

A Study of Mobile App Based Household Purchasing by Working Women in a Developing Country: An Empirical Validation of Theory of Planned Behaviour

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ABSTRACT

Mobile app based shopping is growing rapidly nowadays. The working women in developing country particularly India has to play the dual responsibility. At one end they are busy in their jobs while in other end they have to take care about household duties. The mobile app based household purchasing provide the convenient way to the working women in developing country to maintain the responsibilities. The prevalence of app based purchasing has raised the interest of the retailers to focus on this area. Therefore, the theory of planned behaviour applied to determine the relationship between attitude, subjective norm, perceived behaviour control and mobile app based purchasing as well as the purchase intention. The working women in major cities of Madhya Pradesh above 18 years old were selected as the subject of analysis. 325 out of 500 sets of questionnaires distributed were valid for coding, analyzing and testing the hypothesis. Collected data were then analyzed using SPSS version 20.0. The multiple regression analysis used to examine the model fits and hypothesis testing. The conclusion can be depicted that attitude, subjective norm and perceived usefulness significant positively influence online purchase. Finding also revealed that purchase intention positively influence online shopping behavior. In the end the implications, and future research direction for the study was also presented.

Keywords: Theory of Planned Behaviour, Mobile Apps, Online Purchasing, India, Subjective Norms.

INTRODUCTION

Due to the convenient availability of internet, mobile app based purchasing has become an indispensable part of every working women lives in the developing country. India is the rapidly growing market for e-commerce because of young population and increasing internet penetration. 77 per cent of urban users and 92 per cent of rural users consider mobile as the primary device for accessing the internet, largely driven by availability, affordability of smartphones and the smartphone users in India are expected to reach 700 million by 2020 (IBEF, 2018).

Earlier food and grocery were never thought of as items for online trading. However, with the change of working habits, and consumers opting for adaptability and convenience, there are now innumerable small and large E-commerce companies selling provisions and food items. Mobile platforms have emerged as a major gateway for customer purchases as smartphones are increasingly replacing PCs for online shopping. In the present scenario mobile based application (mobile apps) are the most important facility used by Indians to make shopping (Livemint, 2016). As per the report of India brand equity foundation (IBEF, 2018), the country e-commerce revenue is expected to grow from US\$ 39 billion in 2017 to US\$ 200 billion in 2026 and internet users in India are expected to increase from 429.23 million as of September 2017 to 829

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million by 2021 and presently there are 1-1.2 million transactions per day in e-commerce retailing in the country. Government initiatives like Digital India, Make in India, Start-up India, Skill India and Innovation Fund are constantly introducing people to online modes of commerce and lure people through reward schemes i.e. Lucky Grahak Yojana and Digi-Dhan Vyapar Yojana and the number of online shoppers is expected to go up to 175 million by 2020 (IBEF, 2018).

Shukla & Sharma (2018), presented that the consumers are adapted the technology in general but for grocery purchasing through mobile app is limited in India. Thus this study is an attempt to conduct the study particularly working women for household purchasing to test empirically the theory of planned behaviour in the context of developing country like India.

The article is organised as in the second section theoretical framework and hypothesis development was presented. In the third section research methodology was presented. In the fourth section the result analysis were presented. In the fifth section the discussion on the finding were presented. In the end the conclusion, recommendations, limitations and future research scope of the study was presented.

OBJECTIVES

The objectives of this study are

1. To determine the mobile apps application in household purchasing by working women

2. To empirically test the theory of planned behaviour with reference to mobile app based household purchasing by working women in India.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

With the increasing Internet penetration and flexible payment modes, such as cash on delivery, being used widely nowadays, online shopping is becoming the new way of shopping in India. The online shopping provides 24x7 conveniences in shopping, decreased dependence on store visits, saving travel costs, widening market area, lowering overhead expenses, supporting customer relations and offering broad range of products (services) have made it an even more popular medium of shopping for working women. The theory of planned behaviour was the main theory used for explaining the mobile app based household purchasing in the research work. Theory of planned behaviour was developed on the basis of reasoned action (Fishbein & Ajzen, 1975). This theory argues that attitude, subjective norms and perceived behaviour control affects the behaviour intention which in turn affects the actual behaviour of an individual. The theory of planned behaviour (TPB) has been widely used in literature to explain the online consumer behavior (Lu et al., 2009; Pavlou & Fygenon, 2006, Yeon Kim & Chung, 2011; Yang, 2012). Thus following theoretical model is proposed for the current study.

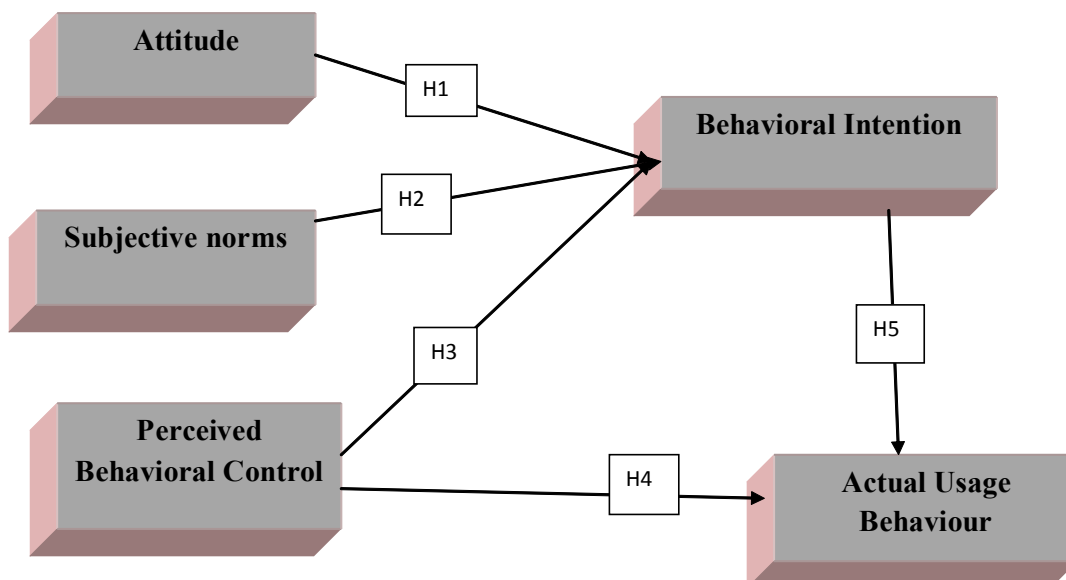


Figure 1: Proposed Theoretical Framework

ATTITUDE AND BEHAVIOUR INTENTION

Attitude is defined as an individual's overall evaluation of performing a behavior. According to the TPB, attitude impacts users' behavioral intention, which in turn influences their actual behavior. When consumers perceive that mobile app based shopping services and functions are useful in facilitating their purchasing, the perception generates a positive feeling toward mobile app based purchasing adoption. The mobile app based purchasing environment which is supported by new technology applications and immediate interactions with service encounters may generate a positive attitude toward its adoption. In addition, numerous studies have supported attitude as a significant predictive variable of behavioral intention (e.g., Dickinger and Kleijnen, 2008; Kang et al., 2006). Fong and Wong (2015) found attitude to be the key factor in determining behaviour of consumer towards use of mobile apps. The previous studies confirm that attitude is significantly associated with behaviour intention in mobile shopping (Yang, 2012, Kim et al., 2011, Moon & Domina, 2015; Shukla & Sharma, 2018). Thus, following hypothesis is proposed-

H1: Working women attitude is positively associated with behaviour intention to make app based household purchasing

Subjective Norms and Behaviour Intention

Subjective norm refers to users' perception of whether other important people perceive they should engage in the behavior. It is the perceived social pressures an individual faces when deciding whether to behave in a certain way. Several studies of information system domain have confirmed the saliency of subjective norms in user decision-making processes in its adoption and use environment (Kim & Han, 2009) and found the strong and significant relationship with behavioural intention (Kim, 2010; Sykes et al., 2009). The users may recommend a service to others when they are satisfied with the service thus, references are credible sources influencing consumer adoption decisions. The others influence on the adoption of mobile shopping impacts consumer intention to adopt mobile shopping because users' adoption of technology is influenced by referent group norms (Kulviwat et al., 2009; Yang, 2012, Kim et al., 2011). Though, the relationship between subjective norms and intentions showed the mixed results in the literature. The study of Mathieson

(1991) found no significant relationship of subjective norm and intention, whereas Taylor and Todd (1995) did find a significant relationship. Hence, the following hypothesis is proposed-

H2: Subjective norm is positively related to behavioural intention to use mobile app for household shopping

Perceived Behavioural Control and Behaviour Intention

Perceived behavioral control refers to a user's perception of how easy or difficult it would be to perform a certain behavior (Ajzen, 1991). Perceived behavioral control describes users' perception if they have the necessary resources, capability, and a sense of control in successfully performing the behavior. Although mobile apps are relatively ease-to-use technology, users still need to have the basic Internet skills to use it. When users have the necessary resources and capabilities in using mobile apps, they feel in control, which increases the level of continuance intention toward it. In addition, compared with conventional purchasing, such as physically visiting the store, mobile app based purchasing is done on the Internet – a virtual space. This may sometimes arouse their anxiety of control and negatively influence their behavioral intention. When consumers perceive that technology is in their control, they perceive that they can control their task process and the perceptions will further increase consumer confidence about the outcome (Bateson and Hui, 1987). The previous literature confirms the significant relationship between perceived behaviour control and behavioural intention (Kim, 2010; Yang, 2012). Perceived behavioral control may have a direct impact on the actual usage behavior (Ajzen, 1991). This means that even if users have a strong intention to use mobile app, they will not adopt the technology when they lack the necessary resources, skills, and sense of control. Hernandez et al., (2009) presented that individuals who felt they had the capability of purchasing online would perceive online shopping as easier to use. Thus, following hypothesis is proposed -

H3: Perceived behavioral control is positively related to the behavioral intention to use mobile app for household shopping

H4: Perceived behavioral control is positively related to the actual mobile app usage.

Behavioral Intention and Actual Usage

In the literature behavioural intentions have been found to be the strong predictor of actual usage of information technologies (e.g. Davis et al., 1989; Venkatesh et al., 2003) and of online shopping (e.g. Ajzen, 2011; Lin, 2007; Pavlou & Fygenson, 2006).

H5: Behavioral intention toward using mobile app is positively related to the actual mobile app usage.

RESEARCH METHODOLOGY

To test the model, the study carried out a survey based on respondents' retrospective online purchasing experience. This is appropriate because online purchase behaviors are memorable events that can be recalled by customers (Grégoire & Fisher, 2006). The participants were instructed to complete the survey questionnaire only if they had online buying experience, and the product was for household use. This solved the problem of respondents answering questions related to purchases they had carried out. The survey data was collected from a sample of working women in public sector/ private sector in the major cities

of Madhya Pradesh India. The questionnaire was developed with the help of previous literature to enhance the validity of the questionnaire. The items in the questionnaire were taken from the previous studies (Rauniar et al., 2014; Wu and Wang, 2005; Taylor & Todd, 1995; Fishbein and Ajzen, 1975; Mun et al., 2006; Rawstorne et al., 2000; Chau and Hu, 2002; Moon & Kim, 2001; Al-rahmi & Othman, 2013; Venkatesh & Davis, 2000) and shown in appendix in the end. All items used a five-point Likert-type scales anchored from 1 (strongly disagree) to 5 (strongly agree). Before conducting the survey, the survey measurements were reviewed by experts to identify problems in the wording, sequencing, content, and any ambiguities in the questions. The data were collected via a paper-based survey in India from the working women/girls. Nearly 500 questionnaires were initially distributed, and 340 responses were eventually received. 15 responses were discarded due to incomplete or invalid answers on them; thus, the final number of valid responses was 325. The ages of the respondents in the final sample ranged from 25 and above. Table 1 presents the demographic data of the respondents in the final sample.

Table 1: Demographic Profile of the respondents

Demographics	Items	Frequency	Percentage
Age	25-30	79	24.31
	31-35	134	41.23
	36-40	67	20.62
	40-45	36	11.08
	above 45	9	2.77
Job	Private	291	89.54
	Public	34	10.46
Mobile app based usage experience for household purchasing	less than 2 years	78	24.00
	2-5 years	178	54.77
	above 5 years	69	21.23

RESEARCH RESULTS

The research model was tested using multiple regressions through SPSS 20. The internal reliability of the items was verified by computing the Cronbach's alpha (Nunnally, 1978). Nunnally suggested that a minimum alpha of 0.6 sufficed for early stages of research. The Cronbach's alpha estimated for attitude was 0.711, subjective norm was 0.770, perceived behavioral control was 0.728, behavioral intention scale was 0.674 and actual usage behavior was .787. As the Cronbach's alpha in this study were all much higher than 0.6, the constructs were therefore deemed to

have adequate reliability.

Normality of Data and Multicollinearity

This study involves a relatively large sample (325 respondents) and therefore, the central limit theorem could be applied and hence there is no question on normality of the data. Two major methods were utilized in order to determine the presence of multicollinearity among independent variables in this study. These methodologies involved calculation of both a tolerance test and variance inflation factor (VIF). None of the

tolerance levels is ≤ 0.01 ; and all VIF values are well below 10 as shown in table 2.

Table 2: Multicollinearity Results

Variables	Tolerance	VIF
Attitude	.552	1.811
Perceived Behaviour Control	.562	1.779
Subjective Norms	.896	1.116

Hypothesis Testing

The table 3 and table 4 provided the results obtained from multiple regression analysis to evaluate the strength of the proposed relationship. The individual hypothesis were tested using the guidelines prescribed by Hair et al.(1998) and followed to predict the regression model with mobile app based purchase intention as the dependent variable as shown in table 3 and table 4. The results obtained, as shown in

Table 3 and in model summary, revealed that H1-H3, were found to be significant in the prediction model. The results provide support for hypotheses H1-H3, that is, the relationship between attitude ($\beta = 0.625$ and $p \leq 0.05$), subjective norm on house hold purchase intention ($\beta = 0.193$ and $p \leq .05$), and perceived behavioral control house hold purchase intention ($\beta = 0.146$ and $p \leq .05$).

The results obtained, as shown in Table 4, revealed that H4 and H5 were found to be significant in the prediction model. The results provide support for hypotheses H4 and H5, that is, the relationship between perceived behaviour control and actual behavior ($\beta = 0.157$ and $p = 0.019$) and purchase intention and actual behavior ($\beta = 0.193$ and $p \leq .05$), and perceived behavioral control house hold purchase intention ($\beta = 0.205$ and $p = 0.002$).

Table 3: Regression Results

Variables	Standardized Coefficients	t Value	P value
	Beta		
(Constant)		-.097	.923
Attitude	.625	14.221	.000
Perceived Behaviour Control	.146	3.343	.001
Subjective Norms	.193	5.598	.000

a. Dependent Variable: Behaviour Intention

Table 4: Regression Results

Variables	Standardized Coefficients	t value	P value
	Beta		
(Constant)		8.847	.000
Perceived Behaviour Control	.157	2.364	.019
Behaviour Intention	.205	3.079	.002

Dependent Variable: Actual Usage Behaviour

DISCUSSIONS

The main objective of this study was to explore how the TPB could facilitate in predicting the intention to make household purchasing using mobile apps in India. The study results show that the TPB model could explain 65.8 percent of the variance in the intentions to purchase household products. The model was statistically significant and this study results demonstrates, once again, the robustness of the TPB for helping to explain purchasing intention. Other studies have also successfully used the TPB as a theoretical framework from which to examine the purchase intention (Madahi & Sukati, 2016).

The study depicted that attitude has a significant and positive effect on household purchase intention using mobile apps. Attitude is an important factor in influencing consumer intention in purchasing household products because those with high positive attitudes appeared to have greater intentions to intent to purchase. Social pressure may compensate for high favorable attitudes in building intentions to purchase household items in such culture. The results are well supported by previous studies as well (Madahi & Sukati, 2016; Shah Alam & Mohamed Sayuti, 2011).

Consistent to the study of Karijin et al. (2007), the research found that subjective norm was

positively and significantly related to intention. This study also confirms other studies like Kamariah and Muslim's (2007) which found subjective norms to be important.

The study also confirmed that perceived behavioral control has a significant effect on house hold purchasing intention. The relationship is a positive relationship which means that the greater impact of control in explaining variability in behavior is not unusual. Ajzen (1991) suggested that control could directly affect behavior by increasing effort to goal achievement.

CONTRIBUTION OF THE STUDY

In the current study, TPB served as a useful foundation for helping explain mobile app based shopping. The relationship between attitudes towards mobile app based purchasing and the actual behavior was strong and positive. The direct relationship in TPB between perceived behavioral control and behavior was supported here. Typically in TPB models, the effects of subjective norms on behavior would be mediated by intention instead of the direct relationship posited here. As more and more studies of online purchasing behavior and its antecedents are done within the TPB framework, we are more able to discover and confirm which antecedents are most important helping us build a robust theory of mobile app based purchasing behavior. From a practical perspective, we will be better able to advise app developers on the elements they need to address in order to increase their usefulness and trustworthiness. The developers can focus on promoting the apps as trustworthy, and in doing so, they can generate positive attitude sonline purchasing.

IMPLICATION OF FINDINGS

From a theoretical perspective, the results of this paper have an important implication for the theory of planned behaviour. The TPB model appeared to effectively predict household purchase intention among working women in India. Past research may provide guidance in developing these perceptions, beliefs, and attitudes. Thus, an individual with a confident command of mobile app skills and familiarity with the Internet is more inclined to adopt Internet shopping.

LIMITATIONS AND DIRECTIONS OF FUTURE RESEARCH

The sample was selected based on purposive sampling, and therefore precautions should be

taken before generalizing the results. The study was conducted in Indian context and cross-cultural issues were not addressed. The study can be further tested in other countries as well. Research is needed on application of TPB in other countries. Modification of the model may help to maximize their predictive efficacy (Moon and Kim, 2001). Other variables can be included for future research, such as other aspects of trust, moral obligation, habit, and self-identity (Karijin et al., 2007). Valid and reliable scales for these constructs need to be developed in order to include them in future research (George, 2002).

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APENDIX – SCALE ITEMS

Constructs	Items	Sources
Attitude	1. Using mobile app is a good idea for household purchasing.	Taylor & Todd, 1995; Fishbein and Ajzen, 1975
	2. I like using mobile app for household purchasing.	
	3. Using mobile app for household purchasing is a wise idea	
	4. I believe it would be advantageous to use my mobile device in my grocery shopping process.	
	5. I think it would be a good idea to use a mobile device when shopping for groceries.	
	6. I think it would be positive to be able to use my mobile device when shopping for groceries.	
Subjective Norms	1. The people who influence my behavior think I should use mobile app for household shopping	Mun et al., 2006; Rawstorne et al., 2000
	2. The people who are important to me think I should use mobile app for household shopping	
	3. The people whose opinions I value think I should use mobile app for household shopping	
	4. Colleagues who are important to me think I should use mobile app for household shopping	
	5. Superiors at work think I should use mobile app for household shopping	
	6. Subordinates at work think I should use mobile app for household shopping	
Perceived Behaviour Control	1. I have knowledge to use mobile app for purchasing	Chau and Hu, 2002; Mun et al., 2006
	2. It provide me facility to use mobile app at work	
	3. Using mobile app at work is wise	
	4. Using mobile app for purchasing is entirely under my control	
	5. I am not using mobile app for purchasing	

Behavioural Intention	1. I will frequently use mobile app for household shopping.	Moon & Kim, 2001; Al-rahmi & Othman, 2013, Venkatesh & Davis, 2000
	2. I intend to keep using of mobile app for buying groceries in the future.	
	3. I intend to increase the use of my mobile app in the future.	
	4. I intend to recommend my friends to using of mobile app for grocery shopping in the future.	
	5. Assuming I have access to the mobile app, I intend to use it	
	6. Given that I have access to the mobile app, I predict I would use it	
Actual usage Behaviour	1. How often per week do you use your mobile app for household shopping? (Never, rarely, occasionally, often, frequently)	Rauniar et al., 2014; Wu and Wang, 2005
	2. How many hours do you used your mobile app for household purchasing purpose every week? (0-2 hours, 2-4 hours, 4-6 hours, 6-8 hours, more than 8 hours)	
	3. How often do you engage in household purchasing via mobile app?	
	4. Use mobile app for household shopping several times a day as per my requirement	
	5. Do not use mobile app	

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728 ^a	.658	.655	.431

a. Predictors: (Constant), Subjective Norms, Perceived Behaviour Control, Attitude

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.962	3	21.654	205.765	.000 ^b
	Residual	33.781	321	.105		
	Total	98.742	324			

a. Dependent Variable: Behaviour Intention

b. Predictors: (Constant), Subjective Norms, Perceived Behaviour Control, Attitude

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.325 ^a	.106	.100	.507

a. Predictors: (Constant), Behaviour Intention, Perceived Behaviour Control

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.788	2	4.894	19.050	.000 ^b
	Residual	82.723	322	.257		
	Total	92.512	324			

a. Dependent Variable: Actual Usage Behaviour

b. Predictors: (Constant), Behaviour Intention, Purceived Behaviour Control