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E-COMMERCE & INDIAN CONSUMERS: AN EMPIRICAL ANALYSIS.

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ABSTRACT

A study growth has been observed in the Internet-based commerce activities in India in the past few years. electronic commerce (E-Commerce) today is exploding and the number of users on the Internet is growing rapidly. However, one of the greatest challenges in India is to convince consumers that both, their survival and prosperity depends on adopting E-Commerce. This research found out that there is a resistance to E-Commerce adopting among Indian consumers. Therefore, the transition to E-Commerce is hoped to open up a vast array of business advantages for those who are willing to take advantage of the new technology. The proposal study tries to examine the relationship between demographic and other variables and their influence on the adoption of E-Commerce by consumers in India. Further, the study tries to examine the factors which affect the adoption of E-Commerce by consumers in India and to develop a framework showing how E-Commerce adoption should be carried out from a strategic perspective.

Keywords: Adoption of Technology, E-Commerce, Socio-Economic Factors, E-Commerce security.

I. INTRODUCTION

E-business is the use of Internet and other electronic devices to operate and manage business.

E-Commerce refers to E-business involving a purchase or sales transaction that occurs electronically. E-Commerce is a frequently discussed concept that currently lacks a widely accepted definition and theoretical model, although a body of empirical research is beginning to emerge on which initial theories and frameworks can be built. While, very few researches have addressed the interaction of E-Commerce website's purpose and type of relationships they are designed to establish and maintain. Similarly, the purpose of an E-Commerce site may have a significant impact on transaction costs and the website's perceived risk exposure. For example, a website that merely promotes products does not reduce transaction costs or requires a high level of security to the same degree as the one that performs online database updating transactions. However, transaction based websites reduce the time and effort required by an organization to complete the transactions, as well as reduce the errors caused by manual data entry. With transaction based systems, however, comes an increased risk as compared to a promotional (non transaction based) website. E-Commerce refers to online shopping, online stock, bond transactions and buying and downloading software without ever going to a store. It also includes business to business connections that makes purchasing easier for big corporation. E-Commerce is the application communication and information sharing technology among trading partners to the pursuit of business objectives. E-commerce can be defined as modern methodology that address the needs of the

organisation, merchants and consumers to cut costs while improving the quality of goods and services and speed of service delivery. The main vehicle of e-commerce remains the Internet and the World Wide Web. A key element of e-commerce is information processing. According to a survey the size of B2C E-Commerce Industry for the year 2011-12 was computed to be around Rs.7080 crores and Rs. 9210 crores in 2012-14, a growth of about 30%. Online Travel Industry is the largest contributor to the B2C E-Commerce Industry, Sized at Rs. 5500 crores for the year 2011=12 and Rs. 7000 crores in 2012-13. The adoption and usage of E-Commerce in the country is a function of the overall environment for Internet usage in a country. Some of the key variables that need to be understood in the context of adoption of E-Commerce by Indian consumers are the proportion of computer literates, internet penetration, frequency of access to the internet, purpose of internet access etc

II. GROWTH OF E-COMMERCE

Because of the intense media scrutiny and the large advertising budgets of the B2C firms, most people think of E-Commerce in terms of B2C transactions. However, 80 percent of E-Commerce is currently B2B and its relative proportion is expected to increase over the next five years.

III. IMPROVES OPERATING EFFICIENCY

The rapid growth in B2B is due to a significant increase in the firm's operating efficiency, which has been made possible by the web. There are many reason for this which includes shorter production cycles, higher employee productivity, better inventory management and more direct control over distribution channels. Many large firms such as Ford and General Motors are rapidly transforming their operations into Internet companies in which the web controls or influences virtually all aspects of their operations.

IV. LOWER INVESTMENT C0STS

The role of the web is dramatically lowering the amount of investment (Capital) required to produce a given dollar amount of revenues. this is achieved by substituting the virtually zero cost of the web for the managerial cost of new physical factory and equipment. This produces a significant increase in the return on net assets.

V. ACCELERATES MARKET SHARE CAPTURE

A web based firm can much quickly capture the market share as compared to a non -web firm. The later must invest in time-consuming process of financing and constructing building and creating other physical infrastructure. this is particularly important for start up firms or those wishing to introduce new business lines or products.

VI. OBJECTIVES

- To identify the factors considered by the customers to buy products/ services online.
- To identify the demographic and other variables and their influence on the adoption of E-Commerce.

VII. RESEARCH METHODLOGY

The study: This study aims to collect the options of customers towards online shopping as well as adoption of e-commerce. Factor analysis is used as a statistical tool to analyze the data.

The sample: The sample of study constituted of 110 respondents.

The Tools for data Collection: A specifically designed questionnaire is used as a tool for collecting the data. The respondents were requested to rank the statements on a 7-point scale basis (1=Strongly agree, 4=Neutral, 7=Strongly disagree). Attributes covered respondents reasons to buy the product/service online or not to buy. It also considers the main factors considered by the customers while choosing an online vendor.

The Tools for data Analysis: Data were analyzed using correlation and factor analysis with the help of the SPSS software.

Socioeconomic factors considered for adoption of E-Commerce:

Gender is a significant factor in adopting Internet –based technology and gender has a significant relationship with willingness to adopt e-commerce, as it is based on Internet as well.

- Age group : Diffusion of innovation technologies have shown that age is an important factor in the adoption of an innovation. Thus, it is widely observed that a younger person is more keen to adopt new technologies.
- Education level : The education level attained by an individual is significantly related to the willingness to adopt E-commerce as adopt as e-Commerce as e-commerce is considered an IT innovation.
- Income level: Adoption of innovations are financially better of than the non-adopters. The research also shows that the adopters of Internet based technologies belong to higher income groups.
- Exposure to the Internet: Individuals with higher level of exposure to Internet tend to adopt Internet-based technologies quicker than those who have less exposure to the Internet. Since e-commerce is based on Internet, it was found that individuals with high level of exposure to the Internet are more likely to adopt e-commerce.

IX. RESULTS AND DISCUSSION

The age distribution in table 1 shows that most of the respondents are lying in the age group of 18-29 years (43%). The next largest group comes from the respondents in the age group of 30-39 years (22.7%) and the number of respondents in the age groups of 50-59 and 60 and above were very less i.e., 6.4 percent and 2.7 percent respectively(Table 1)

The gender table shows that majority of the respondents were male (71.8%). This large gap was due to the fact that most Indian females are conservative and not willing to participate in surveys as well as not in the favour of adoption of E-Commerce (Table2).

Table 3 shows that 22.7 percent respondents are currently, users of E-Commerce; 36.4 percent intend to adopt E-commerce within one year; over 20 percent are willing to adopt E-Commerce within 2-3 years, while 20.9 percent had no intention of using E-Commerce at all.

It is clear from Table-4 that the majority of respondents have graduation degree (64.5 percent). The next largest group of respondents holds a postgraduate qualification (20.9 percent). Only 14.5 percent of respondents were found at undergraduate level.

Table-5 shows that the majority of the respondents(54.5 percent) use Internet for more than 3 hours per day. 31.8 percent respondent use between 1 to 3 hours and only 13.6 percent use less than hour.

Table 6 shows that the majority of the respondents (46.4 percent) are earning 20,001 to 30,000; 30.9 percent respondents are earning more than 30000; 16.4 percent respondents are from income group of 15,001 to 20,000 and only 6.4 percent are from below 15,000 group.

X. THE CORRELATION ANALYSIS

To analyze the effect of demographic and other factors in accounting for the willingness to adopt E-Commerce, correlation analysis was performed. As can be seen, only education level, income level and the exposure to Internet are significant. However, the gender and age, which are generally believed to be important predictors for the adoption of Internet-based technologies, are not significant(Table-7)

XI. ADEQUECY OF DATA

The adequacy of data is evaluated on the basis of the results of Kaiser- Meyer-Olkin Measure(KMO) of sampling adequacy and Bartlett's test of sphericity. The KMO measure of sampling adequacy is .661indicating that the present data are suitable for factor analysis. Bartlett's test of sphericity is significant ($p<.001$), indicating sufficient correlation exists between variables for the factor analysis. The Bartlett's test statistics is approximately distributed and is accepted.(Table-9).

XII. FACTOR ANALYSIS

The first three components i,e., factors in the table 10 have an Eigen values one and they account for about 78 percent of the observed variation in the consumer's attitude towards online shopping. According to Kaiser criterion, only the first three factors should be used because other Eigen values are less than one. The scree plot specifies that 3 factors are going to be extracted. Catell's scree test involves plotting each of the Eigen values of the factors and inspecting the plot to find a point at which the shape of the curve changes direction and become horizontal.

Factor loadings are used to measure correlation between variables and the factors. A loading close to 1 indicates a strong correlation between a variable and a factor, while a loading factor closer to 0 indicates weak correlation. Unrotated solutions of factor loading are not suitable for interpretation purpose since variable generally tend to load on multiple factors. The factors are rotated with the use method for factor extraction is used. The factors whose value is greater than .5are used only for interpretation purpose. table 12 indicates the degree of rotation. Off diagonal elements i.e.,0.088 correspond to smaller and larger rotations.

From table-11, the attributes like A3,a2 and A1 have loading factor.962, .959, . 948 on factor 1.This concludes that Factor 1 is a combination of these 3 attributes. Therefore, the factor can be interpreted as Internet Shopping has perceived usefulness. factor 1 alone contributed for 38 percent variation in consumer's perception about online shopping. The attributes like B1, B2, and B3 have a high loading i.e.0.967,0.920 and 0.979 indicating that Factor 2 is a combination of these attributes. These attributes are combined into a factor called perceived percent variation in consumer's perception about online shopping. The attributes like C1, C2 and C3 have a high loading i.e. 0.766, 0.798, and 0.678 indicating that factor 3 is a combination of these attributes. These attributes

are combined into a factor called direct shopping experience. Factor 3, i.e. direct shopping experience alone contributed for 14 percent variation in consumer's perception about online shopping. The other factors considered by the customer while choosing an online vendor are atmosphere, product, price, promotion and distribution mix.

XIII. CONCLUSION

Correlation analysis shows that only education level, income level and the exposure to Internet are significant. However, the gender and age, which are generally believed to be important predictors for the adoption of Internet-based technologies, are not significant. The perceived benefits included: competitiveness, better image, efficient processes, and better information system. However, despite the perceived benefits, E- commerce adoption was hindered by a number of constraints or barriers. Major barriers were thought to be problem of keeping up and understanding the technology itself ,lack of trained manpower, uncertainties with regard to its operation and regulations, and high switching costs. Hence, any policy that aims at promoting E-commerce should take these factors into consideration. The results support the development of E-business portals to cater to their needs and rectify their problems. E-commerce portals would enable companies to share the high investment cost of constantly changing technology, reduce the manpower requirement. Our study overall perceives E-

commerce as beneficial to business in general and consumers in particulars. With the growing usage of Internet the Indian consumers have realised the importance of E-commerce and its usage is expected to rise expontially in the coming years.

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ANNEXURE

TABLE 1: AGE WISE DISTRIBUTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	9	8.2	8.2	8.2
	18 To 29	48	43.6	43.6	51.8
	30 To 39	25	22.7	22.7	74.5
	40 To 49	18	16.4	16.4	90.9
	50 To 59	7	6.4	6.4	97.3
	60 and above	3	2.7	2.7	100
	Total	110	100	100	

TABLE 2: GENDER WISE DISTRIBUTION

		Frequency	Percent	Valid percent	Cumulative Percent
Valid	Male	79	71.8	71.8	71.8
	Female	31	28.2	28.2	100
	Total	110	100.0	100.0	

TABLE 3: WILLINGNESS TO ADOPT E-COMMERCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Currently Using	25	22.7	22.7	22.7
	Will adopt within 1 Year	40	36.4	36.4	59.1
	Will adopt within 2 To 3 year	22	20.0	20.0	79.1
	Will Not Adopt	23	20.9	20.9	100
	Total	110	100	100	

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TABLE 4: EDUCATION WISE DISTRIBUTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduate	73	64.5	64.5	64.5
	Post Graduate	23	20.9	20.9	85.5
	Under Graduate	16	14.5	14.5	100
	Total	110	100	100	

TABLE 5: FREQUENCY OF INTERNET USAGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than Hour	15	13.6	13.6	13.6
	Between 1 to 3 Hour	35	31.8	31.8	45.5
	More Than 3Hour	60	54.5	54.5	100.0
	Total	110	100	100	

TABLE 6: INCOME WISE DISTRIBUTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 15,000	7	6.4	6.4	6.4
	15,001 to 20,000	18	16.4	16.4	22.7
	20,001 to 30,000	51	46.4	46.4	69.1
	More than 30.001	34	30.9	30.9	100.0
	Total	110	100.0	100.0	

TABLE 7: CORRELATION ANALYSIS

		Adopt	Gender	Age	Education	Income	Exposure
Correlation	Adopt	1.000					
	Gender	.094	1.000				
	Age	.096	.447	1.000			
	Education	.221	.292	.708	1.000		

	Income	.145	.153	.756	.624	1.000	
	Exposure	.277	.233	.287	.367	.178	1.000

** Correlation is significant at the 0.01 level

TABLE:8 VARIABLE DETERMINING ADOPTION OF E-COMMERCE

SL No	Statement	Name of Variable
1	Internet Shopping are ease to use	A1
2	Internet Shopping Saves Time	A2
3	For me, Shopping is a pleasurable activity.	A3
4	Do you have access to the internet and where?	B1
5	Before today, have you ever used browsing software and when did you first start using this type of software?	B2
6	Would you describe your use of browsing software as no experience, up to a few times a month, or at least once a week?	B3
7	To Find product not available in store	C1
8	Easier to compare prices	C2
9	Can find products more easily	C3

TABLE 9: KMO AND BARTIETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.661
Bartlett's Test of Sphericity	Approx. Chi-square	254.336
	Df	36
	Sig.	.000

TABLE 10: TOTAL VARIANCE EXPLAINED

Component	Initial Elgenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.396	37.731	37.731	3.396	37.731	37.731	2.920	32.443	32.443
2	2.341	26.013	63.744	2.341	26.013	63.774	2.797	31.076	63.519
3	1.242	13.802	77.545	1.242	13.802	77.545	1.262	14.026	77.545
4	.942	10.465	88.011						
5	.754	8.381	96.392						
6	.219	2.428	96.820						
7	.065	.726	99.545						

8	.024	.263	99.809						
9	.017	.191	100.000						

TABLE 11: ROTATED COMPONENT MATRIX (a)

	Component		
	1	2	3
A3	.962		
A2	.959		
A1	.948		
B3		.979	
B2		.967	
C2		.920	.798
C1			.766
C3			.678

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 4 iterations.

TABLE 12: COMPONENT TRANSFORMATION MATRIX

Component	1	2	3
1	.748	.669	-.095
2	-.660	.754	.026
3	.088	.044	.985

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization