

E-Tailing Paradigm

(A Diagnostic and Prognostic Study of E-tailing Practices in Bangalore Metropolitan Area)

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Abstract

The Electronic Retailing (E-Tailing) market in India is still considered to be in its infancy, despite having been around for one decade. The share of online retailing in the \$180 billion Indian retail market is insignificant despite the deep penetration of the Internet incrementally over the years. It has become imperative to convert "online visitors" to "online customers".

As the E-tailing concept in India is still relatively new, there is a limitation to availability of information. While substantial amount of research has gone into retailing in India and elsewhere, not much research has been undertaken on the dynamics of the E-tailing paradigm in India. The current literature available appears to be inadequate to cover the entire gamut of the E-tailing paradigm.

A novel model based on the generic "Technology Acceptance Model (TAM)" was developed and empirically tested to understand whether 'credibility', 'security', 'privacy', 'communication', and 'gullibility' affect a customer's 'perceived trust', and whether 'perceived trust', 'perceived value-for-money', 'perceived navigability', and 'perceived quality of E-services' affect a customer's 'confidence for buying', and whether 'confidence for buying' and 'technological comfort' affect 'actual online buying'. This was done because it was felt that there is a necessity to integrate constructs from E-tailing practices with TAM to present a model of acceptance of E-tailing to provide a rich understanding of the acceptance and technology use of this specific class of technology.

The findings of the study indicate that 'security', 'communication' and 'gullibility' are the antecedents of 'perceived trust'; 'perceived trust', 'perceived value-for-money', and 'perceived quality of e-services' are the antecedents for 'confidence for buying'; and 'confidence for buying' and 'technological comfort' are the antecedents for 'actual online buying'. The findings further suggest that 'credibility' and 'privacy' do not affect 'perceived trust' and 'perceived navigability' does not affect 'confidence for buying'.

Keywords : E-Tailing, Technology Acceptance Model, E-Tail Acceptance Model

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1.0 Introduction: Concept of E-tailing

E-tailing consists of computer-interactive retailing activities over the Internet. It involves a website maintained by the E-tailer for buying and selling of products and services via computer networks.

E-tailing is the electronic version of non-store retailing. Consumers can shop from their homes or offices by using computers to interact with retailers using the Internet. The number of Internet websites, or "store-fronts", where products can be ordered has been growing very rapidly. A few years back, www.amazon.com (the most prolific E-tailer) was only an Internet bookstore, but today shoppers can find thousands of items ranging from toys to sporting goods to consumer electronics products at this web site.

The Internet, with its worldwide "audience", is dramatically changing the nature of retailing. Its impact is so great that it finds a place in the "focus areas of special importance" in the retailing business. Traditionally, the focus areas of special importance have been merchandise assortment, location, atmospherics, customer service, store image, and database management.

While everyone - expert analyst and eager entrepreneurs alike mourned the demise of the Web as a business proposition towards the end of the year 2000, E-business has been slowly and steadily growing. And, remarkably, the wildly astronomical predictions and estimates made by analysts during the peak of the dotcom boom have, in fact, turned out to be rather conservative. Forrester Research reported E-commerce worth \$3.9 trillion worldwide in 2003; a figure that is almost double of

predictions made back in 1999. More than 40 % of the 450 plus Internet companies that went public have turned around and become profitable.

2.0 Problem Statement

The E-tailing concept in India is still relatively new. Hence, there is a limitation to availability of information. There is a need to study and analyze the problems being faced by E-tailers, and the marketing dynamics involved in the E-tailing process. In order to do so, it is imperative to develop an understanding of the online consumer that can impact marketing and operational strategy for the E-tailer.

As the practice of E-tailing in India matures, a deeper and more complete understanding of the nature and relationships of the three critical components – BUYERS, SELLERS, & TECHNOLOGIES that bring them together has become very essential. While some firms have been led astray by technology and IT, the truly successful have used the net to apply the core concepts of traditional marketing in a new and powerful way. There is a paradox here – "Customer Focus" is traditional thinking, but its application on the net involves new and non-traditional approaches.

3.0 Research Objectives

The failure of a large number of E-tail companies during the "dotcom bust" period epitomizes the challenges of operating through virtual channels and underscores the need to better understand key drivers of online consumer behavior.

The specific objectives of this research are as follows:

1. To identify the antecedents of customer confidence in E-tailing, leading to actual online purchase
2. To identify the critical success

factors, including technological factors, of making online sales

3. To identify the product / services profiles that hold promise in the electronic market
4. To examine, analyze, and evaluate the important marketing issues facing firms that want to compete in this revolutionary and dynamic new media environment
5. To assess wants, needs and unmet expectations/opportunities specific to E-tailing products and services

In summary,

The study is an attempt to

- *introspect the past,*
- *retrospect the present &*
- *prospect the future*

of E-tailing in India using Bangalore as a representative city

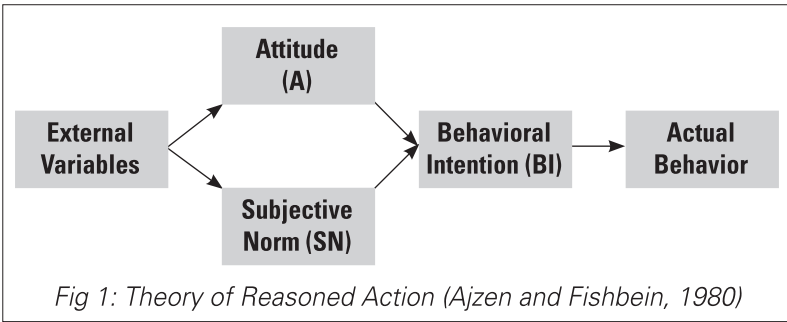
4.0 Research Background

The following sections will introduce some models and issues related to this study and will lay the foundation for the Research Model.

The Theory of Reasoned Action

(TRA), shown in *Figure 1*, attempts to predict and understand an individual's intended behavior (Ajzen and Fishbein, 1980). An individual executes a unique behavior that is decided by his or her behavioral intention (BI), which in turn is determined by his or her attitude (A) and a subjective norm (SN). External variables were considered in TRA to be related to a person's behavior (Ajzen and Fishbein, 1980).

The Technology Acceptance Model (TAM), shown in *Figure 2*, is based on the TRA model (Davis et al, 1989). It was developed to understand and predict an individual's Information System (IS) acceptance behavior based on perceived usefulness, defined 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, defined as “the degree to which a person believes that using a particular system would be free of effort”. Consistent with the TRA model, the TAM states that the two beliefs affect the attitude towards using “IS” and the attitude leads to behavioral intention to use “IS”. Finally, behavioral intention to use leads to actual “IS” use.

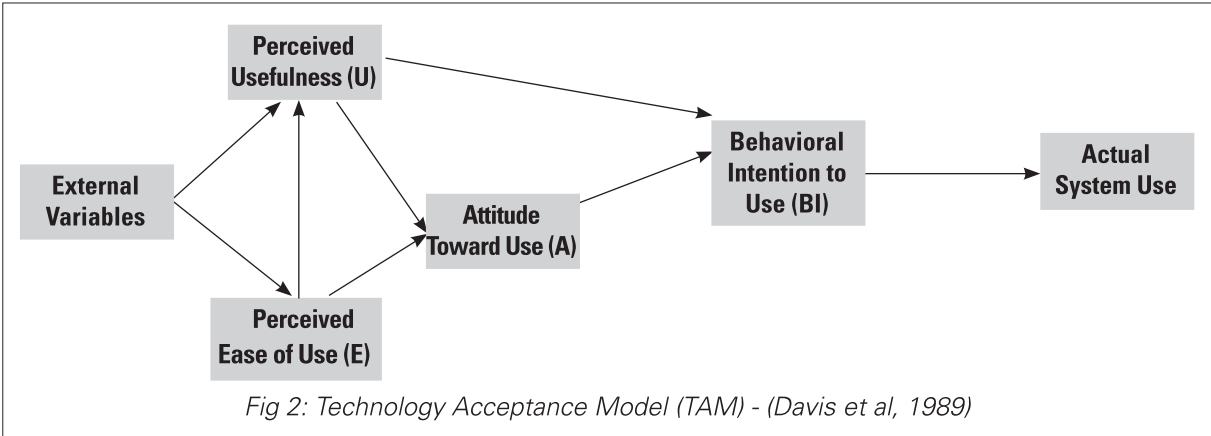
While TAM focuses on beliefs about “perceived usefulness” and

(Gefen, 2003), and computer self-efficacy for Web-Based Learning (Gong et al, 2004). These variables have exhibited significant impact on behavioral intention to use). A Model of Consumer Trust shown in Figure 3 was developed to explain consumer trust in an online store (Jarvenpaa et al, 2000). The trust factors are “perceived size” (the store’s size from customer’s perception), and “perceived reputation” (the store’s reputation from customer’s perception). Their research indicated that there are no

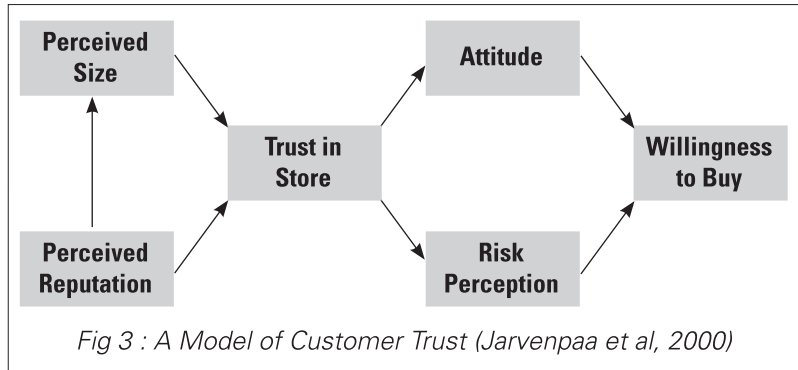
strong effects with antecedents of trust, but the perceived trust in the online store is correlated individually with attitude and risk perception in the consumers’ willingness to buy from an E-tailer’s online store.

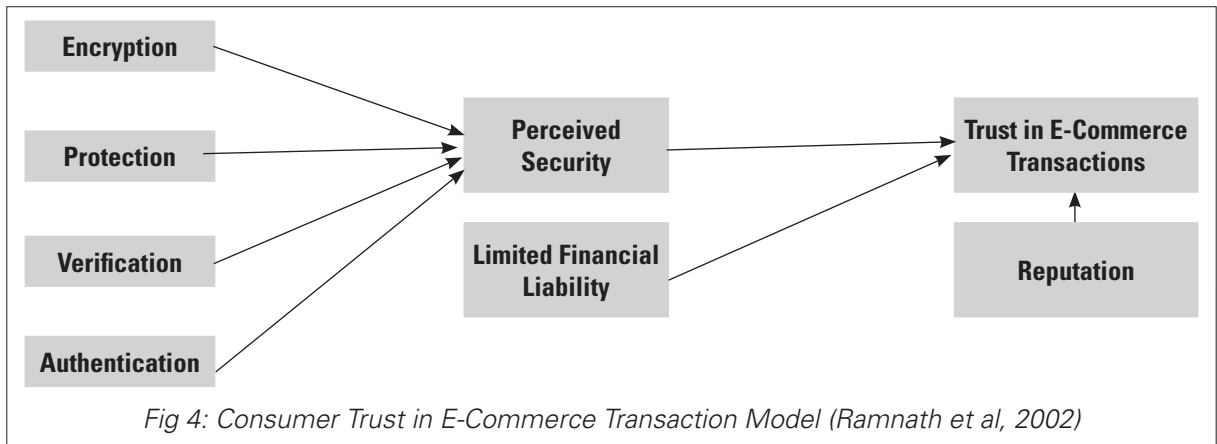
Ramnath and Pavlou (2002) introduced customer trust in an E-commerce transaction model shown in Figure 4 to predict consumer intentions to use online shopping. The conceptual framework was the perceived security effect of encryption, protection and authentication, reputation and Trust in E-commerce transactions in the model. The key finding was the relative strength of perceived security on trust in customer adoption of online shopping.

Dahlberg, et al (2003) introduced a Trust-Enhanced Technology Acceptance Model shown in Figure 5 to explain mobile payment solutions. The trust factors are perceived



“perceived ease of use” to influence the “behavioral intention to use” becoming “actual behavior”, some external variables like “computer self-efficacy” and “trust” may influence behavior. Examples of such external variables are - trust for Internet banking (Suh and Han, 2002), trust for online shopping (Gefen et al, 2003), habit for online shoppers





trust, (the degree to which a person perceives a particular technology solution as secure and trustworthy), and disposition to trust, (the extent to which a person is willing to trust others). The findings indicate that the proposed trust factors play an important role in customer adoption of mobile payment solutions.

An Extended Technology Acceptance Model shown in *Figure 6* has been used to understand consumer intentions to use online purchasing (Heijden et al, 2003). The conceptual framework includes trust in the online store, perceived risk, perceived usefulness, perceived ease of use,

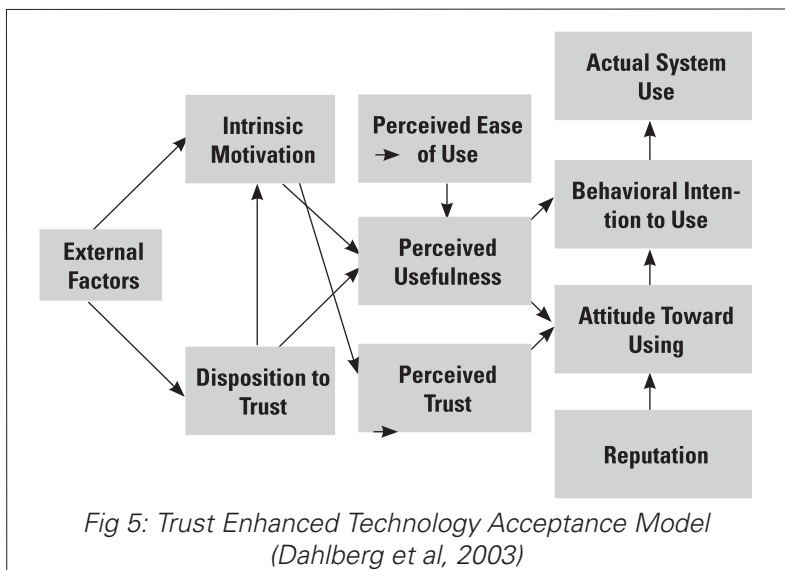
attitude towards online purchasing, and online purchase intention in the research model. The key finding was the relative strength of trust in customer adoption of online purchasing.

Vijayasathy, (2004) introduced an Augmented Technology Acceptance Model shown in *Figure 7* to predict consumer intentions to use online shopping. New variables in the model are privacy (the degree to which personal information is protected), and security (the extent to which a consumer believes that making payments online is secure). The findings indicated that the proposed

privacy and security play an important role in customer adoption of online shopping.

A review of scholarly research on IS acceptance and usage suggests that TAM has emerged as one of the most influential models in this stream of research. The TAM represents an important theoretical contribution toward understanding IS usage and IS acceptance behaviors.

TAM has been applied to a wide range of technologies and has been very predictive of individual acceptance and technology use. One of the criticisms of TAM has been that although it can effectively predict system acceptance, it is not particularly useful in providing explanations that can be used to design interventions that foster acceptance (e.g., Venkatesh and Davis 1996, 2000). While it is widely recognized that perceived usefulness and perceived ease of use affect acceptance, until we better understand what determinants affect perceived usefulness and perceived ease of use, it will be difficult to provide actionable and practical guidance from TAM. There has been some research on a set of general determinants that apply to a wide range of technologies and classes of technologies (e.g., Venkatesh 2000;



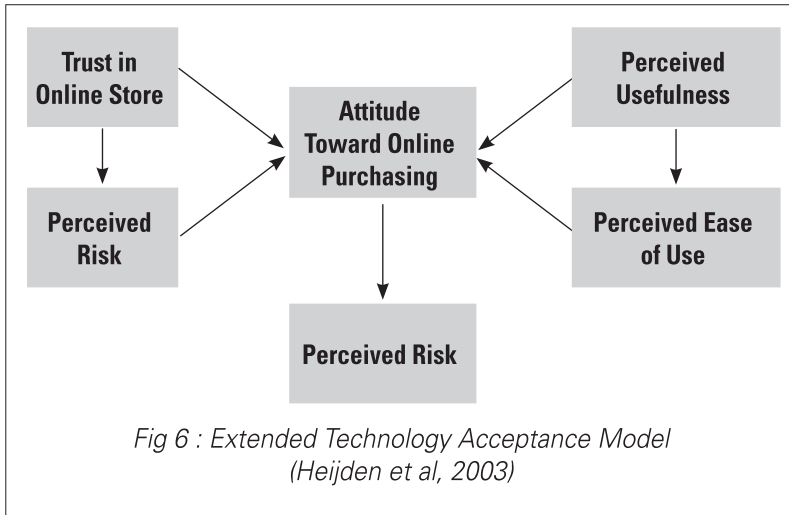


Fig 6 : Extended Technology Acceptance Model (Heijden et al, 2003)

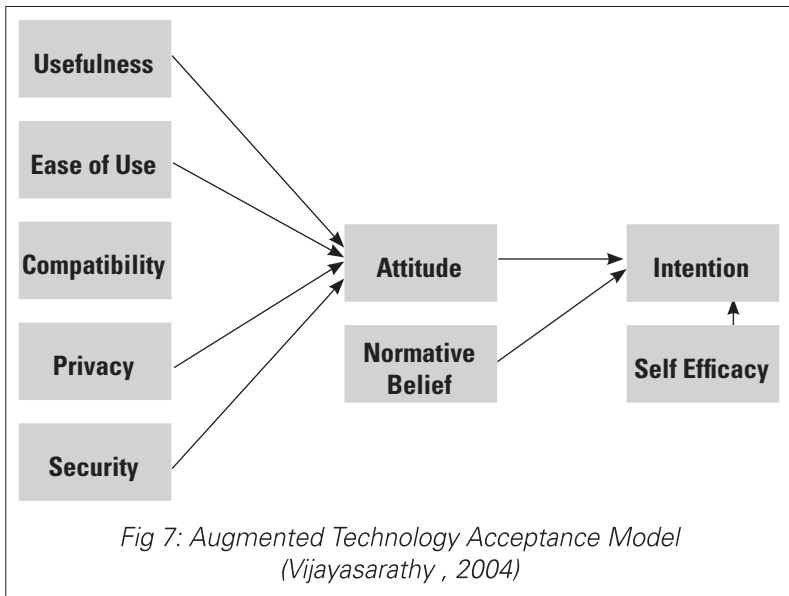


Fig 7: Augmented Technology Acceptance Model (Vijayarathy, 2004)

Venkatesh and Davis 2000). However, in using TAM for actionable guidance, it is essential to identify determinants that are tailored to specific classes of technologies that capture the nuances of the class of technologies and/or business processes (Benbasat and Zmud 2002). Thus, as a first step, it is important to extend TAM toward specific classes of technologies (Dennis and Reinicke 2003). A model focused on a specific class of technologies will produce a narrower but stronger model

rather than a general model that attempts to address many classes of technologies simultaneously (Newell 1969). Given this background, there is a necessity to integrate constructs from E-tailing practices with TAM to present a model of acceptance of E-tailing to provide a rich understanding of the acceptance and technology use of this specific class of technology.

Technologies that facilitate interactions via electronic means

have become an essential component of day-to-day life. Thus, it is not surprising that this class of technologies has received considerable research attention over the past five years (Vessey et al. 2003). However, several prior studies have been mainly in the field of collaboration technologies such as voice mail, E-mail, and group support systems (e.g., Adams, Nelson, and Todd 1992; Chin and Gopal 1995; Straub, Limayem, and Karahanna 1995). These studies are nevertheless important because they established TAM as one of the cornerstones of IS literature and a theoretical model applicable to a wide range of technologies.

A model that integrates technology acceptance with E-tailing practices is lacking, a void that this research seeks to address.

5.0 Research Model & Hypotheses

The conceptual research model, shown in Figure 8, is an extension of the above-mentioned models and their enhancements, customized to the specific and unique characteristics of E-tailing. As explained earlier, the generic model of technology acceptance has inherent limitations and there is a necessity to extend this model to address each class of technology usage individually. The research model given below shows that the major factors that influence 'actual online buying' are 'confidence for buying' and 'technological comfort'. The antecedents of 'confidence for buying' are 'perceived trust', 'perceived value-for-money', 'perceived navigability' and 'perceived quality of E-services'. The antecedents to perceived trust are 'credibility', 'security', 'privacy', 'communication', and 'gullibility'.

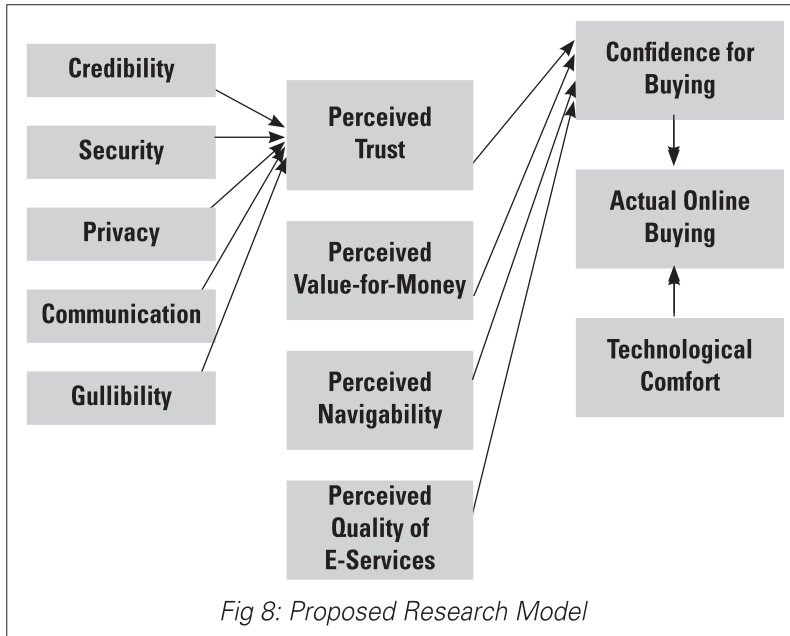


Fig 8: Proposed Research Model

There is a general agreement among researchers (e.g., Cheskin Research, 2000; Cheskin Research & Studio Archetype/Sapient, 1999; Fogg, Soohoo, Danielson, Marable, Stanford, & Tauber, 2002) on the significant importance of "perceived trust" in online activities.

There are several definitions and interpretations of trust, so much so, that it makes the concept confused across research areas. In this study, the definition of trust has been adapted from Mayer et al, 1995 & Jarvenpaa et al, 2000 - trust is "the willingness of a consumer to be vulnerable to the actions of an online store based on the expectation that the online store will perform a particular action important to the consumer, irrespective of the ability to monitor or control the online store". The following antecedents of perceived trust have been identified:

1. Credibility

This is defined as the extent to which the reliability, trustworthiness, existence of physical store and

reputation of the E-tailer is ensured.

Derived Hypothesis:

H1 : There exists a positive association between credibility and perceived trust.

2. Security

This is defined as the extent to which protection of customers' sensitive data from "hackers" and "crackers" is ensured

Derived Hypothesis:

H2: There exists a positive association between security and perceived trust.

3. Privacy

This is defined as the extent to which customer's belief that the E-tailer will not divulge his/her personal information to 3rd parties, willy-nilly, is maintained.

Derived Hypothesis:

H3: There exists a positive association between privacy and perceived trust.

4. Communication

This is defined as the extent to which customer's belief that the E-tailer will

be in constant communication with him/her before, during, and after the E-tail sale transaction is maintained

Derived Hypothesis:

H4: There exists a positive association between communication and perceived trust.

5. Gullibility

This is defined as the extent to which customers get influenced and form opinions based on word-of-mouth communication from others.

Derived Hypothesis:

H5: There exists a positive association between the individual's gullibility and perceived trust.

The research model suggests that perceived trust, perceived value-for-money, perceived navigability and perceived quality of E-services are the antecedents to establishment of confidence for buying.

6. Perceived Trust

As explained earlier, perceived trust is defined as the extent to which the consumer is willing to be vulnerable to the actions of an E-tailer, based on the expectation that the E-tailer will perform a particular action important to the consumer, irrespective of the ability to monitor or control the E-tailer.

Derived Hypothesis:

H6: There exists a positive association between perceived trust and confidence for buying.

7. Perceived Value-for-Money (VFM)

This is defined as the extent to which the consumer's belief that E-tail purchase would offer more convenience, faster processes, better bargains etc. as compared to any other form of purchase is maintained

Derived Hypothesis:

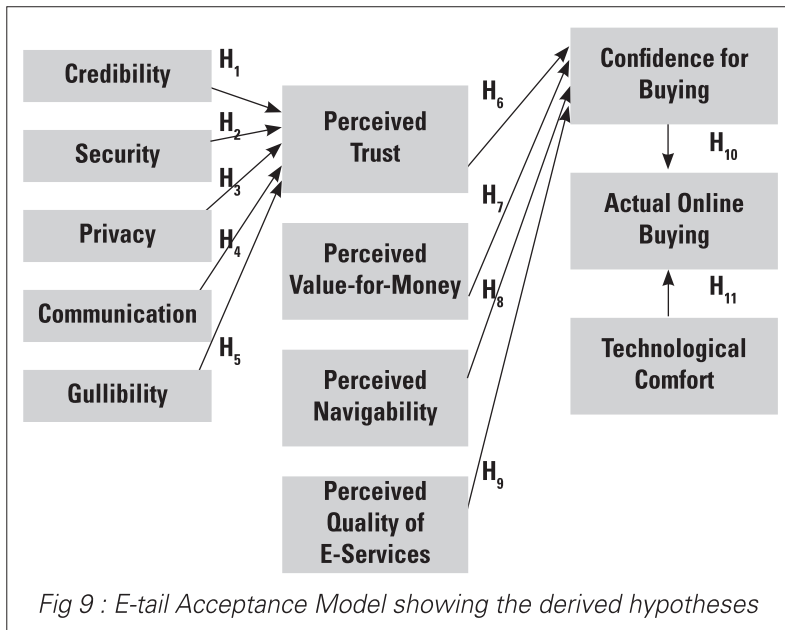


Fig 9 : E-tail Acceptance Model showing the derived hypotheses

H7: There exists a positive association between perceived value-for-money and confidence for buying.

8. Perceived Navigability

This is defined as the extent to which the consumer's belief that the E-tail purchase process is "free of effort" is maintained

Derived Hypothesis:

H8: There exists a positive association between perceived navigability and confidence for buying.

9. Perceived Quality of E-Services

This is defined as the extent to which consumer's belief in service quality of the E-tailer in terms of fulfillment, efficiency, responsiveness, grievance-handling, interactive decision aids (presence technology, 3D presentation, online help, etc.) is maintained

Derived Hypothesis:

H9: There exists a positive association between perceived quality of E-services and confidence for buying.

The research model further suggests that confidence for buying is an

antecedent for actual online purchase

10. Confidence for Buying

This is defined as the extent to which the consumer's confidence in making a purchase in an E-tailing environment is established

Derived Hypothesis:

H10: There exists a positive association between confidence for buying and actual online buying.

11. Technological Comfort

This is defined as the extent to which the consumer is comfortable using the computer and other electronic gadgets relevant to E-tailing

Derived Hypothesis:

H11: There exists a positive association between technological comfort and actual online buying

Figure 9 below shows a diagrammatic representation of the derived hypotheses:

6.0 Research Methodology

The behavior of online customers is central to this study, as it is important to understand the dynamics of

purchases made over the Internet. Hence, the major focus of the study was to understand whether credibility, security, privacy, communication, and gullibility affects a customer's perceived trust, and whether perceived trust, perceived value-for-money, perceived navigability, and perceived quality of E-services affects a customer's confidence for buying, and whether confidence for buying and technological comfort affects the actual online buying.

6.1 Data Collection Instrument

One of the greatest challenges in collecting data for research is the creation and formatting of a questionnaire. In order to minimize misinterpretations in this endeavor, a preliminary questionnaire was initially distributed to a pilot group of 25 subjects, selected on the basis of convenience sampling. This pilot group not only answered the questionnaire, but also suggested changes in nebulous, fuzzy areas of the questionnaire. The group also made suggestions in the order of the questions. This process had a significant impact on the original questionnaire, narrowing the scope of the questions and eliminating redundant and irrelevant questions.

The final questionnaire used for data collection contained close-ended questions to measure the various constructs depicted in the research model. This enabled respondents to answer questions quickly, yet objectively. The perceptions of the respondents were collected objectively using 5-point Likert scales thus reducing the complexity involved in collecting subjective data. Various items within the same construct group were randomized to prevent systemic response bias. An E-mail survey method was selected to float

the questionnaire due to the following three considerations:

1. E-mail surveys (a derivative of the standard mail survey) are well suited for measuring respondents about self-reported or beliefs or behaviors (Neuman, 2003). It provides a quick and efficient way of gathering large amounts of data from the population with a relatively low cost in comparison with other collection methods (Neuman, 2003). In this study, email survey was used to obtain information on the customer's demography and their perceptions on the factors that have influenced actual customer purchase.
2. The use of a mail survey increases reliability of responses by eliminating interviewer bias (Neuman, 2003). As this research attempted to identify factors that influence the actual buying behavior by testing the interrelationship of different variables, the E-mail survey was highly suitable.
3. An E-mail survey allows the researcher contact with inaccessible respondents. It allows respondents to complete the questionnaire at their own convenience and at their own pace. With this flexibility, the respondents can take time to think and answer the questions. Therefore, the E-mail survey method was an appropriate way to collect the data.

Moreover, as this research dealt with Internet-based electronic retailing, it was assumed that using email mode for collecting data would not generate any kind of bias in the sample. Indeed, every online purchaser is also an Internet user and could therefore access emails.

6.2 Sample Frame

The population for this research comprised Bangalore-based Internet-savvy consumers, who are all working professionals.

6.3 Sample Size

Sample size has a direct bearing on how accurate the findings are relative to the true values in the population. Therefore, determining an appropriate sample size for this research was considered to be of paramount importance.

The required sample size was calculated using the following formula:

$$\text{Sample Size} = \frac{\{(Z^2) * (p) * (1-p)\}}{C^2}$$

where:

Z = no. of std. deviations a point on a distribution is away from the mean (e.g. 1.96 for 95% Confidence Level)

p = percentage picking a choice, expressed as a decimal (p = 0.5 is used for calculating required sample size)

C = confidence interval expressed as decimal (e.g. 0.04 = + 4%)

Assuming, Confidence Level = 95% & Confidence Interval = 7%, the required sample size identified was:

$$\frac{1.96^2 * 0.5 * 0.5}{0.07^2} = 196$$

A response rate from an E-mail survey might be normally expected between 10 % and 50 % (Neuman 2000). Therefore, to ensure that sufficient data was collected to allow in-depth analysis, and accurate inferences could be drawn from the data, it was decided to send email questionnaires to five times of the sample size (approximately to 1000 subjects).

6.4 Sampling Method

The concept of E-tailing is of recent origin in India. Hence, E-tail database

of consumers is not publicly available (ala directories). Individual E-tailers do have their own customer databases but generally, they are not at liberty to disclose the list due to the security issues involved in the E-tail purchases.

As a result of the stringent privacy policies adopted by the E-tailers it was extremely difficult to locate samples by absolutely random means. The sampling method chosen was "snowball sampling" (sometimes referred to as "network sampling"). Snowball sampling is a non-probability method used when the desired sample characteristic is rare. It may be extremely difficult or cost prohibitive to locate respondents in these situations. Snowball sampling relies on referrals from initial subjects to generate additional subjects. In the absence of a publicly available database, this was the only technique that could be used. Snowball sampling came at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population.

It was practically impossible to track the number of respondents who finally received the questionnaire, as the questionnaire was sent as an email attachment with a request to forward it to as many Bangalore-based subjects as possible. Initially, it was sent to 137 respondents directly but there is no way that one can estimate how many subjects ended up with a copy of the questionnaire in their mailbox.

219 responses were received till January 23, 2007. Out of these, 17 responses were rejected, as they were incomplete. The balance 202 responses were retained for data analysis. Kaiser-Meyer-Olkin

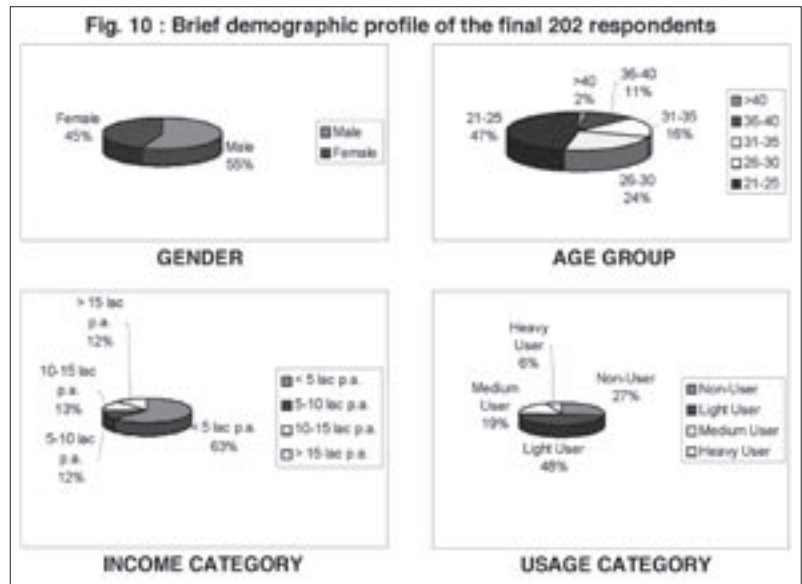
(KMO) Test was used to measure the sampling adequacy. The KMO measure obtained was 0.785 and as this is more than the cut-off value of 0.5, sampling adequacy was established.

6.5 Data Analysis : The Preliminary Steps

This section discusses the initial screening of the data, the examination of the data for missing values and outliers, and the selection of analysis methods.

6.5.1 Data Screening

After collection and compilation of the data, the analysis process commenced with data screening. Prior to analyzing the data, a critical first step was to examine the basic characteristics of the data in order to assist with the application of a multivariate analysis model as well as interpretation of the results (Hair et al, 1998). The data from the survey were first screened to identify out-of-range values by examining the minimum and maximum values for each question. Descriptive statistics ensured that the means and standard deviations were credible



(Table 1).

The next step was to examine the data for missing values, outliers, and reliability. The investigations of these three areas are discussed in the following sections.

Missing values

Using the missing value analysis function in SPSS, the number of cases or variables having missing data was

identified. None of the cases and/or variables in the final 202 responses exhibited a high level of missing data and hence, all of them were retained for further analysis.

Outliers

An outlier is an observation that lies an abnormal distance from other values in a chosen sample. Outliers may occur for a number of reasons: a

Sl.	Variable	Notation	N	Min	Max	Mean	Std. Deviation
1	Credibility	CRE	202	2.00	4.91	3.8245	.47247
2	Security	SEC	202	2.40	5.00	4.0020	.53233
3	Privacy	PRI	202	2.33	5.00	4.1238	.53052
4	Communication	COM	202	2.00	5.00	4.1574	.47991
5	Gullibility	GUL	202	1.80	4.60	3.2901	.60938
6	Perceived Trust	PT	202	1.25	5.00	4.1460	.58831
7	Perceived Value-for-Money	PVFM	202	1.17	5.00	3.4257	.76925
8	Perceived Navigability	PN	202	1.54	5.00	3.6413	.58571
9	Perceived Quality of E-services	PQ	202	1.55	5.00	3.9595	.54793
10	Confidence for Buying	CB	202	1.80	5.00	3.5851	.71095
11	Technological Comfort	TC	202	1.50	4.83	3.2129	.67945
12	Actual Online Buying	AOB	202	2.00	5.00	3.3000	.60000

Table 1 : Descriptive Statistics of Various Constructs

Scale	No. of items	Cronbach's Alpha
Credibility	11	0.7242
Security	5	0.7165
Privacy	6	0.7021
Communication	10	0.8201
Gullibility	5	0.7104
Perceived Trust	4	0.8075
Perceived VFM	6	0.8408
Perceived Navigability	13	0.8820
Perceived Quality of E-Services	11	0.8489
Confidence For Buying	5	0.7042
Technological Comfort	6	0.7319
Actual Online Buying	3	0.7020

Table 2 : Cronbach's Alpha Scores for Reliability Measurement

procedural error (e.g. data entry error), etc. No outliers were detected during the examination and hence, there was no need to eliminate any of the 202 responses.

Reliability

To assess reliability, the Cronbach's alpha score for each construct was examined. The alpha score was greater than 0.7 (Nunnally 1978) in all constructs and hence, the constructs were reckoned as reliable (Table 2).

6.5.2 Data Analysis

The data was then subjected to rigorous quantitative analysis

using SPSS 11.0. The hypothesized relationships depicted in Figure-9 were tested using multiple linear regressions. Three models were initially tested.

Model 1 : The dependent variable (perceived trust) and independent variables (credibility, security, privacy, communication, and gullibility) were entered into a hierarchy for testing hypotheses (H1, H2, H3, H4, and H5). The hypothesized relationships can be represented in terms of the following regression equation:

$$PT = +1CRE + 2SEC + 3PRI +$$

$$4COM + 5GUL$$

where : PT = Perceived Trust, CRE = Credibility, SEC = Security, PRI = Privacy, GUL = Gullibility.

Model 2 : The dependent variable (confidence for buying) and independent variables (perceived trust, perceived value-for-money, perceived navigability, and perceived quality of e-services) were entered into a hierarchy for testing hypotheses (H6, H7, H8, and H9). The hypothesized relationships can be represented in terms of the following regression equation:

$$CB = + 1PT + 2PVFM + 3PN+ 4PQ$$

where : CB = Confidence for Buying, PT = Perceived Trust, PVFM = Perceived Value-for-Money, PN = Perceived Navigability, PQ = Perceived Quality of E-services.

Model 3 : The dependent variable (actual online buying) and independent variables confidence for buying, and technological comfort) were entered into a hierarchy for testing hypotheses (H10, and H11). The hypothesized relationships can be represented in terms of the following regression equation:

$$AOB = + 1CB + 2TC$$

where : AOB = Actual Online Buying,

Coefficients

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Model 1	(Constant)	.108	.311		.347	.729		
	CRE	-4.872E-02	.076	-.039	-.638	.524	.626	1.598
	SEC	.206	.058	.187	3.558	.000	.857	1.167
	PRI	3.745E-02	.067	.034	.556	.579	.638	1.568
	COM	.482	.086	.393	5.571	.000	.474	2.111
	GUL	.378	.051	.391	7.379	.000	.838	1.193

* Dependent Variable: PT

Table 3a : Coefficients for Model - 1

CB = Confidence for Buying,
TC = Technological Comfort.

6.5.3 Results of Regression Analysis

Model 1 : PT versus CRE, SEC, PRI, COM, GUL

The regression equation is

$$PT = 0.108 - 0.0487CRE + 0.206SEC + 0.0374PRI + 0.482COM + 0.378GUL$$

Tables 3a, 3b, and 3c indicate the following:

- PT (perceived trust) showed positive association with SEC (security), COM (communication), and GUL (gullibility) @ 1%, 5%, and 10% significance levels. Thus, hypotheses H2, H4, and H5 are supported. Hypotheses H1, and H3 are rejected.
- The model is powerful because the 'P' value of 'F' is significant @ 1%, 5%, and 10% levels.

MODEL 2 : CB versus PT, PVFM, PN, PQ .

The regression equation is

$$CB = 2.3 + 0.136PT + 0.237PVFM - 0.142PN + 0.519PQ$$

Model Summary

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.734	.538	.526	.40487

* Predictors: (Constant), GUL, SEC, CRE, PRI, COM

Table 3b : Summary of Model – 1

ANOVA

Model 1		Sum of Squares	df	Mean Square	F	Sig.
	Regression	37.438	5	7.488	45.677	.000
	Residual	32.129	196	.164		
	Total	69.567	201			

* Predictors: (Constant), GUL, SEC, CRE, PRI, COM

* Dependent Variable: PT

Table 3c : Analysis of Variance (ANOVA) for Model – 1

Tables 4a, 4b, and 4c indicate the following:

- CB (confidence for buying) showed positive association with PT (perceived trust) @ 5%, and 10% significance levels. It showed positive association with PVFM (perceived value-for-money), and PQ (perceived quality of E-services), @ 1%, 5%, and 10% significance levels. Thus, hypotheses H6, H7, and H9 are supported. Hypotheses H8 is rejected.
- The model is powerful because the 'P' value of 'F' is significant @ 1%, 5%, and 10% levels.

MODEL 3 : AOB versus CB, TC

The regression equation is

$$AOB = 2.67 + 0.216TCT + 0.637CB$$

Tables 5a, 5b, and 5c indicate the following:

- AOB (actual online buying) showed positive association with CB (confidence for buying), and TC (technology comfort) @ 1%, 5%, and 10% significance levels. Thus, hypotheses H10, and H11 are

supported.

- The model is powerful because the 'P' value of 'F' is significant @ 1%, 5%, and 10% levels.

After conducting regression analysis on the three models, test for multi co-linearity was undertaken with the intention of conducting a stepwise regression analysis, if multi co-linearity existed.

Correlation coefficients exceeding 0.75 were considered significant. Table 6 shows that all the coefficients are less than the threshold value of 0.75, and hence, there was no need to conduct step-wise regression analysis.

A summary of the hypotheses test results is presented below:

7.0 FINDINGS & SUGGESTIONS

- A positive association has been established between security and perceived trust. Thus, E-tailers need to beef up their website security measures to instill confidence in the buyers. The following measures are suggested:

- The E-tailers need to procure "security certifications" from trusted third parties like



for their website transactions and display them prominently on their website.

- Warnings of new fraudulent means adopted by hackers need to be displayed prominently on the website on a regular basis.
- Dynamic electronic keyboards should be provided on the website to prevent "keyboard stroke capturing". An example of such a key board is given below:

Such security features are being provided by the E-banks for online banking transactions only. E-tailers

Coefficients

		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
Model 2		B	Std. Error	Beta			
	(Constant)	2.298	.389			5.906	.000
	PT	.136	.098	.112		1.380	.017
	PVFM	.237	.073	.257		3.267	.001
	PN	-.142	.115	-.117		-1.236	.218
	PQ	.519	.134	.400		3.885	.000

* Dependent Variable: CB

Table 4a : Coefficients for Model - 2

need to adopt this feature on their websites.

- All information required to complete an online transaction, including payment are available on the card itself, i.e. Card Number, Expiry Date, and CVV Number. This is a major concern as card theft has become very rampant. Furthermore, in merchant establishments, very often the cards are taken out of view of the customer for swiping. Any unscrupulous person can note down the above three details and make fraudulent purchases. It is suggested that appropriate biometric technologies be brought in to authenticate the person making the online purchase. This would give a major boost to trust in online sale transactions. Till then, the E-tail website should automatically generate a password and send it to the email ID / mobile number of the concerned person. No transaction should be completed without the password being entered on the E-tail website. Very recently, Citibank introduced this feature to authenticate online transfer of money from banking accounts.
- Mobile phones can be integrated into the E-tailing paradigm, as mobile phones are much more personal than computers. The huge penetration of mobile phones could

Model Summary

Model 2	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.368	.135	.118	.66787

* Predictors: (Constant), PQ, PVFM, PT, PN

Table 4b : Summary of Model – 2

ANOVA

Model 1		Sum of Squares	df	Mean Square	F	Sig.
	Regression	13.723	4	3.431	7.691	.000
	Residual	87.872	197	.446		
	Total	101.595	201			

* Predictors: (Constant), PQ, PVFM, PT, PN

* Dependent Variable: CB

Table 4c : Analysis of Variance (ANOVA) for Model – 2

Coefficients

Model 3		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
	(Constant)	2.674	.211			12.648	.000
	CB	.637	.063	.688		10.052	.000
	TC	.216	.066	.223		3.258	.001

* Dependent Variable: AOB

Table 5a : Coefficients for Model - 3

Model Summary

Model 3	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.594	.353	.347	.53129

* Predictors: (Constant), TC, CB

Table 5b : Summary of Model – 3

ANOVA

Model 3		Sum of Squares	df	Mean Square	F	Sig.
	Regression	30.701	2	15.351	54.384	.000
	Residual	56.171	199	.282		
	Total	86.872	201			

* Predictors: (Constant), TC, CB * Dependent Variable: AOB

Table 5c : Summary of Model – 3

be tapped and channelized into an efficient E-tailing service.

- A positive association has been established between communication and perceived trust. This indicates that the E-tailers must be in constant communication with customers before, during, and after the sale transaction. The following measures are suggested:

- The E-tailers need to inform customers about the payment status as soon as it is over through automated email.
- Courier details should be emailed automatically to the customer as soon as the goods are shipped.
- E-tailers should respond to complaints related to late / non-arrival of goods promptly.

- A feedback should be taken after the goods are received and the customer has had time to use the product.

- A positive association has been established between gullibility and perceived trust. This indicates that the E-tailers must cultivate opinion leaders and consider mass advertising.
- A positive association has been established between perceived value-for-money and confidence for buying. This indicates that the E-tailers must offer better bargains; better bulk discounts vis-à-vis retailers. In other words, there should always be a price differential in favor of online purchases. The price advantage should be prominently displayed on the website. Other cost savings like transportation, parking, time costs, etc. should also be highlighted. Institutional membership maybe considered, wherein a member-institute's employees could be

Correlation Matrix

	Pearson's Correlation Coefficient	CRE	SEC	PRI	COM	GUL	PT	PVFM	PN	PQ	CB	TC	AOB
CRE	ζ	1											
SEC	ζ	.252	1										
PRI	ζ	.425	.316	1									
COM	ζ	.602	.326	.581	1								
GUL	ζ	.277	.226	.254	.384	1							
PT	ζ	.367	.404	.403	.600	.582	1						
PVFM	ζ	.298	.307	.381	.415	.430	.370	1					
PN	ζ	.436	.403	.543	.517	.383	.426	.486	1				
PQ	ζ	.631	.452	.560	.705	.390	.569	.487	.695	1			
CB	ζ	.204	.186	-.030	.204	-.045	.195	-.078	.084	.258	1		
TC	ζ	.290	.215	-.019	.301	.105	.178	.066	.221	.354	.554	1	
AOB	ζ	.259	.213	.002	.162	.187	.462	-.007	-.067	.185	.565	.158	1

Table 6 : Correlation Coefficients of all the Constructs

Hypotheses Path	Hyp.	Coeff.	t-Test	Decision
Credibility -> Perceived Trust	H ₁	-.039	-.638	Not Supported
Security -> Perceived Trust	H ₂	.187	3.558	Supported
Privacy -> Perceived Trust	H ₃	.034	.556	Not Supported
Communication -> Perceived Trust	H ₄	.393	5.571	Supported
Gullibility -> Perceived Trust	H ₅	.391	7.379	Supported
Perceived Trust -> Confidence for Buying	H ₆	.112	1.380	Supported
Perceived Value-for-Money -> Confidence for Buying	H ₇	.257	3.267	Supported
Perceived Navigability -> Confidence for Buying	H ₈	-.117	-1.236	Not Supported
Perceived Quality of E-services -> Confidence for Buying	H ₉	.400	3.885	Supported
Confidence for Buying -> Actual Online Buying	H ₁₀	.688	10.052	Supported
Technological Comfort -> Actual Online Buying	H ₁₁	.223	3.258	Supported



Fig. 13 – An example of dynamic electronic keyboard

offered good deals if they shop online.

- A positive association has been established between perceived quality of E-services and confidence for buying. This indicates that the E-tailers must provide efficient E-

services that are superior to offline mode. The following measures are suggested:

- E-tailers need to ensure that order fulfillment takes place on or before the promised date. This is a serious concern as the results of one

delayed receipt could adversely affect future online purchases.

- The E-tailers need to continuously invest in innovative technologies to provide better and better quality E-services. Presence technology, 3D presentations of products,

interactive decision aids, etc. should be considered as starters.

- A positive association has been established between technological comfort and actual online buying. This indicates that the E-tailers must invest in innovative user-interface technologies that would put the user at ease and not intimidate him/her. Voice-based E-tailing services could also be considered.

8.0 CONCLUDING THOUGHTS

E-tailing is one of the critical business models for E-commerce in the competitive business environment. Without a theoretical model for analyzing E-tailing success, it is very difficult for E-tailers to achieve their business goals. An "E-tail Acceptance Model" was developed to enhance and advance the traditional model. This new model has identified the critical factors leading to customer confidence and eventual purchase

in an E-tailing environment, thereby contributing to the rising body of knowledge concerning the determinants of customer confidence in an electronic environment. Many companies today are trying to increase their website sales. The theoretical framework that has been developed in this study will help to convert 'online visitors' to 'online customers'.

The results of this study provide at least two theoretical contributions to E-tail adoption research. First, the study presents four empirically tested, reliable, and valid constructs that were found significant in predicting E-tail use, namely gullibility, perceived value-for-money, perceived quality of E-services, and technological comfort. Second, the results corroborate the fact that specific technology acceptance models have to be developed for specific classes of technology use. The general

model may not be adequate enough to explain the adoption and use of different types of technologies wherein the specific features of the technology play an important role.

Although this study makes contributions to the body of knowledge in the E-tailing domain, there are a number of limitations associated with the research, as follows:

- E-tailers have not been segmented while conducting the study and have been treated as generic. Specific categories of E-tailers need to be considered to check whether the empirically tested model is valid across all categories.
- The sample selection using snowball sampling has limited the ability to generalize the finding to the overall population, due to its non-random nature.



Fig. 14 – A typical credit card with all details embossed on it



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