Results of pilot study-2

The overall reliability of the questionnaire is 0.940.

Table 8 : Reliability of the questionnaire-pilot study-2

Sl. No.	Factor	Number of Questions	Cronbach alpha value
1	Perceived Usefulness	21	0.888
2	Perceived Ease of Use	14	0.826
3	Perceived Trust	8	0.856
4	Perceived Privacy	4	0.805
5	Perceived Risk	13	0.804
6	Social Presence	9	0.840
7	Behavioral Intention	8	0.825
8	Actual Behavior	13	0.917

Source: From Researcher's data analysis

Note that, the second pilot study also has confirmed the consistency of the questionnaire in measuring the factors proposed in the model. We hence, have conducted the EFA and the following tables gives the same.

Table 9 : Results of EFA-KMO, bartlett test, and total variance explained-pilot study-2

	Construct	KMO	Bartlett test	Total variance explained
1	Perceived Usefulness	0.755	0.0001	66%
2	Perceived Ease of Use	0.655	0.0001	67%
3	Perceived Trust	0.807	0.0001	66%
4	Perceived Privacy	0.753	0.0001	64%
5	Perceived Risk	0.728	0.0001	62%
6	Social Presence	0.759	0.0001	77%
7	Behavioral Intention	0.748	0.0001	71%
8	Actual Behavior	0.882	0.0001	69%

Source: From Researcher's data analysis

From the above table one can note that, the sample re-confirms the variable-factor structures and also the significance of the correlation matrices, for each of the factors. Since the total variance explained is more than 60%, the variables can be replaced by the factors in the re-designed questionnaire. The following table gives the communalities of the variables for each of the factors considered in the model.

Table 10 : Communalities of the variables- pilot study-2

Perceived Usefulness		Perceived Ease of Use		Behavioural Intention		Perceived Trust		Perceived Privacy		Social Presence		Actual Behaviour		Perceived Risk	
Q1	.695	Q24	.529	Q36	.708	Q44	.733	Q52	.527	Q56	.778	Q65	.591	Q78	.548
Q2	.583	Q25	.628	Q37	.706	Q45	.667	Q53	.645	Q57	.723	Q66	.651	Q79	.563
Q3	.607	Q26	.696	Q38	.743	Q46	.695	Q54	.770	Q58	.751	Q67	.581	Q80	.758
Q4	.652	Q27	.619	Q39	.627	Q47	.717	Q55	.602	Q59	.716	Q68	.663	Q81	.631
Q5	.771	Q28	.589	Q40	.721	Q48	.549			Q60	.902	Q69	.743	Q83	.608
Q6	.517	Q29	.648	Q41	.715	Q49	.686			Q62	.772	Q70	.761	Q84	.655
Q7	.673	Q30	.703	Q42	.748	Q50	.695			Q63	.733	Q71	.758	Q85	.529
Q8	.525	Q31	.656			Q51	.544			Q64	.746	Q72	.870	Q86	.589
Q9	.600	Q32	.775									Q73	.706	Q87	.540
Q10	.695	Q33	.682									Q74	.712	Q88	.681
Q11	.735	Q34	.877									Q75	.779	Q89	.535
Q12	.629	Q35	.636									Q76	.619	Q90	.768
Q13	.740											Q77	.572		
Q14	.537														
Q15	.744														
Q16	.740														
Q18	.658														
Q19	.791														
Q20	.559														
Q21	.766														

Source: From Researcher's data analysis

From the above table one can note that, there are few questions that have been excluded, due to lack of desired levels of communalities. But, for few variables the communalities are above 0.4 and their levels may increase if the sample size increases. Hence, before excluding the variables, we have combined both the results and conducted the analysis. Note that, combining the two is possible due to the use of same questionnaire. Also, the analysis for the combination is proposed because there is a difference in the variables excluded in both the studies and we hence have considered the combined analysis, to check if the same set of variables are excluded. The final questionnaire was constructed based on the results of the same.

Results of the combined pilot sample

The overall reliability of the questionnaire is 0.945.

Table 11:Reliability of the questionnaire-combined pilot study

Sl. No.	Factor	Number of Questions	Cronbach alpha value
1	Perceived Usefulness	21	0.903
2	Perceived Ease of Use	14	0.870
3	Perceived Trust	8	0.813
4	Perceived Privacy	4	0.843
5	Perceived Risk	13	0.843
6	Social Presence	9	0.836
7	Behavioral Intention	8	0.861
8	Actual Behavior	13	0.910

Source: From Researcher's data analysis

The above table one can observe that the consistency levels are above the require cut-off points.

The following tables give EFA results of the combined sample and based on these, the questionnaire for the third round of pilot was constructed.

Table 12 : Results of EFA-KMO, bartlett test, and total variance explained-combined pilot study

	Construct	KMO	Bartlett test	Total variance explained
1	Perceived Usefulness	0.858	0.0001	66%
2	Perceived Ease of Use	0.779	0.0001	65%
3	Perceived Trust	0.802	0.0001	73%
4	Perceived Privacy	0.771	0.0001	68%
5	Perceived Risk	0.850	0.0001	66%
6	Social Presence	0.822	0.0001	67%
7	Behavioral Intention	0.745	0.0001	67%
8	Actual Behavior	0.932	0.0001	65%

Source: From Researcher's data analysis

From the above table, one can note that all the factors have the desired levels of KMO index and this supports the sample adequacy of correlations between the variables. Also, from the Bartlett test, it is very evident that the correlation matrices are significant. We now look at the communalities of the variables under each of the factors.

Table 13 : Communalities of the variables-combined pilot study

Perceived Usefulness		Perceived Ease of Use		Behavioural Intention		Perceived Trust		Perceived Privacy		Social Presence		Actual Behaviour		Perceived Risk	
Q1	.720	Q24	.513	Q36	.674	Q44	.651	Q52	.602	Q56	.718	Q65	.526	Q78	.647
Q2	.600	Q25	.627	Q37	.736	Q45	.740	Q53	.667	Q57	.649	Q66	.506	Q79	.642
Q3	.562	Q26	.616	Q38	.689	Q46	.724	Q54	.787	Q58	.663	Q67	.616	Q80	.705
Q4	.664	Q27	.632	Q39	.516	Q47	.721	Q55	.674	Q59	.695	Q68	.660	Q82	.708
Q5	.670	Q29	.781	Q40	.744	Q48	.758			Q60	.700	Q69	.618	Q83	.726
Q6	.610	Q32	.765	Q41	.672	Q49	.786			Q62	.576	Q70	.660	Q84	.659
Q8	.634	Q33	.644	Q42	.675	Q50	.719			Q63	.669	Q71	.678	Q85	.569
Q9	.679	Q34	.712							Q64	.680	Q73	.604	Q86	.589
Q10	.709	Q35	.600									Q74	.733	Q87	.657
Q11	.686											Q75	.798	Q88	.644
Q12	.624											Q76	.719	Q89	.738
Q14	.508														
Q15	.771														
Q16	.736														
Q17	.515														
Q18	.647														
Q19	.746														
Q20	.721														
Q21	.719														

Source: From Researcher's data analysis

Based on the above table, one can conclude that the communalities are at the cut-off levels and we now look at the variables that have been excluded. Comparing with the results of the pilot studies 1 and 2 we find the common variables excluded and the specific variables excluded. Note that, few questions have been excluded in both the pilot studies and the following table gives the questions excluded in each of the pilot studies and the combined analysis.

Table 14 : Variables excluded after EFA

Factor	Pilot study-1	Pilot study-2	Combined sample
Perceived Usefulness	Q7	Q17	Q7, Q13
Perceived Ease of Use	Q25	Q22, Q23	Q22, Q23, Q28, Q30, Q31
Behavioral Intention	Q39	Q43	Q43
Perceived Trust	Q51	-	Q51
Perceived Privacy	-	-	-
Social Presence	Q61	Q61	Q61
Actual Behavior	Q66, Q72	-	Q72, Q77
Perceived Risk	Q90	Q82	Q81, Q90

Source: From Researcher's data analysis

Taking the above table into consideration, we have re-built the questionnaire and a third pilot study was conducted to test for its consistency.

Construction of the questionnaire for third pilot study

In this section, we present the discussion on construction of the final questionnaire, and also the results of the third pilot study. Based on the results of the pilot study-1, pilot study-2 and the combined, we have rebuilt the questionnaire. To test the consistency of the same, we have conducted the third round of pilot study with a sample size of 50 students. We first present the discussion on reduction of the questionnaire and then the discussion on the testing the reliability of the questionnaire. Finally present the results of the third pilot study and the discussion on the construction of the final questionnaire.

Recall that each of the factors is associated with a set of variables and the same is given in the table-13. Also, the EFA of the combined sample has suggested that, to measure the factors the set of variables can be reduced to sub-factors. The following tables give the same. Note that, the reduction is done based on the factor loadings. Factor loadings indicate the correlation of the variables with the factors extracted. For example, for the factor "Perceived usefulness", we have considered 21 questions and they have been reduced to 5 factors. Each extracted factor have a set of variables under it and the set of variables will be replaced by the factors. Since we have used a Promax rotation, the 5 factors are associated between and will be used to build the final questionnaire.

Table 15 : Factor loadings-perceived usefulness-combined pilot study

	1	2	3	4	5
Q1					.860
Q2					.580
Q3	.535				
Q4	.863				
Q5	.954				
Q6	.736				
Q8	.496				
Q9			.679		
Q10			.854		
Q11			.772		
Q12	.403				
Q14	.512				
Q15				.957	
Q16				.906	
Q17					
Q18				.434	
Q19		.774			
Q20		.952			
Q21		.775			

Source: From Researcher's data analysis

In the above table, the columns indicate factors and the rows indicate the variables considered in the study to measure the factors. The factors extracted will be used to form the new set of questions. For example, variables Q3, Q4, Q5, Q6, Q8, Q12, Q14 are grouped together and considering that which is common amongst them, the corresponding question is constructed.

The process is iteratively used for all the factors, till all the relevant questions are constructed. The discussion on the same is presented in the later parts of this section.

Table 16 : Factor loadings-perceived ease of use-combined pilot study

	1	2	3
Q24	.746		
Q25	.776		
Q26	.787		
Q27	.586		
Q29			.858
Q32		.964	
Q33		.724	
Q34		.664	
Q35	.608		

Source: From Researcher's data analysis

Table 17 : Factor loadings-perceived trust-combined pilot study

	1	2
Q44		.811
Q45		.851
Q46		.854
Q47	.805	
Q48	.894	
Q49	.897	
Q50	.842	

Source: From Researcher's data analysis

Table 18 : Factor loadings-perceived risk-combined pilot study

	1	2	3
Q78		.803	
Q79		.826	
Q80		.881	
Q82			.844
Q83			.826
Q84		.629	
Q85	.587		
Q86	.515		
Q87	.855		
Q88	.838		
Q89	.919		

Source: From Researcher's data analysis

Table 19 : Factor loadings-perceived privacy-combined pilot study

	1
Q52	.776
Q53	.817
Q54	.887
Q55	.821

Source: From Researcher's data analysis

Table 20 : Factor loadings-social presence-combined pilot study

	1	2
Q56		.868
Q57		.743
Q58	.727	
Q59	.837	
Q60	.857	
Q62	.752	
Q63	.815	
Q64	.837	

Source: From Researcher's data analysis

Table 21 : Factor loadings-behavioral intention-combined pilot study

	1	2
Q36	.840	
Q37	.894	
Q38	.801	
Q39	.618	
Q40		.862
Q41		.810
Q42		.834

Source: From Researcher's data analysis

Table 22 : Factor loadings-actual behavior-combined pilot study

	1	2
Q65	.606	
Q66	.783	
Q67	.759	
Q68	.794	
Q69	.878	
Q70	.465	
Q71	.475	
Q73		.725
Q74		.795
Q75		.900
Q76		.896

Source: From Researcher's data analysis

Note that, the questionnaire was re-built taking into consideration the factors extracted from EFA. Each factor has set of variables and they have to be named appropriately such that it contains the essence of all the variables. In our case, based on the variables that were combined by the EFA, we have constructed the questions. The questionnaire for the third pilot study was constructed (appendix-2) and tested using the data drawn under the third pilot study. Note that, in few cases the original questions were retained and this is to ensure that the questionnaire has the required consistency as the last one. In some cases, the variables are reduced to two or three questions. The following tables gives the same.

Table 23 : Questions related to Perceived Usefulness

Variables	Questions constructed
Q3, Q4, Q5, Q6, Q8, Q12, Q14	I get varieties and meet by needs and more convenient purchasing on E-commerce websites.
	It has enhanced my selection on e-commerce websites.
Q17, Q19, Q20, Q21	Paying through online is easy and saves time, while purchasing on E-commerce websites.
Q9, Q10, Q11	Quick and effective in selecting a product on E-commerce websites.
Q15, Q16, Q18	Discounts and offers given are useful while purchasing on E-commerce websites.
Q1, Q2	Purchasing using E-commerce websites is faster and saves time.

Source: From researcher's analysis

Table 24 : Questions related to Perceived Ease of Use

Variables	Questions Constructed
Q24 Q25, Q26, Q35	Doing online shopping is easy, interactive and clear.
Q32, Q33, Q34	I learn shopping easily on E-commerce websites.
	My skills of navigating and purchasing has increased on E-commerce websites.
Q29	Mental effort and difficulty is less while purchasing through E-commerce websites.

Source: From researcher's analysis

Table 25 : Questions related to Perceived Trust

Variables	Questions Constructed
Q44, Q45, Q46	Web retailers are trust worthy, committed and looks for customer's interests.
Q47, Q48, Q49, Q50	I trust mobile payments systems reliable, trust worthy, when linked to E-commerce websites.

Source: From researcher's analysis

Table 26 : Questions related to Perceived Risk

Variables	Questions Constructed
Q78, Q79, Q80,84	Internet banking is risky, uncertain while shopping on E-commerce websites.
Q82, Q83	**Retained as they are**
Q85, Q86, Q87, Q88, Q89	I find it dangerous to bank over the e-commerce websites.

Source: From researcher's analysis

Table 27 : Questions related to Perceived Privacy

Variables	Questions Constructed
Q52, Q53, Q54, Q55	I am concerned that the information I submit on the e-commerce websites could be misused.

Source: From researcher's analysis

Table 28 : Questions related to Social Presence

Variables	Questions Constructed
Q56, Q57	There are other buyers like me purchasing on E-commerce websites and this motivates me to purchase with confidence.
Q58, Q59, Q60, Q62, Q63, Q64	Because of other buyers on E-commerce websites, I feel a sense of human touch and warmth, belongingness while reading and writing reviews regarding the products.

Source: From researcher's analysis

Table 29 : Questions related to Behavioral Intention

Variables	Questions Constructed
Q36, Q37, Q38, Q39	It is very good idea, desirable, and better option to purchase on E-commerce websites.
Q40, Q41, Q42	Using online banking services is a frequent choice while purchasing on websites.

Source: From researcher's analysis

Table 30 : Questions related to Actual Behavior

Variables	Questions Constructed
Q65, Q66, Q67, Q68, Q69, Q70, Q71	I am comfortable, confident and trust worthy shopping online through e-commerce websites.
	I don't perceive any risk by sharing my personal information concerning my transaction with the e-commerce websites.
Q73, Q74, Q75, Q76	I am confident that others cannot tamper with information concerning my transaction with the e-commerce websites.
	I feel secured and safe providing sensitive information on E-commerce websites.

Source: From researcher's analysis

Table 31 : Questions that are not grouped and leftover as they are under each factor

Factor	Variables	Questions Constructed
Perceived Usefulness	Q7	Sharing of the links is easy on the e-commerce websites.
	Q13	Websites are useful to search for products
Perceived Ease of Use	Q22,Q23, Q27, Q28	**Retained as they are**
Behavioral Intention	Q43	I am planning to use online banking services in the future on e-commerce websites.
Perceived Trust	Q51	Even if the mobile payment systems are not monitored, I would trust them to do the job correctly if they are linked to e-commerce websites.
Social Presence	Q61	I felt "availability" and efficient services on e-commerce websites.
Actual Behavior	Q72	I believe that advanced technology can certainly provide the desired security for my transaction with the e-commerce websites.
	Q77	The security issue of sensitive information was a major obstacle to my online purchases from e-commerce websites.
Perceived risk	Q90	Using the e-commerce websites is not as risky as I feel.

Source: From Previous questionnaire

Based on the above tables, a new questionnaire was constructed and appendix-2 gives the same. Note that, the new set of questions are a resultant of the EFA and a third pilot study was conducted to test the reliability of the same, in measuring the factors proposed in the model.

Results of the third pilot study

In this section, we present the results of the third pilot stud that gives the reliability of the questionnaire constructed, based on the two rounds of pilot study. Note that, the data used is the responses collected from the third pilot study. The responses are collected from 50 students. The overall reliability of the questionnaire is 0.888.

Table 32 : Reliability of the questionnaire-third pilot study

Sl.No.	Factor	Number of Questions	Cronbach alpha value
1	Perceived Usefulness	8	0.751
2	Perceived Ease of Use	8	0.728
3	Perceived Trust and Privacy	4	0.393
4	Perceived Risk	5	0.375
5	Social Presence	3	0.457
6	Behavioral Intention	3	0.440
7	Actual Behavior	6	0.780

Source: From Researcher's data analysis

From the above table, one can note that the set of questions that were reduced do not have the necessary reliability levels. For example, for measuring the "Perceived Trust", we have considered three questions and these are extracted from the EFA on combined pilot sample. But, they do not have the required levels of consistency. Whereas, for Perceived Usefulness, perceived ease of use and Actual behavior the reliability levels meet the necessary cut-off values. Hence, we have retained the set of questions identified in the previous questionnaire for other factors and have replaced the old questions with new questions for factors that have necessary reliability levels. For example, for perceived usefulness, we have used the new set of questions. For Perceived trust, we have retained the old questions. The same process is continued for all other questions.

Final Questionnaire of the study

Based on the third pilot study, the final questionnaire was build and the following discussion gives the details of the same. From the results of the third pilot study, one can note that, for few factors the new set of questions do not have the required levels of reliability. Hence, we have retained the same set of questions (initial questionnaire) that have the reliability levels and for others, we have retained the new set of questions. Appendix-3 gives the final questionnaire designed.

Section XII : Sample size determination

The sample size is determined based on the confidence level, degree of precision, and estimate of the population standard deviation. The necessary inputs are estimated based on the pilot results. The parameters estimated are level of precision, population standard deviation. **The combined pilot study data is considered to estimate the final sample size. Since, the questions are the third pilot are extracted from the combined, we have decided to consider the data drawn on the combined pilot study. The value of D (=0.14) is assumed from the researcher's experience and Z-critical value (=1.96) is taken from the standard normal tables at 5% level of significance. Estimate of the variance=**1.950596. The sample size estimated is 746, the minimum to conduct the study.

Section XIII : Execution of the sample survey

After the sample size is estimated, we have executed the final survey. The time horizon considered for the study is from November 2017 to January 2018. The responses are collected from different places in India like Mysore, Bangalore, Vijayawada, Hyderabad, Kolkata, Mumbai, Delhi etc. The questionnaires are distributed to the respondents and the data are collected from them. Few responses are collected using google docs online. Total put together, the final sample size was achieved and the same are used for building the model. Finally, we could the sample size of 773 respondents, which is more than the required sample size.

Section XIV : Testing Randomness of the sample

Table 33 : Results of test for randomness-run test

Variable	p-value	Variable	p-value	Variable	p-value	Variable	p-value	Variable	p-value	Variable	p-value
Q1	.0001	Q11	.326	Q21	.001	Q31	.184	Q41	.101	Q51	.348
Q2	.0001	Q12	.562	Q22	.010	Q32	.019	Q42	.415	Q52	.589
Q3	.043	Q13	.902	Q23	.005	Q33	.517	Q43	.448	Q53	.503
Q4	.000	Q14	.793	Q24	.071	Q34	.452	Q44	.007	Q54	.965
Q5	.034	Q15	.650	Q25	.080	Q35	.492	Q45	.577	Q55	.988
Q6	.219	Q16	.158	Q26	.887	Q36	.350	Q46	.520	Q56	.735
Q7	.739	Q17	.337	Q27	.279	Q37	.036	Q47	.054	Q57	.667
Q8	.402	Q18	.474	Q28	.066	Q38	.005	Q48	.868	Q58	.045
Q9	.126	Q19	.273	Q29	.972	Q39	.794	Q49	.590	Q59	.409
Q10	.811	Q20	.599	Q30	.488	Q40	.244	Q50	.734		

Source: From researcher's data analysis

From the above table one can conclude that, except for few variables, for all other variables the assumption of randomness is satisfied by the data. Hence, we proceed to use the statistical methods proposed in the study. Refer to the p-values for the same.

Section XV : Reliability of the final questionnaire

After the final survey was executed, the reliability of the questionnaire was computed and the following tables gives the same.

Table 34 : Reliability of the Questionnaire-Final sample study

Sl. No.	Factor	Number of Questions	Cronbach alpha value
1	Perceived Usefulness	8	0.761
2	Perceived Ease of Use	7	0.769
3	Perceived Trust	7	0.844
4	Perceived Privacy	4	0.791
5	Perceived Risk	11	0.810
6	Social Presence	8	0.823
7	Behavioral Intention	8	0.810
8	Actual Behavior	6	0.732

Source: From Researcher's data analysis

From the above table one can note that, the questionnaire has the required consistency levels in measuring the factors considered in the model proposed.

Section XVI : Description of the final sample

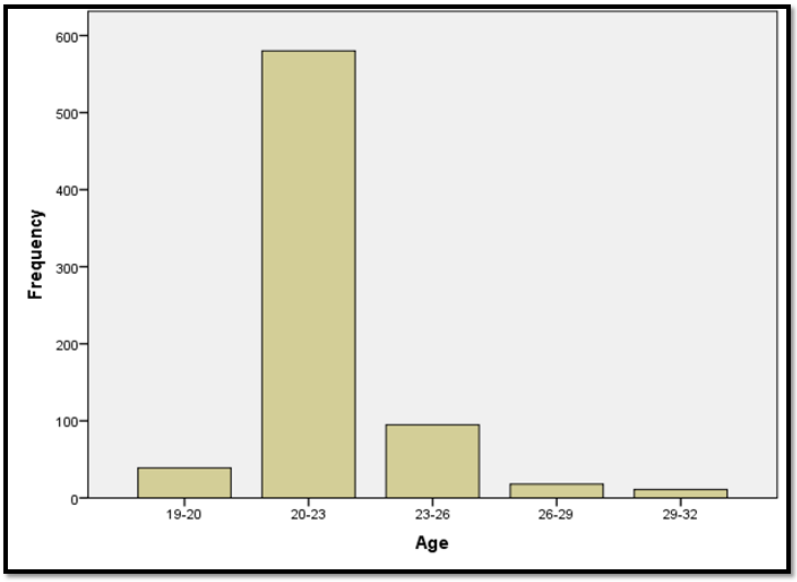
In this section, we present the details of the sample respondents who have participated in the survey. The description is based on demographic characteristics considered in the study. We also present the descriptive statistics of the variables considered under each factor. The following graphs and tables give the same. Note that, we present the description of the final sample only.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19-20	39	5.0	5.2	5.2
	20-23	580	75.0	78.1	83.3
	23-26	95	12.3	12.8	96.1
	26-29	18	2.3	2.4	98.5
	29-32	11	1.4	1.5	100.0
	Total	743	96.1	100.0	
Missing	99	30	3.9		
Total		773	100.0		

Table 35 : Distribution of the customers based on age

Source: From researcher's data analysis

From the above table one can conclude that, majority of the customers considered in the study are from the age group 20-23. This is very obvious because, the population considered for the study are MBA/PGDM students and most of them will be in this age group. Hence, the conclusions drawn can be taken as those inclined towards this age group, and the companies can design their plans for this age group.



Graph 1 : Age-wise distribution of the customers

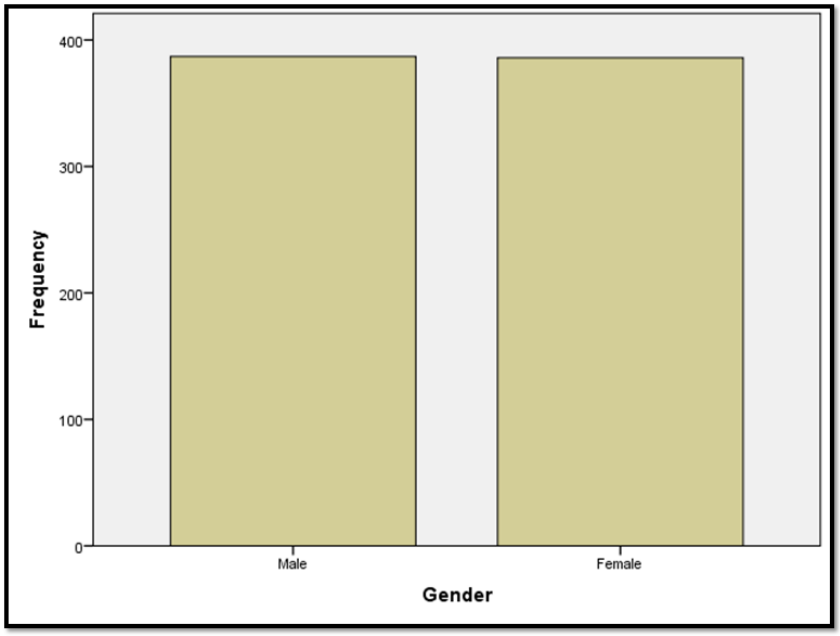
Source: From researcher's data analysis

Table 36 : Distribution of the customers based on gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	387	50.1	50.1	50.1
	Female	386	49.9	49.9	100.0
	Total	773	100.0	100.0	

Source: From researcher's data analysis

From the above table, one can note that both male and female are given equal importance.



Graph 2 : Gender-wise distribution of the customers

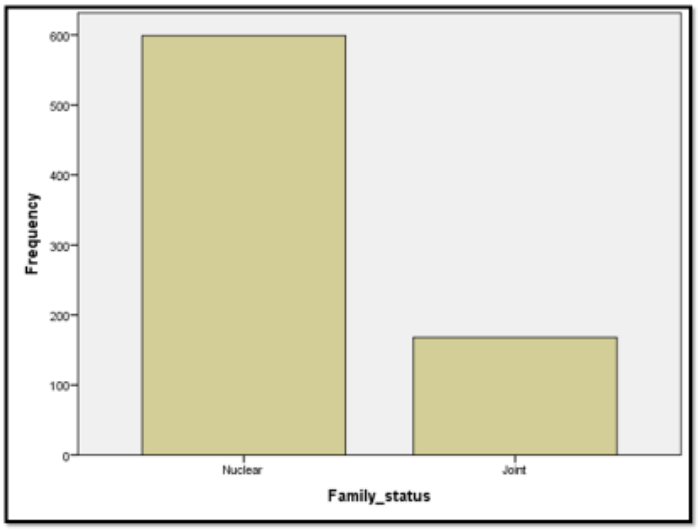
Source: From researcher's data analysis

Table 37 : Distribution of the customers based on family status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nuclear	599	77.5	78.1	78.1
	Joint	168	21.7	21.9	100.0
	Total	767	99.2	100.0	
Missing	99	6	.8		
Total		773	100.0		

Source: From researcher's data analysis

From the above table one can note that, most of the customers belong to nuclear family and companies have to take this into consideration while using the conclusions of this study. That is, while interpreting the results related to the factors and the model proposed, one has to keep in mind about the family background of the customers. This is because, family may influence the minds of the customers. A customer from a joint family need not have to behave as the one from a nuclear family. One can hypothetically state that, the one from nuclear may have more freedom of purchase and other aspects as compared to the one coming from joint family.



Graph 3 : Distribution of customers based on family status

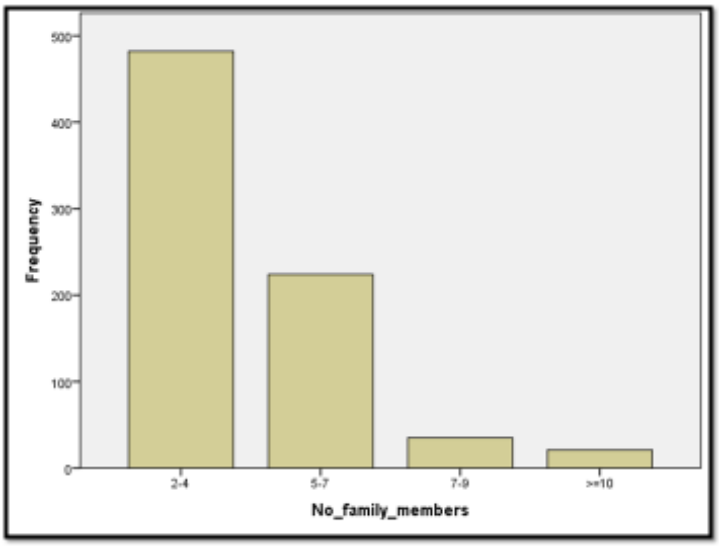
Source: From researcher's data analysis

Table 38 : Distribution of customers based on number of family members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-4	482	62.4	63.3	63.3
	5-7	224	29.0	29.4	92.7
	7-9	35	4.5	4.6	97.2
	>=10	21	2.7	2.8	100.0
	Total	762	98.6	100.0	
Missing	99	11	1.4		
Total		773	100.0		

Source: From researcher's data analysis

From the above table one can note that, most of the customers come from families with members between 2 and 4 and others from family with members between 5-7. From this one can note that, the results and the conclusions drawn have to be looked from the point of these customers more.



Graph 4 : Distribution of customers based on number of family members

Source: From researcher's data analysis

Table 39 : Distribution of customers based on frequency of shopping

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=3	506	65.5	67.7	67.7
	4-6	197	25.5	26.4	94.1
	7-9	33	4.3	4.4	98.5
	>=10	11	1.4	1.5	100.0
	Total	747	96.6	100.0	
Missing	99	26	3.4		
Total		773	100.0		

Source: From researcher's data analysis

From the above table one can observer that, most of the customers purchase online less than three times and this is alarming for the e-commerce companies. They need to develop plans that can increase the frequency of purchase online. The results of the current study can be used for the same. The significant factors and sub-factors identified will help them to develop strategies to build the websites that can attract more customers.

Graph 5 : Distribution of customers based on frequency of shopping

Source: From researcher's data analysis

The following tables give the number of customers who have preferred the payment options.

Table 40 : Choice of cash on delivery

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	206	26.6	26.7	26.7
	1.0	565	73.1	73.3	100.0
	Total	771	99.7	100.0	
Missing	99.0	2	.3		
Total		773	100.0		

Source: From researcher's data analysis

Table 41 : Choice of Paytm

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	615	79.6	79.8	79.8
	1.0	156	20.2	20.2	100.0
	Total	771	99.7	100.0	
Missing	99.0	2	.3		
Total		773	100.0		

Source: From researcher's data analysis

Table 42 : Choice of credit card

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	608	78.7	78.9	78.9
	1.0	163	21.1	21.1	100.0
	Total	771	99.7	100.0	
Missing	99.0	2	.3		
Total		773	100.0		

Source: From researcher's data analysis

Table 43 : Choice of debit card

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.0	443	57.3	57.5	57.5
	1.0	328	42.4	42.5	100.0
	Total	771	99.7	100.0	
Missing	99.0	2	.3		
Total		773	100.0		

Source: From researcher's data analysis

Now, we look at the cross tabulation between the payment options. These tables will help one to know the number of customers who have preferred COD, have preferred other payment options. Similarly, with respect to other payment options. We first present a table that summarizes the frequency of customers who have opted different payment options and then the cross tabulation.

Table 44 : Payment option frequencies

	Responses		Percent of Cases
	N	Percent	
Net banking	198	14.0%	25.7%
COD	565	40.1%	73.4%
Paytm	156	11.1%	20.3%
Credit	163	11.6%	21.2%
Debit	328	23.3%	42.6%
Total	1410	100.0%	183.1%

Source: From researcher's data analysis

From the above table, it very apparent that most of the customer have chosen COD. The cross tabulations below give details of other payment options chosen by the customers along with the payment option actually chosen.

Table 45: Payment option*Paytm cross tabulation

		Paytm		Total
		.0	1.0	
Net banking	Count	130	68	198
	% of Total	16.9%	8.8%	25.7%
COD	Count	469	96	565
	% of Total	60.9%	12.5%	73.4%
Credit	Count	99	64	163
	% of Total	12.9%	8.3%	21.2%
Debit	Count	222	106	328
	% of Total	28.8%	13.8%	42.6%

Source: From researcher's data analysis

We present the explanation for one table and others can be interpreted on similar lines. The cross tabulations give the customers who have chosen even other payment options, along with the payment option currently they have chosen.

For example, from table- one can note that, there are total 198 respondents who have chosen Net banking as the payment option and among those 68 have chosen Paytm also. Among 565 customers who have chosen COD, 96 also have chosen Paytm and among 163 customers who have chosen credit card, 64 also have chosen Paytm. Similarly, among 328 who have chosen debit card, 106 also have chosen Paytm as payment option. Note that, these tables give combinations of payment options chosen by the customers. Companies can use this information to find the payment option that is chosen more frequently by the customers.

Table 46 : Payment option*credit cross tabulation

		Credit		Total
		.0	1.0	
Net banking	Count	117	81	198
	% of Total	15.2%	10.5%	25.7%
COD	Count	470	95	565
	% of Total	61.0%	12.3%	73.4%
Paytm	Count	92	64	156
	% of Total	11.9%	8.3%	20.3%
Debit	Count	246	82	328
	% of Total	31.9%	10.6%	42.6%

Source: From researcher's data analysis

Table 47 : Payment option*debit cross tabulation

		Debit		Total
		.0	1.0	
Net banking	Count	86	112	198
	% of Total	11.2%	14.5%	25.7%
COD	Count	355	210	565
	% of Total	46.1%	27.3%	73.4%
Paytm	Count	50	106	156
	% of Total	6.5%	13.8%	20.3%
Credit	Count	81	82	163
	% of Total	10.5%	10.6%	21.2%

Source: From researcher's data analysis

Table 48 : Payment option*COD cross tabulation

		COD		Total
		.0	1.0	
Net banking	Count	77	121	198
	% of Total	10.0%	15.7%	25.7%
Paytm	Count	60	96	156
	% of Total	7.8%	12.5%	20.3%
Credit	Count	68	95	163
	% of Total	8.8%	12.3%	21.2%
Debit	Count	118	210	328
	% of Total	15.3%	27.3%	42.6%

Source: From researcher's data analysis

Section XVII : Results of the final EFA

In this section, we present the results of the EFA and the way the initial model is constructed. Note that, for the final analysis we have used "Varimax" rotation, as we want to have orthogonal factors. This is because, in the final model the factors extracted have to be orthogonal. For example, the factors extracted under the factor "Perceived Usefulness" have to be orthogonal, so that they give better understanding of the factor. Also, this will help us to find the significant effect of the sub-factors separately on the factors.

Table 49 : Results of EFA-KMO, bartlett test, and total variance explained-final sample study

	Construct	KMO	Bartlett test	Total variance explained
1	Perceived Usefulness	0.801	0.0001	60%
2	Perceived Ease of Use	0.657	0.0001	61%
3	Perceived Trust	0.839	0.0001	69%
4	Perceived Privacy	0.781	0.0001	62%
5	Perceived Risk	0.829	0.0001	63%
6	Social Presence	0.843	0.0001	61%
7	Behavioral Intention	0.762	0.0001	69%
8	Actual Behavior	0.708	0.0001	63%

Source: From Researcher's data analysis

From the above table one can note that, the sample suits to the factor analysis and since all the values are above the cut-off values, the model can be built using the results of EFA.

Table 50 : Communalities of the variables -final sample study

Perceived Usefulness		Perceived ease of use		Behavioural Intention		Perceived Trust		Perceived Privacy		Social Presence		Actual Behaviour		Perceived Risk	
Q1	.581	Q9	.633	Q16	.664	Q24	.744	Q31	.535	Q35	.766	Q46	.608	Q45	.497
Q2	.628	Q10	.636	Q17	.685	Q25	.742	Q32	.650	Q36	.658	Q47	.721	Q49	.628
Q3	.624	Q11	.547	Q18	.700	Q26	.534	Q33	.640	Q38	.604	Q48	.524	Q50	.600
Q5	.542			Q20	.735	Q27	.657	Q34	.635	Q39	.561			Q51	.617
Q6	.515			Q21	.746	Q28	.712			Q40	.513			Q52	.607
Q7	.731			Q22	.608	Q29	.707			Q41	.584			Q53	.617
						Q30	.700			Q42	.589			Q55	.614
														Q56	.663
														Q57	.658
														Q58	.591
														Q59	.517

Source: From Researcher's data analysis

The above table gives the communalities and those variables that have communalities above 0.5 are retained and they form the set of variables that are used to extract the sub-factors under each of the factors.

Section XVIII : Initial model constructed based on EFA results

The following tables and the explanation gives the details of the model building process and also the changes made in the model, to arrive at the final model. The initial model was built by taking into consideration the results of the EFA, especially the factor loadings. Factor loadings indicate the correlation of the variables with the factors extracted by the analysis and the following tables give the variables and the factors extracted along with the factor loadings. The sub-factors are named based on the commonness among the variables. For example, under the factor "Perceived Usefulness", the questions Q1, Q2, and Q3 form one sub-factor. Based on the questions, the sub-factor is named as 'Selection". The other sub-factors are named appropriately, based on the commonness of the variables.

Table 51 : Factor loadings-perceived usefulness- final sample study

	Selection	Purchase
Q1	.752	
Q2	.771	
Q3	.752	
Q5		.661
Q6		.648
Q7		.855

Source: From Researcher's Data Analysis

Table 52 : Factor loadings-perceived ease of use- final sample study

	Perceived ease of use
Q9	.795
Q10	.798
Q11	.740

Source: From Researcher's Data Analysis

Table 53 : Factor loadings-perceived privacy- final sample study

	Perceived Privacy
Q31	.731
Q32	.806
Q33	.800
Q34	.797

Source: From Researcher's Data Analysis

Table 54 : Factor loadings-actual behavior- final sample study

	Actual Behaviour
Q46	.780
Q47	.849
Q48	.724

Source: From Researcher's Data Analysis

Table 55 : Factor loadings-perceived trust- final sample study

	Mobile Payment	Web retailer
Q24		.847
Q25		.835
Q26		.684
Q27	.766	
Q28	.807	
Q29	.814	
Q30	.824	

Source: From Researcher's Data Analysis

Table 56 : Factor loadings-behavioral intention- final sample study

	Banking	Modern way of purchase
Q16		.804
Q17		.815
Q18		.818
Q20	.852	
Q21	.855	
Q22	.741	

Source: From Researcher's Data Analysis

Table 57 : Factor loadings-social presence- final sample study

	Networking	Personal Touch
Q35		.872
Q36		.763
Q38	.747	
Q39	.740	
Q40	.703	
Q41	.758	
Q42	.742	

Source: From Researcher's Data Analysis

Table 58 : Factor loadings-perceived risk-final sample study

	Shared Information	Payment	Transaction
Q49		.771	
Q50		.718	
Q51		.738	
Q52			.778
Q53			.777
Q55	.760		
Q56	.798		
Q57	.806		
Q58	.722		
Q59	.683		
Q45			.705

Source: From Researcher's Data Analysis

Using the above tables, the initial model was built and the following figure gives the same. We now use the Confirmatory factor analysis (CFA) and Structural Equation Modelling (SEM) to test the model built, improve the model fit and meet the objectives of the study.

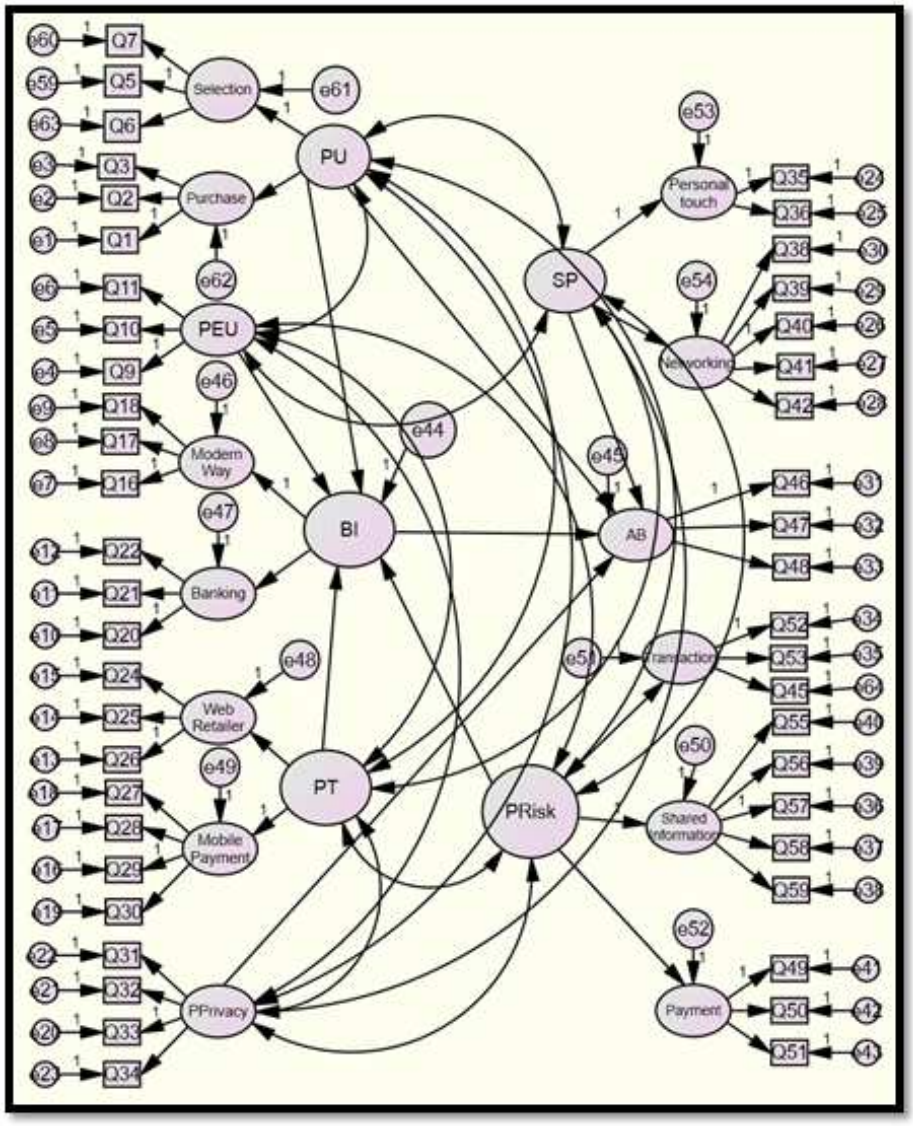


Figure 2 : Initial SEM model

Source: From researcher's data analysis

Section XIX : Model building using CFA and SEM

The initial model has two parts, (1) a measurement model that defines the relation between the observed variables and the factors extracted, (2) the structural model that defines the relation between the factors. The final model of the study is built using structural equation modeling (SEM). Before SEM is used, one has to test measurement model using CFA and based on this, the final model has to be built. We first present the results of CFA and then the results of SEM.

Results of confirmatory factor analysis

CFA is used to test the validity of the measurement model and the following discussion gives the details of the same. In order to test the validity of the measurement model, we need to consider that portion from the initial model, which gives the relation between the observed variables and the latent factors. The following figure gives the same.

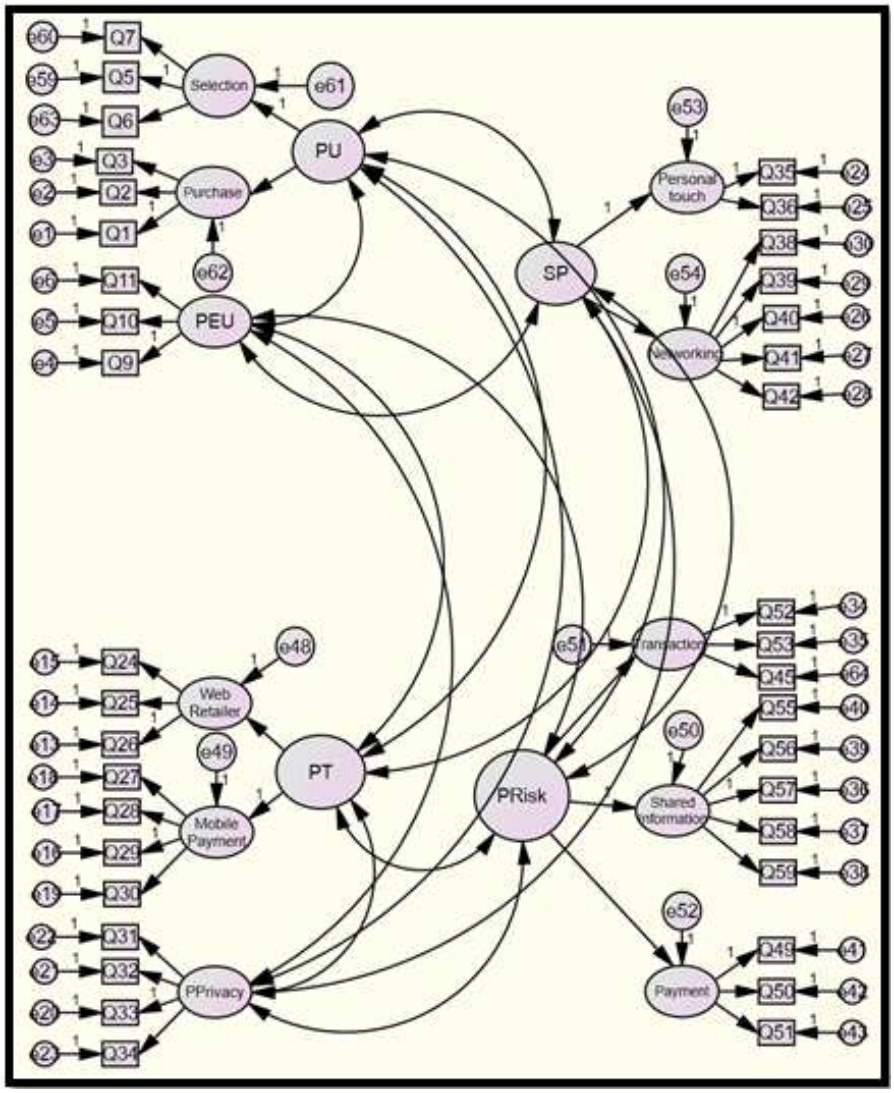


Figure 3 : Initial Measurement Model

Source: From researcher's data analysis

The above model is the initial measurement model, and based on the model fit indices, we test the goodness-of-fit of the model. The following tables gives the indices values and based on the same we determine whether to modify the model or not.

Table 59 : CMIN-initial measurement model

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	100	1725.799	641	.000	2.692
Saturated model	741	.000	0		
Independence model	38	10422.133	703	.000	14.825

Source: From researcher's data analysis

Table 60 :RMR, GFI-initial measurement model

Model	RMR	GFI	AGFI	PGFI
Default model	.089	.894	.877	.773
Saturated model	.000	1.000		
Independence model	.242	.359	.325	.341

Source: From researcher's data analysis

Table 61 : Baseline comparisons-initial measurement model

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.834	.818	.889	.878	.888
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Source: From researcher's data analysis

Table 62 : RMSEA-initial measurement model

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.044	.049	.975
Independence model	.134	.132	.136	.000

Source: From researcher's data analysis

From the above tables, one can note that, the model doesn't have the required validity levels (refer to GFI, AGFI, TLI, and CFI), as the model fit indices are less than the required cut-off values. We hence look at the modification indices. The following table gives the modification indices with respect to the regression paths between the factors, factors and the observed variables.

Table 63 : Modification indices-initial measurement model

			M.I.	Par Change
Selection	<---	Web_Retailer	7.218	-.097
Shared_Information	<---	PU	8.164	-.205
Shared_Information	<---	SP	18.245	-.331
Shared_Information	<---	PT	27.512	-.284
Shared_Information	<---	PEU	11.733	-.200
Shared_Information	<---	Selection	7.689	-.192
Shared_Information	<---	Transaction	21.436	-.244
Shared_Information	<---	Networking	11.541	-.174
Shared_Information	<---	Personal_touch	13.337	-.232
Shared_Information	<---	Mobile_Payment	34.761	-.233
Shared_Information	<---	Web_Retailer	19.929	-.264
Shared_Information	<---	Purchase	4.747	-.136
Transaction	<---	PU	67.255	.590
Transaction	<---	SP	144.498	.936
Transaction	<---	PT	185.455	.740
Transaction	<---	PEU	79.048	.521
Transaction	<---	Selection	62.003	.547
Transaction	<---	Shared_Information	10.814	-.123
Transaction	<---	Networking	144.344	.616
Transaction	<---	Personal_touch	102.393	.645
Transaction	<---	Mobile_Payment	165.066	.510
Transaction	<---	Web_Retailer	146.896	.718
Transaction	<---	Purchase	56.072	.469
Networking	<---	PU	4.053	-.101
Networking	<---	Selection	4.381	-.102
Networking	<---	Transaction	33.988	.216

Source: From researcher's data analysis

From the above table, one can observe that, the path corresponding to PT-> Transaction has the highest modification index and by changing the path from perceived risk to perceived trust, we get the improved model. Also, some of the modification indices corresponding to the errors are high and creating a covariance path between the same will improve the model. The following figure gives the same.

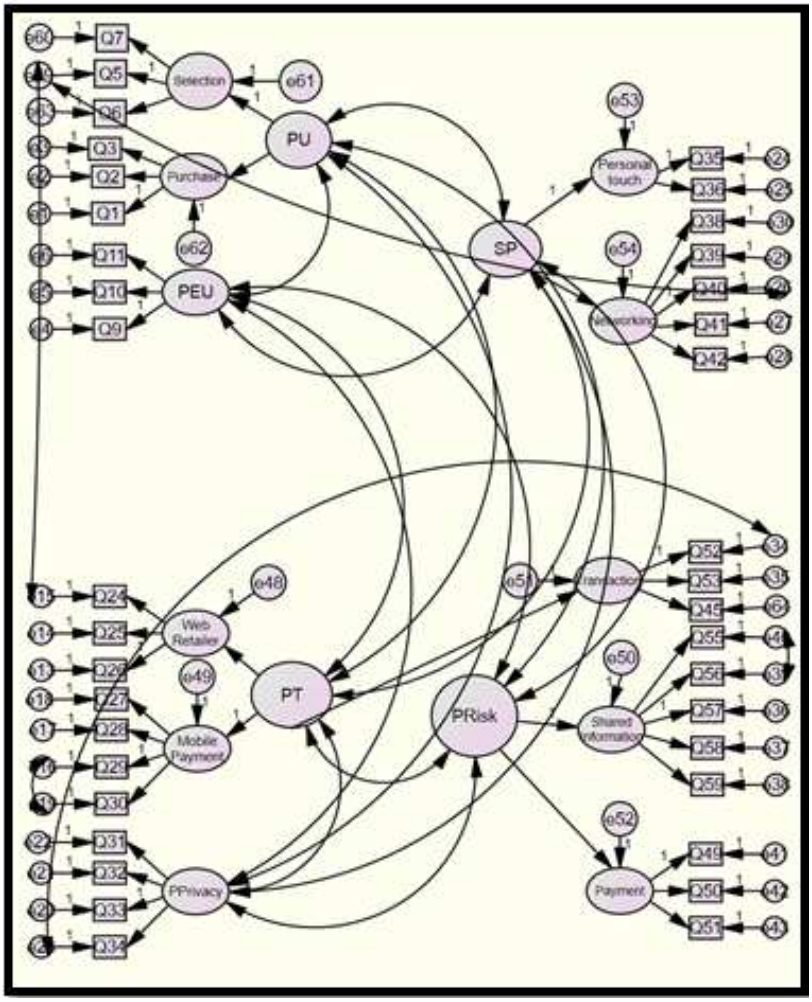


Figure 4 : Improved measurement model

Source: From researcher's data analysis

We now look at the model fit indices for the improved measurement model. The following tables give the same.

Table 64 : CMIN-improved measurement model

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	105	1264.391	636	.000	1.988
Saturated model	741	.000	0		
Independence model	38	10422.133	703	.000	14.825

Source: From researcher's data analysis

Table 65 : RMR, GFI- improved measurement model

Model	RMR	GFI	AGFI	PGFI
Default model	.052	.920	.906	.789
Saturated model	.000	1.000		
Independence model	.242	.359	.325	.341

Source: From researcher's data analysis

Table 66 : Baseline comparisons- improved measurement model

Model	NFI-Delta1	RFI-rho1	IFI-Delta2	TLI-rho2	CFI
Default model	.879	.866	.936	.929	.935
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Source: From researcher's data analysis

Table 67 : RMSEA- improved measurement model

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.036	.033	.039	1.000
Independence model	.134	.132	.136	.000

Source: From researcher's data analysis

From the above tables, one can note that, the model fit indices have attained the required cut-off values and the measurement model is valid. The following table gives the significance levels of the covariances between the exogenous factors extracted, and based on this, we conclude that the measurement model is significant.

Table 68 : Covariances- improved measurement model

			Estimate	S.E.	C.R.	P	Label
PEU	<-->	PT	.179	.023	7.913	***	par_28
PEU	<-->	PPrivacy	.106	.025	4.257	***	par_29
PEU	<-->	SP	.160	.021	7.557	***	par_30
PEU	<-->	PRisk	.082	.023	3.611	***	par_31
PT	<-->	PPrivacy	.201	.027	7.437	***	par_32
PT	<-->	SP	.227	.027	8.525	***	par_33
PT	<-->	PRisk	.092	.022	4.123	***	par_34
PPrivacy	<-->	SP	.158	.023	6.717	***	par_35
PPrivacy	<-->	PRisk	.300	.037	8.054	***	par_36
SP	<-->	PRisk	.118	.021	5.622	***	par_37
PEU	<-->	PU	.218	.023	9.581	***	par_40
PT	<-->	PU	.143	.019	7.572	***	par_41
PPrivacy	<-->	PU	.111	.021	5.275	***	par_42
SP	<-->	PU	.120	.017	7.047	***	par_43
PRisk	<-->	PU	.082	.019	4.296	***	par_44
e39	<-->	e40	.273	.039	6.935	***	par_48
e26	<-->	e59	.092	.022	4.149	***	par_49
e16	<-->	e19	.154	.027	5.739	***	par_50
e23	<-->	e34	-.143	.032	-4.485	***	par_51
e15	<-->	e59	-.085	.020	-4.280	***	par_52

Source: From researcher's data analysis

Table 69 : Correlations- improved measurement model

			Estimate
PEU	<-->	PT	.496
PEU	<-->	PPrivacy	.216
PEU	<-->	SP	.615
PEU	<-->	PRisk	.205
PT	<-->	PPrivacy	.410
PT	<-->	SP	.869
PT	<-->	PRisk	.231
PPrivacy	<-->	SP	.445
PPrivacy	<-->	PRisk	.555
SP	<-->	PRisk	.412
PEU	<-->	PU	.744
PT	<-->	PU	.489
PPrivacy	<-->	PU	.280
SP	<-->	PU	.570
PRisk	<-->	PU	.255
e39	<-->	e40	.346
e26	<-->	e59	.172
e16	<-->	e19	.282
e23	<-->	e34	-.194
e15	<-->	e59	-.191

Source: From researcher's data analysis

From the above tables, one can get the significance levels and also the degree of associations between the exogenous factors. We hence proceed to fit a model using SEM that has the structural portion. The following gives the modified SEM, an improved model than the one presented in figure-2.

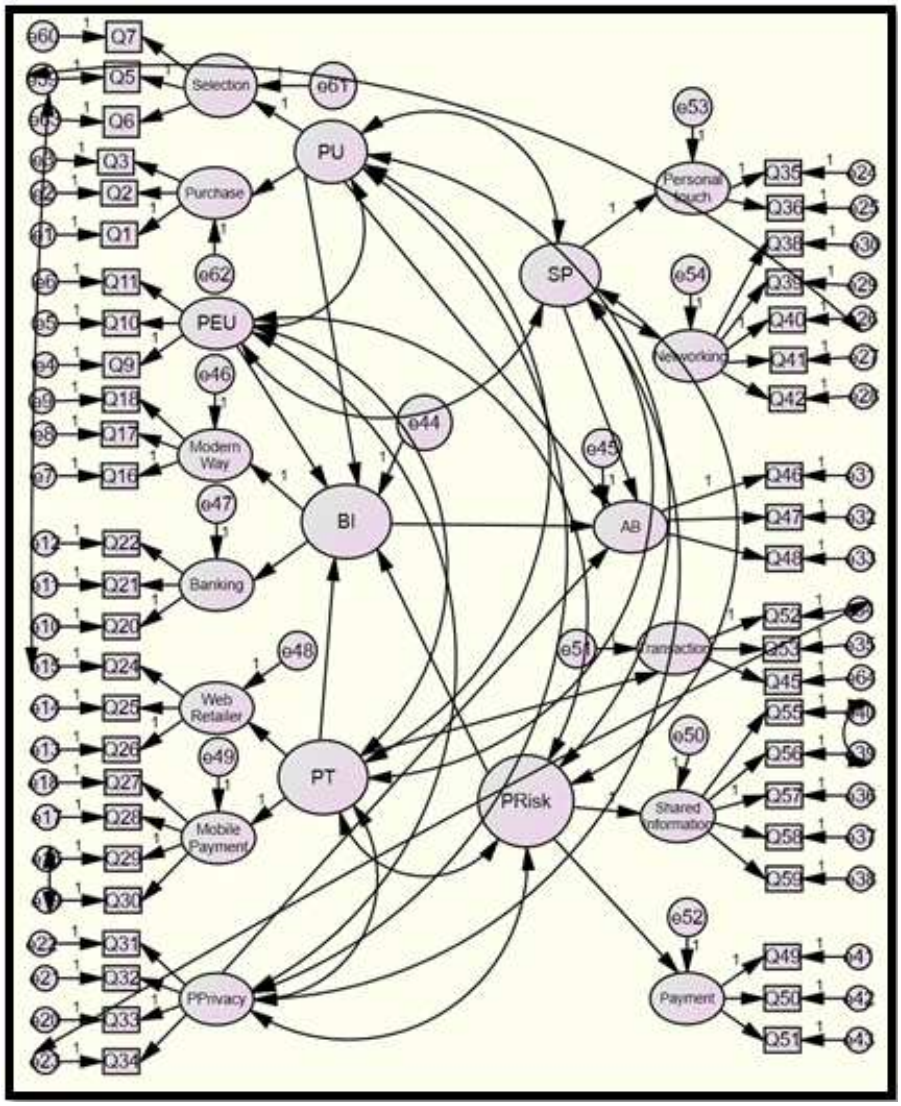


Figure 5 : Improved initial SEM model

Source: From researcher's data analysis

Testing of the improved initial SEM model

The model presented in the figure-5 is the improved initial model. After a model is proposed, one of the important aspect that one has to look at is whether the model is identified or not. When the model is not identified, it indicates that the relations proposed are not appropriate. In such cases, one has to look at the modification indices and make necessary changes to the model.

In the current study, we have observed that the initial model is not identified and hence we have looked at modification indices to make appropriate changes. The following table gives the modification indices.

Table 70 : Modification indices - improved initial SEM model

			M.I.	Par Change
e61	<-->	PT	6.109	-.023
e61	<-->	PEU	4.218	.021
e52	<-->	PT	6.514	.036
e50	<-->	PT	9.480	-.051
e51	<-->	SP	11.940	.026
e51	<-->	PPrivacy	18.490	-.072
e45	<-->	e51	8.563	.037
e54	<-->	PPrivacy	7.937	-.045
e54	<-->	PT	4.464	.021
e54	<-->	PEU	4.519	-.025
e54	<-->	e51	4.190	.024
e53	<-->	PU	4.888	.022
e53	<-->	PPrivacy	20.762	.080
e53	<-->	PT	12.386	-.040
e53	<-->	PEU	10.053	.041
e53	<-->	e44	9.966	-.027
e53	<-->	e61	10.296	.036
e53	<-->	e45	4.273	-.028
e49	<-->	SP	4.063	-.017
e49	<-->	PPrivacy	11.149	.063
e49	<-->	e50	12.051	-.072
e47	<-->	PU	12.912	-.054
e47	<-->	SP	5.405	-.029
e47	<-->	PT	21.586	.081
e47	<-->	e61	5.166	-.038
e47	<-->	e53	21.581	-.096
e47	<-->	e49	25.975	.112

Source: From Researcher's data analysis

The above table is a part of the total modification indices. Among the other paths, the path between e47 and e49 has improved the model and made it as an identified model. The following figure gives the improved model and we continue to build the paths that are significant such that, we get the final model that has the indices attaining the required cut-off points.

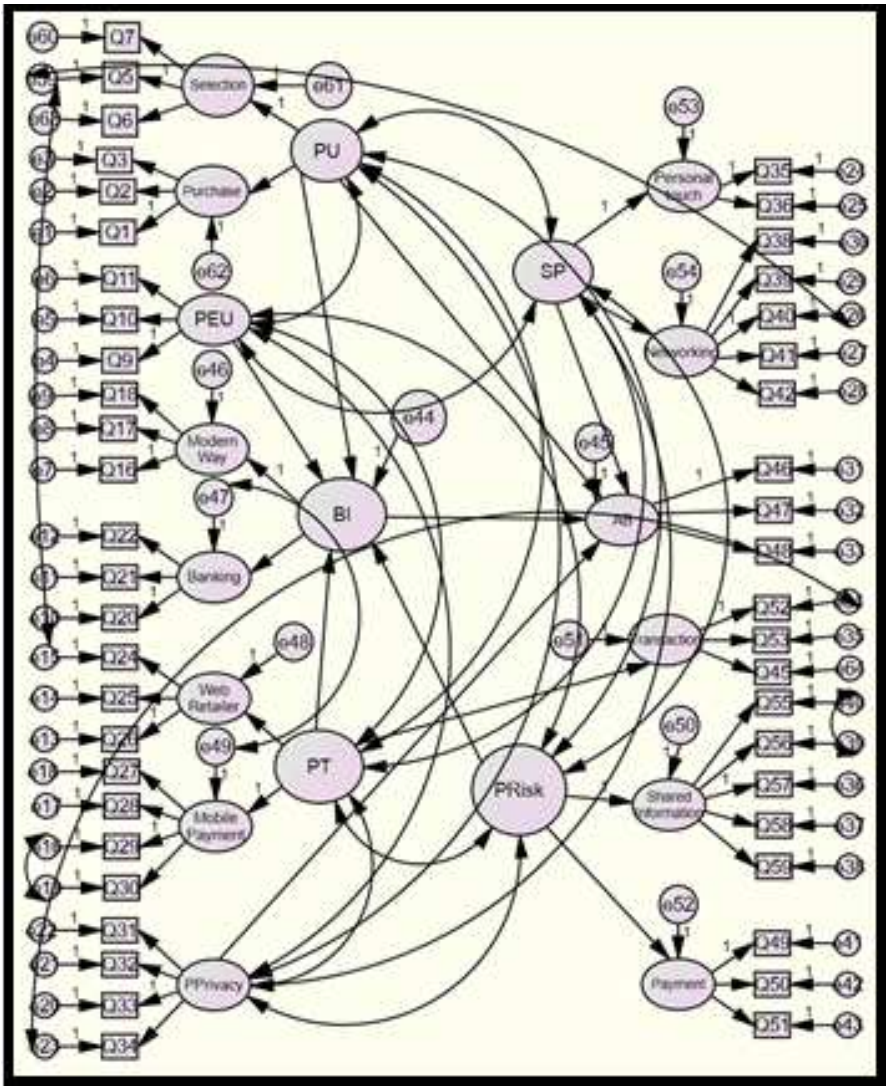


Figure 6 : Improved SEM model-identified

Source: From researcher's data analysis

The following tables give the model fit indices of the above model. Based on this, we check whether the final model is determined or not.

Table 71 : CMIN- improved SEM model-identified

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	134	2071.938	994	.000	2.084
Saturated model	1128	.000	0		
Independence model	47	13791.808	1081	.000	12.758

Source: From researcher's data analysis

Table 72 :RMR, GFI- improved SEM model-identified

Model	RMR	GFI	AGFI	PGFI
Default model	.054	.895	.881	.789
Saturated model	.000	1.000		
Independence model	.245	.312	.282	.299

Source: From researcher's data analysis

Table 73 : Baseline comparisons- improved SEM model-identified

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.850	.837	.916	.908	.915
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Source: From researcher's data analysis

Table 74 : RMSEA- improved SEM model-identified

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.037	.035	.040	1.000
Independence model	.123	.122	.125	.000

Source: From researcher's data analysis

From the above tables, one can observe that the GFI, AGFI are not at the required cut-off levels and hence we look at the modification indices and construct the significant paths and improve the model. This process is continued till the final model has the required cut-offs for the model fit indices. We do not present all the modification indices tables but the paths in the final model indicates that they have higher modification indices and the paths are significant. The following figure is the final model built, after the new significant paths between the errors as well as between the factors and errors are formed.

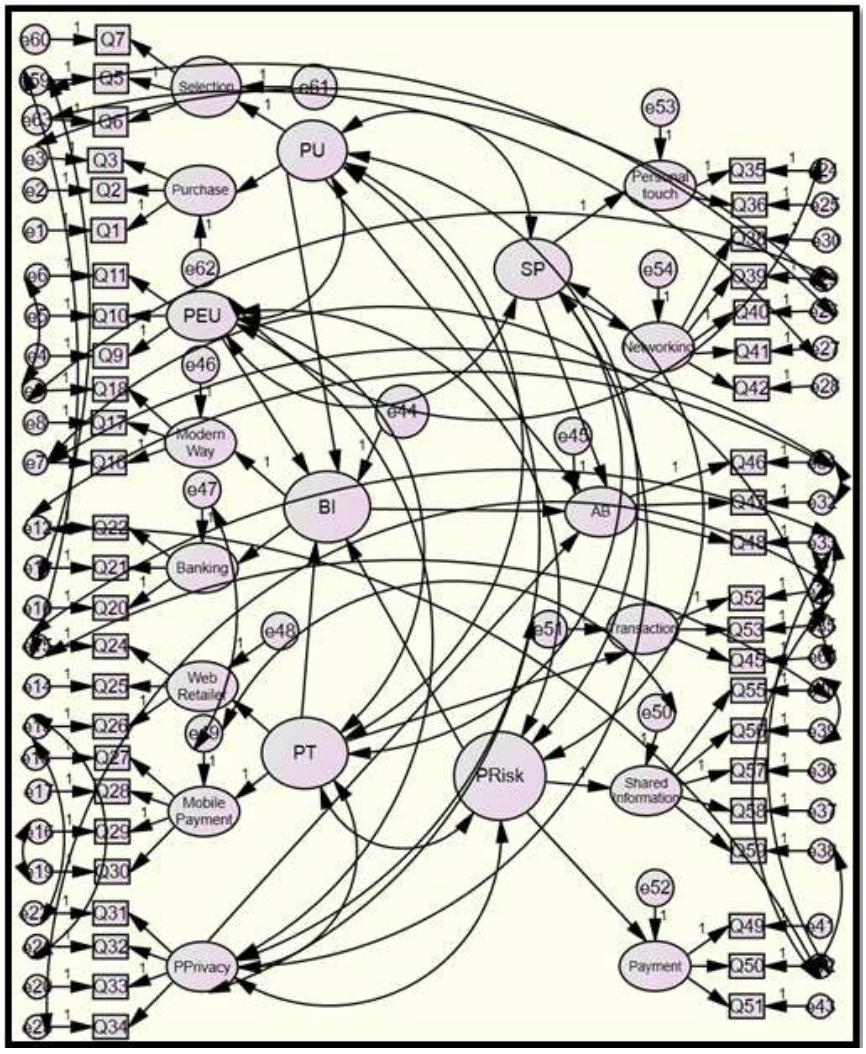


Figure 7 : Final SEM model

Source: From researcher's data analysis

Testing of the model rebuilt

The following tables give results of the model fit indices for the final model proposed and based on this we get the confirmation.

Table 75 : CMIN- final SEM model

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	156	1714.071	972	.000	1.763
Saturated model	1128	.000	0		
Independence model	47	13791.808	1081	.000	12.758

Source: From researcher's data analysis

Table 76 : RMR, GFI- Final SEM Model

Model	RMR	GFI	AGFI	PGFI
Default model	.049	.914	.900	.788
Saturated model	.000	1.000		
Independence model	.245	.312	.282	.299

Source: From researcher's data analysis

Table 77 : Baseline Comparisons- Final SEM Model

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.876	.862	.942	.935	.942
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Source: From researcher's data analysis

Table 78 : RMSEA- Final SEM Model

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.031	.029	.034	1.000
Independence model	.123	.122	.125	.000

Source: From researcher's data analysis

From the above tables, one can note that the model fit indices meets the required cut-off points and hence the model built is a good-fit. Hence, the model built can be used for testing the hypotheses constructed and also address the objectives framed. The following tables give the results of the regression paths in model built and will be used to test the hypotheses proposed.

Table 79 : Testing of regression paths- final SEM model

			Estimate	S.E.	C.R.	P	Label
BI	<---	PEU	-.219	.081	-2.720	.007	par_35
BI	<---	PT	.538	.067	7.993	***	par_46
BI	<---	PU	.770	.130	5.922	***	par_54
BI	<---	PRisk	.083	.035	2.405	.016	par_56
Banking	<---	BI	1.002	.101	9.896	***	par_9
Web_Retailer	<---	PT	.740	.065	11.318	***	par_14
Mobile_Payment	<---	PT	1.000				
Personal_touch	<---	SP	1.000				
Networking	<---	SP	1.403	.157	8.943	***	par_24
Shared_Information	<---	PRisk	1.000				

			Estimate	S.E.	C.R.	P	Label
Payment	<---	PRisk	1.013	.118	8.580	***	par_34
Selection	<---	PU	1.000				
Purchase	<---	PU	.960	.098	9.783	***	par_48
Modern_Way	<---	BI	1.000				
AB	<---	PU	-.938	.234	-4.015	***	par_58
AB	<---	BI	1.201	.348	3.453	***	par_59
AB	<---	PPrivacy	-.284	.053	-5.391	***	par_60
AB	<---	SP	.992	.294	3.371	***	par_61
Transaction	<---	PT	.959	.088	10.964	***	par_62
Q1	<---	Purchase	1.000				
Q2	<---	Purchase	1.043	.082	12.757	***	par_1
Q3	<---	Purchase	1.171	.089	13.092	***	par_2
Q9	<---	PEU	1.000				
Q10	<---	PEU	.996	.075	13.349	***	par_3
Q11	<---	PEU	.939	.076	12.303	***	par_4
Q16	<---	Modern_Way	1.000				
Q17	<---	Modern_Way	.985	.059	16.642	***	par_5
Q18	<---	Modern_Way	1.019	.061	16.721	***	par_6
Q20	<---	Banking	1.000				
Q21	<---	Banking	1.037	.058	17.751	***	par_7
Q22	<---	Banking	.790	.048	16.299	***	par_8
Q26	<---	Web_Retailer	1.000				
Q25	<---	Web_Retailer	1.408	.092	15.318	***	par_10
Q24	<---	Web_Retailer	1.314	.088	15.011	***	par_11
Q29	<---	Mobile_Payment	1.000				
Q28	<---	Mobile_Payment	1.139	.057	20.078	***	par_12
Q27	<---	Mobile_Payment	1.051	.054	19.323	***	par_13
Q30	<---	Mobile_Payment	.927	.044	21.055	***	par_15
Q33	<---	PPrivacy	1.000				
Q32	<---	PPrivacy	1.038	.060	17.369	***	par_16
Q31	<---	PPrivacy	.860	.057	15.024	***	par_17
Q34	<---	PPrivacy	.976	.056	17.283	***	par_18
Q35	<---	Personal_touch	1.000				
Q36	<---	Personal_touch	1.320	.133	9.909	***	par_19
Q40	<---	Networking	1.000				
Q41	<---	Networking	1.089	.072	15.161	***	par_20
Q42	<---	Networking	1.163	.073	15.907	***	par_21
Q39	<---	Networking	1.087	.072	15.134	***	par_22
Q38	<---	Networking	1.144	.073	15.713	***	par_23
Q46	<---	AB	1.000				
Q47	<---	AB	1.202	.083	14.560	***	par_25
Q48	<---	AB	1.133	.095	11.935	***	par_26
Q52	<---	Transaction	1.000				

			Estimate	S.E.	C.R.	P	Label
Q53	<---	Transaction	1.175	.101	11.686	***	par_27
Q57	<---	Shared_Information	1.000				
Q58	<---	Shared_Information	.970	.053	18.297	***	par_28
Q59	<---	Shared_Information	.863	.052	16.464	***	par_29
Q56	<---	Shared_Information	.912	.052	17.437	***	par_30
Q55	<---	Shared_Information	.861	.053	16.391	***	par_31
Q49	<---	Payment	1.000				
Q50	<---	Payment	.831	.067	12.381	***	par_32
Q51	<---	Payment	1.013	.079	12.806	***	par_33
Q5	<---	Selection	1.000				
Q7	<---	Selection	1.065	.093	11.468	***	par_47
Q6	<---	Selection	1.176	.095	12.337	***	par_55
Q45	<---	Transaction	1.124	.096	11.656	***	par_57

Source: From researcher's data analysis

The above table gives the p-values, and using which, one can observe the significance of the paths between the factors, between factors and the observed variables. Using these, we test the hypotheses proposed in the study.

Table 80 : Standardized regression weights- final SEM model

			Estimate
			Estimate
BI	<---	PEU	-.253
BI	<---	PT	.601
BI	<---	PU	.678
BI	<---	PRisk	.107
Banking	<---	BI	.548
Web_Retailer	<---	PT	.734
Mobile_Payment	<---	PT	.736
Personal_touch	<---	SP	.709
Networking	<---	SP	.820
Shared_Information	<---	PRisk	.705
Payment	<---	PRisk	.910
Selection	<---	PU	.917
Purchase	<---	PU	.771
Modern_Way	<---	BI	.714
AB	<---	PU	-.671
AB	<---	BI	.977
AB	<---	PPrivacy	-.368
AB	<---	SP	.612
Transaction	<---	PT	.928
Q1	<---	Purchase	.603
Q2	<---	Purchase	.664
Q3	<---	Purchase	.707
Q9	<---	PEU	.655
Q10	<---	PEU	.666
Q11	<---	PEU	.582
Q16	<---	Modern_Way	.702

			Estimate
Q17	<---	Modern_Way	.735
Q18	<---	Modern_Way	.741
Q20	<---	Banking	.751
Q21	<---	Banking	.787
Q22	<---	Banking	.663
Q26	<---	Web_Retailer	.604
Q25	<---	Web_Retailer	.794
Q24	<---	Web_Retailer	.742
Q29	<---	Mobile_Payment	.728
Q28	<---	Mobile_Payment	.812
Q27	<---	Mobile_Payment	.770
Q30	<---	Mobile_Payment	.699
Q33	<---	PPrivacy	.731
Q32	<---	PPrivacy	.725
Q31	<---	PPrivacy	.612
Q34	<---	PPrivacy	.715
Q35	<---	Personal_touch	.558
Q36	<---	Personal_touch	.718
Q40	<---	Networking	.629
Q41	<---	Networking	.676
Q42	<---	Networking	.721
Q39	<---	Networking	.670
Q38	<---	Networking	.709
Q46	<---	AB	.565
Q47	<---	AB	.683
Q48	<---	AB	.626
Q52	<---	Transaction	.514
Q53	<---	Transaction	.632
Q57	<---	Shared_Information	.748
Q58	<---	Shared_Information	.733
Q59	<---	Shared_Information	.651
Q56	<---	Shared_Information	.703
Q55	<---	Shared_Information	.659
Q49	<---	Payment	.631
Q50	<---	Payment	.611
Q51	<---	Payment	.673
Q5	<---	Selection	.593
Q7	<---	Selection	.565
Q6	<---	Selection	.638
Q45	<---	Transaction	.626

Source: From researcher's data analysis

The above table gives the standardized regression weights, using which, one can understand the level of impact the exogenous variables on the endogenous variables. For example, level of impact of BI on AB is 0.977, which indicates that the impact is very high and designing a website that creates a right intention in the minds of the customers will motivate them to purchase products through the website. Similarly, the impact of Perceived risk on BI is 0.107, which indicates that the impact is low. Hence, one can conclude that, the customers are perhaps happy with the existing provisions to protect the customer's safety with respect to shopping, payment, and sharing personal information etc. This may lead to a conclusion that, customers are not expecting much from the websites

for the same with respect to safety to have a better intention for purchase through the websites. Similar explanation can be given to other weights as well.

Table 81 : Covariances- final SEM model

			Estimate	S.E.	C.R.	P	Label
PEU	<-->	PT	.173	.021	8.036	***	par_36
PEU	<-->	PPrivacy	.093	.024	3.915	***	par_37
PEU	<-->	SP	.133	.020	6.703	***	par_38
PEU	<-->	PRisk	.081	.022	3.675	***	par_39
PT	<-->	PPrivacy	.232	.028	8.272	***	par_40
PT	<-->	SP	.194	.024	8.054	***	par_41
PT	<-->	PRisk	.091	.021	4.370	***	par_42
PPrivacy	<-->	SP	.142	.022	6.605	***	par_43
PPrivacy	<-->	PRisk	.288	.037	7.874	***	par_44
SP	<-->	PRisk	.104	.019	5.512	***	par_45
PEU	<-->	PU	.195	.021	9.286	***	par_49
PT	<-->	PU	.134	.017	7.712	***	par_50
PPrivacy	<-->	PU	.108	.020	5.534	***	par_51
SP	<-->	PU	.096	.015	6.616	***	par_52
PRisk	<-->	PU	.075	.018	4.267	***	par_53
e51	<-->	PPrivacy	-.086	.019	-4.560	***	par_66
e47	<-->	e49	.134	.025	5.432	***	par_67
e49	<-->	e50	-.079	.022	-3.628	***	par_88
e39	<-->	e40	.264	.039	6.774	***	par_62
e26	<-->	e59	.087	.022	3.968	***	par_63
e16	<-->	e19	.143	.026	5.475	***	par_64
e15	<-->	e33	.130	.026	5.042	***	par_65
e38	<-->	e42	.107	.030	3.528	***	par_68
e33	<-->	e34	.142	.036	3.992	***	par_69
e31	<-->	e32	.150	.039	3.849	***	par_70
e33	<-->	e42	.153	.029	5.374	***	par_71
e34	<-->	e42	.112	.031	3.644	***	par_72
e24	<-->	PEU	.088	.019	4.542	***	par_73
e23	<-->	e34	-.108	.031	-3.430	***	par_74
e15	<-->	e59	-.094	.019	-4.846	***	par_75
e13	<-->	e21	-.091	.026	-3.432	***	par_76
e15	<-->	e40	-.085	.024	-3.537	***	par_77
e12	<-->	e42	.114	.027	4.247	***	par_78
e9	<-->	e29	-.088	.023	-3.809	***	par_79
e13	<-->	e22	-.091	.028	-3.243	.001	par_80
e12	<-->	e31	.105	.030	3.566	***	par_81
e7	<-->	e31	-.115	.027	-4.313	***	par_82
e6	<-->	e9	-.096	.023	-4.244	***	par_83
e3	<-->	e29	.075	.023	3.233	.001	par_84
e33	<-->	e35	.079	.032	2.495	.013	par_85
e11	<-->	e59	-.092	.023	-3.951	***	par_86
e27	<-->	e63	-.076	.023	-3.258	.001	par_87
e7	<-->	e64	.095	.026	3.657	***	par_89

Source: From researcher's data analysis

The above table gives the significance of the associations between the exogenous factors extracted and also associations between the errors that improves the model built. One can note that all the association are significant and the following table gives the degree of associations between the exogenous factors. Recall that, their significance played a role in the final model building process and the same is discussed in CFA.

Table 82 : Correlations- final SEM model

			Estimate
PEU	<-->	PT	.514
PEU	<-->	PPrivacy	.195
PEU	<-->	SP	.585
PEU	<-->	PRisk	.209
PT	<-->	PPrivacy	.502
PT	<-->	SP	.678
PT	<-->	PRisk	.245
PPrivacy	<-->	SP	.454
PPrivacy	<-->	PRisk	.541
SP	<-->	PRisk	.409
PEU	<-->	PU	.736
PT	<-->	PU	.523
PPrivacy	<-->	PU	.296
SP	<-->	PU	.553
PRisk	<-->	PU	.254
e51	<-->	PPrivacy	-.485
e47	<-->	e49	.328
e49	<-->	e50	-.229
e39	<-->	e40	.336
e26	<-->	e59	.161
e16	<-->	e19	.267
e15	<-->	e33	.215
e38	<-->	e42	.146
e33	<-->	e34	.163
e31	<-->	e32	.203
e33	<-->	e42	.220
e34	<-->	e42	.145
e24	<-->	PEU	.185
e23	<-->	e34	-.142
e15	<-->	e59	-.208
e13	<-->	e21	-.149
e15	<-->	e40	-.137
e12	<-->	e42	.174
e9	<-->	e29	-.167
e13	<-->	e22	-.133
e12	<-->	e31	.138
e7	<-->	e31	-.173
e6	<-->	e9	-.189
e3	<-->	e29	.143
e33	<-->	e35	.105
e11	<-->	e59	-.182
e27	<-->	e63	-.139
e7	<-->	e64	.158

Source: From researcher's data analysis

Reliability and validity measures

Fornell and Larcker (1981) have emphasized on both the reliability of each indicator variable (measurement item) as well as, the reliability of each factor. Reliability of each measurement item is measured by squared multiple correlation (SMC). SMC represents the amount of variance explained by an individual indicator/construct of its respective factor; and measured by square of its (indicator's) standardized factor loading. Column 5 of table-82 shows that all values of SMC are greater than cut-off of 0.30 suggested by Bagozzi and Yi (1988).

Reliability of each construct is assessed by Cronbach alpha. As suggested by Hair et al. (2010), alpha values are more than the acceptable cut-off criterion of 0.7 (table-82). According to Hair et al. (2010), there are three common approaches to ensure convergent validity used by researchers: (1) standardized factor loading (0.5 or greater); (2) average variance explained (0.5 or higher); and (3) composite reliability (0.7 or above).

As shown in table-78, each standardized factor loadings (l) was statistically significant ($p < 0.001$) and above the cut-off value, which reflect adequate convergent validity. The values of average value explained (AVE) and construct reliability (discussed as "composite reliability") were also more than their cut-off level 0.5 and 0.7 respectively and acceptable. Therefore, these measures exhibited adequate convergent validity.

Table 83 : Reliability and validity measures

Factor	Sub-Factor	Item	λ	SMC	Error	CR	α	AVE	SQRT(AVE)
Perceived Usefulness	Purchase	Q1	0.752	0.566	0.434	0.880	0.744	0.552	0.743
		Q2	0.771	0.594	0.406				
		Q3	0.752	0.566	0.434				
	Selection	Q5	0.661	0.437	0.563				
		Q6	0.648	0.420	0.580				
		Q7	0.855	0.731	0.269				
		Total	4.439	3.313	2.687				
Perceived Ease of Use	-	Q9	0.795	0.632	0.368	0.821	0.672	0.605	0.778
		Q10	0.798	0.637	0.363				
		Q11	0.740	0.548	0.452				
		Total	2.333	1.816	1.184				
Perceived Trust	Web-retailers	Q24	0.847	0.717	0.283	0.941	0.852	0.617	0.785
		Q25	0.835	0.697	0.303				
		Q26	0.684	0.468	0.532				
	Mobile Payment	Q27	0.766	0.587	0.413				
		Q28	0.807	0.651	0.349				
		Q29	0.814	0.663	0.337				
		Q30	0.824	0.679	0.321				
	Transaction	Q45	0.705	0.497	0.503				
		Q52	0.778	0.605	0.395				
		Q53	0.777	0.604	0.396				
		Total	7.837	6.168	3.832				
Perceived Risk	Payment	Q49	0.771	0.594	0.406	0.911	0.831	0.563	0.751
		Q50	0.718	0.516	0.484				
		Q51	0.738	0.545	0.455				
	Shared Information	Q55	0.760	0.578	0.422				
		Q56	0.798	0.637	0.363				
		Q57	0.806	0.650	0.350				
		Q58	0.722	0.521	0.479				
		Q59	0.683	0.466	0.534				
		Total	5.996	4.506	3.494				
Perceived Privacy	-	Q31	0.731	0.534	0.466	0.864	0.790	0.615	0.784
		Q32	0.806	0.650	0.350				
		Q33	0.800	0.640	0.360				
		Q34	0.797	0.635	0.365				
		Total	3.134	2.459	1.541				
Social Presence	Personal Touch	Q35	0.872	0.760	0.240	0.906	0.799	0.581	0.762
		Q36	0.763	0.582	0.418				
	Networking	Q38	0.747	0.558	0.442				
		Q39	0.740	0.548	0.452				
		Q40	0.703	0.494	0.506				
		Q41	0.758	0.575	0.425				
		Q42	0.742	0.551	0.449				
		Total	5.325	4.067	2.933				

Factor	Sub-Factor	Item	λ	SMC	Error	CR	α	AVE	SQRT(AVE)
Behavioral Intention	Modern Way	Q16	0.804	0.646	0.354	0.922	0.769	0.664	0.815
		Q17	0.815	0.664	0.336				
		Q18	0.818	0.669	0.331				
	Banking	Q20	0.852	0.726	0.274				
		Q21	0.855	0.731	0.269				
		Q22	0.741	0.549	0.451				
		Total	4.885	3.986	2.014				
Actual Behaviour	-	Q46	0.780	0.608	0.392	0.828	0.687	0.618	0.786
		Q47	0.849	0.721	0.279				
		Q48	0.724	0.524	0.476				
		Total	2.353	1.853	1.147				

Source: From Researcher's data analysis

ë: Standardized factor loading, SMC: Squared multiple correlation, CR: Composite reliability, á: Cronbach alpha, AVE: Average variance explained.

Discriminant validity was ensured through comparison of shared variance between factors with the average variance explained of individual factor. Table- gives the correlation matrix of constructs, where non-diagonal elements are correlation among constructs and diagonal elements are square root of average variance explained by that construct. Fornell and Larcker (1981) suggested that the diagonal value should be greater than non-diagonal value for adequate discriminant validity. Table-83 clearly shows that all eight factors are different from each other.

Table 84 : Comparison of inter-construct correlation with AVE for discriminant validity

	PU	PEU	PT	PR	PP	SP
PU	**0.743**					
PEU	0.736	**0.778**				
PT	0.523	0.514	**0.785**			
PR	0.254	0.209	0.245	**0.751**		
PP	0.296	0.195	0.502	0.541	**0.784**	
SP	0.553	0.585	0.678	0.409	0.454	**0.762**

Source: From Researcher's data analysis

From the above discussion, we conclude that the all the reliability and validity measures meet the necessary cut-off points and this indicates that the model is a reliable and valid model.

Section XX : Testing of hypothesis

Based on the results of the SEM and the model built, we test the hypotheses proposed in the study. The following discussion give the details of the same.

H1: Behavioral Intention and the Actual behavior of the user are significantly associated.

The null hypothesis is that the association or the impact of Behavioral Intention (BI) on Actual Behavior (AB) is not significant against the alternative that the association or impact is significant. From table-78 one can note that the p-value corresponding to the regression path from BI to AB is 0.0001, which is less than the 5% level of significance. Hence, we conclude that the null hypothesis is rejected and conclude that both BI and AB are significantly associated or the impact of BI on AB is significant. From table-79 one can note the level of impact of BI on AB as 0.977. Since the level of impact is close to 1, one can conclude that the impact of BI is high on AB. From this we suggest that, the actual purchase behavior of the products through e-commerce websites is influenced by their intention or opinion on the usage of the websites for purchase. Hence, in order to attract more customers to purchase through their websites, the e-commerce companies have to design the websites in such-a-way that they match the intention or opinion of the customers on usage of websites for purchase. That is, if the websites generate a positive intention in the minds of the customers to use it, then it leads to purchase of the products through the website.

H2: Social presence is significantly associated with actual behavior of the users.

The null hypothesis is, social presence (SP) is not significantly associated or impacting the actual behavior of the customers. From table-78 one can note that the p-value corresponding to the regression path SP to AB is 0.0001, which is less than the 5% level

of significance. Hence, we conclude that the null hypothesis is rejected and conclude that both SP and AB are significantly associated. From table-79 one can note the level of impact of SP on AB as 0.612. This indicates that the degree of association is moderately high. From this, we conclude that the websites should provide an opportunity for the customers to socialize and this will lead to the purchase of the products through the websites. That is, a customer who wishes to purchase a product online, should feel that the website is interactive.

H3: Perceived usefulness is significantly associated with actual behavior of the users.

The null hypothesis is, perceived usefulness (PU) is not significantly associated or impacting the actual behavior (AB) of the users. From table-78 one can note that, the p-value corresponding to the regression path from PU to AB is 0.0001, which is less than the 5% level of significance. Hence, we conclude that the hypothesis is rejected and conclude that both PU and AB are significantly associated. From table-79 one can note the level of impact of PU on AB as -0.671. Note that, the association or impact is negative. From this we conclude that, if the service providers do not design the websites in such-a-way that they create a sense of usefulness in the minds of the users, then they lose out the customers to their competitors. The same is reflected from the level of impact, which is negative. It indicates that a website that doesn't create a sense of usefulness, cannot attract the customers. Also, if a website is designed in such-a-way that customer perceives that it is useful, he/she still may not tend to purchase through the website because they may look for something better than what they currently perceive. The assumption here is that the user has a better alternative. This is something surprising and interesting.

H4: Perceived privacy is significantly associated with actual behavior of the users.

The null hypothesis is, perceived privacy (PP) and Actual Behavior (AB) are not significantly associated or there is no significant impact of PP on AB. From table-78 one can note that the p-value corresponding to the regression path from Perceived Privacy (PP) to Actual behavior (AB) is 0.0001, which is less than the 5% level of significance. Hence, we conclude that the hypothesis is not-rejected and conclude that both BI and AB are significantly associated. From table-79 one can note the level of impact of BI on AB as -0.368. This indicates that, if the users are not convinced appropriately that their privacy is preserved on the websites, then they may not tend to purchase through the website. Even if the privacy is met, given the better alternatives, they may not prefer to purchase that website.

From the above set of hypotheses, we conclude that the factors: (1) Perceived usefulness, (2) Perceived ease of use, (3) Social Presence, and (4) Perceived Privacy have significant impact on Actual purchase behavior.

H5: Perceived usefulness is significantly associated with behavioral intention of the users.

Null Hypothesis: PU is not significantly associated or the impact of PU is not significant on BI. From table-78 one can note that the p-value corresponding to the regression path from Perceived Usefulness (PU) to Behavioral Intention (BI) is 0.0001, which is less than the 5% level of significance. Hence, we conclude that the hypothesis is not-rejected and conclude that both PU and BI are significantly associated. From table-79 one can note the level of impact of PU on BI as 0.678. From this we conclude that, if a website is designed appropriately in such-a-way that it creates the perception on the usefulness of the same for purchase, then it can create a positive intention on the user's mind.

H6: Perceived ease of use is significantly associated with behavioral intention of the users.

Null hypothesis: PEU is not significantly associated or the impact of PEU is not significant on BI. From table-78 one can note that the p-value corresponding to the regression path from Perceived Ease of Use (PEU) to Behavioral Intention (BI) is 0.007, which is less than the 5% level of significance. Hence, we conclude that the hypothesis is rejected and conclude that both PEU and BI are significantly associated. From table-79 one can note the level of impact of PEU on BI as -0.253. From the above, we conclude that if a website cannot create an impression that its usage is easy, it cannot attract the users. Since the impact is negative, a website has to be designed in such-a-way that, a user should feel that it is the better than the alternatives, with respect to ease of use.

H7: Perceived risk is significantly associated with behavioral intention of the users.

Null hypothesis: Perceived risk (PR) and behavioral intention (BI) are not significantly associated or

impact of Perceived risk is not significant on behavioral intention.

From table -78 one can note that the p-value corresponding to the regression path from PR to BI is 0.016 which is less than the 5% level of significance. Hence, we conclude that the hypothesis is not-rejected and conclude that both PR and BI are significantly associated. From table -79 one can note the level of impact of PR on BI as 0.107. This indicates that, the website has to take care of the safety of the users of the website. Since the degree of association is not high, it may probably indicate that, customers feel that the steps taken by the providers of the websites are adequate and need not have to be improved further. If it is an important criterion, the association would have been high.

H8: Perceived trust is significantly associated with behavioral intention of the users.

Null hypothesis: Perceived trust (PT) and behavioral intention (BI) and not significantly associated or impact is not significant. From table-78 one can note that the p-value corresponding to the regression path from PT to BI is 0.0001 which is less than the 5% level of significance. Hence, we conclude that the hypothesis is not-rejected and conclude that both PR and BI are significantly associated. From table-79 one can note the level of impact of PR on BI as 0.601. Since the impact is significant and the degree of association is moderately high, one can conclude that the website providers have to take necessary steps to gain the trust of the users to create a positive intention.

H9: The sub-factors extracted are significantly associated with factors proposed in the model.

Table 85 : Sub-factor hypotheses and conclusion

Null Hypothesis	p-value	Conclusion
Selection and PEU are not-significantly associated.	0.0001	Rejected
Purchase and PEU are not-significantly associated.	0.0001	Rejected
Modern way of purchase and BI are not-significantly associated.	0.0001	Rejected
Banking and BI are not-significantly associated.	0.0001	Rejected
Web retailer and PT are not-significantly associated.	0.0001	Rejected
Mobile Payment and PT are not-significantly associated.	0.0001	Rejected
Transaction and PT are not-significantly associated.	0.0001	Rejected
Personal touch and SP are not-significantly associated.	0.0001	Rejected
Networking and SP are not-significantly associated.	0.0001	Rejected
Shared information and PR are not-significantly associated.	0.0001	Rejected
Payment and PR are not-significantly associated.	0.0001	Rejected

Source: Based on the model built and data analysis by the researcher's analysis

Note that, set-3 hypotheses are very important for the study as they include the conclusions related to the effect of exogenous factors on endogenous factors. The effect is either a direct effect or indirect effect and also the total effect of exogenous factors on the endogenous factors. The following discussion gives the details related to the same.

H10: Intention mediates the relationship between perceived usefulness and the actual behavior.

H11: Intention mediates the relationship between perceived ease of use and actual behavior.

H12: Intention mediates the relationship between perceived trust and actual behavior.

H13: Intention mediates relationship between perceived risk and actual behavior.

Table 86 : Indirect effect of Variables interaction

Hypothesis	Exogenous	Mediate	Endogenous	Path	Indirect effect estimate	Mediating Hypothesis
H10	PU	BI	AB	PU-> BI->AB (0.678*0.977)	0.663	Mediating
H11	PEU	BI	AB	PEU-> BI->AB (-0.253*0.977)	-0.247	Mediating
H12	PR	BI	AB	PR-> BI->AB (0.104*0.977)	0.104	Mediating
H13	PT	BI	AB	PT-> BI->AB (0.601*0.977)	0.587	Mediating

Source: From researcher's data analysis

From the above table we conclude that, the mediation of BI between the factors PU and PT is significantly higher than other two factors.

Mediation of BI between PU and AB

This indicates that, the relation between PU and AB is decided by how the website's design create an intention in the minds of the customer. That is, if a website has to be used by the customer for purchase based on its usefulness, then it has to be designed in a way that it creates an intention of purchase because of its usefulness. In other words, perceived usefulness leads to usage of the website for purchase only if it creates a strong intention in the minds of customer related to its usefulness.

Our study indicates that a service provider should design the website in a way that it should not only make the customer to feel that it is useful, but also, create a strong intention that it will be really useful to purchase the products. Unless this happens, a perception towards usefulness need not have to result in the use of the website for purchase.

Mediation of BI between PT and AB

Similarly, PT may lead to AB related to usage of the website, only if an intention is created in the mind of the customer that he/she can trust the website for purchase. The degree of indirect effect is 0.587, this indicates that an intention created by the perceived trust will have better effect on the AB.

Mediation of BI between PEU and AB

The indirect effect of PEU is negative on AB. This indicates that, if a service provider wishes that his/her website has to be used for purchase, then the website should be designed in a way that it creates perception that it is easy to use for purchase. Since the effect is negative, if a website cannot create a positive perception with respect to its ease of use while purchase, then it may lose the customer. Based on the question framed in the questionnaire, we note that if a website is in such-a-way that it is very easy to use, it may create an intention that it may not take care of the purchase properly. Whereas if a website is designed in such-a way

that it is easy to use but slightly includes tougher process, then the customer may feel that it takes care of the purchase safely. Hence, we conclude that the negative effect of PEU on AB may be due to too much of ease in use. The current day customer wishes to have an easy process, yet procedure that creates an intention of safety. If one observes that the steps very easy, then it may create to a doubt. Under this assumption we conclude the discussion on indirect effect. This assumption can be checked with a study and can be a future research for anyone.

Mediation of BI between PR and AB

Based on table-86, we conclude that the indirect effect of perceived risk on actual behavior of purchase through the websites is low. This indicates that, if a customer feels that the website provides sufficient assurance that they are not at risk, then they create an intention on positive side, which ultimately leads to the actual behavior of the customers.

Direct and total effect of exogenous factors on endogenous factors

Table 87 : Direct effect of exogenous factors

Exogenous	Endogenous	Path	Effect
PU	BI	PU-> BI	0.678
PEU	BI	PEU-> BI	-0.253
PR	BI	PR-> BI	0.107
PT	BI	PT-> BI	0.601
PP	AB	PP->AB	-0.368
SP	AB	SP->AB	0.612
PU	AB	PU->AB	-0.671
BI	AB	BI->AB	0.977

Source: From researcher's data analysis

Table 88 : Total effect of exogenous factors on AB*

Exogenous	Mediate	Endogenous	Path	Total effect
PU	BI	AB	PU-> BI->AB (-0.671+0.663)	-0.009
PEU	BI	AB	PEU-> BI->AB (0+ (-0.247))	-0.247
PR	BI	AB	PR-> BI->AB (0+0.104)	0.104
PT	BI	AB	PT-> BI->AB (0+0.587)	0.587
PP	-	AB	PP->AB	-0.368
SP	-	AB	SP->AB	0.612
BI	-	AB	BI->AB	0.977

Source: From researcher's data analysis

*Total effect=Direct effect + Indirect effect. Direct effect estimates can be found in table- and the same are used to conclude the hypotheses in set-1 and set-2.

Total effect and direct effect of perceived usefulness on actual behavior

From table-87 one can note that, the direct effect of PU on AB is very low. This indicates that, if a website is designed in such-a-way that a customer perceives that the site is useful, then it may not directly lead to actual behavior of usage. Linking this with the indirect effect, we can conclude that unless the usefulness of the website creates a strong positive intention in the minds of the customers, the usage of the website for purchase will not happen. From the table- we note that, the direct effect of PU on AB is negative.

This indicates that, the actual behavior of the customer cannot be influenced by the website directly based on perceived usefulness. But, if PU creates a strong intention in the minds of the customers, then it can influence the AB of the customers. This is because, the impact of PU on BI is significant and high-positive. Hence finally we conclude that, if PU creates a strong intention in the minds of the customers, then it leads to actual behavior of the customers in using the websites for purchase.

Total effect and direct effect of perceived ease of use on actual behavior

From table-87 and table-88 one can note that, there is no direct of PEU on AB as there is no direct path between the two. Hence, the total effect of PEU on AB is same as the level of indirect effect of PEU on AB, through BI. So, the conclusion is the same as that we have presented for the mediation effect of PEU on AB through BI.

Total effect and direct effect of perceived risk on actual behavior

Since, there is no direct path from PR to AB, the direct effect is zero. Hence, the effect of PR on AB is only through BI. That is, unless the design of the website creates a perception related to risk and PR creates a strong intention related to the website, the customer may not get necessary motivation to use the website for purchase.

Total effect and direct effect of perceived trust on actual behavior

Similar to the previous one, the total effect of PT on AB is zero due to the absence of the direct regression path. Hence, the effect of PT on AB is indirect through BI.

Total effect and direct effect of perceived trust on actual behavior

There is not direct path from PT to AB and hence there is no direct effect of PT on AB. But, there is an indirect effect of PT on AB, through BI. This makes total effect equal to indirect effect of PT on AB.

Total effect and direct effect of perceived privacy on actual behavior

Note that, there is a direct path between the PP and AB and the impact level of PP on AB is negative, -0.368. Hence, total effect is same as direct effect. This indicates that unless a website is designed in such-a-way that it creates a perception in the minds of the customers that it takes care of their privacy on the website, purchase cannot happen. Negative association indicates that, customer may look for a better option even they perceive that their privacy of information is taken care.

Total effect and direct effect of social presence on actual behavior

Even in this case, the total effect is same as direct effect. The level of effect is 0.612 and positive. This indicates that if a website provides an opportunity to discuss, share, and receive information with other buyers on websites, then customers tend to use the website for purchase.

Total effect and direct effect of behavior intention on actual behavior

The total effect of BI on AB is same as the direct effect of BI on AB and it is at the level of 0.977. If a website creates a high purchase intention in the minds of the customers, then customers will use the website for purchase of the products.

Final remarks

From the entire discussion presented above, we conclude that the exogenous factors- PU, PEU, PR, and, PT, are significantly associated with the BI of the customer and BI, PU, SP, and, PP are significantly associated with the AB of the customers. Also, BI mediates significantly between PEU and AB, PU and AB, PT and AB, PR and AB.

Interesting point is, PU has a direct path to AB, which is negative. But, it has positive effect on AB if it is mediated by the BI of the customers. This indicates that, if the website creates a perception in the minds of the customer on PU and if it leads to strong intention to purchase, then the customer will purchase using the website.

Section XXI : Discussion and suggestions from the study

The following are the suggestions from the study. The suggestions are mainly related to the design of the websites for purchase and can be taken up by the service providers (e-commerce companies).

If a service provider wishes that a customer uses the website for purchase, then the website has to be designed in such-a-way that it creates a **strong intention** to use a website for purchase through a perception that it is **useful**, **easy to use**, it gives confidence related to **risk** taken by the customer, and, trust on the website that the process of purchase is safe. Hence, we suggest that the e-commerce companies have to design the website that it creates a strong intention to use by taking the necessary steps related to the factors mentioned.

Based on the impact levels of the regression paths, we suggest that while designing the website, a company has to give top priority to perceived usefulness and provide all the aspects related to PU in it. The next priority has to be given to perceived trust. Since the level of impact of perceived ease of use if negative, the companies have to be cautious before design the website that are very user friendly. Few customers may not expect a trivial or easy way of purchase and may expect that few steps have to be followed before the purchase happens. Since the level is not very high, they can take this as the third priority with respect to creating a strong intention to use the website. The impact level of perceived risk on intention is positive and hence, the company has to give emphasis that creates the perception that they are not at risk if he/she uses the website.

A customer's actual purchase of a product through the website is dependent on the **strong intention** the website creates to use it, safe guards the **privacy**, **useful** to use it, and, feels a sense of **social touch** on the website. Hence, we suggest that the website has to be designed in such-away that it finally leads to usage of the website by taking care of the factors mentioned.

Among the factors that impact the actual behavior of the customer in using the website for purchase, the strong intention that the website creates to use it has to be given top priority. Since the impact is at the level that is close to one, the companies have to be very cautious in designing the websites. They will be able to get more customers using their websites if they can create a strong intention by taking into consideration the following (found significant in the study): 1. Create a sense of modernity in purchase, 2. Payment using online banking for purchase. Among the two, more effect is due to modernity in purchase (refer to table-).

In order to create a positive perception of usefulness, the e-commerce should provide opportunity of selecting the product he/she is looking for, and, create a smooth process for purchase. We suggest that these aspects have to be taken care appropriately by the e-commerce companies. From the current study, we have identified that aspects like faster purchase, varieties in purchase, convenient to purchase, meets the need, and effective selection for purchase are significant in relation to the factor purchase. Also, usefulness of website for searching, enhanced selection, and, sharing of the links have turned out to be significant for the factor perceived usefulness. Among these, quick and effective purchase for the sub-factor purchase and enhanced selection for the sub-factor selection are having the high impact. Hence, taking these aspects into consideration for designing the website, companies will be able to attract the customers.

For creating a perception on ease of use, the companies have to ensure that: 1. the customers should feel that learning to purchase a product through the website is easy, 2. Easy to understand the use of the website, 3. Transactions are easy on the website. Among these, easy to understand and easy to learn are having more impact on PEU.

To create a perception that the website can be trusted for purchase, the companies have to provide assurance that: 1. they take care of the interests of the customers, 2. create an opinion that they can trust the website, 3. Create an opinion that mobile payments are trustworthy, secured. Among these, aspects related to transaction are having more impact, followed by aspects related to mobile payments, and aspects related to web-retailers.

To create a perception of aspects related to privacy, the companies have to provide assurance that the information provided is not misused, free from concern about the availability of private information on website, free from concern about the way the information shred will be used. If the companies can provide the assurance on these, then they will be able to create perception that the website safeguards their privacy.

The sense of the social presence can be created if the companies consider the aspects related to personal touch, followed by networking.

The perception on risk can be created if the companies can assure that the information shared is protected, payment through website is safe. Among these, aspects related to payment have to be given the top priority.

If the companies wish to attract more customers and make them use their websites for purchase, then they have to adopt the factors, sub-factors, and the respective variables to design the websites.

Section XXII : Linking the results to the existing literature

The results of the current study can be linked to the existing literature, in the following way.

From the results, we note that, Social presence is significantly associated with the actual behavior of the customers in using the websites for purchase. This supports the claims made by Baozhou *et al* (2016) that, social presence explains buyer behavior.

In the model built, we have studied the significance of the correlation between PP and PT, PP with PR, PT with PR and found that all the correlations are significant. This coincides with the results of Nuno Fortes and Rita (2016), Ankit and Shailendra (2012).

The results have shown that PU is significantly negatively correlated and when mediated by BI, it has a positive association/impact. This gives a solution to the claims made by Turner *et al* (2010), in their review on TAM.

The results show that PR is significant in explaining BI and this coincides with the results of Li and Huang (2009). This suggests that PR is an important component, that one has to consider to understand the behavior of the customers, with respect to online shopping.

The main contribution is, PP, PT and PR are the three components to be added to existing TAM, to understand the behavior of the customers, in using the websites for purchase.

Another significant contribution is, to under the behavior of the customer better, one needs to consider the mediation of BI between PU and PT.

Section XXIII : Conclusion of the study

From the above analysis and findings, we conclude the study with the following statements.

The model constructed gives the e-commerce companies an opportunity to find the set of factors that are significantly effecting the purchase behavior of the customers using their websites.

A service provider who can take care of creating a positive perception on usefulness, on ease of use, on trust, and, on risk can easily create a strong intention on using the website for purchase. Among these, usefulness of the website for purchase is having the high impact on intention.

A service provider who can take care of creating a strong intention to purchase the product using the website, assures that the customer's privacy is safeguarded, and, provides opportunity for having social presence, can make the customer use the website for purchase. Among these, creating a strong intention is very important followed by social presence, But, creating a perception on usefulness has to be done carefully. If there are alternative options, then customers can look for better options than the one he/she is looking currently. Hence, it is important to give the best design to make the customer to use the website for purchase.

We finally conclude that the study gives an opportunity for the companies to know the factors, sub-factors, and, the significant variables, to understand the behavior of the customers better.

Section XXIV : Limitations and future work

The study focused mainly on MBA students and the future work can cover students from other branches. Also, it can be extended to other section of the society.

It mainly considered an extended TAM model and can also consider also the theory of planned behavior model along with extended TAM.

The sample is drawn from few states and can also cover those states that were not considered.

The study focused on collecting data from the users and one can consider collecting data from the e-commerce companies.

The study is based on a survey and one can consider the study as a design of experiments, by showing the websites to few customers and then taking their responses for model building.

References

Ankit, K. and Shailendra, S.B., (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. International Journal of Bank Marketing. Vol. 30 No. 4, pp-303-322.

Ajzen, I. (1985). From Intentions to Actions. A Theory of Planned Behavior. In. Kuhl J., Beckmann J. (eds) Action Control. SSSP Springer Series in Social Psychology. Springer, Berlin, Heidelberg.

Albert, L., L., Maupin, D., J., Sena, M., P., Zhuang, Y. (2000). The technology acceptance model and the World Wide Web. Decision Support Systems 29, pp-269–282.

Alina, M., C., Davis, G., B., Kauffman, R., J. (2000). Trust, Expertise, and E-Commerce Intermediary Adoption. Association for Information Systems AIS Electronic Library (AISeL), AMCIS 2000 Proceedings.

Alraja, M., N., and Aref, M. (2015). Customer acceptance of e-commerce. integrating perceived risk with TAM. I J A B E R, Vol. 13, No. 2, pp-913-921.

Baozhou, L., Weiguo, F., Zhou, M. (2016). Social presence, trust, and social commerce purchase intention. An empirical research, Computers in Human Behavior, Volume 56, pp- 225-237.

Bagozzi, R.P. & Yi, Y. JAMS (1988) 16. 74. https://doi.org/10.1007/BF02723327

Benamati, John & Fuller, Mark & Serva, Mark & Baroudi, Jack. (2010). Clarifying the Integration of Trust and TAM in E-Commerce Environments: Implications for Systems Design and Management. Engineering Management, IEEE Transactions on. 57, pp-380 - 393.

Bentler, P., M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107, pp-238–246.

Browne, M.W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In Bollen, K.A. & Long, J.S. [Editors.] Testing structural equation models. Newbury Park, CA: Sage, 136–162.

Bumm Kim, Hong & Kim, Taegoo (Terry & Won Shin, Sung.) (2009. Modeling roles of subjective norms and e-Trust in customers' acceptance of airline B2C e-Commerce websites. Tourism Management - TOURISM MANAGE. 30, pp-266-277.

Byrne, B.M. (2010). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming,* 2nd ed., Multivariate Application Series, Routledge. Taylor and Francis Group, New York, NY and London.

Cronbach LJ (1951). Coefficient alpha and the internal structure of tests. Psychometrika. **16** (3), pp-297–334.

Cochran, w. G. (1977). Sampling techniques. New York. John Wiley.

Chiu, C-M, Lin, H-Y, Sun, S-Y., and Hsu, M-H. (2009). Understanding customers' loyalty intentions towards online shopping. an integration of technology acceptance model and fairness theory, Behavior & Information Technology, 28.4, pp-347-360.

Cho, Y., C., and Sagynov, E. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment. International Journal of Management & Information Systems – First Quarter, Volume 19, Number 1, pp-21-35.

Comrey, A., L., and Lee, H., B. (1992). A first course in factor analysis (2nd edition). Hillsdale, N., J. Lawrence Erlbaum Associates.

David T., G., and Michael, J., P. (2011). Integrating website usability with the electronic commerce acceptance model. Behavior & Information Technology Vol. 30, No. 2, pp-181–199.

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- 982-1003.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, Vol. 13 No. 3, pp-319-40.

Featherman, M. (2001). Extending the Technology Acceptance Model by Inclusion of Perceived Risk. Association for Information Systems AIS Electronic Library (AISeL), AMCIS Proceedings, pp-758-760.

Field, A. (2005). Discovering statistics using SPSS. Second edition. Sage.

Field, A. P. (2009). Discovering statistics using SPSS. London, England. SAGE.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior. An introduction to theory and research.* Reading, Mass. Addison-Wesley.

Fornell, C. and Larcker, D. (1981). Evaluating structure models and unobservable variable and measurement errors, *Journal of Marketing Research*, Vol. 18, pp-39-50.

Gefen, D., and Straub, D. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption. Journal of the Association for Information Systems Volume 1, Article 8, pp-1-30.

Gefen, D., Karahanna, E. and Straub, D. (2003). Trust and TAM in Online Shopping: An Integrated Model. MIS Quarterly, Vol. 27, No. 1, pp-51-90.

Guadagnoli, E., and Velicer, W. (1988). Relation of sample size to the stability of component patterns. Psychological Bulletin 103, pp-265-275.

Hair, J., F., Tatham, R., L., Anderson, R., E., and Black, W. (1998) Multivariate data analysis. (Fifth Ed.) Prentice-Hall. London.

Hair, J.F., Black, W.C., Babin, B., Anderson, R.E. and Tatham, R.L. (2010), *Multivariate Data Analysis,* Prentice Hall, Upper Saddle River, NJ

Hu, L., & Bentler, P., M. (1999). Cut-off criteria for fit indexes in covariance structure analysis. Conventional criteria versus new alternatives. Structural Equation Modeling, Retrieved, Taylor & Francis Online, 6, pp-1-55.

Hu, L., T., and Bentler, P., M. (1995). Evaluating model fit. In R. H. Hoyle (Editor), Structural Equation Modeling. Concepts, Issues, and Applications (pp. 76-99). London. Sage.

James J. Jiang, Maxwell K. Hsu, Gary Klein and Binshan Lin d (2000). E-commerce user behavior model. an empirical study. Human Systems Management

19, pp-265–276.

Jöreskog, K., G., and Sörbom, D. (1996). LISREL 8 User's reference guide. Chicago. Scientific Software.

Park, J., Lee, D., & Ahn, J. (2004) Risk-Focused E-Commerce Adoption Model. A Cross-Country Study, Journal of Global Information Technology Management, 7.2, pp-6-30.

Johnson, R., and Hignite, M., A. (2000). Applying the technology acceptance model to the WWW. Academy of Information and Management Sciences Journal, Volume 3, Number 2, pp-130-142.

Klopping, I., M., and McKinney, E. (2004). Extending the technology acceptance model and the task-technology fit model to consumer e-commerce. Information Technology, Learning, and Performance Journal; Morehead Vol. 22, Issue.1, pp-35-48.

Kline, R., B. (2016). Principles and practice of structural equation modeling (4th ed.). New York. Book © Guilford Press.

Khalil M., N., and Michael, P., J. (2007). The Influence of Trust on Internet Banking Acceptance. Journal of Internet Banking and Commerce, vol. 12, no.2.

Kaiser, H., F. (1970). A second generation little jiffy. Psychometrika, 35(4), pp-401–415.

Kaiser, H., F. (1974). An index of factor simplicity. Psychometrika, 39 (1), pp-31-36.

Luthfihadi, M., and Dhewanto, W. (213). Technology Acceptance of E-commerce in Indonesia. International Journal of Engineering Innovation and Management 3, pp-9-18.

Lee, D., Park, J., Ahn, J-H. (2001). On the Explanation of Factors Affecting ECommerce Adoption. Association for Information Systems AIS Electronic Library (AISeL), ICIS 2001 Proceedings.

Li, Y-H., and Huang, J-W (2009). Applying Theory of Perceived Risk and Technology Acceptance Model in the Online Shopping Channel. World Academy of Science, Engineering and Technology 53, pp-919-925.

Mccloskey, D. (2004). Evaluating Electronic Commerce Acceptance with the Technology Acceptance Model, Journal of Computer Information Systems, 44.2, pp-49-57.

Mei Cao, Zhang, Q., Seydel, J. (2005). B2C *e*commerce web site quality. an empirical examination", Industrial Management & Data Systems, Vol. 105 Issue. 5, pp.645-661.

McCloskey, D. (2006). The Importance of Ease of Use, Usefulness, and Trust to Online Consumers. An Examination of the Technology Acceptance Model with Older Consumers. Journal of Organizational and End User Computing, vol. 18, no. 3 edited by M. Adam Mahmood © 2006, Idea Group Inc.

MacCallum, R., C., Widaman, K., F., Zhang, S., and Hong, S. (1999) Sample size in factor analysis. Psychological Methods 4(1), pp-84-99.

MacCallum, R., C., Widaman, K., F., Preacher, K., J., and Hong, S. (2001) Sample size in factor analysis. The role of model error. Multivariate Behavioral Research 36, pp-611-637.

Maditinos, D.I., Sarigiannidis, L., and Dimitriadis, E. (2007). Predicting e-commerce purchasing intention in Greece. An extended TAM approach. 5th International Conference on Accounting and Finance in Transition (ICAFT), 12-14 July 2007 Greenwich, London organized by Greenwich University, The Business School.

Mandilas, A., Karasavvoglou, A., Nikolaidis, M., and Tsourgiannis, L. (2013). Predicting consumer's perceptions in On-line shopping. Procedia Technology, 8, pp-435-444.

Maditinos, D., Chatzoudes, D., and Sarigiannidis, L. (2013). An examination of the critical factors affecting consumer acceptance of online banking. A focus on the dimensions of risk. Journal of Systems and Information Technology Vol. 15 No. 1, pp. 97-116.

Nadim, J., and Noorjahan, B. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. African Journal of Business Management Vol.2 (1), pp-32-40.

Nuno Fortes and Paulo Rita (2016). Privacy concerns and online purchasing behavior: Towards an integrated model. European research on management and business economics, 22, pp-167-176.

Pavlou, P., A. (2001). Integrating Trust in Electronic Commerce with the Technology Acceptance

Model. Model Development and Validation. Association for Information Systems AIS Electronic Library (AISeL), AMCIS 2001 Proceedings.

Pavlou, P., A. (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. International Journal of Electronic Commerce, Vol. 7, No. 3 (Spring, 2003), pp-101-134.

Sanda Renko and Daniel Popoviæ (2015). Exploring the consumers' acceptance of electronic retailing using technology acceptance model. https.// hrcak.srce.hr/file/206343.

Schumacker, R. E., & Lomax, R. G. (2010). A beginner's guide to structural equation modeling (3rd ed.). New York. Routledge.

Sejin Ha and Leslie Stoel (2009). Consumer e-shopping acceptance. Antecedents in a technology acceptance model. Journal of Business Research 62, pp-565–571.

Steiger, J., H., and Lind, J., C. (1980). Statistically-based tests for the number of common factors. Paper presented at the Annual Spring Meeting of the Psychometric Society, Iowa City.

Stevens, J., P. (1992) Applied multivariate statistics for the social sciences (2nd edition). Hillsdale, NJ.Erlbaum.

Tabachnick, B., G. and Fidell, L., S. (2007) Using multivariate statistics. Fifth Edition. Pearson Education Inc.

Tamara, D., and Paul, H. (2006). An Extended Privacy Calculus Model for E-Commerce Transactions. Information Systems Research, Vol. 17, No. 1, pp. 61-80

Tucker, L., R. and Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. Psychometrika, 38, pp-1–10.

Turner, Mark & Kitchenham, Barbara & Brereton, Pearl & Charters, Stuart & Budgen, David. (2010). Does the technology acceptance model predict actual use? A systematic literature review. Information and Software Technology. 52, pp-463-479.

Ullman, J., B. (2001). Structural equation modeling. In B. G. Tabachnick & L. S. Fidell (Editors.), Using Multivariate Statistics (4th ed.) (pp. 653-771). Needham Heights, MA. Allyn & Bacon.

van der Heijden, Hans. (2000). E-Tam: A revision of the Technology Acceptance Model to explain website revisits. VU University Amsterdam, Faculty of Economics, Business Administration and Econometrics, Serie Research Memoranda.

http.//degree.ubvu.vu.nl/repec/vua/wpaper/pdf/ 20000029.pdf

Vijayasarathy, L., R. (2004). Predicting consumer intentions to use on-line shopping: The case for an augmented technology acceptance model. Information & Management 41, pp-747–762.

Venkatesh, V. (2000). Determinants of perceived ease of use. integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information System Research*, Vol. 11 No. 4, pp-342-65.

Venkatesh, V. and Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Science,* Vol. 39 No. 2, pp-273-315.

Venkatesh, V. and Davis, F.D. (1996). A model of the antecedents of perceived ease of use. development and test. *Decision Science,* Vol. 27 No. 3, pp-451-81.

Venkatesh, V. and Davis, F.D. (2000). A theoretical extension of the technology acceptance model. four longitudinal field studies*. Management Science*, Vol. 46 No. 2, pp- 186-204.

WANN-YIH WU and CHING-CHING KE (2015). An online shopping behavior model integrating personality traits, perceived risk, and technology acceptance. Social behavior and personality, 43(1), pp-85-98.

Appendix-1

Questionnaire-1

A Study on Identifying the Factors the Motivate Customers to choose E-commerce Websites

Dear Sir/Madam,

We introduce ourselves as a research team at Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysore. The title of the project is "**A Study on Identifying the Factors the Motivate Customers to choose E-commerce Websites**". The objectives include collecting information from customers who use e-commerce or e-transactions for different purposes. This project is purely for academic purpose and, the responses given by you will not be shared with anyone and used only for academic purpose.

We request you to cooperate and give your valuable response.

Thanking you,

Yours very truly,

Dr.Srilakshminarayana.G
SDMIMD, Mysore

Demographics

1. May we know your good name.....
2. Can you please specify your college name? .....
3. Can you please specify the city you belong to? .....
4. Can you please specify your age category?
   a. 19-20 b. 20-23 c. 23-26 d. 26-29 e. 29-32
5. Gender
   a. Male b. Female
6. Family Status
   a. Nuclear b. Joint
7. Number of family members
   a. 2-4 b. 5-7 c. 7-9 d. >=10
8. Which of the payment options do you use on e-commerce websites? (You can choose more than one option)
   a. Net banking
   b. Cash on delivery
   c. Paytm
   d. Credit card
   e. Debit card
9. Frequency of shopping monthly
   a. <3 times b 4-6 c. 7-9 d. >=10 times

Appendix-1

Opinion	5	4	3	2	1
Purchasing using e-commerce websites makes purchase faster.					
It saves time and money purchasing on e-commerce websites.					
It has become easy for me to search different varieties on e-commerce websites.					
It meets my needs browsing on e-commerce websites.					
I get most of the products I look for on the e-commerce websites.					
Selection is easy on e-commerce websites.					
Sharing of the links is easy on the e-commerce websites.					
It is more convenient purchasing through e-commerce websites.					
Quick selection is possible purchasing on e-commerce websites.					
Improved performance in online shopping via e-commerce websites.					
Makes my job of selection easier using e-commerce websites.					
Effective in selecting a product on e-commerce websites.					
Websites are useful to search for products					
It has enhanced my selection on e-commerce websites.					
Discounts given are useful for saving while purchasing through websites.					
Frequent offers are useful in selection through websites.					
Banking links provided on websites is useful for payments.					
Payment online and tracking is useful through the websites.					
It saves time paying online through e-commerce websites.					
Easy transfer on money through e-commerce websites					
Booking is faster on e-commerce websites.					
Easy to learn using websites for shopping online.					
It is easy to understand the shopping on e-commerce websites.					
Transactions are easy on e-commerce websites.					
I would find doing online shopping and web based online transaction easy.					
I would find interaction through websites clear and understandable.					
I would find it is easy to become skillful at navigating the websites.					
Searching is clear and easy to understand on e-commerce websites.					
Mental effort is less in searching on e-commerce websites.					
Easy to use the e-commerce websites for search.					
Difficulty level is less in using e-commerce websites.					
I learned easily to shop on the e-commerce websites.					
Shopping on the e-commerce website is a clear and understandable process.					
I become easily skillful at shopping on the e-commerce websites.					
For me, it's easy to shop on the e-commerce websites.					
I think it would be very good to use the e-commerce websites for my shopping activities in addition to traditional methods					
In my opinion it would be very desirable to use the e-commerce websites for my shopping activities in addition to traditional methods					
It would be much better for me to use the e-commerce websites for my shopping activities in addition to traditional methods					
Using the e-commerce websites for my shopping activities is a good idea					

Opinion	5	4	3	2	1
I frequently use online banking services for financial transaction activities on e-commerce websites.					
I always use online banking services to pay for products I purchase related to my living on e-commerce websites.					
I have positive attitudes toward using online banking services on e-commerce websites.					
I am planning to use online banking services in the future on e-commerce websites.					
The web retailers are trustworthy.					
The web retailers keep their promises and commitments.					
The web retailers keep their customer's best interests in mind.					
I trust mobile payment systems to be reliable that are linked to e-commerce websites					
I trust mobile payment systems to be secure that are linked to e-commerce websites.					
I believe mobile payment systems are trustworthy if they are linked to e-commerce websites					
I trust mobile payment systems if linked to e-commerce websites.					
Even if the mobile payment systems are not monitored, I would trust them to do the job correctly if they are linked to e-commerce websites.					
I am concerned that the information I submit on the e-commerce websites could be misused.					
I am concerned that a person can find private information about me on the e-commerce websites.					
I am concerned about submitting information on the e-commerce websites, because of what others might do with it.					
I am concerned about submitting information on the e-commerce websites, because it could be used in a way I did not foresee.					
I feel that there are other buyers like me purchasing on e-commerce websites.					
There is a sense of personal-ness purchasing via e-commerce websites.					
I can socialize while purchasing on e-commerce websites.					
There is a sense of human warmth purchasing on e-commerce websites.					
There is a sense of human sensitivity on e-commerce websites.					
I felt "availability" and efficient services on e-commerce websites.					
There is always a possibility of social networking through the interaction with the e-commerce websites.					
There was a sense of friendliness when I interacted with the e-commerce websites.					
There was a sense of belongingness when I interacted through e-commerce websites.					
I do not think that things may go wrong with my transaction through e-commerce websites					
I am confident that my transaction through my online store will always be transparent.					

Opinion	5	4	3	2	1
This online shopping website is one that keeps promises and commitments					
I trust this online shopping website because they keep my best interests in mind.					
The overall feeling of this website is trustworthy					
I don't perceive any risk by sharing my personal information concerning my transaction with the e-commerce websites.					
I am confident that others cannot tamper with information concerning my transaction with the e-commerce websites.					
I believe that advanced technology can certainly provide the desired security for my transaction with the e-commerce websites..					
I don't think my money will get stolen whenever I transact with an e-commerce websites.					
I feel secure in providing sensitive information when transacting with electronics websites.					
I would feel totally safe providing information about myself to e-commerce websites.					
I would feel secure sending sensitive information to e-commerce websites.					
The security issue of sensitive information was a major obstacle to my online purchases from e-commerce websites.					
Internet banking payment is risky on e-commerce websites.					
Banking on the e-commerce websites entails uncertainty or vulnerability					
There are negative outcomes banking on e-commerce websites.					
I find it dangerous to bank over the e-commerce websites.					
I feel transactions on e-commerce websites is not risky.					
It is safe and easy to pay on e-commerce websites.					
Shopping on e-commerce websites is risky.					
Providing credit card information on e-commerce websites is risky.					
Providing personal information on e-commerce websites is risky.					
Providing my phone number on e-commerce websites is risky.					
Registering on e-commerce websites is risky.					
It is riskier to shop on e-commerce websites for a product than to shop offline					
Using the e-commerce websites is not as risky as I feel.					

We thank you for your cooperation

Appendix - 2

Questionnaire-2

A Study on Identifying the Factors the Motivate Customers to choose E-commerce Websites

Dear Sir/Madam,

We introduce ourselves as a research team at Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysore. The title of the project is "**A Study on Identifying the Factors that Motivate Customers to choose E-commerce Websites**". The objectives include collecting information from customers who use e-commerce or e-transactions for different purposes. This project is purely for academic purpose and, the responses given by you will not be shared with anyone and used only for academic purpose.

We request you to cooperate and give your valuable response.

Thanking you,

Yours very truly,

Dr. Srilakshminarayana.G
SDMIMD, Mysore

Demographics

1. May we know your good name……..
2. Can you please specify your college name? ……
3. Can you please specify the city you belong to? ……
4. Can you please specify your age category?
   b. 19-20 b. 20-23 c. 23-26 d. 26-29 e. 29-32
5. Gender
   b. Male b. Female
6. Family Status
   b. Nuclear b. Joint
7. Number of family members
   b. 2-4 b. 5-7 c. 7-9 d. >=10
8. Which of the payment options do you use on e-commerce websites?
   f. Net banking
   g. Cash on delivery
   h. Paytm
   i. Credit card
   j. Debit card
9. Frequency of shopping monthly
   a. <3 times b 4-6 c. 7-9 d. >=10 times

10. Please give your opinion on the following on a scale of 1-5, **5- highest weight and 1-least**

	Opinion	5	4	3	2	1
1	Purchasing using E-commerce websites is faster and saves time.					
2	I get varieties and meet by needs and more convenient purchasing on E-commerce websites.					
3	Quick and effective in selecting a product on E-commerce websites.					
4	Discounts and offers given are useful while purchasing on E-commerce websites.					
5	Websites are useful to search for products.					
6	It has enhanced my selection on e-commerce websites.					
7	Sharing of the links is easy on the e-commerce websites.					
8	Paying through online is easy and saves time, while purchasing on E-commerce websites.					
9	Easy to learn using websites for shopping online.					
10	It is easy to understand the shopping on e-commerce websites.					
11	Transactions are easy on e-commerce websites.					
12	Doing online shopping is easy, interactive and clear.					
13	Searching is clear and easy to understand on e-commerce websites.					
14	Mental effort and difficulty is less while purchasing through E-commerce websites.					
15	I learn shopping easily on E-commerce websites.					
16	My skills of navigating and purchasing has increased on E-commerce websites.					
17	It is very good idea, desirable, and better option to purchase on E-commerce websites.					
18	Using online banking services is a frequent choice while purchasing on E-commerce websites.					
19	I am planning to use online banking services in the future on e-commerce websites.					
20	Web retailers are trust worthy, committed and looks for customer's interests.					
21	I trust mobile payments systems reliable, trust worthy, when linked to E-commerce websites.					
22	Even if the mobile payment systems are not monitored, I would trust them to do the job correctly if they are linked to e-commerce websites.					
23	I am concerned that the information I submit on the e-commerce websites could be misused.					
24	There are other buyers like me purchasing on E-commerce websites and this motivates me to purchase with confidence.					
25	I felt "availability" and efficient services on e-commerce websites.					
26	Because of other buyers on E-commerce websites, I feel a sense of human touch and warmth, belongingness while reading and writing reviews regarding the products.					

	Opinion	5	4	3	2	1
27	I believe that advanced technology can certainly provide the desired security for my transaction with the e-commerce websites.					
28	The security issue of sensitive information was a major obstacle to my online purchases from e-commerce websites.					
29	I am comfortable, confident and trust worthy shopping online through e-commerce websites.					
30	I don't perceive any risk by sharing my personal information concerning my transaction with the e-commerce websites.					
31	I am confident that others cannot tamper with information concerning my transaction with the e-commerce websites.					
32	I feel secured and safe providing sensitive information on E-commerce websites.					
33	Internet banking is risky, uncertain while shopping on E-commerce websites.					
34	It is safe and easy to pay on E-commerce websites.					
35	I feel transaction on e-commerce is not risky.					
36	I find it dangerous to bank over the e-commerce websites.					
37	Using the e-commerce websites is not as risky as I feel.					

We thank you for your cooperation.

Appendix-3

Final Questionnaire

A Study on Identifying the Factors the Motivate Customers to choose E-commerce Websites

Dear Sir/Madam,

We introduce ourselves as a research team at Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysore. The title of the project is "**A Study on Identifying the Factors that Motivate Customers to choose E-commerce Websites**". The objectives include collecting information from customers who use e-commerce or e-transactions for different purposes. This project is purely for academic purpose and, the responses given by you will not be shared with anyone and used only for academic purpose.

We request you to cooperate and give your valuable response.

Thanking you,

Yours very truly,

Dr.Srilakshminarayana. G
SDMIMD, Mysore

Demographics

1. May we know your good name…….....

2. Can you please specify your college name? ……

3. Can you please specify the city you belong to? ……

4. Can you please specify your age category?

   c. 19-20 b. 20-23 c. 23-26 d. 26-29 e. 29-32

5. Gender
   c. Male b. Female

6. Family Status
   c. Nuclear b. Joint

7. Number of family members
   c. 2-4 b. 5-7 c. 7-9 d. >=10

8. Which of the payment options do you use on e-commerce websites? (You can choose more than one)
   k. Net banking
   l. Cash on delivery
   m. Paytm
   n. Credit card
   o. Debit card

9. Frequency of shopping monthly
   a. <=3 times b 4-6 c. 7-9 d. >=10 times

10. Please give your opinion on the following on a scale of 1-5, **5- highest weight and 1-least**

	Opinion	5	4	3	2	1
1	Purchasing using E-commerce websites is faster and saves time.					
2	I get varieties and meet by needs and more convenient purchasing on E-commerce websites.					
3	Quick and effective in selecting a product on E-commerce websites.					
4	Discounts and offers given are useful while purchasing on E-commerce websites.					
5	Websites are useful to search for products.					
6	It has enhanced my selection on e-commerce websites.					
7	Sharing of the links is easy on the e-commerce websites.					
8	Paying through online is easy and saves time, while purchasing on E-commerce websites.					
9	Easy to learn using websites for shopping online.					
10	It is easy to understand the shopping on e-commerce websites.					
11	Transactions are easy on e-commerce websites.					
13	Searching is clear and easy to understand on e-commerce websites.					
14	Mental effort and difficulty is less while purchasing through E-commerce websites.					
15	I learn shopping easily on E-commerce websites.					
16	My skills of navigating and purchasing has increased on E-commerce websites.					
17	I think it would be very good to use the e-commerce websites for my shopping activities in addition to traditional methods					
18	In my opinion it would be very desirable to use the e-commerce websites for my shopping activities in addition to traditional methods					
19	It would be much better for me to use the e-commerce websites for my shopping activities in addition to traditional methods					
20	Using the e-commerce websites for my shopping activities is a good idea					
21	I frequently use online banking services for financial transaction activities on e-commerce websites.					
22	I always use online banking services to pay for products I purchase related to my living on e-commerce websites.					
23	I have positive attitudes toward using online banking services on e-commerce websites.					
24	I am planning to use online banking services in the future on e-commerce websites.					
25	The web retailers are trustworthy.					
26	The web retailers keep their promises and commitments.					
27	The web retailers keep their customer's best interests in mind.					

	Opinion	5	4	3	2	1
28	I trust mobile payment systems to be reliable that are linked to e-commerce websites					
29	I trust mobile payment systems to be secure that are linked to e-commerce websites.					
30	I believe mobile payment systems are trustworthy if they are linked to e-commerce websites					
31	I trust mobile payment systems if linked to e-commerce websites.					
32	I am concerned that the information I submit on the e-commerce websites could be misused.					
33	I am concerned that a person can find private information about me on the e-commerce websites.					
34	I am concerned about submitting information on the e-commerce websites, because of what others might do with it.					
35	I am concerned about submitting information on the e-commerce websites, because it could be used in a way I did not foresee.					
36	I feel that there are other buyers like me purchasing on e-commerce websites.					
37	There is a sense of personal-ness purchasing via e-commerce websites.					
38	I can socialize while purchasing on e-commerce websites.					
39	There is a sense of human warmth purchasing on e-commerce websites.					
40	There is a sense of human sensitivity on e-commerce websites.					
41	There is always a possibility of social networking through the interaction with the e-commerce websites.					
42	There was a sense of friendliness when I interacted with the e-commerce websites.					
43	There was a sense of belongingness when I interacted through e-commerce websites.					
44	I believe that advanced technology can certainly provide the desired security for my transaction with the e-commerce websites..					
45	The security issue of sensitive information was a major obstacle to my online purchases from e-commerce websites.					
46	I am comfortable, confident and trust worthy shopping online through e-commerce websites.					
47	I don't perceive any risk by sharing my personal information concerning my transaction with the e-commerce websites.					
48	I am confident that others cannot tamper with information concerning my transaction with the e-commerce websites.					
49	I feel secured and safe providing sensitive information on E-commerce websites.					
50	Internet banking payment is risky on e-commerce websites.					

	Opinion	5	4	3	2	1
51	Banking on the e-commerce websites entails uncertainty or vulnerability					
52	There are negative outcomes banking on e-commerce websites.					
53	I feel transactions on e-commerce websites is not risky.					
54	It is safe and easy to pay on e-commerce websites.					
55	Shopping on e-commerce websites is risky.					
56	Providing credit card information on e-commerce websites is risky.					
57	Providing personal information on e-commerce websites is risky.					
58	Providing my phone number on e-commerce websites is risky.					
59	Registering on e-commerce websites is risky.					
60	It is riskier to shop on e-commerce websites for a product than to shop offline					

We thank you for your cooperation.