An Empirical Study on the Online Grocery Shopping Intentions of Consumers in Vadodara City

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ABSTRACT

Online grocery shopping is an entirely novel means of buying preferred grocery goods for household consumption. Such a concept has been launched in a sub-urban city like Vadodara in the state of Gujarat, India in the past one year by launching websites such as deliveryathome.co.in, groceryathome.co.in and kariyana.com to name a few. This also marks the early phase of online grocery selling phenomenon in the city. Because of such an exponential improvement in technology and its widespread availability, business concepts like online grocery shopping are bound to gain a sustainable market share in the retail food markets, not only in Vadodara but nationwide. This study is intended to examine the factors that affect the intention of the consumers in Vadodara to buy groceries online. The most prominent factors of them all include Attitude, Subjective Norms and Perceived Behavioural Control. The population sample considered for this study consisted of the consumers who possessed some prior experience of buying goods online over the Internet. The data collection is done using self administered questionnaire. Convenient stratified sampling method is used to gather data from three major economic strata of the population in Vadodara city. The results of the study have depicted that there is a weak but positive intention articulated by the respondents of the study towards buying groceries online.

The overall findings of the study have highlighted some significant points which should be helpful to the online grocers for capturing the local city market and encourage repeated orders in the future. It also helps the online grocers to realize consumers' wants and preferences while they shop online for grocery products. By acknowledging this study, online grocers should be able to position themselves in the market at par to be accepted by consumers in Vadodara city. Such and other similar studies can also be applied to other cities in the State of Gujarat to understand the consumer behavior towards online grocery shopping and online grocery companies can accordingly formulate strategies for penetrating the markets by expanding their geographical reach.

Keywords

Online Grocery Shopping, Online Retailing, Theory of Planned Behaviour, Shopping Intention

1. INTRODUCTION

Modern retailers are increasingly facing serious challenges, which consist of constant development, designs and new operating skills and strategies to meet up with the customers' varied demands. With speedy technological improvements, more pioneering retailers, such as shopping malls, hypermarkets, departmental stores and outlet center are introducing new ways of selling goods to the consumers in the ever changing markets [1]. The trend of retailing store is changing as a growing number of retailers are shifting their focus from general brick and mortar retailing to new formats such as electronic retailing or e-tailing [8]. Due to the swift augmentation of technology, online shopping has been a specific cause of excitement for consumers to explore. On the other hand, grocery shopping has also been regarded as stressful and as a tedious tasks by those who are not very technology savvy and find it difficult using technology devices [9,10].

Nevertheless, consumers' acceptance towards online grocery services has been much slower than expected [11]. One of the prime reasons for such a lower acceptance accounts to the delivery fee that the online grocery retailers charge. Delivery charge is a major cost factor that prevents majority of the consumers to use the Internet for buying grocery shopping [11]. Few other reasons comprise of issues concerning the user privacy and security [12,13]. The acceptance of online grocery shopping, conversely, is much lesser than the average online shopping rate for other products [11]. In other words, many consumers who already had online shopping experience earlier have not been using Internet for shopping groceries online. Existing traditional grocers and some IT companies in collaboration with some large sized retail companies have tried to provide electronic grocery shopping platforms which facilitate consumer to make purchases online through credit card transfer, net banking or even cash-on-delivery [14]. However, consumers are more comfortable walking-into a nearby grocery store or a modern supermarket to procure their daily provisions including grocery items and fresh food products.

It is also significant to note that the Indian retail market has emerged as the fifth largest retail destination globally. It is now ranked the fourth most lucrative market for investments in the retail sector, according to AT Kearney's

eleventh annual Global Retail Development Index (GRDI, 2012). Though fresh vegetable and grocery retail has been thought to be a low margin business, one cannot ignore the market potential that can be unleashed by attracting the massive number of households which have so far been largely catered to by the unorganized neighborhood grocery stores. (Sengupta, 2008). As per the report published by the Research on International Economic Relations, the Indian retail business is estimated to grow at 11 per cent annually from US$ 322 billion in 2006–07 to US$ 740 billion in 2014–15. The organized retail in India, which constituted only by a mere four per cent of the total retail in 2006-07, is expected to grow at a rate of 40-45 per cent annually, and reach a 15 per cent share of the total retail by the year 2014-15 (ICRIER, 2011). This also unveils the tremendous amount of potential that lies in the Online Grocery Products market in various metro and sub metropolitan cities across India. The Government of India has termed the retail sector as a sunrise sector, and the worth of the organized retail sector in India is likely to be around US $ 75 billion by the year 2015. The Food and Grocery retail in India is the sole largest segment projected to be worth a whopping 62 per cent, but the share of the organized sector in this market is likely to remain a miniscule (GOI, 2010).

This study, however, aspires to look into the levels of acceptance among consumers in Vadodara city. It will focus on the factors that affect the consumers buying intentions and shopping preferences.

2. LITERATURE REVIEW

The shopping behavior varies from place to place where the shopping takes place and also along with the levels of involvement with respect to the shopping activity (Berman and Evans, 2005). The basic disparity however continues to be the ripeness of markets and formats. While retail in the western world has evolved in terms of formats over the past century, organized retail in India is still a nascent phenomenon (Swapna Pradhan, 2007). Rhee and Bell (2002) believe that while shoppers often patronize many stores, they particularly have a prime affiliation to a 'main store' that takes care of the greater part of their purchases.

There have also been studies in which profiling has been done for online shoppers and the results of the study revealed that long-term internet surfers, with profound usage had the strongest likeness for internet shopping (Parikh (2006). Over and above this, previous experience of internet shopping had an exponential effect on future intention to shop through internet. As opposed to the expectations, there were no major linkages between the various shopping segments and demographic characteristics. An Indian research group also conducted an on-line survey of over 30,000 Internet users in India and found that about 40 per cent of urban Internet users are also on-line buyers and as meager as 5 per cent of the Internet consumers add to as much as 42 per cent of total sales made on the Internet (Techtree, 2005).

Parikh (2006) intended at classifying various shopping orientation prevailing among the internet users and categorized the internet users into five shopping profile categories: socializing, home, mall, economic and civil. Within reachable literature, very little methodical studies were found investigating diffusion of internet in India. These studies were intended to study the dispersal of internet in India as a country rather than acceptance and distribution of internet among Individual customers (eg. Dutta and Roy, 2003, 2004; Kshetri, 2002; Dholakia et al. 2003).

The Theory of Planned Behaviour (TPB) also has certain limitations in predicting behaviour (Werner, 2004). The first limitation being intention determinants are not limited to just attitudes, subjective norms, and perceived behavioural control (Ajzen 1991). There could be other unnoticeable factors influencing behavior to a certain extent whose combined affect cannot be disregarded. Empirical studies have revealed that up to only about 40% of the variance of behaviour could be explained using TPB (Ajzen 1991; Werner 2004). The second limitation is that there may be a sizable gap of time between examination of behavioural intention and the actual behaviour being exhibited and assessed (Werner 2004). Within this time gap, the intention of an individual is likely to shift or change. The third limitation is that TPB is a predictive model that foretells an individual's act based on certain criteria. Conversely, individuals do not always behave as predicted by those criteria (Werner 2004).

In terms of adoption of IT and IT based services, TPB has been utilized to explain the adoption process from individual standpoint. The original Theory of Reasoned Action (TRA) was modified into Theory of Planned Behaviour (TPB) and Technology Acceptance Model (TAM) to predict user acceptance of new IT based technologies (Chin & Marcolin 2001; Karahanna & Straub 1999; Legris, Ingham & Collerette 2003). TAM employees the same principles as TRA in predicting acceptance of IT (behaviour) from an individual's perspectives to accept IT based services. The similarity has been assessed in a study involving 107 MBA students at the University of Michigan (Davis, Bagozzi & Warshaw 1989). TPB has also been used to explain the adoption of IT. For example, TPB has been used to explain the adoption of voice-mail technology (Benham & Raymond 1996) and WAP service (Hung, Ku & Chang 2003). TPB is also comparable with TAM in explaining web presence in SMEs (Riemenschneider, Harrison & Mykytyn 2003).

In India, similar studies have also been carried out like the study on attitude measurement using TPB towards India's

Internet Banking services (Bhatt 2011); the study on the influence of factors on citizen towards adoption of electronic tax filing services (Brahmbhatt 2012); the adoption of e-negotiation (Sharma 2013); a study of perceived influence of internet use on social competence, emotional maturity and general well-being of adolescents (Anita, 2013); prediction of the Internet browsing behavior of the University library users in Tamilnadu (Nehru 2014); adoption of mobile commerce in India using TPB approach (Mishra 2014).

The model below depicted in Figure 1.0 shows the framework of Theory of Planned Behaviour (Ajzen, 1985) which will be used through the proposed research for predicting the Intentions of the consumers towards shopping groceries online in Vadodara city.

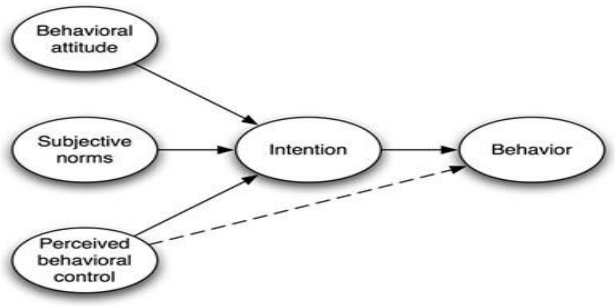

Figure 1.0: ***Theory of Planned Behaviour (Ajzen, 1985)***

This section discusses theories pertinent to foretelling and illuminating the actual behavior and behavioral intention within the context of internet based grocery shopping in a specific city of Guarat. It mainly focuses on Theory of Planned Behavior (TPB) (Ajzen, 1985,1989) as a model to understand the intention leading to the behavior of the consumers. The Theory of Planned Behavior which has been developed out of TRA is considered superior in determining behavior. Researchers have, at length used this theory for exploring the individual differences in speculating behavior from behavioral intentions, which in turn is dependant and derived from the consumer's attitudes and subjective norms towards the object under study. TPB has also been employed for predicting customers' intentions and actions concerning the adoption of technical products (for example, internet shopping, mobile services etc.) DeBono (1993) used. The Theory of Planed Behaviour also emphasizes on the analysis that determines how these attitudes and subjective norms influence behavioral intentions differently or alike.

On the implementation side of selling groceries online, a few technology based companies have taken initiatives for selling groceries in Vadodara and surrounding regions primarily over Internet. Some of these popular websites include groceryathome.co.in, deliveryathome.co.in, kariyana.com etc. which have been operational since as recently as FY 2012-2013.

3. RESEARCH METHODOLOGY

Hypothesis Testing:

H1: There is significant positive effect of ATTITUDE on online purchasing intention for online grocery shopping.

H2: There is significant positive effect of SUBJECTIVE NORMS on online purchasing intention for online grocery shopping.

H3: There is significant positive effect of PERCEIVED BEHAVIOURAL CONTROL on online purchasing intention for online grocery shopping.

Based on the Theory of Planned Behaviour, a research framework for the proposed study is depicted in Figure 2.0 and the above hypothesis which provides the framework as deduced below:

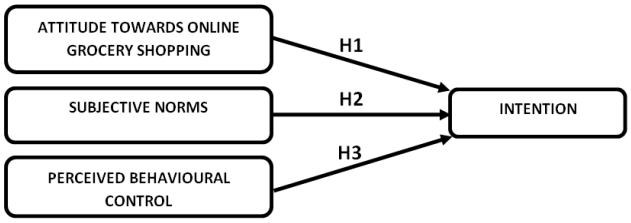

Figure 2.0: Schematic diagram of Research Model
Table1. In Bold Letters

To evaluate the attitude towards online grocery shopping, a survey was conducted on total of 290 respondents from the city of Vadodara of Gujarat State-India. About 300 questionnaires were delivered randomly to individual adult citizens who usually use the Internet for online shopping purpose. Out of these, about 290 questionnaires were returned, including the individuals who have / have not purchased online. For the purpose of data collection, the following type of sampling approach was used:

Sampling Method: Stratified Convenient Sampling Method
Sampling Universe: Urban grocery consumers

Sampling Unit: Internet users in urban areas consuming grocery items

Instrument for Survey: Structured Non – Disguised Questionnaire using 5 Point Rating Scale

As apparent from the TPB model depicted above, a total of three components were deliberate and then combined to form behavioral intention (BI), i.e. attitude towards the

object, subjective norms & perceived behavioral control. In the case of attitude towards the object, the component was evaluated by inquiring with the respondents about their belief towards the object and the strength of their belief.

Subjective norms were assessed by evaluating the sub-components viz. normative beliefs and the motivation to comply with it, whereas the perceived behavioural control component is assessed by using two factors control belief and perceived importance of control. All three components combined yields Behavioural Intention (BI) as the output.

Looking at the profile of the respondents shown in Table 01 below, most of the respondents using internet shopping belongs to the age group 21 to 30. The gender using most of the internet shopping is male which i.e. 76%, classifying by the education most users are either graduates of post graduates. People into private and public sector company services are the highest users of Internet Shopping 55%. This indicates that the young aged working employees are likely to be the customers for Internet based grocery shopping. It has also been observed that respondents aged over 50 years having Internet shopping experience is 14% which is considerably higher as compared to the number of such respondents reported in the studies carried out for Internet shopping behavior at various other locations in India.

Table1.0 Respondent's demographic frequency distribution

Gender	% Pop.	Age (In Years)	% Pop.	Education	% Pop.	Occupation	% Pop.
Male	76.55	21 – 30	52.06	Undergraduate	10.68	Service	55.17
Female	23.45	31-40	12.06	Graduate	42.41	Business	32.41
		41-50	23.10	Post-graduate	32.41	Professional	12.41
		51-60	11.03	Professional	11.03		
		> 60	1.72	Doctorate	3.44		

Table No. 2 shows the internal consistency reliability which was assessed by computing overall Cronbach's alpha using SPSS 17.0. The resulting value comes out to be 0.731 (Σ nbj mcj) (for all 43 items under study). Hair, Anderson, Tatham and Black have suggested that the lowest limit for Cronbach's alpha be 0.70. All the factors covered under the research model displayed fairly good acceptable reliability. These coefficients are represented for each of the constructs. This shows that since none of the variables (Perceived Behavioral Control, Subjective Norms, Attitude towards the object & Behavioral Intention) has a Cronbach's Alpha value less than 0.70, all the variables can be treated as if they all are reliable.

Table 2.0 Reliability Statstics (n = 43)

Factor	Cronbach's Alpha
(Overall)	0.731
Perceived Behavioural Control	0.904
Subjective Norms	0.711
Attitude	0.671
Behavioural Intention	0.817

The summary consisting of Mean and Standard Deviation (SD) for the different constructs and measures of the major factors viz. Attitude towards behavior, Subjective Norms, Perceived Behavioural control and Behavioural Intention

Table 3.0 Statistics for Constructs & Measures

Constructs & Measures	Mean	SD
ATTITUDE CONSTRUCTS		
ATT1: Compared to physical stores, I prefer buying groceries online	**3.64**	**0.83**
ATT2: I think that buying online grocery products is good for me	**3.78**	**0.92**
ATT3: I think that buying online grocery products is good for the community	**3.52**	**1.05**
ATT4: I think shopping grocery products online is a good idea	**3.67**	**0.87**
ATT5: I think that there is too much hype about Internet based shopping	**3.31**	**0.96**
SUBJECTIVE NORMS CONSTRUCTS	**M**	**S**
SN1: Does your family have an influence on your online purchasing?	**3.57**	**0.85**
SN2: Do your friends/peers have any influence on your online purchasing?	**3.42**	**0.91**
SN3: Do the advertising media influence your online purchasing	**3.11**	**0.84**
SN4: Most people who are important think that I should buy groceries online	**3.08**	**0.84**
SN5: The people whose opinions I value approve me to buy groceries online	**3.27**	**0.90**
SN6: It is expected of me that I purchase groceries over the Internet	**3.55**	**0.86**
SN7: Most people who are important to me buy groceries over the Internet	**3.68**	**0.88**
SN8: Most people in my life whose opinions I value, buy groceries online	**3.65**	**0.85**
PERCEIVED BEHAVIOURAL CONTROL CONSTRUCTS	**Mean**	**SD**
PBC1: I am capable of buying groceries over the Internet	**4.02**	**0.73**
PBC2: Buying groceries over the Internet is entirely within my control	**3.93**	**0.69**

PBC3: I have the knowledge & ability to buy grocery over the Internet	**4.01**	**0.67**
PBC4: It is important to FEEL COMFORTABLE buying groceries online	**3.88**	**0.75**
PBC5: It is important to EASILY buy groceries over the Internet on my own	**3.76**	**0.72**
PBC6: I can buy groceries over Internet even if no one shows me how to do it	**3.66**	**0.66**
BEHAVIOURAL INTENTION CONSTRUCTS	**Mean**	**SD**
BI1: For future purchases, I plan to search for online grocery products	**3.01**	**1.02**
BI2: For future purchases, I plan to buy groceries products over the Internet	**3.25**	**1.03**
BI3: I plan to spend time to learn about online grocery shopping options	**3.30**	**1.00**
BI4: I will take more time to search for online grocery as an alternative	**3.43**	**1.03**

The inter factor correlation among constructs are shown in Table 4.0, wherein none of the values of correlation coefficients of the pair of factors exceeded the criterion 0.9. This depicts the satisfactory validity of constructs and the scale should have sufficient validity.

Table 4: Bi-variate Correlations among constructs

Constructs	Attitude	Subjective Norms	Perceived Behavioural Control
Attitude	1.000		
Subjective Norms	0.501**	1.000	
Perceived Behavioural Control	0.690**	0.528**	1.000
Behavioural Intention	0.635**	0.503**	0.655**

**** Correlation is significant at the level 0.01 level (two-tailed)**

Multiple regression analysis was used to find the relationship between dependent and independent variables. As per the β coefficient, the three independent variables influencing the on-line grocery shopping behaviour intention in Vadodara are listed in Table 5.0.

Regression coefficients signify an important relationship between the three variables: Attitude toward On-line Grocery Shopping, Subjective Norm, and Perceived Behaviour Control. The results of the multiple regression analysis are summarized as below:

1. Attitude factor reaches a level of significance (β=0.157 and p=0.038<0.05), which depicts that the attitude will weakly but positively influence the consumer's intention to shop for groceries online. Hence, Hypothesis H1 is accepted.

2. Subjective Norm factor reached a level of significance (β=0.138 and p=0.021<0.05), which indicates that the influence of social relationships (family, friends, colleagues etc.) on on-line grocery shopping will weakly but positively affect the consumer's intention to purchase groceries online. Hence Hypothesis H2 is accepted.

3. Perceived Behavioural Control factor reached a level of significance (β=0.488 and p=0.000<0.05), which signifies that the consumers will be positively influenced toward on-line grocery shopping with respect to their behavioural control. Therefore, Hypothesis H3 is accepted.

Table 5. β Coefficients using Regression

Independent Variables	Unstd. β Coefficient	Std. β Coefficient	t	Sig.
Attitude towards online grocery shopping	0.215	0.157	2.055	0.038
Subjective Norm	0.188	0.138	2.273	0.021
Perceived Behavioural Control	0.650	0.488	6.550	0.000
R	0.751			
Adjusted R Square	0.558			
F	58.696 (p=0.000)			

Dependant Variable: Behavioural Intention

The overall results of the multiple regression analysis for behavioural intention are shown in Figure 3.0 modeled into the Theory of Planned Behaviour (TPB) framework below:

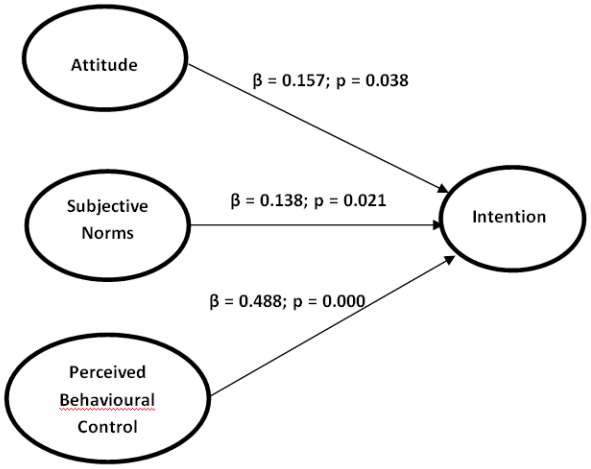

Figure 3.0 Results modeled into TPB framework

4. CONCLUSION

As per the above accepted hypotheses, the effect of the three independent factors on behavioural intention and on attitude was shown through the significance of the coefficients. It can be observed that the perceived behavioural control factor greatly influences the Internet shoppers' behavioural intention to shop for groceries online. The more consumers think they can control the transaction; knowledge and ability to buy groceries on-line; feel comfortable and perceive easy buying of groceries without anyone's help, the more likely it is that they will buy groceries online. The attitude and subjective norm factor also influence consumer behavioural intention by validating the sequential changes in users' beliefs and attitude and examining their effects on the intentions for shopping groceries on-line.

The results of the study conducted have reaffirmed that the framework of Theory of Planned Behaviour (TPB) is applicable to the measurement of consumer's behavioural intentions while shopping for groceries on-line. This study presents substantial empirical support for the sufficiency of Ajzen's TPB model in on-line shopping behaviour. Thus with all the other three variables of the TPB, the study demonstrates the predictive utility of the TPB to determine on-line shopping behavior, specifically for grocery shopping in the city of Vadodara.

Nevertheless, the TPB model has seldom been utilized to scrutinize the factors that influence consumers' attitude in a dynamic perspective or a changing environment. Finally, it is concluded in this study that applying the TPB model can be helpful to understand on-line shopping intention and ultimately predict the possible behavior of the consumers in Vadodara.

5. LIMITATIONS AND FUTURE SCOPE

Some limitations within the study carried out could have influenced the conclusions drawn from the findings in a biased manner. Initially, only the Theory of Reasoned Action (TRA), which a preliminary model from which the Theory of Planned Behaviour (TPB) has been derived, was tested with respect to the on-line grocery shopping consumers in Vadodara. The subjects were limited in type and geographical locations where the survey was carried out. The respondents in the survey were the all the adult and earning individuals residing in Vadodara who usually use the Internet for various purposes. Also, the survey was conducted only in one part of the State of Gujarat rather than on a larger scale covering a bigger geographical region and hence the results may be limited or biased considering the socio cultural aspects restricted only to this particular part of the region.

Secondly, this study has not categorized products or services rendered by the online grocery websites, and might not be completely accurate. Therefore, future research work might cover up the classification and attributes of products/services, and the way they influence on-line grocery shopping behaviour.

Thirdly, the questionnaire was designed in the form of a self-reporting format, hence there could be some self-reporting distortions. These distortions may consist of: differences between respondents' interpretation and the real situation; respondents' emotional status; and their social expectations.

The concept of online grocery shopping being relatively new to the state of Gujarat, the phenomenon of buying groceries online has not been experienced by a large majority of the respondents included in this study. Thus, since most of the respondents have never shopped for groceries online, the study has focused only on knowing the formation of intention towards online shopping of such goods. With the market capitalization of such online grocery companies in the future and more and more increase in the consumption of such services, the buying intention leading to behavior would also become accurately predictable.

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