

B to C Ecommerce Websites' Success Factors in the Indian Context

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Abstract: *Business to consumer electronic commerce is witnessing tremendous growth in the Indian market. As the adoption of online shopping increases, it is vital for e-retailers to understand the factors that drive an ecommerce website's success. In this study, a survey was conducted among 252 online shoppers to explore the key factors that were associated with an ecommerce website's success in the Indian context. Eight factors, site usage experience, service quality, delivery, reputation and size of the store, security & privacy, information quality & accessibility, attractive prices and multiple payment options, were identified through exploratory factor analysis. In addition, discriminant analysis carried out to assess the differences between more and less frequent shoppers showed that site usage experience, information quality & accessibility and multiple payment options were considered more important by more frequent shoppers.*

Keywords: *ecommerce, electronic retail, online shopping, ecommerce success factors*

I. Introduction

Business to consumer electronic commerce has witnessed phenomenal growth in recent years. According to emarketer.com (2014), B to C ecommerce market size is estimated at \$1.32 trillion or 5.9% of the global retail industry and is expected to reach \$2.5 trillion or 8.8% global retail industry by 2018. According to some reports, retail market size in India was estimated at \$846 billion in 2012 and the Indian retail industry is expected to reach \$3.8 trillion by 2022 (Economist Intelligence Unit, 2012). India is also expected to become the 3rd largest retail market in the world, after USA and China, by 2022 (Economist Intelligence Unit, 2012). Similar to other markets, electronic retailing is expected to grow and play an important role in the overall growth of retail sector in India.

The electronic retail market size in India was estimated at \$ 2 billion in 2013, but is expected to grow at a CAGR of 60-65% and reach \$45-55 billion by 2020 (Shashidhar, 2015). Though the electronic retail just accounted for 0.3% of overall retail sales in 2013, it is expected to account for 4.5 to 5.5% of overall retail sales in India by 2020 (Shashidhar, 2015). Given the vast potential for e-tailing growth in India, lot of players, both domestic and Indian, evinced interest in this market leading to intense competition. With increasing internet penetration due to broad band and mobile technologies, e-retail sites are also expected to attract new users in the years to come. Reports indicate that 50 million new buyers are likely to undertake electronic shopping, primarily from tier 1 and tier 2 cities by 2016 (Tandon, 2014). With increasing user base and growing competition, the e-tailing firms need to know what are the factors that are important to consumers while shopping online in order to retain their competitive edge and attract customers. Though considerable research has been undertaken in other countries like USA to understand consumer online shopping behaviour, scant research has been undertaken in India in this regard.

This research has been carried out to ascertain the important dimensions of B to C ecommerce sites as perceived by Indian internet shoppers. For this research, an ecommerce site is defined as the website from which consumers can buy a product or service. By this definition, ecommerce sites include stand alone e-retailers as well as market places like Flipkart and Amazon. The rest of this article is organized as following. The next section briefly discusses evolution of internet and e-retailing in India and presents the key challenges and drivers for the growth of e-tailing in Indian market. Then the key attributes that are relevant to consumers while making an online purchase from an e-tailer are identified through literature review. Next, the methodology of the study is discussed followed by the analysis and results. Finally, conclusions and their implications are discussed.

II. Growth Of Internet In India

India's tryst with Internet was started in August 1995 when the state-owned Videsh Sanchar Nigam Limited (VSNL) launched Internet Services in India (Burkhart, Goodman, Mehta & Press, 1998). By the middle of 1998 VSNL had acquired 150,000 subscribers for the service (Natarajan, 2000). Till 1998 VSNL had the monopoly for providing internet services in India. This monopoly ended in November 1998 when government allowed internet services by private operators (Natarajan, 2000). The entry of private internet service providers accelerated the internet usage in the country and increased it by many fold over the years. Number of internet users in India in 2014 is pegged at 216 million, while this number is expected to reach 346 million by 2018

(statista.com, n.d). Reports also indicate that India is likely to become the second largest country, next to China, in terms of internet users by 2015 (Gnanasambandam et al, 2012).

III. Evolution Of E-Retail In India

The online retail is still at nascent stage in India. There are a number of reasons for this. Though the number of internet users is impressive at over 200 million, they still account for only 19% of India's 1.2 billion population (internetlivestats.com, n.d). In addition, the number of people who shop online is estimated at 35 million (Rajan, 2014). Indians are also wary about using credit cards and plastic money. A Datamonitor report (Datamonitor, 2012) shows that Indians own only 0.02 pay later cards per person. This is against the regional average of 1.25 cards per person in Asia Pacific region. A large number of people are also concerned about cyber security. The infrastructural support is also underdeveloped. According to a McKinsey report (Gnanasambandam et al, 2012) India ranks 49 out of 57 countries on infrastructure support & environment. The cost of broadband internet access is also higher in India as compared to many other countries.

The future, however, looks bright. The mobile internet is expected to play a large role in increasing the internet penetration. High cost of personal computers and laptops is a barrier for internet usage. The growth of cheaper handheld devices like smart phones and tablets would enable more people to access internet. Narasimhan (2011) estimates that 41% of Indians would access internet using only mobile devices by 2015, while another 38% will access internet using both PC and mobile. Only 21% will access internet using only PC. Along with falling smart phone prices, innovative and affordable rate plans by mobile service providers are also fuelling the mobile internet usage.

Many online retailers have also started developing their own infrastructure to overcome the infrastructure hurdles. For example, Flipkart, the leading online retailer in India, has started its own courier operations to get around the poor and unreliable third party logistics support (Dharmakumar, 2012). Amazon, a relatively late entrant in Indian market, also started a logistics company named Amazon Transportation Services Private Limited to deliver items bought on its site to consumers directly (Julka, 2015). Online retailers have also started offering cash on delivery (COD) to overcome the poor penetration of credit cards and Indians' reluctance to use plastic money. COD is a payment option that allows buyers to pay for goods at the time of receipt of goods instead of at the time of placing the order using a credit or debit card. Another positive factor is the growth in ownership of debit cards. While there is no significant change in the number of credit cards that are in circulation between 2005 and 2010, the number of debit cards that are in circulation has gone up from 50 million to more than 200 million in the same period. The total number of electronic cards in the country was estimated at 400 million in 2013 (Goyal, 2013). In addition, the mobile payments are also growing very fast.

In spite of the bottlenecks mentioned above, the e-commerce market in India has reached \$930 million in 2011 from \$108 million in 2005 (Kakroo, 2012) and is expected to reach \$15 billion by 2016 (Tandon, 2014). Some reports also suggest that e-commerce is likely to contribute as much as 4 percent to GDP by 2020 from the current contribution of less than 1 percent (Bose & Singh, 2014). As acceptance of internet as retail channel is growing among consumers, it is imperative for managers to understand the factors that are important to consumers while making online purchases. The purpose of this study is to examine the importance of various factors which may influence consumer online shopping behavior.

IV. Online Retail Store Characteristics

In the context of electronic commerce, the activities undertaken by consumers can be categorized into different phases including pre-purchase information search, evaluation of alternatives and short listing one of the alternatives for purchase, providing personal information like name, e-mail, address etc. for fulfillment and finally making payment, usually with the help of credit/debit card or net banking. A number of researchers have attempted to examine e-retail store characteristics that are pertinent to consumers during different phases of online shopping.

Information search is one of the key stages in consumer purchase process. Before purchasing a product, consumers seek information about various alternatives that may satisfy their need. Quality information helps shoppers learn about products and make informed and better choices. Consumers may seek information about brands, features, functionality, quality, prices etc. Some of the factors that are used to judge information quality include accuracy of information, completeness and understandability (Ahn, Ryu & Han, 2004). Relevant and easy to use information play an important role in influencing online shoppers (Ranganathan & Ganapathy, 2002; Reibstein, 2002; Ho & Wu, 1999). It has been found that information relevance was seen as one of the top web site quality factors by both online shoppers as well as managers/designers of e-business companies (Lee & Kozar, 2006).

While information content is critical for a web site's success, navigation is another factor that is related to a website's success (Palmer, 2002). It has been noted that "navigation and content are inseparable" (Palmer, 2002, p.153). Ease of navigation enables users to obtain information faster with ease. Reibstein (2002) found

that website navigation is one of the factors that affect consumer likelihood of buying again from online merchant. Ahn et al. (2005) found that navigation is an important aspect of system quality of an internet shopping mall.

After information search, the next phase in consumer buying process is comparing and evaluating different alternatives and short listing one of them for final purchase. In electronic retailing consumers do not get to touch, feel and experience the products as in the case of purchases in brick and mortar stores. Thus consumers may feel evaluating alternatives on e-retail stores more difficult. Internet retailing, however, provides opportunity for retailers to offer decision aids that are interactive and enable consumers to compare alternatives. Extant research shows that interactive decision tools that help consumers narrow down alternatives and make detailed comparisons among the short listed ones can lead to better purchase decisions with lesser effort (Häubl & Trifts, 2000). This may lead to more satisfaction with purchases among consumers.

Product/brand variety is an important factor that customers seek while shopping either online or offline. Compared with a conventional store retailer, an online retailer can offer a bigger range of product categories and a larger variety of products within any given category. In a survey conducted amongst online shoppers, Comscore (2012) found that product variety offered by e-retailers as an important factor to online shoppers. The same study also found that 38% of online shoppers wanted a greater variety of products & brands from e-retailers. In another study conducted by Reibstein (2002), product selection was emerged as third most important attribute for consumers while choosing a web site for shopping. Along with product variety, product quality is another aspect that is important to consumers in both online and offline purchases. Though quality may mean different things different consumers, perceived quality does play a vital role in consumer choice making. It has been argued that maximizing product quality for the price paid tends to one of the fundamental objectives of customers (Keeney, 1999).

Price is another important attribute that influences consumer shopping. "Online customers are more inclined to search for better prices" (Shankar, Rangaswamy, & Pusateri, 1999). Reibstein (2002) found that "customers on average state and behave as if price is the most important factor in drawing them to a site". Other researchers (Liao & Cheung, 2001; Lee & Kozar, 2006; Song & Zahedi, 2001) also found that prices offered by online retailers influence consumer online purchase behavior. In the Indian context attractive pricing through deals and discounts is an important driver of ecommerce (Ghosh, 2013). Shipping charges, which increases the overall cost for consumers can also affect online shopping behavior.

Consumers share personal details like name, e-mail, phone number, address etc. along with credit / debit card details while making online purchases. Websites also gather information regarding user browsing behavior using means like cookies. Thus security and privacy are amongst the major concerns that consumers have while shopping online. Udo (2011) found that security and privacy are the main barriers for adoption of internet purchases among consumers. A number of other research studies also showed security as one of the most important factors that customers look for while shopping online (Lee & Kozar, 2006; Ranganathan & Ganapathy, 2002; Yoo & Donthu, 2001; Pavlou, 2003; Van der Heijden, Verhagen & Creemers, 2003; Ho & Wu, 1999). A survey conducted by First Data & Javelin Strategy (Brant, 2009) showed that nearly 9% in online sales are lost because of security concerns among consumers. 80% of respondents in the same survey indicated that stronger security at web store would motivate them to shop online in future.

Other factors that may influence consumer online shopping behavior are delivery and service quality. The service quality in an online environment tend to be composed of multiple processes such as different communication options to answer customer queries and address grievances (Ahn et al., 2004), provision for order tracking, on time delivery, after sales service (Zhou, Lu & Wang, 2009), ease of returns, ease of cancellation. Previous research found that service quality tends to play bigger role on customer satisfaction than design quality (Zhou et al., 2009).

In summary, a variety of factors including range of products available, price and quality of the products offered, ease of navigation, availability of relevant information, ease of accessing the information, ease of ordering, delivery, after sales service, security of financial transactions and personal information may influence consumer online shopping behavior.

V. Data Collection

5.1 Survey instrument

The various factors found in the literature were summarized into different attributes and a questionnaire was created. Respondents were asked to rate the importance of each attribute while shopping from an e-tailer site using a five point scale where 1 represented 'not at all important' and 5 represented 'very important'. In addition, number of online purchases made in last one year was also obtained. The survey instrument was pilot tested with 2 doctoral students and 8 others who frequently shopped online. Based on the feedback, some items were modified. The questionnaire was then administered to 258 students in a large business school in National

Capital Region (NCR), Delhi. Only, responses by 252 subjects who made online purchases in the last one year were considered for final analysis.

5.2 Sample characteristics

The sample consisted of 63% males and 37% females. All subjects have shopped online at least once in the last one year. The median value for the number of times shopped online in the last one year was 8 which indicates respondents were frequent online shoppers.

VI. Findings

Exploratory factor analysis was used to assess underlying dimensions as little information was available in this regard among Indian online consumers. The value Kaiser-Meyer-Olkin measure of sampling adequacy was 0.76 and Bartlett's Test of Sphericity (Chi Square=3092, df=351, p<.001) showed significant intercorrelations between variables which indicate factor analysis can be used to extract underlying dimensions (Hair et al., 2006). The factor analysis revealed eight dimensions that were named site usage experience, service quality, delivery, reputation and size of the store, security & privacy, information quality & accessibility, attractive prices, multiple payment options. The factors and item loadings are shown in Table 1. One item 'availability of traditional communication channels for customer service' had low loadings across all factors. No substantial cross loadings were observed for any item. Cronbach's alpha was calculated to assess the internal reliability for each factor. All alpha values were above 0.6, over the threshold suggested for exploratory research (Hair et al., 2006). The alphas values and the variance explained by each factor are given in Table 2. The cumulative variance explained by all the factors was 68%, which can be deemed satisfactory (Malhotra & Dash, 2011). The eigen values for factors ranged from 1.5 to 3.1.

To ascertain the relative importance of these dimensions among more and less frequent online shoppers, discriminant analysis was carried out. To carry out discriminant analysis, respondents were divided based on the median value of 'number of times' they shopped online in the past one year. The results of discriminant analysis are shown in Table 3. Results indicate (Wilk's Lambda=.80, Chi Square=53.7, df=8) that discriminant function was significant (p<.01). The canonical correlation was 0.45. Examination of Wilk's Lambda and F values for individual dimensions (Table 4) showed that site usage experience, information quality and accessibility and multiple payment options were considered more important by more frequent shoppers.

Table 1

Factors, items and loadings[#]

<i>F1 : Site usage experience</i>	
Page down load time / response time	0.83
Visual attractiveness / aesthetics of the website interface	0.81
Ease of navigation	0.63
Ease of ordering	0.53
Display of products in visually attractive manner	0.52
Provisions to compare alternatives	0.52
<i>F2 : Service quality</i>	
Ease of making returns and exchanges	0.72
Flexibility to return at offline stores	0.69
Ease of cancellation	0.67
Availability of after sales service	0.69
Availability of live customer service / online chat	0.51
<i>F3 : Delivery</i>	
Flexibility to choose delivery date and time	0.79
Online order tracking ability	0.74
Delivery time	0.77
<i>F4 : Reputation and size of the store</i>	
Wide range of products	0.75
Reputation of the site	0.67
Quality of products	0.57
<i>F5 : Security & privacy</i>	
Safety and security of personal and financial (credit card/ debit card/ net banking) information	0.91
Clear and easy to understand privacy policies	0.87
<i>F6 : Information quality & accessibility</i>	
Ease of finding relevant information	0.51
Availability of detailed and accurate information about the products	0.59
Personalized information / recommendations	0.58
Availability of reviews and ratings by other users	0.78
<i>F7 : Good prices</i>	
Attractive prices	0.81
Free shipping and handling costs	0.62

F8 : Multiple payment options like cash on delivery, credit/debit cards, net banking *	0.78
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* Only single item in the factor

loadings below 0.5 are not shown

Table 2

Reliability Analysis and Variance explained

	No. of items	Alpha	% Variance explained
Site usage experience	6	0.82	11.4
Service quality	5	0.75	10.7
Delivery	3	0.80	9.8
Reputation and size of the store	3	0.61	8.3
Security & privacy	2	0.84	8.0
Information quality & accessibility	4	0.66	7.9
Good prices	2	0.66	6.6
Multiple payment options*	1	-	5.7

* Only single item in the factor

Table 3

Results of Discriminant analysis

	Standardized Canonical Coefficients	Discriminant loadings
Site usage experience	0.64	0.55
Service quality	-0.14	0.54
Delivery	0.05	0.41
Reputation and size of the store	-0.07	-0.21
Security & privacy	-0.26	0.14
Information quality & accessibility	0.50	-0.11
Good prices	0.17	-0.06
Multiple payment options*	0.63	0.04
Wilk's Lambda	0.8	
Chi-Square	53.71	
Significance (p)	<0.01	
Predicted group membership		
Total	71%	
Less frequent shoppers	66%	
More frequent shoppers	76%	

Table 4

Univariate F tests (df: 1 and 244)

	Wilks' Lambda	F	Sig. (p)
Site usage experience	0.93	18.6	0.00
Service quality	1.00	0.8	0.39
Delivery	1.00	0.1	0.76
Reputation and size of the store	1.00	0.2	0.65
Security & privacy	0.99	2.7	0.10
Information quality & accessibility	0.96	10.4	0.00
Good prices	1.00	1.2	0.28
Multiple payment options	0.93	18.1	0.00

VII. Discussion And Conclusion

Exploratory factor analysis of different attributes pertaining to ecommerce websites showed eight underlying dimensions : site usage experience, service quality, delivery, reputation and size of the store, security & privacy, information quality & accessibility, attractive prices, multiple payment options. Organizations which operate or intend to launch B to C ecommerce portals need to keep these factors in mind. E-tailers should actively improve user experience by improving the aesthetics, navigability and response times of the websites. Creative thinking while designing websites is required in order to make website's look and feel more attractive and enticing. System quality which can lead to faster response times, easy navigability and effortless purchase process is an important factor. Poor page download speeds and navigability can frustrate consumers. Consumers also seek relevant and accurate information about the products from the sellers as well as reviews from other consumers. E-tailers need to design their websites in such a way that consumers can quickly obtain information they need. Good system quality and design along with relevant content can help consumers in retrieving the information they seek faster.

Service quality is another area that e-tailers need to pay attention. Some of the thorny issues in ecommerce include after sales service and return & exchange of goods bought online. It is much easier for consumers to return or exchange goods bought at brick and mortar stores. Returning & exchanging goods bought online is more cumbersome as consumers have to ship the items back to the seller. The provision to return the goods bought online at brick and mortar stores make the process of returns much easier for consumers. E-tailers may designate some brick and mortar stores to accept the product online. Omnichannel retailers, who got presence in both online and offline formats have an obvious advantage in this regard as they can integrate both formats to provide superior customer service. Many a time sales personnel can persuade undecided consumers at brick and mortar stores to complete the purchase. E-tailers are at disadvantage here as there are no sales personnel to persuade wavering consumers. Availability of live customer services through means such as online chat can help e-tailers answer customer queries while they shop online and increase conversion rates. Flexibility to decide the time and date for delivery and the provision to track orders also enhances customer satisfaction in online purchases.

The reputation of the e-tailer as well as product quality and assortment along with attractive prices emerged as important factors. In internet shopping, shipping charges over and above product cost, increases overall cost to the consumers. E-tailers need to eke out a strategy to balance between product quality and cost including shipping charges to attract customers. Consumers are wary regarding the safety and privacy issues in online purchases. Ensuring secure gateways certified by third parties for financial transactions, appropriate steps to safe guard privacy and clear & simple privacy policies that are articulated well can reduce consumer concerns regarding privacy and security of their financial and personal information. Multiple payment options including 'cash on delivery' may also help attract customers those who are unwilling to transact online with electronic cards due to safety related issues.

Discriminant analysis carried out to assess the differences between more and less frequent shoppers showed that site usage experience, information quality and accessibility and multiple payment options were considered more important by more frequent shoppers. Consumers who shop more frequently are more likely to spend greater time on e-tail sites. Thus site usage experience in terms of aesthetics, response time, navigation and ordering ease as well as ease of finding relevant and accurate information quickly without exerting too much effort become more important to consumer who have greater propensity to shop online. Multiple payment options like 'cash on delivery', credit/debit card payments is also more important for shoppers who buy online more frequently as it increases convenience, while reducing the risk associated with electronic transactions.

Obtaining random samples of online shoppers is difficult as sampling frames for online shoppers are not easily available (Couper, 2000). Thus, the data about ecommerce site characteristics in this study was obtained through convenience sampling from students. Therefore one should be more cautious in terms of generalizability of results. In spite of this limitation, this study enhances our understanding about online purchase behavior among Indian consumers and helps e-tailers to understand the factors that are important to online shoppers.

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