

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.

The e-tailing literature from across the world suggests that understanding the important components of online consumer behavior is the key to success in e-tailing. A clear and thorough understanding of the behavioral components can help e-tailers improve the adoption of consumer online purchasing by implementing methods and technologies that help fill in the gaps between the physical world shopping experience and the experience online.

E-tailing is a humongous concept. To understand the various facets of e-tailing it was necessary to adopt a four-pronged approach towards unraveling its many dormant traits. The buyer-oriented first study, focused on e-tail customers for validating the research model. The seller-oriented second study involved making an assessment of "net readiness" across Bangalore-based retailers and e-tailers. The third study, another buyer-oriented study, involved a study of retail visitors in Bangalore city to gain insight into their motivation for visiting physical retail stores and to explore the potential of switching

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offline shoppers to an online mode. The technology-oriented fourth study involved benchmarking emulative features of e-tail websites from across the world.

As a part of the first study, a novel model based on the generic "Technology Acceptance Model (TAM)" and Indian idiosyncrasies 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-service features' 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 first 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' is an antecedent 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'. Further, 'technological comfort' has no bearing on 'actual online buying'.

The second study on retailers and e-tailers in Bangalore has brought out the first detailed set of net readiness scores. This is probably the first of its kind in India itself. Such studies have been conducted in countries like Bulgaria and New Zealand before. The overall results portray a very dismal picture of net readiness in retail units in Bangalore. This indicates that e-mode of business is not of much significance to this sector. It would require a multi-pronged strategy to change the mindset and bring them under the fold of e-tailing. The level of net readiness for e-tailing units in Bangalore, on the other hand, presented a much more encouraging picture. The results indicate that Bangalore-based e-tailers have as good a technology as compared to the best in the world. However, leadership, organizational competencies, and governance exhibited by them are not upto the international standards.

The third study was designed to capture e-tail perceptions from visitors at retail outlets in Bangalore. The findings of this study isolated some factors and results that can be astutely used by prudent e-tailers to enhance their website sales. The types of products that hold promise in the online world and the maximum amount of money willing to be spent for a single online purchase sale transaction were also revealed in the study. The study also indicated some pointers for driving conversion from offline to online mode.

The fourth study, albeit a qualitative study, was designed to benchmark emulative features of renowned e-tail websites from across the world. The study revealed that no e-tail website is perfect when measured in terms of the parameters prescribed by Website Optimization Inc., a leading 3rd party rater. This was indeed a startling revelation. Qualitative content analysis of 20 short-listed e-tail websites indicated some emulative features of highly reputed e-tailers that can serve as guidelines for design of the "ideal e-tail website".

Keywords: E-Tailing, Technology Acceptance Model, Net Readiness

1. Introduction

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 personal 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-tailing 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.

Most of figures that are depicted are not being referred to in the text. There inclusion is only for consolidated Understanding.

2. Problem Statement

The e-tailing concept in India is still relatively new. Not much research work has treaded on this territory and hence, there is a limitation to availability of information. There is a need to study and analyze the problems being faced by e-tailers, their preparedness for conducting

business, 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.

The online environment is radically different from the traditional environment because of the dizzying, uncontrollable pace. The present-day business mantras contradict many of the advantages that the pre-digital economy assigned to such strategies as first mover advantage, stability, and linear product development cycles designed to defend existing product lines. In the electronically lubricated digital environment, first mover advantage can be easily offset. 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, and TECHNOLOGIES that bring them together has become very essential. While some firms have been led astray by technology, the truly successful have used technology to apply the core concepts of traditional marketing in a novel and potent way. There is a dichotomy here – "customer focus" is traditional thinking, but its application on the internet involves innovative and non-traditional approaches. cursory recognition and even an iota of success may be achieved by technology savvy enterprises, but technology is easy to replicate in the digital world, and is not a sustainable competitive differentiator.

Understanding the important components of online consumer behavior is perhaps the key to success in e-tailing. A clear and thorough understanding of the behavioral components leading to actual online purchase can help e-tailers improve the adoption of consumer online purchasing by implementing methods and technologies that help fill in the gaps between the physical world shopping experience and the experience online. However, in some instances, physical touch can never be substituted. Likewise, human interaction will continue to be desired for social reasons. Nonetheless, Indian e-tailers should discover and capitalize on the unique advantages of the internet over physical world shopping, if e-tailing in India is to achieve staggering growth.

3. Significance of the Study

After the late 1990's a majority of dotcoms, including several e-tailers, ceased to exist after a spectacular

spell. Yet, for some e-tailers (e.g. www.amazon.com), the entire effort of setting up an electronic store and engaging in commerce over the net was a runaway success. It is very important from the e-tailer point of view to analyze what could have gone wrong, so that similar mistakes are not made in future.

It is worth noting that despite the resounding resilience in the international markets, Indian e-tailing has met with only moderate success. To match e-tailing success in the west, Indian e-tailers need to revamp their existing business perspectives, gain an in-depth insight into online consumer behavior, and chart out a path towards eventual success. In short, they need to find an answer to the topical question – “What does it take to succeed in this digital, perpetually shifting landscape within the web-centered world of e-tailing?”

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, which includes e-tailing vis-à-vis retailing. The current literature available appears to be inadequate to cover the entire gamut of the e-tailing phenomenon. There is a pressing need to take up serious study to identify the potential pitfalls, the “loose bricks” in the brick-less electronic storefronts, and other typical shortcomings in the e-tailing paradigm. There is a strong need also to strategize the dynamics of e-tailing. It has become imperative to propel e-tailing paradigm into the right orbit using a theoretical framework that is distilled from empirical research. The end goal is to ensure that the e-tailing juggernaut gains momentum and rolls on.

A proper diagnosis of the dynamics will reveal the underlying causes to e-tailing failures and unleash a road map to its eventual success in India. A vital research lacuna truly exists in this critical issue and this is what has encouraged taking up this research investigation.

4. Literature Review

Most of the findings culled from e-tailing literature have been found to be rather fragmented and the impression is that there is a need to glean a holistic, monolithic image from the nuggets of synthesized information on

e-tailing facets, floating about in cyberspace or locked away in research libraries. The following sections illustrate some relevant breakthrough frameworks and issues related to this study that will lay the foundation for the Research Model.

Most empirical studies on e-tailing, per se, the world over converge on a very important frame of reference called as “Technology Acceptance Model” propounded by Fred Davis (1989)^[1]. The Technology Acceptance Model (TAM) is one of the most extensively used models to explain information technology acceptance behavior. This is apparently the most powerful model that has been widely applied and empirically tested to explain end-users’ acceptance behavior across a wide range of technological innovations. During the last decade, TAM has generated substantial interest, along with empirical reinforcement, amongst the online researcher community - Mathieson (1991)^[2], being a pioneering example. A meta-analysis of empirical findings on the TAM conducted by Qingxiong & Liping (2004) reveals that there were around 100 TAM-related studies^[3], published in journals, conference proceedings, and technical reports between the years 1989 and 2001. These studies enabled TAM to be comprehensively tested using diverse sample sizes and varying user groups within or across organizations. TAM has been widely applied to various end-user technologies such as email (Adams, Nelson & Todd, 1992)^[4], word processors (Davis, Bagozzi & Warshaw, 1989)^[5], groupware (Taylor & Todd, 1995)^[6], spreadsheets (Agarwal, Sambamurthy & Stair, 2000)^[7], and the World Wide Web (Lederer, Maupin, Sena & Zhuang, 2000)^[8]. A few studies have also extended TAM by considering additional elements such as gender, culture, experience, and self-efficacy. Some of the prominent technological contexts on which TAM has been tested for end-user acceptance include online banking^[9], e-learning^[10], mobile commerce^[11], website revisits^[12], and alternative technologies^[13].

TAM is rooted in social psychology theory, in general, and the Theory of Reasoned Action (TRA) in particular. The Theory of Reasoned Action (TRA), endeavors to envisage and comprehend an individual’s intended behavior (Ajzen & Fishbein, 1980)^[14]. An individual displays a unique behavior that is determined by his or

her behavioral intention (BI), which in turn is governed by his or her attitude (A) and a subjective norm (SN), defined as an appraisal of the social pressures exerted on an individual to indulge or not to indulge in the behavior under consideration. TRA also postulated that external variables impact a person's acceptance behavior.

The Technology Acceptance Model^[15], based on the TRA Model, is an information systems framework that represents how users reach the stage of accepting and using a technology. The model indicates that whenever users are offered a new software application, several factors combine together to influence their decision regarding how and when they will use it. Two factors were considered to be of utmost significance, when they were introduced by Davis in 1989, namely:

- Perceived usefulness (PU) – Davis defined this construct as “the degree to which a person believes that using a particular system would enhance his or her job performance”.
- Perceived ease-of-use (PEOU) – This construct was defined by Davis as “the degree to which a person believes that using a particular system would be free from effort”.

Coherent with the TRA model, the TAM indicates that the two constructs (PU and PEOU) that form an enduser's beliefs on a technology, influence the attitude towards using the information system in question. The attitude, in turn, affects the behavioral intention to use the information system. Behavioral intention to use, finally, leads to acceptance (i.e., actual information system use).

Akin to TRA, TAM also postulated that external variables impact a person's acceptance behavior. Some of the external variables that have been identified and tested are as follows:

- “Computer self-efficacy^[16]” for web-based learning, defined as “an individual's belief in his ability to perform a particular task”.
- “Security planning^[17]” for information security, defined as “a process leading to protection of business assets behind a gateway that allows detailed access control”.
- “Trust^[18]” for online banking, defined as “the willingness to be vulnerable to the actions of another person or people”.

These external variables have demonstrated substantial impact on “behavioral intention to use” in their respective empirical studies.

Various extensions and adaptations of the TAM have also been considered while deriving the research model, e.g. A Model of Customer Trust (Jarvenpaa, 2000), Consumer Trust in E-Commerce Transaction Model (Chellappa et al, 2002), Trust Enhanced Technology Acceptance Model (Dahlberg, et al, 2003), Extended Technology Acceptance Model (Heijden et al, 2003), Augmented Technology Acceptance Model (Vijayarathya, 2004)

5. Literature Review: Identification of Vital Research Gaps

An evaluation of empirical research results on information systems acceptance and adoption indicates that TAM has emerged as one of the most dominant frames of reference in this branch of research.

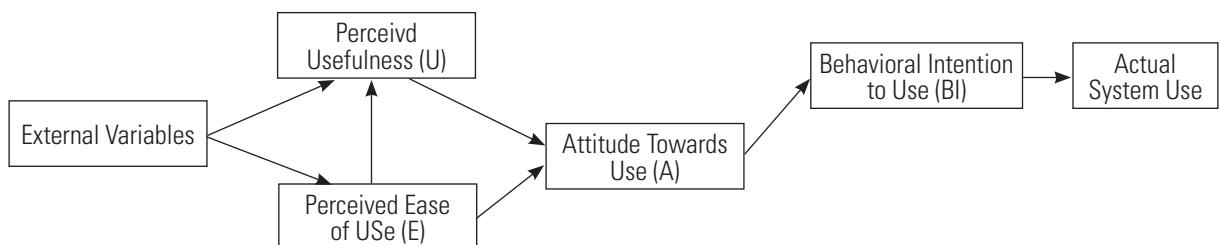


Fig 1 Technology Acceptance Model (TAM) - (Davis, 1989)

TAM has been tested on a wide array of technologies and has been very prognostic of individual user acceptance and technology usage. However, one common criticism faced by TAM is that although it can successfully provide insights into system acceptance, it is not particularly useful in offering elucidations that can be used to design interfaces that promote acceptance. Although it is widely accepted that 'perceived usefulness' and 'perceived ease of use' affect user acceptance, it will be difficult to provide actionable and realistic guidance from TAM till the antecedents that affect perceived usefulness and perceived ease of use are understood. Some attempts have been made to carry out research on a set of general antecedents that encompass a wide range of technologies and various classes of technologies, as well. However, in using TAM for practical guidance, it is necessary to ascertain antecedents 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)^[19]. Hence, as a first step, it is essential to extend TAM towards specific classes of technologies (Dennis and Reinicke, 2004)^[20]. A model concentrating on an explicit class of technology will produce a constricted but richer model rather than a universal model that tries to cater to several classes of technologies concurrently. Keeping this background in mind, there is a need to integrate constructs from e-tailing practices in India with TAM elements. The resultant of such an attempt would be to synthesize a model ofetail acceptance that provides a rich understanding of the acceptance and technology use of this specific class of technology.

Technologies that enable interactions through digital media have become an essential ingredient of everyday life. Hence, it is of no surprise that this class of technology has received substantial research attention over the past few years. However, several pioneering studies have been mainly in the area of collaboration technologies such as voice mail, e-mail, and group support systems and not online shopping, per se. These studies are nevertheless important because they instituted TAM as one of the keystones of information systems literature. The studies also established TAM as a theoretical framework applicable to a broad range of technologies.

A detailed investigation into the available literature has revealed that no specific framework pertaining toetailing phenomenon in India has been espoused. Beside its potential theoretical contributions, a framework that clubs TAM with the nature of Indian e-tailing is also useful to information technology (IT) management practice. By comprehending the important precursors to user acceptance, IT managers can design more effective interventions to accomplish greater technology acceptance and usage.

A unifying model that integrates technology acceptance with e-tailing phenomenon in India is lacking, a void that this research seeks to address. This is truly a vital research gap, which has been suitably addressed in this study.

5.1 Research Model (Synthesized from Literature Review)

The conceptual research model, drawn from the Technology Acceptance Model (Fig 1), shown in Fig 2, is an extension of the above-mentioned models and their enhancements, customized to the specific and unique characteristics of e-tailing in India.

The research model given below posits that the antecedents of "actual online buying" are "confidence for buying", and "technological comfort". The antecedents of "confidence for buying", in turn, are "perceived trust", "perceived value-for-money", "perceived navigability", and "perceived quality of E-service features". The antecedents of "perceived trust", in turn, are credibility, security, privacy, communication and gullibility.

6. Research Objectives

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

A deeper and more complete understanding of the nature and relationships of three critical components – Buyers, Sellers, and Technologies that bring them together, has become essential. *Hence, the focus of this research is on the e-tail customers (current customers, potential customers, and non-customers), e-tailing companies (current and also those with future*

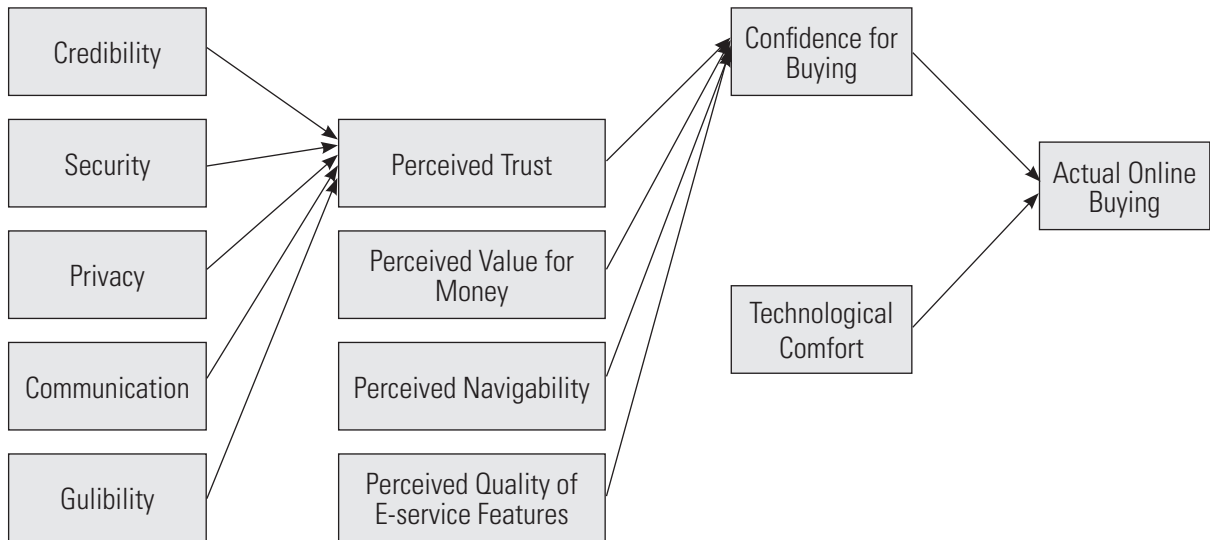


Fig 2 Proposed Research Model

potential) and the “technology bridges” (i.e., websites), wherever applicable.

The specific objectives of this research study 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 of making successful online sales
3. To identify the product profiles that hold promise in the online mode
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 benchmark (external) features of e-tailing websites across the world which embody world’s best e-tail website features
6. To capture and evaluate perceptions of physical shoppers regarding the ‘approach goals’ and ‘avoidance goals’ that drive consumers towards or away from retail and e-tail stores
7. To measure current levels of preparedness of Indian e-tailing companies as well as retailing units to perform and compete in the new internet-based economy

7. Formulation of Hypotheses

There are multiple definitions and enunciations of trust, which makes the concept prone to creating confusion across research areas. The definition of trust has been adapted from Mayer (1995)^[21] in this study as “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:

a. 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.

b. 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.

c. 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.

d. 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.

e. 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 second stage of the research model posits that perceived trust, perceived value-for-money, perceived navigability and perceived quality of E-service features are the antecedents to establishment of confidence for buying.

f. 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.

g. 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:

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

h. Perceived avigability

This is defined as the extent to which the consumer's belief that the e-tail purchase process is "easy-to-use" is maintained.

Derived Hypothesis:

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

i. Perceived Quality of E-service Features

This is defined as the extent to which consumer's belief in quality of the e-tailer's E-service features 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 third stage of the research model posits that confidence for buying is an antecedent for actual online purchase.

j. 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.

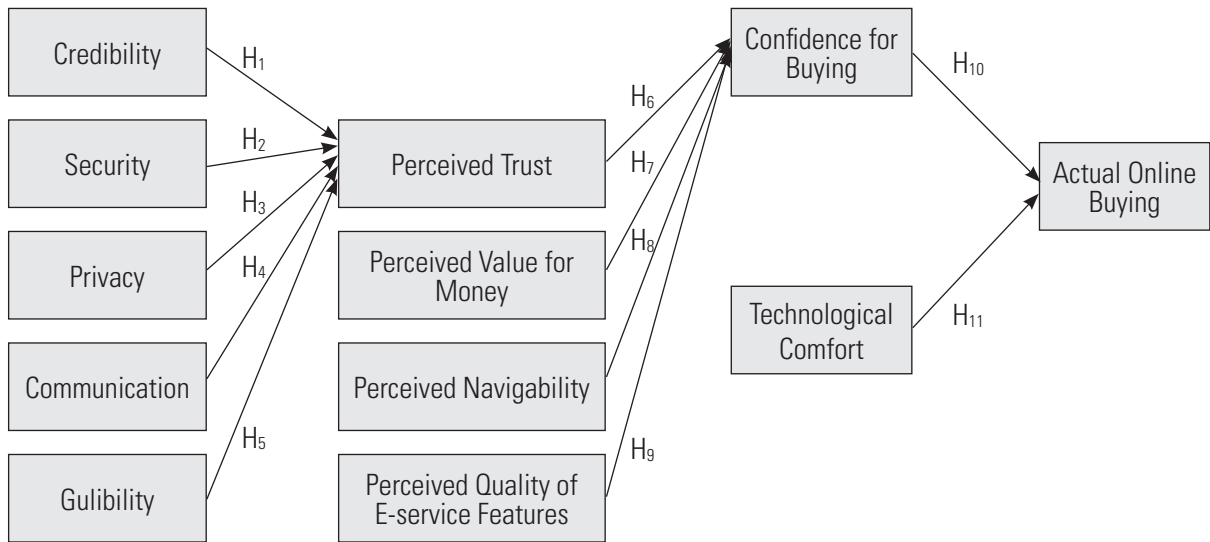


Fig 3 Proposed Research Model showing the Derived Hypotheses

k. 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.

8. Research Methodology

E-tailing is a humungous concept. To understand the various facets of E-tailing it was necessary to adopt a four-pronged approach towards unraveling its many dormant traits and hence, four independent empirical studies were devised, that explored 'e-tailing paradigm' from multiple dimensions.

The buyer-oriented first study, focusing on the e-tail customers, aimed at validating the research model. The seller-oriented second study involved making an assessment of "Net Readiness" across Bangalore-based retailers and e-tailers. The third study, another buyer-oriented study, involved a study of retail visitors in Bangalore city to gain insight into their motivation for visiting physical retail stores and to explore the potential of switching offline shoppers to an online mode. The technology-oriented fourth study involved

benchmarking emulative features of e-tail websites from across the world.

The methodology adopted for each of the four independent studies is elucidated in the following sections.

8.1 Methodology for Study of E-tail Customers (current as well as potential customers) for Validating the Research Model

Online consumer behavior was the focal point of this study, as it was important to understand the dynamics of purchase decisions made over the Internet. Hence, the major focus of the study was to understand whether credibility, security, privacy, communication, and gullibility affected a customer's perceived trust, and whether perceived trust, perceived value-for-money, perceived navigability, and perceived quality of Eservice features affected a customer's confidence for buying, and whether confidence for buying and technological comfort affected the actual online buying.

8.1.1. Data Collection Instrument

The aim of this segment of the research was to empirically validate the eleven hypotheses generated in the "E-tail Acceptance Model" that was developed to enhance and customize the traditional technology acceptance model to the Indian context. One of the

foremost challenges in collecting primary data for research is the design of a questionnaire. In order to achieve the best possible questionnaire design, a preliminary questionnaire was created on the basis of 13 online focus group chats held between March and May, 2006 (using yahoo messenger). Each of these discussions had between six to eight participating members. The members were drawn at random from a pool of tech-savvy friends and colleagues, depending on their availability and willingness to log onto yahoo messenger at the pre-designated time. A pre-requisite for participation in the discussions was that each member had to have some degree of familiarity with online shopping. This constraint was imposed to ensure that the final questionnaire is based on the actual experiences, rather than on normative beliefs about online shopping. All the online discussions were guided by a 'discussion guide', whose creation preceded the actual discussions.

The discussions resulted in a preliminary questionnaire that contained 98 close-ended questions to measure the various constructs depicted in the research model. This was 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. This brought down the number of questions to 83.

The final close-ended questionnaire that was distilled from the preliminary questionnaire was then administered to the respondents in an Excel spreadsheet with red background that had two important "caution-features" - any value provided outside the range of 1 - 5, including null values, would retain the red background in the cell, and secondly, a check-list box was provided as a last column that cautioned the respondent in case the same answer was given more than one response. This enabled respondents to answer questions quickly, yet objectively, with sufficient visual cues in case of

mistakes. The perceptions of the respondents were collected objectively using 5-point Likert scales, thus reducing the complexity involved in collecting subjective data. Various questions within the same construct group were randomized to reduce systemic response bias. An e-mail survey method was selected to float the questionnaire to allow respondents to answer leisurely without time pressure.

8.1.2 Sample Frame

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

8.1.3 Sample Size

Sample size has a direct bearing on the accuracy of the findings 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 a software titled "Sample Size Calculator", provided by the Canada-based research company, 'MaCorr Research Solutions Online'^[22]. MaCorr is a full-service, online market research firm that provides complete quantitative (e-mail and web page surveys, web panel research) and qualitative (online focus groups) research services across the world. It employs professionals who are fully experienced in a wide variety of research and statistical methodologies. The software uses the following formula for calculating sample size:

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

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. 0.05 = + 5%)

Assuming, the most widely used values for Confidence Level = 95% & Confidence Interval = 5%, the required sample size identified was:

$$\frac{1.96^2 * 0.5 * 0.5}{0.05^2} = 384$$

A response rate from an e-mail survey might be normally expected between 10% and 50% (Neuman, 2000) [23]. Therefore, to ensure that sufficient data could be collected to allow in-depth analysis, and accurate inferences could be drawn from the data, it was decided to send emailed questionnaires to five times of the sample size (approximately to 1900 subjects).

8.1.4 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 potential respondents 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.

522 responses were received till November 15, 2007. Out of these, 62 responses were rejected, as they were grossly incomplete and hence, of little use. The balance 460 responses were retained for data analysis.

8.1.5 Data Analysis

The data was then subjected to rigorous quantitative analysis using SPSS 11.0. Factor Analysis was used to reduce the number of variables to the principal components for each construct. The hypothesized relationships depicted in the research model were then tested using multiple linear regressions. Three models were generated and 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 were represented in terms of the following regression equation:

$$PT = \alpha + \beta_1 CRE + \beta_2 SEC + \beta_3 PRI + \beta_4 COM + \beta_5 GUL$$

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-service features) were entered into a hierarchy for testing hypotheses (H6, H7, H8, and H9). The hypothesized relationships were represented in terms of the following regression equation:

$$CB = \alpha + \gamma_1 PT + \gamma_2 PVFM + \gamma_3 PN + \gamma_4 PQ$$

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

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 were represented in terms of the following regression equation:

$$AOB = \alpha + \zeta_1 CB + \zeta_2 TC$$

where: AOB = Actual Online Buying, CB = Confidence for Buying, TC = Technological Comfort.

8.2 Net Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area

The Net Readiness scorecard, developed by Hartman, Sifonis and Kador (2000) from their in-depth analysis of Cisco Systems and other “net” companies, was adopted for the Bangalore-based business context to measure the ability of the e-tailers / retailers to perform and compete in an internet-based economy. 14 Bangalore-based e-tailing units were selected through convenience sampling and the net readiness questionnaire was administered to each of them. Till January 20, 2007, 9 responses were received (response rate = 64.29%).

In addition to e-tailing units, 20 other categories of Bangalore-based retail units were identified - Branded Stores, Computers & Peripherals, Departmental Stores, Fitness, Florists, Footwear Shops, Furnishing & Furniture, Games & Toys Stores, Gift Shops, Home Electronics, Jewelry & Watches, Kitchenware, Leather Stores, Lens & Optics, Luggage & Accessories, Malls & Shopping Centers, Musical Instruments, Pharmacies, Photography, Sports.

25 units were chosen at random from each of the above 20 categories (i.e. a total selection of 500 units) using “Sulekha Yellow Pages”, and during October and November, 2006, a questionnaire was sent to each of the selected unit, and a follow-up reminder call made later. A total of 126 responses were received by January 20, 2007 (response rate = 25.2%); out of these 104 were complete and usable for analysis (final response rate = 20.8%). There were no respondents from the categories of “jewellery & watches”, “luggage & accessories”, and “musical instruments” and hence, these categories were eliminated from the final analysis.

8.3 Methodology for Study of E-tail Perceptions through Retail Visitors

The aim of this segment of the research was to understand the perceptions of online shopping from

shoppers who visit retail stores. It was intended to capture valuable insights from the shoppers at physical stores that would lead to an understanding of the perceptions and potential regarding e-tailing.

8.3.1 Data Collection Instrument

A questionnaire was used for the survey that contained 7 close-ended questions with multiple sub-sections. Out of these, 5 were used to explore the facets of online shopping from different angles. The balance 2 questions were used to gauge the potential of e-tail products and transaction value. The perceptions of the respondents were collected objectively using 5-point Likert scales, thus reducing the complexity involved in collecting subjective data.

8.3.2 Sample Frame

The population for this research comprised visitors to retail outlets across Bangalore city.

8.3.3 Sample Size

The required sample size was calculated using the same software that was used to calculate sample size for validating the research model. As before, the required sample size was calculated as 384.

8.3.4 Sampling Method

The respondents in this segment of the research study comprised visitors in various retail outlets in Bangalore Metropolitan Area, selected through convenience sampling. Time and accessibility were the two constraints in selecting the outlets. The methodology adopted includes accosting visitors at the retail outlets and requesting them for a response.

This study was conducted over a period of eight weekends, during July – September, 2007. Till September 23, 2007, 439 responses were collected, out of which 31 were rejected as they were grossly incomplete and unusable. The balance 408 responses were retained for data analysis.

8.3.5 Data Analysis

The data was then subjected to rigorous quantitative analysis using SPSS 11.0. Factor Analysis was used to reduce the number of variables to the principal components for each construct.

8.4 Methodology for Conducting “Emulative Features Benchmarking Study”

Benchmarking is the process of identifying innovative and/or outstanding features that create and sustain exemplary E-tailing websites, and then emulating them. The aim was to reduce duplication by learning from others who have already found the solution. The purpose of this study was to benchmark outstanding features of websites, from throughout the world for a set of identified parameters:

Website Atmospheric : Aesthetic appeal (Look & Feel)

User Interface & Navigation : Ease of use

Search : Simple and advanced input, presentation of results, and search refinement

Content : Product Information, overall content

Payment : Payment modes, security issues

Confidence-building Measures: Third party trust seal, warranties, free trial period, presence technology, product reviews etc.

The objective of this segment of the research study was to gain valuable high-level insights distilled from content analysis of short-listed e-tail websites, which could help drive the design of “the ideal website” for e-tailers.

The methodology employed for conducting the benchmark study is illustrated in the diagram below. This methodology is an adaptation and modification of a similar study conducted by The Hiser Group, Australia in 2001, titled as “Best Practices Benchmarking Study”.

Identify Potential Best Practices Sites:

Discussions with experts, 3rd party website ratings, Hiser Group Study Report, and independent website reviews helped to identify potential sites for benchmarking. 150 sites were identified in this process.

Kepner-Tregoe Methodology^[24]:

Kepner-Tregoe is a decision analysis methodology that was developed by Kepner-Tregoe Inc. (KT) based in New Jersey, USA. KT is a comprehensive technique for comparatively evaluating solutions, and is particularly applicable for comparing between candidate options. The technique has been widely used for evaluating competing software packages and web sites for satisfying a business need. The KT criteria and the associated weights were developed in consultation with people adept in online shopping. The scale chosen had a range from 1 (“Nice to have”) to 5 (“Essential”).

50 respondents were chosen from a pool of net-savvy friends and colleagues to conduct KT evaluation. Each respondent was mapped to 3 websites picked at random,

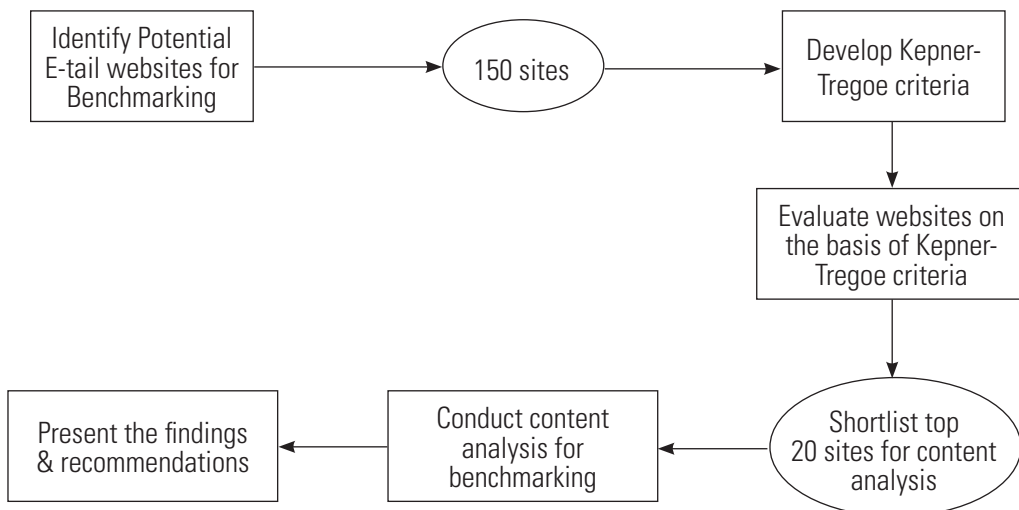


Fig 4: Methodology for Emulative Features Benchmarking Study

and they were requested to conduct KT evaluation based on the KT criteria and weights provided. All the responses were sorted and the top 20 websites were chosen for content analysis, namely:

www.amazon.com, www.circuitcity.com,
www.buy.com, www.illuminations.com,
www.jcpenney.com, www.gxonlinestore.com,
www.walmart.com, www.hallmark.com,
www.netmarket.com, www.shopping.rediff.com,
www.bluenile.com, www.barnesandnoble.com,
www.linensnthings.com, www.etoys.com,
www.travelocity.com, www.kmart.com,
www.tigerdirect.com, www.lampsusa.com,
www.shopping.indiatimes.com, www.egghead.com

The 20 short-listed e-tail websites were then subjected to content analysis through the content analyzer website, www.websiteoptimization.com^[25]. Website Optimization, LLC is a web performance and internet marketing firm dedicated to increasing bottom line through the optimization of existing web sites.

Each of the websites was tested on the following 11 parameters, wherever present:

- TOTAL_HTML (the total number of HTML files)
- TOTAL_OBJECTS (the total number of objects)
- TOTAL_IMAGES (the total number of images)
- TOTAL_CSS (the total number of cascading style sheets)
- TOTAL_SIZE (the total size of the page, in bytes)
- TOTAL_SCRIPT (the total number of scripts)
- HTML_SIZE (the total size of the HTML file, in bytes)
- IMAGES_SIZE (the total size of the images, in bytes)
- SCRIPT_SIZE (the total size of the scripts, in bytes)
- CSS_SIZE (the total size of the cascading style sheets, in bytes)
- MULTIM_SIZE (the total size of the multimedia files, in bytes)

Website Optimization also provided a rating for each of these parameters, as follows:

A => "Congratulation"

B => "Caution"

C => "Warning"

After obtaining the results from Website Optimization, visual content analysis was conducted to elicit the emulative features from the above 20 websites by critically studying them individually.

9. Summary of Major Findings

9.1 Results of the Empirical Study of E-tail Customers (current as well as potential customers) for Validating the Research Model

Factor analysis helped in reducing the data complexity from 83 variables to 71 variables contained in 22 extracted factors,

Model 1:

- The regression equation for Model 1 is:
$$PT = 0.141 + 0.018(CRE) + 0.197(SEC) + 0.039(PRI) + 0.402(COM) + 0.386(GUL)$$
- Model 1 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.
- PT (perceived trust) showed positive association with SEC (security), COM (communication), and GUL (gullibility) @ 1% significance level. *Thus, hypotheses H_2 , H_4 , and H_5 are supported. Hypotheses H_1 and H_3 are rejected.*

Model 2:

- The regression equation for Model 2 is:
$$CB = 1.905 + 0.290(PT) + 0.210(PVFM) + 0.0002(PN) + 0.3262(PQ)$$
- Model 2 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.

- CB (confidence for buying) showed positive association with PT (perceived trust), PVFM (perceived value-for-money), and PQ (perceived quality of E-service features) @ 1% significance level. *Thus, hypotheses H₆, H₇, and H₉ are supported. Hypotheses H₈ is rejected.*

Model 3:

- The regression equation for Model 3 is:

$$AOB = 2.411 + 0.603(CB) + 0.045(TC)$$
- Model 3 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.
- AOB (actual online buying) showed positive association with CB (confidence for buying) @ 1% significance level. *Thus, hypothesis H₁₀ is supported. Hypotheses H₁₁ is rejected.*

9.2 Discussions pertaining to the Results of the Study for Validating Research Model

As hypotheses H₁ and H₃ have been rejected, it can be inferred that perceived trust in the Indian online shopping context is not dependant on credibility or privacy. One important aspect regarding credibility is that in the developed nations, credibility is often equated to the presence (or absence) of a physical store by the same e-tailer [26]. In the Indian context, perhaps, such a consideration does not exist in the mindset of consumers. The findings regarding privacy are in line with an average Indian's callous attitude towards privacy. It is a known fact that Indians have very little respect for privacy, in general. That explains why telemarketers have no compunctions in making unsolicited marketing calls to customers, irrespective of the time of the day. It is shocking note that the "National Do-Not-Call Registry", launched by TRAI, Govt. of India, has met with a very tepid response, ever since it commenced in September, 2007 [27]. Overall, it can be concluded that ensuring credibility and privacy

may not be successful USPs per se.

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:

- Online fraud is a dynamic activity. E-tailers need to enforce latest security measures on their websites on an ongoing basis to prevent security threats. It must be borne in mind that even one single incident of security compromise is enough to detract a consumer from making further online purchases. It is analogical to the fact that even a tiny bird hit can crash a jumbo aircraft. E-tailers need to make a collective, collaborative effort to ensure that latest security measures are made available to the entire retail community.
- The e-tailers need to procure "security certifications" from trusted third parties like "VERISIGN" for their website transactions, and display them prominently on their website.
- Warnings of new fraudulent means adopted by hackers like phishing, etc. need to be displayed prominently on the website on a regular basis, as is being done by leading online banks.
- Listings in comparative shopping sites like FROOGLE, BIZRATE, SHOPPING, SHOPZILLA etc. need to be considered.
- Dynamic electronic keyboards should be provided on the website to prevent "keyboard stroke capturing". An example of such a key board is given below:

The sequence of alphabets and numbers keep on changing dynamically whenever the page is refreshed. The user needs to fill in the login ID and password, using only mouse clicks on the electronic keyboard. This is a very safe way to ensure that physical keyboard strokes, used otherwise, cannot reveal the combination of login ID and password. Such security features are being provided by the e-banks for online banking transactions only. E-tailers need to adopt this feature on their websites too to ensure that spyware running inside the computer cannot capture and transmit sensitive information to the outside world.

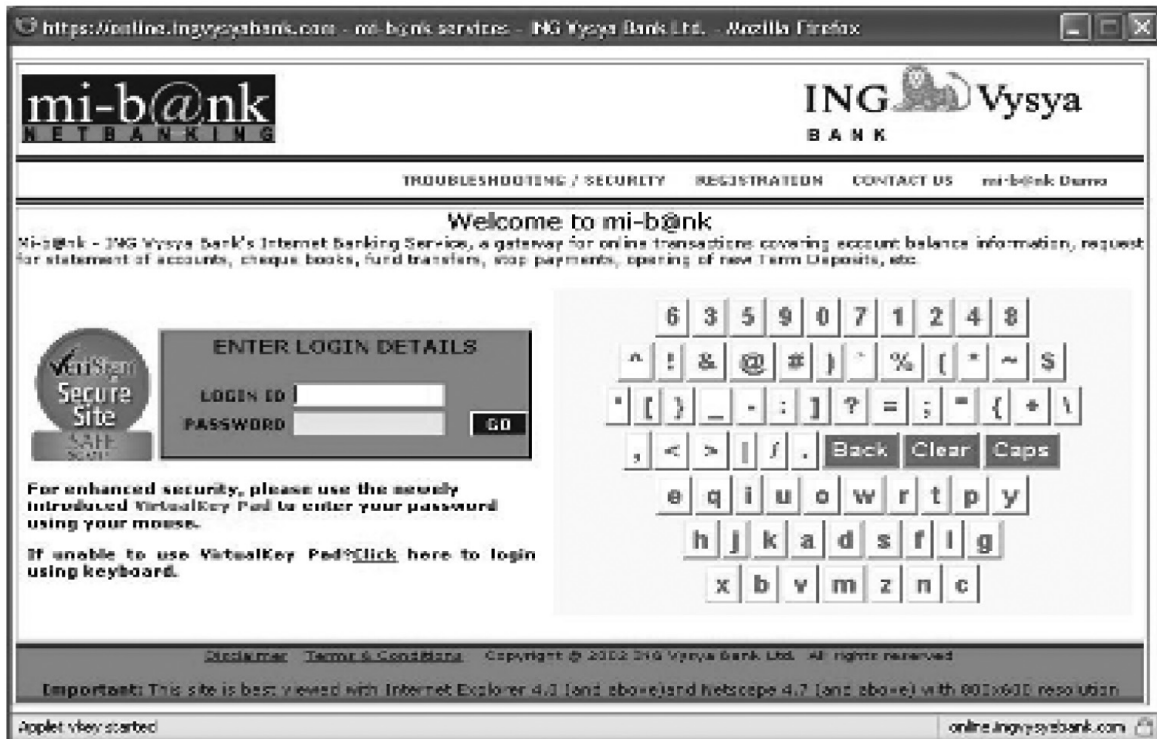


Fig 5 Example of an Electronic Keyboard (Source: ING Vysya Bank) [28]

Credit card is the most popular means of making online payments. However, a major problem with a typical credit card is that all information required for completing an online transaction, including payment, are embossed 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 online 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. Recently, Citibank introduced this feature to authenticate online transfer of money from banking accounts.



Fig. 6 A Typical Credit Card with all Details Embossed

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 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 e-tailers need to inform customers about the payment status as soon as it is over through automated email.

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 offered good deals if they shop online.

A positive association has been established between perceived quality of e-services features and confidence for buying. This indicates that the e-tailers need to 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 eservices. Presence technology, 3D presentations of products, interactive decision aids, etc. should be considered as starters.

The findings of the study indicate that perceived navigability and technological comfort are not important factors that lead to actual online purchase. This is also in line with the intuitive understanding that innovative user-friendly interfaces are already in existence that are guiding online consumers towards successful purchase without any hassle. Thus, navigating a website nowadays is very easy and is not related to the level of technological comfort that could act as an impediment in making online purchases.

9.3 E-tail Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area

It is interesting to note that in the retail units category, competencies received the highest score in each category except for photography. Similarly, governance received the lowest score in each category except for footwear. In the e-tail units category, technology received the highest scores whereas governance received the least scores.

The “E-tail Retail Gap”, as indicated by the net readiness average scores is given below:

The shaded portions in diagram below show the gap between E-tail and retail units. The dotted lines show the best-of-breed values. It is an interesting observation that both E-tail and retail units have exhibited almost equal competencies. E-tail units are far ahead in technology, whereas the leadership gap and governance gap seem to converge.

Catagory	Leadership	Governance	Competencies	Technology
E-tail Units	3.36	2.92	3.06	3.98
Retail Units	2.00	1.47	3.06	1.99
GAP (E-TAIL - RETAIL)	1.47	1.71	0.21	2.10

Table 1: The E-tail Retail Gap

This suggests that retail units will need a fundamental change in the leadership mindset and governance method to move towards an E-tailing mode of operation.

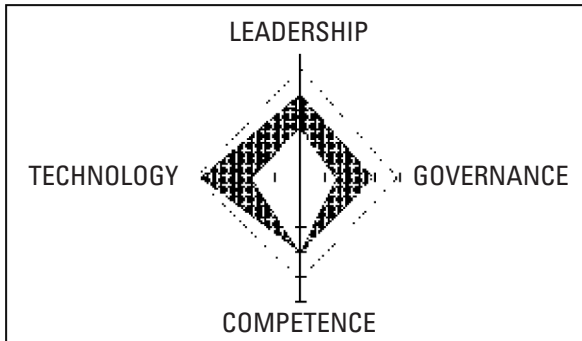


Fig. 7 The E-tail Retail Gap

The overall results portray a very dismal picture of net readiness in retail units in Bangalore. “Net Agnostic” companies comprise a whopping 71%, whereas there is not even a single “Net Visionary” company. This indicates that e-mode of business is not of much significance to this sector. It would require a multi-pronged strategy to change the mindset and bring them under the fold of E-tailing.

To start with, it is suggested that the retailers be encouraged to add a website as an additional channel for taking orders, just as telephone was treated as another means of booking orders, without the customer having to physically visit the store. Over time, the websites can be updated to full-scale E-tail websites.

The level of net readiness for e-tailing units in Bangalore, on the other hand, presents a much more encouraging picture. When compared to best-of-breed values it is seen that for e-tailing units the gaps are: leadership (0.93), governance (0.72), competencies (0.93), and technology (0.01). This implies that Bangalore-based e-tailers have as good a technology as compared to the best in the world. However, leadership and competencies are not upto the international mark. E-tailers need to strive hard to close the gaps in each of these areas to ensure that they are world-class, not only in the products but also in the process. This would benefit them a lot as they can easily graduate to a successful international e-tailer, because getting foreign

customers then will not be a problem. Even governance has to be addressed properly, as poor governance can play spoilsport to honest efforts attempted at widening the e-tailing net.

9.3 Results of Empirical Study of Understanding E-tail Perceptions through Retail Visitors

All the findings in this particular study relate to the perceptions of physical visitors who were accosted at various retail establishments in Bangalore. The results can be judiciously used by e-tailers to spruce up their offerings and marketing communications.

It can be observed from the findings of the first segment of the study that the individual reasons, per se, that spur people to visit retail stores are - making pre-planned purchases, window-shopping, socializing, checking out new electronic gadgets, checking out new CDs/ DVDs in the market, new fashion, enjoying the ambience, watching movies, getting best bargains, and enjoying the sight of attractive people in the retail centre. Surprisingly, checking out new fashion received the highest response at more than 70%. Many of these reasons like socializing; enjoying the ambience, and enjoying the sight of attractive people cannot be replicated at all in the digital world of online shopping. That goes to show that online shopping can never actually replace physical shopping in India, not in the near future at least. However, some of the other reasons can be replicated in the online world either totally or partially. The onus of simulating the real world onto a digital screen clearly rests with the e-tailers, who have to invest in technologies that can bridge the gap between the physical world and the online world. Probably having a me-too website may not be sufficient, as customers may not be able to distinguish between two websites with similar features.

Factor Analysis helps to classify the principal factors for visiting retail establishments as “facilities”, “new products display”, “recreation”, “time-pass”, “actual purchase”, “dining”, and “bargains and discounts”. E-tailers could benefit by exploring the feasibility of replicating the above factors in the online world, wherever possible.

The second segment of the study reveals some interesting results that can be used by e-tailers as strong reasons for weaning away people from physical shopping to online shopping. The major reasons for avoiding physical stores appear to be parking problems, transportation problems, long check-out queues, crowd problems, traffic woes, indecent visitors, and the need to carry large amounts of cash for heavy shopping. All these problems can be negated in the online shopping mode. It needs to be pointed out that many retail establishments accept credit card payments, but many of them impose an additional 2.5% charge from the customers, leading to an increase in the price of the product. Hence, the need for carrying cash into the retail establishment arises. E-tailers need to integrate these findings in their marketing communication.

Factor Analysis helps to classify the principal factors for avoiding visiting retail establishments as “cumbersome sales completion process”, “decency expectation”, “uncomfortable transit”, and “visit-oriented woes”. Such factors should be highlighted by the e-tailers as strong reasons to make shoppers adopt online shopping mode.

The results of the third segment of the study reveal some reasons that make people eschew online shopping. Lack of credit card appears to be a major reason and hence, e-tailers have to devise alternative means of payment. Although some e-tailers have provided this option, the general impression is that online shopping cannot be done without possessing credit cards. It is upto the e-tailers to break this myth and communicate to the public that credit card is just one of the many ways of making a payment. Another reason that seems to be strong is that people need to see the product before buying. It may be a good idea to encourage the idea of collecting payment after the product is received by the customer and used for a pre-specified trial period. It is suggested that although credit card details be collected and authenticated on day zero, the actual debit take place only on a stipulated post-delivery date. This would boost the trust factor. Technology phobia has also been cited as a major reason for avoiding online shopping. To this extent, e-tailers have to ensure that the entire process of online shopping is simple and relatively free-of-effort. A case in point is the usage of

mobile phones in India – although Internet and mobile phones hit the Indian market almost simultaneously, the penetration achieved by mobile phones is phenomenal and has overtaken Internet penetration by leaps and bounds. One possible reason could be the ease of using a mobile phone. E-tailers need to take a cue from mobile phone vendors who have ensured that despite advanced functionalities; any person with a very basic understanding of alphabets and numbers can also use the phones easily, using visual imageries. This requires a concerted collective effort on the part of e-tailers to educate consumers about how to go about online shopping in a hassle-free manner.

Factor Analysis helps to classify the principal factors for avoiding online shopping as “product quality paranoia”, “technology-ignoramus”, “technology-destitute”, and “gregarious factor”. E-tailers should strive to address all these issues appropriately, barring the gregarious factor, which is probably something that is inherent cannot be changed.

The fourth segment of the study indicates the categories of products that are likely to be purchased online. It appears that products like CDs/DVDs, stationery items, computers and peripherals, consumer electronic items, kitchenware, home appliances, and gifts have potential for being sold online. Products like groceries/fruits, jewellery, children’s’ products, healthcare, beauty, medicines, cosmetics, beverages, confectionery, food items, footwear, and apparels do not seem to have caught the fancy of online shoppers. It may have nothing do with the pricing alone – cheap products like groceries along with expensive products like jewellery have been cast into the same bracket in terms of non-popularity in online purchases. It could be a pre-conceived notion that such kinds of products are best bought at physical stores where the quality can be gauged first-hand before purchasing hem. E-tailers need to break such mental blocks if the spectrum of successful online sales has to be broadened.

The fifth segment of the study reveals that, as expected, almost 30% of the respondents are willing to shop online for less than Rs. 1000 for a single transaction. 26% of the respondents are willing to spend upto Rs. 2500, whereas 21% are willing to go upto Rs. 5000. It is worth probing as to why this mind-set exists. After

all, a Rs.100 online transaction holds the same security risks as a Rs. 1 lakh transaction (post-revealing the credit card details). It is absurd to think that a Rs. 1 lakh transaction is 1000 times more risky than a Rs. 100 transaction – but that could be a mind-set, that calls for serious efforts on the e-tailer's part. They need to devise strategies for making consumers spend larger amounts in single online transactions.

The fifth segment of the study indicates that the major perceived problems in online shopping are lost orders, security and privacy getting compromised, unsatisfactory quality of products, inadequate grievance-handling mechanisms, delay in obtaining products, and a non-existing goods return policy. E-tailers need to exorcise these perceptions and ensure that all these are issues adequately dealt with.

Factor Analysis helps to classify the principal factors for perceived problems in online shopping as “perceived product/process problems”, and “perceived appraisal”. In reality such problems may not be significant, but the fact that such perceptions exist can damage the efforts of e-tailers in promoting adoption of online shopping. E-tailers have to ensure that such negative perceptions are dispelled; otherwise e-tailing as a preferred mode of shopping in India will remain a pipe-dream.

The final segment of the study indicates some of the reasons that could perhaps make physical shoppers graduate to an online mode, namely, alternative payment methods, payment after receipt of goods, simple and user-friendly online shopping process, big price advantage, effective grievance-handling mechanism, full refund for unsatisfactory products, free trial period, and bigger and better bargains / offers.

Factor Analysis helps to classify the principal factors that could make shoppers willing to switch to online mode as “confidence booster”, and “E-service faith booster”. It would be worthwhile for the e-tailers to pay heed to these factors as they can drive conversion from offline to online mode.

9.4 Results of the qualitative “Emulative Features Benchmarking Study”

Extensive qualitative content analysis was conducted on each of the short-listed 20 websites, on the 6 identified

parameters mentioned earlier. The findings have been crystallized into a scheme of recommendations.

It is believed that the high-level insights distilled from content analysis of the 20 short-listed e-tail websites can drive the design of “the ideal website” for E-tailers.

A few observations on the findings of the content analysis of the 20 websites is presented below. All the reports have been generated from the independent 3rd party website www.websiteoptimization.com on December 15, 2007.

- In 95% cases, the number of HTML files is less and has got a rating of ‘A’ congratulation, which most browsers can multithread. This can lead to minimizing HTTP requests, which is a key for website optimization.
- In 85% cases, the number of objects is observed to be high with a rating of ‘C’ (warning), which makes it cumbersome for some browsers to multithread.
- In 85% cases, the number of images is observed to be high with a rating of ‘C’ (warning), which impedes speed of downloading.
- In 56% cases, the number of external CSS is observed to be less with a rating of ‘A’ (congratulation).
- In 80% cases, the total size of the page is observed to be high with a rating of ‘C’ (warning), which impedes speed of downloading. Ideally, page size should be less than 30,000 bytes to achieve sub-eight second response times on 56 kbps connections.
- In 76% cases, the total number of external script files is observed to be on the higher side with a rating of ‘B’ (caution).
- In 60% cases, the total size of the HTML file is observed to be less with a rating of ‘A’ (congratulation).
- In 83% cases, the total size of the images is observed to be high with a rating of ‘C’ (warning).
- In 76% cases, the total size of external CSS is observed to be high with a rating of ‘C’ (warning).
- In 90% cases, the total size of external multimedia files is observed to be less with a rating of ‘A’ (congratulation).

One obvious conclusion that can be drawn from the above is that no e-tail website is perfect. A case in point is the pioneer, www.amazon.com – the website has got an 'A' rating (congratulation) in only 33% of the parameters, and whereas it has got a 'C' rating (warning) in 42% of the parameters. Perhaps the "ideal e-tail website" is yet to appear on the digital horizon. Nevertheless, as the above 20 websites are highly regarded etail websites, it was considered worthwhile to conduct a qualitative content analysis to elicit emulative features that could go a long way in helping e-tailers design their websites for maximum impact.

The following section provides a commentary on the general observations made from the visual qualitative analysis conducted on the 20 short-listed websites. Some suggestions with reference to the 6 parameters chosen earlier are also provided after the commentary. These are intended to serve as general guidelines for the design of the "ideal e-tail website".

- The index page uses visually appealing contrasting colors and fits completely on the computer screen without having to scroll down or to the side.
- Web pages begin with the most important or introductory information first that are then followed by pages that contain specific details.
- Hierarchical menu leads the visitor to a product category and not to an exclusive product per se.
- It is very easy to locate a desired product intuitively with the tools provided at the website with minimum number of clicks.
- Common parlance has been used with scanty technical jargons.
- Page layout is simple, elegant, and uncluttered.
- Most of the applications and operations look identical that makes the website appear consistent.
- Each page downloads quickly and does not make the visitor wait unnecessarily.
- Orphan or dead-end pages have not been encountered.
- Only few clicks were required to locate the desired product

- Very helpful "Help menu" in the tool bar to assist the buyer complete a task
- Graphics are optimized and do not convey the feeling of unnecessary graphics having been used
- Clear "merchandise return policy" and "privacy policy" are displayed prominently.
- Information is provided about the security of the transaction.
- Information appears to be current as a last update date is present.

It should be borne in mind that the website acts as a storefront for the online products and services. Most site visitors are, for the most part, window shoppers and net surfers. The aim of E-tail websites should be to convert these surfers into online customers. Shoppers usually make up their mind about a site instantly as soon as they land on it and consequently, an attractive product layout is critical. "Attractive" is a subjective term and is dependent on a lot of factors, outside the scope of this study. Nevertheless, it is important to strive towards achieving an overall attractive website.

The website should aim at "gently piloting" the visitor through the learning and sales process. Keeping the home page simple and elegant without cluttering could aid this endeavor. Use of frames should be discouraged as individual pages become difficult to bookmark. Furthermore, designers who would like to benchmark this particular website for designing may find frames to be very confusing.

Aesthetic utilization of white space, easily readable fonts, visually appealing color schemes, universally understood symbols, and un-distracting backgrounds are simple, yet powerful means of ensuring pleasant website atmospherics. Not every user can access sounds or animation on their computers. Hence, alternative methods need to be provided to display information. Music, if used, should be euphony and not cacophony.

To provide a "live" feel to the website, a different photo of the product may be looped at pre-fixed intervals. This could be eye-catching and reduce the overall monotony. To sustain interest in a particular website it is necessary to keep the online visitor engaged with

dynamic environments. The visitor must be made to experience the site and not just browse it. Elements like chat features, forums, solicited feedback, and database delivery of custom content goes a long way in promoting the website atmospherics.

The aim of providing a user interface and navigation should be to prevent user frustration while making a purchase. Site navigation should be kept simple and consistent, and all the doubts that may arise in a consumer's mind should be clarified along the way. The "3-click rule" (wherein a visitor is able to access any information regarding the offering within 3 mouse clicks) should be adhered to as far as possible. Crossbrowser compatibility issues need to be addressed appropriately, as complicated menu systems often play havoc with different browsers.

It may be worthwhile to consider the use of "bread-crumbs navigation links", wherein a user can find his exact page location in relation to the overall site. For example, if a user has drilled down from the "DVD page" to the "Hindi Films page" to the "Family Drama page", the breadcrumb links look like this: DVD>Hindi Films> Family Drama.

Information should be organized in such a way that the user can understand what is available from the home page, and then referenced with links to others pages. Intelligent use of imagery can act as effective guides for online navigation. Using common browsing elements like tabs and folder / tree style navigation will be helpful as surfers can intuitively understand their way through the website.

It has been often cited that time constraint ^[29] is one of the major reasons that make people make online purchases. To ensure parity with this line of reasoning, it is important to ensure that shoppers are not made to waste their time searching for whatever they want. One tool that could help shoppers find products faster would be a "fly out" navigational menu, which displays a deeper category menu when a shopper moves their cursor over a link. Fly out menus can be designed to show second or even third level site navigation.

Integrating browsing with searching can be a very good way of transforming simple surfing into serious searches

for online products and services. Providing online guidance tools can help users to search faster. It should be ensured that users can easily fine-tune an existing search by entering additional search keywords.

Intelligent spread of content across the entire website can go a long way in conveying simplicity and logicity. Cluttering pages with too much information and images leads to confusion and so the designers have to strike a balance between quantity and comprehensibility of contents on the webpage. Consistent use of fonts and colors in displaying content would be helpful for intuitive understanding of subsequent web pages from the home page. It would be a good idea to combine information into useful groupings. Providing advanced functionality at regular intervals is definitely desirable but it must be assumed that most users will be intimidated by new features. The trick here would be to present the functionality in a user-friendly manner. User-customization for frequent visitors could be considered.

"Shopping cart abandonment" has been found to be an anathema for E-tailers. In other words, many prospective online purchases come to an abrupt end when the user is directed to the "payments" page. It may be possible that users get confused after reaching this page and so they opt out. To discourage this practice the E-tailers have to ensure that the payment process is very simple and transparent, by providing clear confirmation of all outcomes of actions made at this particular page. To build trust, users must be provided with a clear path for aborting the process at any time. As Indians are generally paranoid about revealing credit / debit card details, E-tailers must provide alternate payment methods like DD, COD, etc.

E-tailers should strive to instill confidence in online sales transactions. Even small errors can obliterate the efforts of E-tailers in acquiring and retaining customers. A lot of endeavor has to be made to ensure that customers do not shy away. To start with, the "About Us" page is mandatory and crucial to boosting customer confidence. It provides a summary of the business, the commitments and direction. Spellings and other factual data should be accurate, as poor spelling and incorrect data act as major trustbusters. Slow downloading

pages should also be optimized for optimum download time. Dynamically changing electronic keyboards for inputting data would be an ideal way to prevent spyware from capturing physical keyboard key strokes. All online sales transactions above a certain amount (say Rs. 3000/-) should be verified physically by the E-tailers by sending an automatic request to the credit card issuing bank to authenticate the buyer by calling him up on his contact number. Alternatively, "password-on-mobile-phone service" for every E-tailing transaction to be completed, can also be considered. A well-monitored grievance-handling mechanism should be put into place to inculcate a feeling of confidence in the website. Privacy and other policies should be clearly displayed on the website. Trusted Third party certifications should be procured and displayed prominently. Maintaining constant communication with customers even after the sale transaction is completed may lead to a boost in customer confidence. It may be worthwhile to consider a FAQ (Frequently asked questions) page. Many questions that surface in surfers' minds tend to be repetitive, which can be compiled into the FAQ page. This could promote customer confidence and save precious time for executives manning the helpline. A prospective client may be somewhat hesitant in asking questions and this hesitancy may translate into a lost sale. A well constructed FAQ can help coax these online customers into purchasing. Testimonials page is another important tool for instilling confidence. For new outfits it is suggested that free samples be given to a select group of prospective customers and take their feedback in the form of a testimonial. This could act as a strong confidence-building measure.

In summary, the following points should be considered by E-tailers for the design of their websites:

- The layout should be easy to understand and use,
- It should reflect the "personal touch" of the traditional store,
- It should provide customer services beyond what is expected,
- The website should be fast to use,
- The home page should be attractive and effective,
- It should allow product to be quickly and easily located,

- It should have a consistent design across all pages,
- It should allow the purchasing process to be fast and easy,
- It should describe products effectively along with attractive pictures,
- It should have easily-readable pages
- It should instill confidence in customers about the safety of online sales transactions.

10. Conclusion & Futuristic Note

10.1 Fulfillment of Objectives and Contribution to the Body of Knowledge

The extent to which the research objectives have been fulfilled can be evaluated by identifying and reviewing the contributions made by this research towards the body of knowledge.

10.1.1 Study of E-tail Customers for Validating the Research Model

The 'E-tail Acceptance Model' was generated mostly to address the first objective of identifying the antecedents of customer confidence in e-tailing, leading to actual online purchase. This new model has identified the critical factors leading to customer confidence and eventual purchase in an Indian e-tailing environment, thereby contributing to the rising body of knowledge. Its main contribution lies in the fact that it extends the traditional technology acceptance model to accommodate Indian idiosyncrasies like gregariousness and gullibility. None of the reviewed model extensions considered technology or website features, per se, which has been suitably incorporated in the research model. Contemporary terms have been used to replace the earlier terms like "perceived ease of use" and "perceived usefulness", which is another important feature of the research model.

The results of this study provide at least two theoretical contributions to e-tail adoption research. First, the study presents four new 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-service features', 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, as advocated by Davis, may not be adequate enough to explain the adoption and use of different types of technologies wherein the specific features of the technology itself play an important role.

This particular study has helped to fulfill the first objective totally and the second objective partially.

10.1.2 Net Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area

The study on retailers and e-tailers in Bangalore has provided the first detailed set of Net Readiness scores. This is probably the first of its kind in India itself. Such studies have been conducted in countries like Bulgaria [30] and New Zealand [31] before. The results contribute to the body of knowledge by providing a snapshot of the state of preparedness for conducting e-mode of business for Bangalore-based retailers and e-tailers. They capture elements of the four essential drivers (leadership, governance, competencies, and technology) of e-business and provide overall picture vis-à-vis best-of-breed companies. The study needs to be repeated over time. Time series data would provide trends within each category of retailer as well as e-tailer to understand progress towards attainment of Net Readiness.

This particular study has helped to fulfill the seventh objective.

10.1.3 Study of E-tail Perceptions through Retail Visitors

This study has revealed a paradox - on one side customers have expressed willingness to shop online subject to certain conditions being fulfilled. On the other side, they have shown reluctance to purchase big ticket items online. This paradox indicates that there is a perceived threat in the customer mindset that prevents them from buying expensive items online, despite the fact that security risks are absolutely the same, be it a cheap item or an expensive item. This would definitely be of use to e-tailers as this bit of knowledge exhorts them to rework their communication

strategy to highlight that all credit card transactions at the website are secure, irrespective of the amount being doled out.

The other contributions made by this particular study are that it has identified factors that explain what drives customers to visit retail establishments, factors that explain why customers avoid visiting retail establishments, factors that act as impediments to the adoption of online shopping, factors that identify major perceived problems in online shopping, and finally factors that could drive conversion from offline mode to online mode of shopping. Further, the types of products that hold potential in the e-tail world have also been identified. These set of findings will be more useful for practitioners than for researchers as the aim was to build up substantive knowledge rather than validate the findings through a theoretical model. For researchers, this can serve as a starting point for further research and building up of research models pertaining to e-tail perceptions through retail customers.

This particular study has helped to fulfill the third and sixth objective totally, and the second and fourth objective partially.

10.1.4 Emulative Features Benchmarking Study

The benchmarking study does not make any original contribution to the body of knowledge because the general guidelines laid down for design of the "ideal e-tail website" have been distilled from content analysis of existing e-tail websites. Nonetheless, the findings can be considered as a compendium for the practitioner.

This particular study has helped to fulfill the fifth objective.

Thus, it is seen that all the objectives with which the research work commenced have been attained.

Regarding contribution, it can be said that in other countries, studies of online consumer behavior in the e-tailing area have been conducted mostly by commercial organizations. This is probably the first systematic study of the e-tailing paradigm in the Indian context conducted by an academic and non-biased researcher. This fact itself can be regarded as a contributing factor.

10.2 Limitations of the Study

Although this research makes contributions to the body of knowledge in the e-tailing domain, there are a number of limitations associated with it. This section highlights the limitations.

10.2.1 Scope

The main limitation of this research can be ascribed to the research model's coverage in terms of 'perceived trust'. The model attempted to include as many trust-enhancing factors as possible without trying to zero in on one particular factor. The high-level model that resulted might therefore appear to be too general when viewed from only one dimension.

Another major limitation is that e-tailers were not segmented and were treated as generic. For example, there might be a significant difference in perceived trust between a customer buying a laptop from a generic site like www.bangalorestore.com and a computer-specific site like www.computerwarehousepricelist.com.

Only English language websites were selected for the "Emulative Features Benchmarking Study" and hence, the desire to choose world's best e-tailing websites could not be fulfilled. Superior websites in other languages have been consciously excluded due to the researcher's illiteracy in those languages.

10.2.2 Internal Validity

Internal validity issues refer to the ubiquitous question – "Are the changes in the dependent variable exclusively due to the independent variables that were identified?" The main threats to internal validity in the first study involve the possibility of extraneous or confounding variables. It might be possible that the research model missed one crucial factor that had a significant effect on respondents' responses. One apparent omission in the research model is 'previous experiences'. A previous interaction with an e-tailer or a brand could be an obvious factor that could impact one's trust in the website. Less obvious are cases of brand associations. This refers to situations where a person may not have directly interacted with an e-tailer before but where this e-tailer's website bears resemblance to some other website the person is familiar with, be it trusted or not.

Such a situation would bring forth another factor into the 'perceived trust' equation that would be difficult to comprehend, let alone quantify.

History effect is another aspect that could have resulted in biased responses, as incidents of fraudulent online sales transactions get published whenever it happens. In fact, during the survey period there was an incident in Bangalore where a lady was shocked to find that air tickets worth Rs. 93,000/- had been fraudulently purchased on her credit card, which was very much in her possession! Such reported incidents could have affected the respondent's state of mind, especially while answering questions on 'perceived trust'.

A possible maturation effect might have also played a role in the first study. 83 questions apparently is a large number for a questionnaire, which took anywhere between 45 minutes to 1 hour to complete. Because of the length of the questionnaire, respondents might have been less motivated and less alert towards the end.

There is a possibility that the benchmarking study could have missed some new features that were introduced later. Given that live e-tail sites were subjected to content analysis, it is always possible that a lot of features might have changed from one day to the next, because of the dynamics of web authoring. This could have been countered if all the short-listed e-tail websites were subjected to content analysis all at once, which was not a feasible option, considering the constraint on resources.

10.2.3 External Validity

External validity is concerned with the generalizability of the results. The sample selection using snowball sampling in the first study has limited the ability to generalize the finding to the overall population, due to its non-random nature. This sample had to necessarily be tech-savvy with some degree of familiarity with the concept of e-tailing, because it was felt that they would be in a better position to provide proper responses as opposed to novices who may not have understood the contents of the questionnaire. However, more people are increasingly getting attracted by the convenience of online shopping. It is unclear as to what extent the findings would apply to a technology-novice user group

who are also interested in online shopping but take the help of other people to do the actual purchasing.

An interesting question that arises is whether the results can be generalized to future times. Although the basic concepts of the constructs will certainly not change over time, technology changes at a staggering pace and so does people's attitude to novel and innovative website features. Furthermore, the legal fabric for e-tail transactions might also change in a manner that would give customers more rights and more protection. In that case, customer perceptions can change in favor of e-tailing. However, it is hoped that the basic framework of the 'E-tail Acceptance Model' was articulated at a high enough level to remain applicable to different flavors of electronically-mediated retailing.

Website design is a dynamic activity. Thus, the 'shelf-life' of the identified emulative features of best e-tail stores is only temporal and may not be sustainable for too long a time.

10.2.4 Ecological Validity

Ecological validity refers to the similarity of the test situation to the real situation. In the 'Emulative Features Benchmarking Study', each selected respondent was asked to provide a response for three websites based on the Kepner-Tregoe criteria. In this case, a pertinent question that arises is – "was the participant's behavior during the evaluation similar to that in a real online shopping situation?" The main limitation in this particular study stems from the fact that none of the respondents were really about to make a purchase from the respective websites they were evaluating. This lack of intrinsic motivation might have affected the quality of the feedback with respect to the Kepner-Tregoe parameters.

10.3 Future of e-tailing – What is needed?

The four empirical studies have captured shortfalls as well as unaddressed potentials in the e-tailing paradigm in India, using Bangalore as a representative city. To generate a spurt in e-tailing activities e-tailers need to abide by the validated research model. The concepts and applications of 'security', 'communication', and 'gullibility' need to be appropriately addressed

to generate the desired level of 'perceived trust'. Suggestions derived from the benchmarking study of e-tail websites from across the world, if implemented judiciously, can go a long way in achieving this. Proper thrust needs to be provided to the perceptions regarding 'value-for-money' and 'quality of e-service features' in an e-tail offering. The suggestions emanating from the study of e-tail perceptions through retail visitors, if implemented, can drive conversions. E-tailers of the present as well as the future need to upgrade their business processes, their leadership skills, governance modes, organizational competencies and technologies on an ongoing basis to scale the pinnacle of net readiness. Only when these aspects are taken care of, will the Indian psyche witness a paradigm shift from offline to online mode of shopping and there will be manifold growth in e-tailing business.

While discussing the future of e-tailing one must not have unrealistic expectations. Net-net, it is difficult for e-tailing to establish as a 'complete business', even if the internet users increase. The reason: the Internet itself. Internet, from a technological perspective, is a network of heterogeneous network topologies. Just as telephone brought a network into business, Internet brings 'yet another channel' to sell—just like any other non-store channel! Organized retailing will gain the edge till the market dynamics are in favor. And yes, e-tailing will remain an auxiliary channel to provide hard-to-find content in a cost-efficient way. Internet, for e-tailers would also build the advantage of interactivity around selling products/services.

10.4 Directions for Future Research

As expounded in an earlier section, this study does have some limitations that have been acknowledged and need to be addressed in future studies:

First, though the results provide a good understanding of the online purchasing behavior of the tech-savvy population, they may not provide insights into the behavior of a consumer who is not necessarily a regular computer user, but is all the same purchasing online. As Internet use is increasing across all demographics, it would be interesting to compare the buying behavior of these two types of populations – 'tech-savvy' and 'tech-novice'.

Second, specific categories of e-tailers need to be considered to check whether the empirically tested 'E-tail Acceptance Model' is valid across all categories. In other words, it needs to be checked whether the model displays the same results when the participants are asked to provide their responses in relation to say, a website that sells only flowers, or only apparels.

Third, the Net Readiness study was only a starting point in understanding the level of preparedness for conducting e-mode of business. Future researchers are encouraged to build up the concept and devise strategies that could bridge the "E-tail Retail Gap."

Finally, the art of website design is akin to the art of fashion. It would be interesting for future researchers to conduct research studies to understand the nature and impact of the "fashion factor" and its relationship to overall e-tail success.

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