An empirical study of the consumer's behavior towards online shopping in northeast India

[1]Suraj Debbarma, [2]Sutapa Debbarma
[1]Lecturer, [2]Assistant Professor
[1]Information Technology,[2]Electronics & Telecommunication
[1]Women's Polytechnic, Hapania, West Tripura, [2]Tripura Institute of Technology, Narshingarh, West Tripura

Abstract—With the advancement of internet technology, online shopping trend is becoming most popular. Northeast India, which is obscure, and is somewhat cut-off from other parts of India, is the fastest growing and booming market for e-retailers. Therefore, understanding the factors that influences the "intention to use" online shopping among the people of north-eastern region of India, is important for theoretical and managerial perspective. The study extends previous theories of Technology Acceptance Model (TAM) by introducing a new factor of belief, i.e., "perceived convenience", with two other existing beliefs, "perceived usefulness" and "perceived ease of use". This research explores how various external factors influence "perceived usefulness", "perceived ease of use" and "perceived convenience" which further influence "intention to use" the online shopping. In this research, it is found that external factors like "Online retailer services" provided by the online retailer and "self-efficacy" are strongly influencing "perceived convenience" and "perceived ease of use" respectively. The result of this study suggests that perceived convenience and perceived ease of use are significantly influencing the intention to use online shopping, whereas perceived usefulness has no significant effect on it. This study will contribute managerial and theoretical value to the researchers.

Keywords: Online shopping, Perceived Convenience, Perceived ease of use, perceived usefulness, Intention to use

I. INTRODUCTION

In the recent era of internet technology, an e-commerce use is growing rapidly all over India. As per the market research, online shopping trend is expected to cross 100 million by the end of 2017, with e-retail market likely jumping to 65% by the year 2018. Indian e-retail is expected to touch $17.52 billion with expected growth of 15% every year [31]. Online shopping trend is significantly growing in Northeast part of India and becoming a booming market for various e-retailers [15]. With a total population of 45 million, i.e., 3.76% of total population of India [16]and standard per-capita income [1], the region has good market potential for e-retailers. Due to the limited geographic reach and low availability of variety of products, people in northeast India are turning to online shopping as a convenient shopping option [15]. Previously few studies had been conducted about online shopping in India [12]; [2]; [24]; [19], but there is still significant gap in understanding the online shopping behaviour of northeast part of India because of its geographically obscure and cut off location, different cultural and economic situation compared to other parts of India [40]. In theoretical perspective, this study is important because very few literatures are available that uses Technology acceptance model (TAM) to understand the online shopping intension in India.

The Technology Acceptance Model developed by Davis, 1989 is the most widely applied model of user acceptance and usage [44]. TAM suggests that perceived ease of use and perceived usefulness are two specific beliefs to determine one's behavioural intention to use a technology [13]; [14]; [44]. In this research, a new belief construct, viz., "perceived convenience", is incorporated in the existing TAM framework. Convenience can be referred to as users' perception of saving time and effort using the system ([38]; [6]). Previous researchers found that perceived convenience affects shopping motivation [29] and intention to use the system [21];[25]. Perceived convenience was used as external variable in TAM and found that it motivates attitude towards using mobile technology [8] and e-learning system [22]. Convenience is seen as a useful attribute that influences consumers for online shopping [35]; [11]. However, there is no literature to support "Perceived convenience" as one of the key beliefs to influence intention to use online shopping. Hence, there is necessity to study perceived convenience as key belief construct along with perceived ease of use and perceived usefulness in TAM, and understand the factor that leads to consumers' perception of convenience for using online shopping. This research further aims to determine how strongly perceived convenience affects the perceived ease of use and intention to use.

Researches on online shopping have already identified that utilitarian benefits such as price promotion, easy transaction, availability of value products, and hedonic benefits such as enjoyment, brand, experience seeking [32]; [11] are the motivations that influence the online shopping intentions. Thus, consumers' preferences for experiential value such as fashion, brand or price can influence online shopping activities. Also, quality of service delivered by the online retailers leads to satisfaction, and influences intention to shop online [35]. Another factor of using any technology is user friendliness; people will accept the technology if they know how to use it. Therefore, "self-efficacy" can be considered as customers' confidence of using internet and online shopping websites would influence their belief of perceived ease of use. Considering all the factors that relates to the usefulness, ease of use, convenience and ultimately intention to use online shopping, this research have used three key external variables namely "consumers' preferences", "self-efficacy" and "Online retailer services".

II. RESEARCH OBJECTIVE

Research objective of this study is three fold. First, to provide a critical analysis of the factors those influences intention to use online shopping among the people of north-eastern region of India. Second, to understand the impact of new belief construct perceived convenience in the existing TAM framework. Third, to provide managerial and theoretical implications from the analysis and results.

III. LITERATURE REVIEW

Theoretical background of TAM

Over the last few decades TAM (Technology acceptance model) is used in information system context by many researchers to understand the acceptance of technology by the user. TAM framework was first developed by Davis (1989) and identified that external variables positively impact on beliefs, viz., perceived ease of use and perceived usefulness. These two beliefs have significant effect on attitude towards using and influence intention to use technology. Also TAM shows that perceived usefulness will be influenced by perceived ease of use because, the easier a technology is to use, the more useful it can be (Davis, 1989; Davis et al, 1989; Venkatesh, 2000and Lagris et al, (2003), have used modified TAM2 framework eliminating behavioural construct 'attitudes towards using' because perceived usefulness directly influence intention to use.

TAM is used by many researchers and received extensive empirical supports in various technological acceptances. Purpose of TAM is to identify the impact of external variables on internal beliefs, i.e., "perceived Usefulness" and "perceived ease of use", attitudes, and intentions. "Behavioral intention is predicted by both attitude and perceived usefulness; the latter also influences attitude. Perceived ease of use influences both attitude and perceived usefulness" [23], [13]; [14].

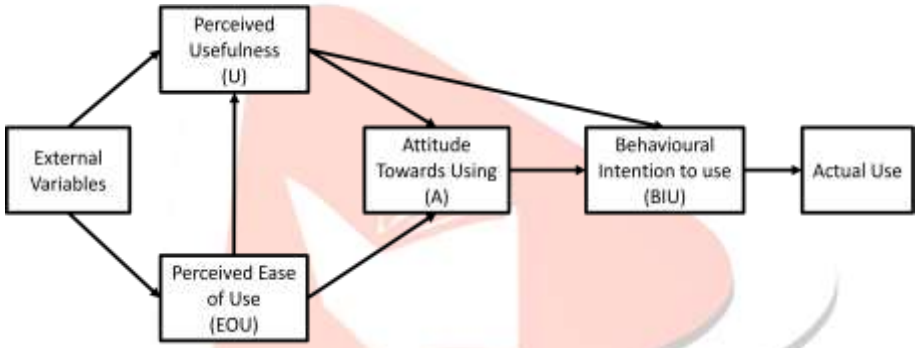

Fig. 1: Original Technology acceptance model (TAM); Source: (Davis et al, 1989)

Online shopping

Online shopping allows consumers to directly buy goods or services from a seller over the Internet using a web browser. Literature on online shopping suggest that trust, security and privacy and computer friendliness is important for online shopping behavior ([35]; [30];[9]). Lee and Lin (2005) have found that customer perception of e-service quality also influence the online shopping behaviors. Another research on online shopping behaviour found that relative advantages over direct shopping such as time saving, price advantages, convenience and lower transaction costs are some important factors that influence online shopping intentions ([9]; [11]). Previous literature based on e-commerce, marketing, and retailing literature,that recognizes consumers' shopping preferences, are based on both utility and fun based motivations such as interpersonal utility, information seeking, price advantages, convenience, and entertainment for using the online shopping [33];[4]; [7]; [11]. .

IV. RESEARCH MODEL AND HYPOTHESIS

External Variables

In TAM, external variables are considered as key indicators to influence key beliefs "perceived ease of use" and "Perceived usefulness". External variables may include individual, organizational, and task characteristics related to the environment [44]; [13]. Utilitarian and hedonic perspective such as economic value for the money, judgement of convenience and time-saving, brand, fashion and enjoyment are some motivations for online shopping intentions [32]; [47]. Hence, product availability, price advantages, availability of branded and fashionable products and availability of various accessories can provide "consumers' preferences" for online shopping compared to conventional shopping, and can be considered as an external motivation to influence perceived usefulness. Another external factor, "Self-efficacy", is defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" [5];[37]. Venkatesh,(2000) have shown that self-efficacy positively influence the perceived ease of use. Perception of control over the technology [44] such as computer or mobile friendliness, internet friendliness and online shopping experience can improve the self-efficacy of the customers which can influence their belief in ease of use.

In the context of service, reliability and responsiveness are the two measuring factors for service quality [27]; [26]. Online retailer could be consider as reliable if they have ability to fulfill orders correctly, deliver promptly, and keep personal information

secure [34]; [27]. Also if the "responsiveness" that can be defined as how promptly an online store provides services, such as customer inquiries and information retrieval [34]; [26], is deemed good, then it can satisfy the customer and influence the intention to use [27]. Reliability and responsiveness of online retailer in the service context can be termed as "Online retailer services", which can influence on the customer's perception of convenient services. Hence, the relationship between external variables and beliefs can be hypothesized as follows:

H1: Consumers' preferences will have positive influence on perceived usefulness
H2: Self-efficacy will have positive influence on perceived ease of use
H3: Online retailer services will have positive influence on perceived convenience

Perceived usefulness, perceived ease of use, perceived convenience and intention to use

In TAM, perceived usefulness and perceived ease of use are the key factors to determine the user intention to use technology. Perceived usefulness is referred as ''the degree to which a person believes that using a particular system would enhance his or her job performance.'' And perceived ease-of-use is referred as ''the degree to which a person believes that using a particular system would be free of effort'' [13]; [14]; [28]. According to the TAM proposed by Davis, perceived ease of use positively affected perceived usefulness; perceived usefulness and perceived ease of use positively affected attitude toward using; and perceived usefulness and attitude toward using positively affected intention to use [14]; [44]; [28]. Due to a weak direct link between perceived usefulness and attitude, attitude towards using a technology was omitted from the final model of TAM [14]; [44], which helps to better understand the influence of perceived ease of use and perceived usefulness on the ultimate dependent variable of interest, "intention to use" [44].

Customers give preference to the product or services if it saves their time and effort [6]; [22]. Relative advantages of online shopping compared to physical shopping is that, using online shopping there is no need to go from one store to the other to buy the product which saves time and effort [36]; [39]; [45];[11]. Convenience provide positive effect on consumers'intention to do online shopping [42]. A study conducted by Cheolho and Sanghoon (2007), indicates that perceived ease of use has significantly positive effects on perceived convenience. In the context of online shopping, customers feel it convenient due to time saving [8], easy transaction and home delivery of products by the online retailers [11]. Previous study on effect of e-service quality on online shopping intension revealed that customers' perception of e-service quality such as prompt delivery of product, prompt responses and security & privacy of customer identity has positive effect on customer satisfaction and intention to use [27]; [41]. Hence, consumers' perception of online shopping as time and effort saving, safe and responsive can be considered as belief and will positively effect on intention to use online shopping. Based on the literature, following hypotheses are proposed:

H4: Perceived ease of use will have positive influence on perceived usefulness
H5: Perceived convenience will have positive influence on perceived ease of use
H6: Perceived usefulness will have positive influence on intention to use
H7: Perceived ease of use will have positive influence on intention to use
H8: Perceived convenience will have positive influence on intention to use

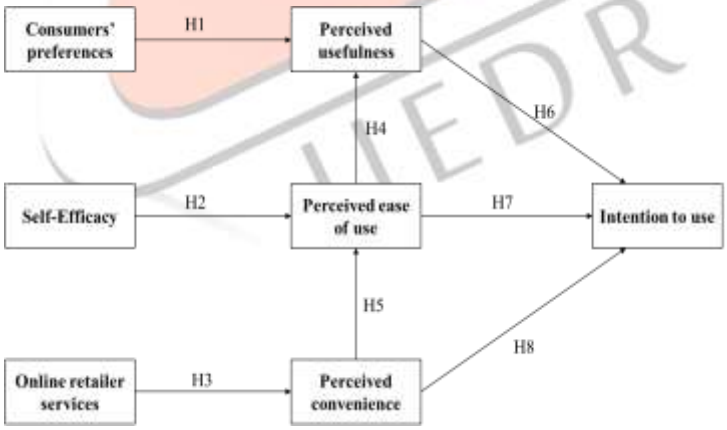

Fig. 2: Research Model

V. METHODOLOGY

In this research, quantitative approach is used. A questionnaire with 32 items comprising seven dimensions: consumers' preferences, self-efficacy, online retailer services, perceived usefulness, perceived ease of use, perceived convenience, and intention to use, is constructed. Items of each constructmust describe the concept in order to generalize the findings. Thus, in this study, development of items for measuring the constructs are adopted and modified in the research context from previous researches conducted by Davis (1989); Davis et al. (1989); Venkatesh, (2000); Berry et al (2002); Overby and Lee (2006); Close and Monika (2009); Lee and Lin (2005); and are refined by online shopping experts through a pilot study using 25 samples.

In the present study, data were collected through questionnaire survey. Samples were targeted from various group of people having online shopping experience that include students, employees, home-makers and self-occupied people,so as to generalize the findings among various groups of people. A brief description of the study was explained in the questionnaire to make it

understandable to the respondent about the research context. Questionnaires were distributed and the respondents were instructed to indicate their level of agreement with the statements in the item using a five-point Likert-type scale. Altogether, 120 questionnaires are collected, out of which, 90 questionnaires are received with valid responses.

VI. ANALYSIS AND RESULT

In this study we used SmartPLS 2.0.M3 for the data and structural path analysis. Partial least squares (PLS) is a powerful method of analysis because of the minimal demands on measurement scales, sample size, and residual distributions. The literature supports that the minimum sample size for PLS should be larger than 10 times the largest number of structural paths directed at a particular construct in the inner path model [10]; [43]. In this proposed research model, structural paths directed at a particular construct in the inner path model is eight, whereby, "intention to use" with 3 paths has the largest number of structural paths. Thus, sample size 90 satisfies the minimum requirements. Analysis of data is done in two steps, confirmatory factor analysis (CFA) and structural modelling. CFA analysis represents the reliability and validity of the constructs. Convergent validity can be confirmed by testing item loadings, composite reliability, and AVE [43]. Composite reliability (CR) of the items should be above 0.7 [17]; average variance extracted should be above 0.5 [20]; the square root of AVE should be higher than the inter-construct co-relations [17]; [43]. Individual item standardized loading should be above 0.5 [20] and significant p-value of loading is $P<0.05$ [18]. In this research model, all the used constructs have higher than the required values of factor loading with significant p-value, CR, AVE and square root of AVE, which confirms the convergent and discriminant validity. Table 1 shows the reliability and validity of the constructs andcorrelation of constructs. Table 2 shows loadings and t-value of the items.

Table1: Reliability and validity of constructs

Constructs	CR	AVE	√AVE	Correlations among constructs						
				IU	PC	PEU	PU	SA	SE	RA
IU	0.8791	0.7842	0.885	1	0	0	0	0	0	0
PC	0.8286	0.4933	0.702	0.6442	1	0	0	0	0	0
PEU	0.8548	0.5958	0.772	0.6309	0.7417	1	0	0	0	0
PU	0.801	0.5741	0.758	0.4909	0.5533	0.6034	1	0	0	0
SA	0.8039	0.5801	0.762	0.3169	0.3559	0.3827	0.4264	1	0	0
SE	0.8891	0.6177	0.786	0.3629	0.3407	0.4428	0.3976	0.3434	1	0
RA	0.8123	0.5229	0.723	0.4915	0.5727	0.6333	0.6966	0.3501	0.4121	1

Abbreviations: CR = composite reliability; AVE = average variance extracted (also in parentheses). IU=Intension to use; PC=Perceived convenience; PEU=Perceived ease of use; PU=Perceived usefulness; SA= Service advantages; SE= Self-efficacy; RA= Relative advantages

Table 2: Loadings and t-values of the items.

Items	Item descriptions	loadings	t-values
PC1	Online shopping is convenient because it helps me to save the desired product information for future purchase.	0.6429	8.2648
PC2	I feel Online shopping is convenient because it delivers products at my home.	0.7226	10.1392
PC3	Online shopping is convenient because it provides different modes of payment.	0.7523	13.8013
PC4	Overall, I feel Online shopping is very convenient for me.	0.7619	12.3599
PC5	Most of the Online shopping facilitates Free delivery.	0.62	7.9703
IU1	Assuming the advantages of online shopping, I will use it.	0.8728	22.0686
IU2	I have high intention to use Online shopping in future.	0.8982	37.1702
PEU1	I can do online shopping without much effort.	0.7973	19.2806
PEU2	I feel online shopping is clear and understandable.	0.7227	9.0715
PEU3	I feel it is easy to search and find desired products using online shopping.	0.7929	19.3972
PEU4	Overall, I feel online shopping is easy to use.	0.7723	15.5201
PU1	Using the online shopping, my shopping quality improves	0.7934	17.7978
PU2	Online shopping gives me opportunity to shop effectively by choosing from a range of items or products.	0.7891	15.5246
PU3	Overall, I feel online shopping is useful for me.	0.6856	6.4748

OS1	The retailer in online shopping delivers on time.	0.851	7.1088
OS2	Transactions with the online shopping are highly secured.	0.6561	3.1076
OS3	I believe the online retailers are always willing to attend customers.	0.7653	7.8556
SE1	I can do online shopping because I am computer friendly.	0.7191	9.5414
SE2	I can do online shopping because I am mobile friendly	0.8324	10.917
SE3	I can do online shopping because I am internet friendly.	0.8269	17.8243
SE4	I believe that I can shop online all by myself.	0.8537	18.4995
SE5	I am confident about shopping online because I have experience in it.	0.6824	7.8495
CP1	I do online shopping to get updated fashion trends.	0.8442	27.7
CP2	Several brands are easily available online.	0.7241	7.2947
CP3	Latest accessories are first introduced in online shopping.	0.6906	7.5294
CP4	Products available online are comparatively cheaper than retail shops.	0.6146	5.7191

Table 3 shows the hypothesis testing results. All the hypotheses, except hypothesis seven (H7), are significant with p-value <0.001, path coefficients are as per the required values suggested by [20], i.e., 0.20 is acceptable, whereas, 0.30 is ideal. Figure 3 shows model testing results.

Table 3: Hypothesis testing results

Hypothesis	Path coefficients	T- Values	P-values	Results
H1: RA -> PU	0.525	8.1097	***P<0.01	Significant
H2: SE -> PEU	0.2151	3.3331	***P<0.01	Significant
H3: SA -> PC	0.3559	3.5407	***P<0.01	Significant
H4: PEU -> PU	0.2709	3.2302	***P<0.01	Significant
H5: PC -> PEU	0.6685	12.1102	***P<0.01	Significant
H6: PU -> IU	0.1126	1.0538	P>0.1	Not Significant
H7: PEU -> IU	0.2919	2.4766	***P<0.01	Significant
H8: PC -> IU	0.3654	3.0548	***P<0.01	Significant

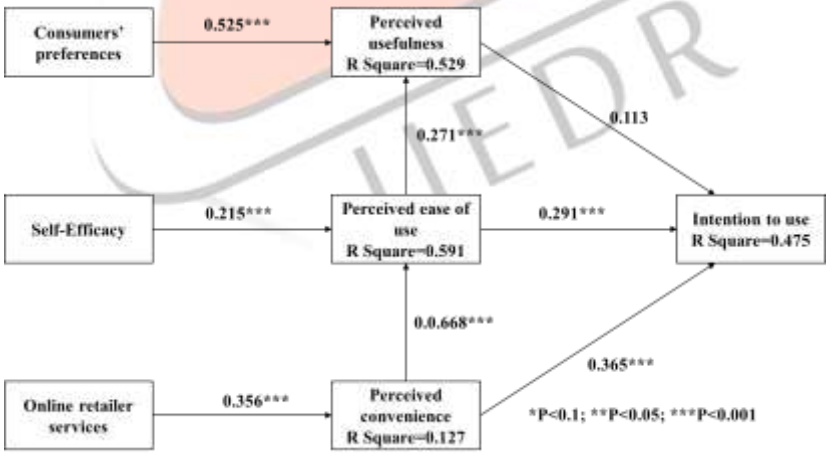

Fig. 3: Model testing results

VII. FINDINGS AND IMPLICATION

Our finding suggests that mode of payments (online transaction, cash on delivery, EMI), home delivery, free delivery and website feature to save product information for future references, are some key indicators for perceived convenience. Perceived convenience has strong and positive impact on online shopping intention with P-value P<0.01. Perceived convenience is influenced by external variable 'online retailer services' such as on time delivery, secure transaction and responses by e-retailer. Perceived convenience also impact very strongly to perceived ease of use (t-value = 12.11, ***P<0.01). External variable influencing perceived ease of use is 'self-efficacy'. Perceived ease of use influencing intension to use is very significant (***P<0.01).

It is required for e-retailer to design and manage websites to improve convenience to the customer. Customers feel convenient if there is facility of free home delivery of products, although there are some retailers who take extra charges for home delivery on select products and there are also select products that can't be delivered at some specific area. Considering the large profit of online retailers and e-business, government policies should encourage for improvement in courier services, transportation and other dimensions to enhance the convenience for the customers [40]. It is seen from the previous literature that relational benefit with customers is important to build a long term relationship for e-retailers to improve trust and confidence [35]. Therefore, e-retailer should take effort on improving relational benefits by improving product and service information quality to satisfy their customer and improve convenience and ease of use.

From this analytical observation, it is observed that "perceived usefulness" is positively influenced by external factor "consumers' preferences", like available brands, accessories, price promotion; but has no significant impact on "intention to use". It implies that, many people think online shopping is useful but does not intend to do online shopping. Several factors may lead to this decision such as low trust, lack of good experience by themselves or peers, lack of knowledge for online transactions and services. E-retailers should build the awareness by organising external information events like advertising and word-of-mouth communication. Also, marketers and government should incorporate together to provide improved internet service facility, and spread awareness on the availability of new technologies such as smart phone, laptop, PC, tablet and other devices like e-readers.

VIII. CONCLUSION

This study provides theoretical and managerial perspective of understanding the key variables that influences perceived usefulness, perceived ease of use and perceived convenience on intention to use online shopping in northeast part of India. Customers who involve in online shopping activity are mainly technology friendly and convenience oriented shoppers. Customers might feel useful to use online shopping due to price promotion and availability of various range of products, but would adopt online shopping only if it is easy to use and convenient. Study is limited on overall behavioural intention to use online shopping. In future, this research can be carried out on comparative study among age group and gender.

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