



DETERMINANTS OF ONLINE BUYING BEHAVIOUR

S. N. Geetha¹

1. INTRODUCTION

The spending on grocery and daily essentials is the largest and most consistent share of the wallet for any household. With a large customer base and increasing penetration of Internet connectivity and growing popularity of online shopping, many entrepreneurs have seen the potential in creating e-stores for groceries. Many e-groceries have come up, but the segment is far from saturated. Most of such ventures are catering to a few metros and many cities are yet to have such e-stores. The potential market size also ensures that there would be room for multiple players, even within cities. In India, the last three years have seen a mushrooming of grocery ecommerce sites in many metros. Everyone is blinded by the size of the overall market: \$35-40 billion worth of FMCGs across the country, of which modern retail accounts for around 5 percent. As grocery retailing witnesses a change with more and more net-savvy and time-pressed consumers buying their daily needs from portals, PE players see this as an opportunity to invest. The sector is roughly growing by 25-30 per cent year-on-year. Though currently grocery retailing is restricted to metros and major urban centres, investors and retailers feel growth in logistics is bound to spur demand. Some of the recent PE investments in e-grocery retailing include Ronnie Screwvala's Unilazer picking up a 25 per cent stake in Mumbai-based EkStop Shop, Karmvir Avant investing in LocalBanya, and Ascent Capital investing \$10 million in BigBasket.

Though none of the major players in the industry gives out revenue numbers, research indicates that the largest player in the space is BigBasket with estimated revenue of \$4 million, followed by Zopnow, which is around \$2 million in revenue, and MyGrahak. Zopnow's average order size has gone from approximately Rs 700 when it started to around Rs 1,300 today.

While majority of Indians continue to depend more on their neighbourhood mom-and-pop stores or throng the supermarkets on weekends for their monthly grocery shopping, increasing number of Indians are also getting comfortable buying groceries and vegetables online. The \$30 mn online grocery retailing is expected to grow near 45 per cent over the next four years. While the e-grocery segment is miniscule compared to the \$370 bn India F&G (food and grocery) market size, the category is expected to grow considering the small base of the segment and the increasing number of players which are entering this segment.

2. LITERATURE REVIEW

Based on the theory of reasoned Action, Davis (1986) developed the Technology Acceptance Model which deals more specifically with the prediction of the acceptability of an information system. The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. 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 & Perceived ease-of-use.

Diffusion of innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. Everett Rogers, a professor of communication studies, popularized the theory in his book Diffusion of Innovations; the book was first published in 1962, and is now in its fifth edition (2003). The book says that diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion of an innovation occurs through a five-step decision-making process. Rogers' five stages (steps): Knowledge, Persuasion, Decision, and Implementation & Confirmation. Rogers defines several intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation. TAM suggests that actual usage of the system is determined by the users' behavioural intention (BI) to use the system, which is determined by users' attitude (AT) towards using the system and their perceived usefulness (PU) and ease of use (PEOU) of the system (Davis, et al., 1989). Together, PU and PEOU constitute a significant influence on AT, which in turn affect the BIU. In addition, PEOU has also been shown to significantly influence PU (Teo, 2009). The improved model of TAM (Davis, 1993) suggests that Perceived Usefulness is influenced by Perceived Ease of Use, but not vice versa, since easy-to-use technology is more useful than hard-to-use technology, but useful technology may not be easy to use. This relationship has been confirmed in a number of other studies (Davis et al., 1989; Davis, 1993; Taylor and Todd, 1995; Chau, 1996). Similarly, behavioral intention (BI) to use the system is posited to be affected by attitude towards usage (AT). In accordance with the research objective and consistent with the related literature, we propose the following hypotheses:

¹ Professor, Department of Management Studies, Anna University, Chennai, Tamilnadu, India-600025

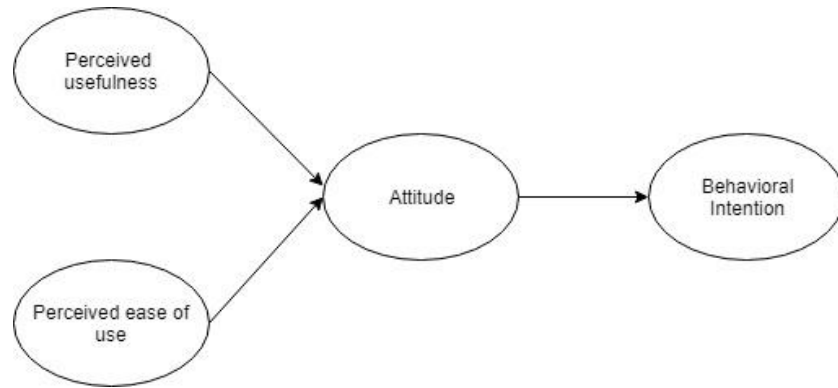


Figure 1: Proposed Model

- H1: Perceived usefulness has a positive influence on attitude
- H2: Perceived ease of use has a positive influence on attitude
- H3: Attitude has a positive influence on purchase intention

3. RESEARCH METHODOLOGY

The questionnaire is divided into three parts: perceived usefulness, perceived ease of use, attitude and behavioural intention. The 5-point Likert measurements are used in this research to limit the bias evaluation of respondents because the respondents cannot find the means of the 5-point scale in the questionnaire. Hence data was collected using questionnaire method.

In this study, EFA is used to explore the factors that the variables of behavioural finance and investment performance of the questionnaire belong to. EFA is used to reduce the number of items in the questionnaire that do not meet the criteria of the analysis (O’Brien, 2007, p.142). Factor loadings are defined as correlations of each item with the factor that it belongs to. Factor loadings of the items on a factor are greater than 0.5 (with the sample size is 100) ensure that EFA has a practical significance to the analysed data (Hair et al., 1998, p.111). In this research, SEM is used to confirm which behavioural factors (formed by the earlier steps of EFA and Cronbach’s Alpha test) have the impacts on investment performance of individual investors as well as estimate the regression weights among them.

SEM is done by the support of AMOS software. SEM is used to test the complex models with indirect or mediation relationships (Hair et al., 2009). The model validation is done by using the following criteria: χ^2 goodness-of-fit statistic, the goodness-of-fit index (GFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR). A model is considered to have a very good fit if the χ^2 statistic is non-significant, the GFI, and CFI are greater than .90, and the RMSEA and SRMR is below 0.08 (Hair et al., 2009). SEM analysis has time and again proved to be a very convenient framework in statistical analyses to present the relationships between the independent, mediating and dependent variables through a clear graphical representation with item weights loaded on each variable. This paper uses structural equation modeling to assess the relationship between the study variables through the model presented below:

4. ANALYSIS & INTERPRETATION

4.1 Measurement model results

To examine the hypothesized relationships, we followed a two-step approach of Structural Equation Modelling (SEM) proposed by Anderson and Gerbing (1988). SEM is useful to simultaneously test a series of relationships where dependent variables become independent variables in the intertwined relationships (Hair, Black, Babin, Anderson, & Tatham, 2006). First, using AMOS, we conducted a confirmatory factor analysis (CFA) to assess the measurement model and then used SEM to validate the structural model. The results of CFA indicated a good fit: $p < .001$, $\chi^2/df = 4.51$; root mean square error of approximation (RMSEA) = .057, CFI = .964; TLI = .963. The values indicated good fit with the data as RMSEA is smaller than .70 and other fit index were greater than .93 (Hair et al., 2006).

Table 2: Standardized factor loadings, AVE and composite reliability values

Constructs	Loadings	CR	AVE
Perceived usefulness		0.76	0.54
PU1	0.73***		
PU2	0.76***		
PU3	0.82***		
PU4	0.69***		
PU5	0.80***		

Perceived ease of use		0.74	0.63
PEU1	0.81***		
PEU2	0.74***		
PEU3	0.75***		
PEU4	0.69***		
PEU5	0.86***		
Attitude		0.78	0.68
ATT1	0.77***		
ATT2	0.86***		
ATT3	0.69***		
ATT4	0.72***		
ATT5	0.81***		
Purchase intention		0.86	0.59
PI1	0.77***		
PI2	0.79***		
PI3	0.81***		
PI4	0.69***		
PI5	0.83***		

***p < .001, AVE- Average Variance Extracted, CR- Composite Reliability

As shown in table 2, all the items of respective constructs loaded significantly. The composite reliability value (CR > 0.7) of all the constructs are satisfactory as suggested by Hair. Also the value of AVE of all the construct is greater than 0.5 indicates that it possesses convergent validity.

Table: 3 Discriminant validity

Constructs	1	2	3	4
1. Perceived usefulness	0.724			
2. Perceived ease of use	0.645	0.771		
3. Attitude	0.721	0.612	0.822	
4. Purchase intention	0.418	0.340	0.546	0.727

Diagonal values represent the square root of the AVE

Discriminant validity was evidenced as the average variance extracted (AVE) per construct was greater than the squared correlation coefficients between constructs (Fornell & Larcker, 1981).

Structural model results Next, we assessed the structural model. The results of SEM showed a good fit of the model with the data: p < .001, $\chi^2/df = 3.911$, RMSEA = .047, CFI = .954; TLI = .956.

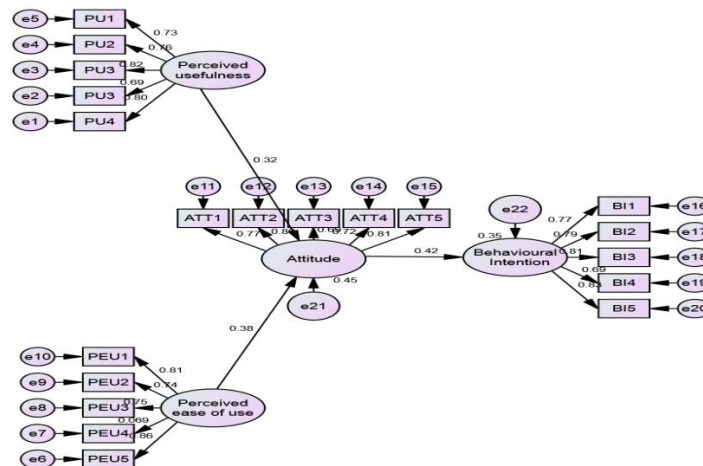


Figure 2: Statistical model

Table 4: Standardized path loadings and associated t-values for relationships

Relationships	Standardized coefficient	S.E	T Value	P Value
Perceived usefulness to attitude (H1)	0.26	0.013	22.39	<0.001
perceived ease of use to attitude (H2)	0.52	0.014	41.76	<0.001

Attitude to behavioural intention(H3)	0.41	0.022	21.67	<0.001
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As shown in Table 4, all the proposed hypothesis for the theoretical model is positive and significant at 1% level. The hypothesis (H1) connecting perceived usefulness and attitude decisions is positive and significant ($\beta = 0.26$, $t = 22.39$, $P < 0.001$). Then the hypothesis (H2) perceived ease and attitude decisions is positive and significant ($\beta = 0.52$, $t = 41.76$, $P < 0.001$). Finally, the hypothesis (H3) connecting attitude and behavioural intention is positive and significant ($\beta = 0.41$, $t = 21.67$, $P < 0.001$).

5. CONCLUSION AND SUGGESTIONS

The study proposed a revised acceptance model of the integrated TAM & IDT for Online Grocery Shopping Service in India. The descriptive statistics indicated that the overall attitude towards using virtual grocery stores in India is positive and thus they are more likely to accept and use the service in the near future. The work also generated the following insights in understanding consumer acceptance of virtual stores in India.

- 1) The integrated Technology Acceptance model & Innovation Diffusion Theories are valid in explaining and predicting user behaviours in the context of Online Grocery Service in India.
- 2) The intention to use the online grocery service is predicted reasonably well from their attitude towards the service.
- 3) Compatibility, Perceived Usefulness and Perceived Ease of Use are the primary determinants of consumer attitude towards online Grocery Service.
- 4) Visibility of the online grocery shopping service did not have a significant influence on the attitude towards the service. This is inconsistent with the findings of the previous research. The reason for this is not clear, but several possible reasons might exist. In India the online grocery is still in its pioneering stage and thus not many people are aware about the service. The visibility of the service still remains very minimum. However, a number of advantages in using OGS (such as competitive price, diverse products, convenience and time saving) may still entice consumers to use the service/ to have a positive attitude towards the service.

The findings of this research have some important implications to managers and developers of virtual grocery stores in India. Organizations can apply the framework to predict consumer acceptance of virtual stores, diagnose the reasons for low acceptance of existing stores and develop corrective steps. Virtual store managers and developers can also form strategies by examining the antecedents of Usefulness, Ease of use and compatibility.

Based on these findings, on-going re-search should focus on studies to discover the dynamics of behavior and perception patterns, as well as to further develop the integrated IDT-TAM model.

6. REFERENCES

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