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**A FACTOR ANALYTIC APPROACH ONLINE SHOPPING BEHAVIOR IN ENGINEERING STUDENTS**

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**ABSTRACT**

The rapid growth of Internet and E-commerce use has triggered off many changes in our life. It has brought promised change, challenges and even bright future, not only to consumers but also to companies, suppliers and middlemen. But still there are still many “ifs” and “buts”, that we find people whispering relating to its potentiality, impact and implications on business and social lives. This paper is an empirical study to know the factors that influence the online purchase behavior. A sample of 180 respondents was drawn from various Management Colleges, in Nagpur city. The major objective of the study was to find out respondents’ preferences and overall opinion on Online Buying. The research tool used was a structured questionnaire. The results of the study revealed that online shopping experience, its features and benefits significantly affect online shopping of young students, and at the same time the perceived risk in terms of quality of products, privacy, security, money and product guarantee/warrantee discourages the students to shop online.

**Keywords:** *Internet, E-commerce, Online Shopping, Consumer Behaviour*

**Introduction**

Today the rapid growth of Internet and E-commerce has triggered off many changes in our life. This has brought promised change, challenges and even bright future, not only to consumers but also to companies, suppliers and middlemen. There are still many “ifs” and “buts” that we find people are whispering relating to its potentiality, impact and implications on business and social lives of all. The advent of internet is one of the major breakthroughs in the field of IT in 1995, not many of us could guess or correctly perceive the power and potentiality of it. Seen as just a source of information, it grew merely as an extension of our library but very soon it captured uses relating to communication that took a very faster, economical and personalized one. Though many among us regarded it as expensive and perceived it to be restricted mainly to commercial applications, with the birth of faster processors, better browsers, easy to use graphical interfaces and fall in the prices of its acquisition and use, it rapidly reached the fingertips of common men of Indian economy.

**Internet: The Current Scenario**

One of the recent surveys by NASSCOM predicted its phenomenal growth both in terms of internet connections and actual hours of its usage. From a mere 1 million subscribers in 1995, internet connections are predicted to rise to as much as 50 million by the end of 2003. One of the growing areas of E-commerce is Online Buying. More and more consumers are turning to the World Wide Web for their shopping needs, which gives them access to either local or international products with just a click of the mouse. The theme of anytime anywhere shopping appeals to consumers who cannot take time off their busy schedules to go out and shop. Keeping this in mind, many online shops have sprung up in cyberspace offering products right from books, music CDs, household goods, groceries to furniture and cars. The consumers can also avail of a variety of services for communication, consultancy and so on. But even with all its advantages, online buying still raises many questions – Are the transactions secure enough? Does the consumer get the goods he has ordered? And so on. These unanswered questions have raised many issues on the potentiality and utility of Online Buying.

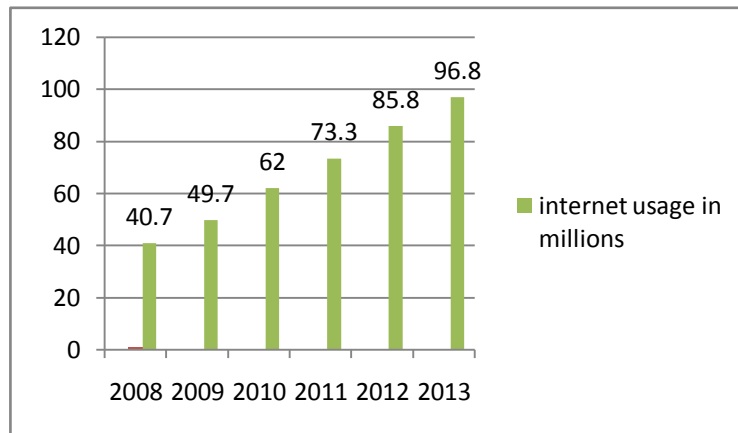
**Table:1: World Internet Users And Population Statistics**

World Regions	Population (2011)	Internet Users	Penetration	Users Growth 2000 - 2008
Africa	1037524058	139875 242	13.5 %	2 988.4 %
Asia	3879740877	1016799076	26.2 %	789.6 %
Europe	816 426 346	500 723 686	61.3 %	376.4 %
Middle East	216 258 843	77 020 995	35.6 %	2 244.8 %
North America	347 394 870	273 067 546	78.6 %	152.6 %
Latin America/Caribbean	597 283 165	235 819 740	39.5 %	1 205.1 %
Australia/Oceania	35 426 995	23 927 457	67.5 %	214.0 %
World Total	6930055154	2267233742	32.7 %	528.1 %

. Source: Internet WorldStats, 2012

**Internet Usage: Indian Scenario**

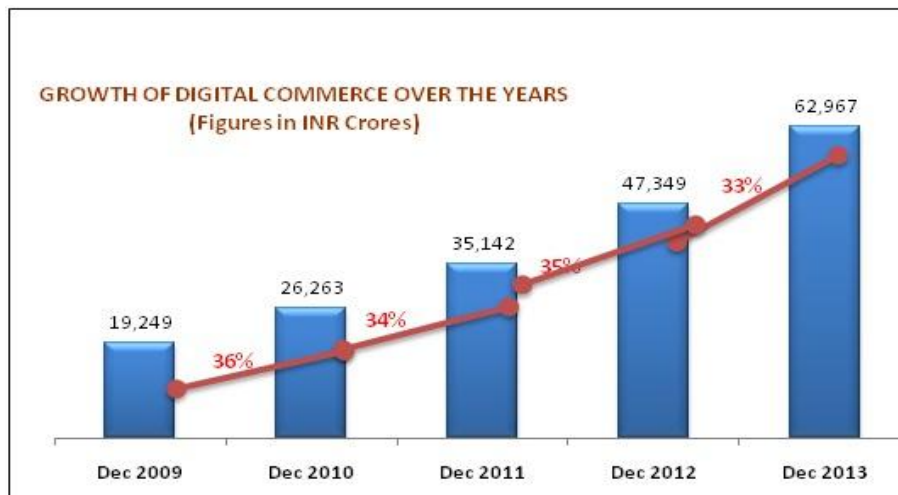
**Graph :1:Internet Usage: Indian Scenario**



Source:www.eMarketer.com

The Internet is an extremely important new technology, and it is no surprise that it has received so much attention from entrepreneurs, executives, investors, and business observers (Porter, 2001). It has become an essential business platform for trading, distributing and selling products between organizations, among organizations and consumers, and even between consumers. This has brought e-commerce to an entirely new level. (Corbit et al., 2003)

**Graph :1:Ecommerce Growth Usage: Indian Scenario**



Source:<http://yourstory.com/2014/01/digital-commerce-india/>

The investments to this new media and e-commerce profits are continuously increasing every year and that is one of the reasons to follow this new technology and try to describe and analyze Internet

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user's behaviour. Modern organizations are under increasing pressure from stakeholders to find new ways to compete effectively in dynamic markets and changing customer preferences .The marketplace has never been as dynamic and muddled as we enter the twenty-first century.

This dynamism is a result of great changes in the following:

- *The structure of markets.*
- *The mobility of individuals and the great increase in global travel.*
- *The growth of information technology and its impact on marketing.*
- *The nature of marketing segments.*
- *Strategic alliances and networks between organizations. (Ranchhod, 2004)*

### **Objective of The Study**

The basic objective of this study is to identify the key factors influencing online shopping behavior of students pursuing Engineering education.

### **Literature Review**

Ranchhod (2004) predicted the impact of information technology on marketing. We can add the impact on business in general because the growth of new technologies results in the growth of business faster than before. Electronic commerce is the use of advanced electronic technology for business. Both parties of business information, product information, sales information, service information and electronic payment and other activities are achieved with mutually agreed trading standards through the network, the advanced information processing tools, and the computer. Online shopping or online retailing is a form of electronic commerce whereby consumers directly buy goods or services from a seller over the Internet without an intermediary service. (Tao, Li, Dingjun, 2011). Ramanathan et al. (2012) describes previous interpretation of e-commerce simply as transactions over the Internet. However, over the years, e-commerce has been interpreted to include a variety of organizational activities including selling, buying, logistics, and/or other organization-management activities via the Web or doing business over information networks. (Ramanathan et al., 2012). The emergence of e-commerce as a way of doing business has created an environment in which the needs and expectations of business customers and consumers are rapidly changing and evolving. (Clarke, Flaherty, 2005). In the last decade, the growth and generalization of Internet use has made it possible to increase sales through e-commerce websites. (Iglesias-Pradas et. al, 2012) .All marketers try to identify consumers' buying behaviour. But they are in opposite to sophisticated customers who are able to use and analyze more information sources than before and to make the best buying decision. They are more comfortable than in previous years because they are used to having better services now. The effectiveness of advertising is decreasing and it is more

difficult to persuade customers to buy company's products. The combination of these factors can influence the final price. The analysis of consumer behaviour is a key aspect for the success of an e-business. However, the behaviour of consumers in the Internet market, changes as they acquire e-purchasing experience.(Hernández et al., 2010) Customer behaviour does not necessarily remain stable over time since the experience acquired from past purchases means that perceptions change. Consumer decision process is so generic that it can be applied to consumer behaviour in any channel, including the Internet. (Roberts, 2008)

### Research Methodology

**Population and Sample:** The population of the study was Nagpur city, the second capital of Maharashtra state. Sample frame was students pursuing Engineering course. 200 questionnaires were distributed to the students of selected Engineering institutes. These institutes involved the , institutes situated in the heart of the city as well as the outskirts of Nagpur also. Final semester students were administered the questionnaire. Out of 200 questionnaires, 180 were returned, with the conversion rate being approximately 90%. Only 180, completely answered questionnaire were considered the purpose of this study. The collected data was analyzed with the help of SPSS 20.0. Factor Analysis is the basic tool that was considered for data analysis.

**Development of Instrument:** The questionnaire included questions/variable extracted from the literature review. The questionnaire was divided into two; first part was the questions related to demographic details of the respondents and the second part included 32 items, and the responses was measured with 5 point Likert Scale. Reliability test was conducted thereafter. Cronbach's alpha was .791, representing a reasonable level of reliability.

Table : 3 : Reliability Statistics

Cronbach's Alpha	N of Items
.791	35

**Data Analysis:** The survey results are organized as follows. In the first section, the demographic profile of the respondent was presented. The second part concluded with the data analysis of the responses with respect to the perception of the respondents.

### RESULT AND ANALYSIS

**Demographic Characteristics:** Table 4 exhibits the demographic traits associated with the respondents considered for the purpose of the study. It was observed that 64.4% were male and 35.6% were female. 32.8 % were from the age category of 20-22, 64.6% from 22-24 category and

2.8 % were from 24-26 category. There were no respondents from above 26 yrs category. 92 % respondents belonged to urban area, 5% from semi urban area and 3% from rural locality.

Variables and categories	N=180	%
Age		
20-22	117	65
22-24	61	34
24-26	2	1
Above 26	0	0
Gender		
Male	121	67
female	59	33
Locality		
Rural	4	2
Semi-urban	54	30
Urban	122	68

*Source: Primary Data*

**Results:** Consumer expectations and perceptions towards online shopping were examined with respect to the perceived usefulness and risk. Factor analysis was conducted in order to identify the factors that affect online shopping behavior. Factors were identified using the Eigen value criteria that suggests extracting factors with Eigen value greater than 1.0 Principal Component Analysis and Varimax Rotation were considered for obtaining a component matrix. For confirming the adequacy and sphericity of the data set, Kaiser-Meyer-Olkin(KMO) and Bartlett's Test values were also obtained. Refer to table No. 5.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.702
Bartlett's Test of Sphericity	Approx. Chi-Square	1919.023
	df	496
	Sig.	.000

*Source: Primary Data*

KMO score is 0.702. It is above the recommended value of 0.5. Further Bartlett's Test of Sphericity exhibits significance value of less than 0.05 (.000). Thereby ensuring the appropriateness of factor analysis.

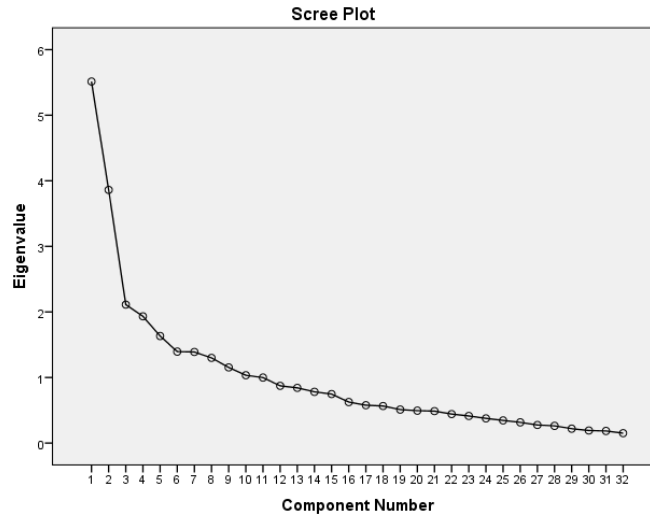
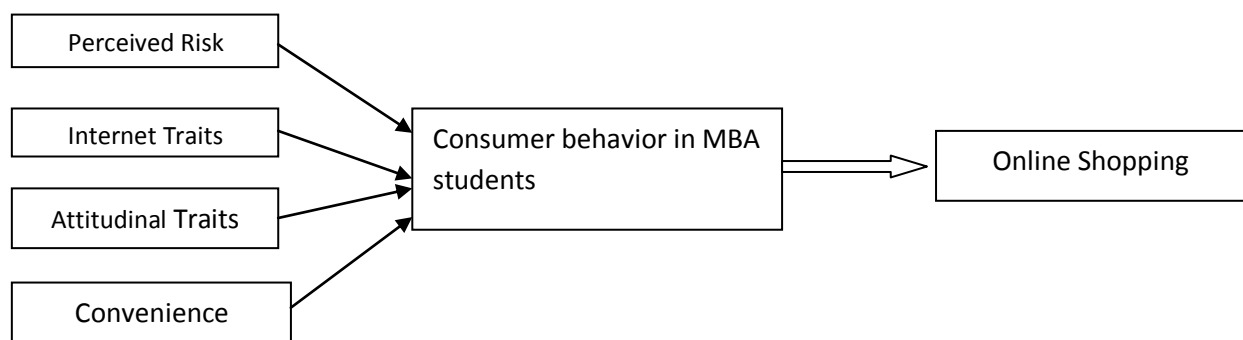


Table :6:Exploratory Factor Analysis

Sr.No.	Items	Factors			
		1	2	3	4
1.	There may be difference in the quality ordered and received	.806			
2.	Possibilities of getting cheated is more in case of online shopping	.761			
3.	It is very difficult to exchange the product in case of defects	.731			
4.	Goods may get damaged, during transportation	.711			
5.	There is chance of getting hacked the personal and confidential information	.676			
6.	Cash on delivery is not available in maximum occasions	.631			
7.	It's difficult to rely on the delivery boy who comes for product delivery	.601			
8.	Sometimes, the products delivered may be expired/second hand/outdated	.583			
9.	The company may charge more than , what is the actual price	.556			
10.	Possibilities of receiving the product late is a common problem in case of online shopping	.545			
11.	Online payment through credit cards may result in hacking possibilities more	.514			
12.	Product exchange involves cumbersome process		.806		
13.	I am very keen to adopt new things		.796		
14.	I feel internet has made life easy		.751		
15.	Internet facility is blessing in case of emergencies		.687		
16.	I does surfing conveniently		.627		
17.	I enjoy surfing net in order to explore new things		.601		
18.	Internet act as a very common communication media among youngsters		.583		

19.	Online shopping is 24x7			.785	
20.	Online shopping showcases variety of products and brands			.753	
21.	It is very convenient to depend on online shopping			.628	
22.	I prefer to buy from , the shop of my choice			.621	
23.	I prefer cash payment instead plastic money			.611	
24.	Online shopping saves time			.601	
25.	Online shopping facilitates product comparison			.589	
26.	Online shopping is very easy				.816
27.	Online shopping offer more discounts and gifts than the traditional shopping				.778
28.	Online ordering layout is easy and convenient				.747
29.	Internet is very convenient in providing the information				.695
30.	Online buying information is clear, precise and easy to understand				.611
31.	Prices offered through online shopping is less than the traditional shops				.589
32.	Online buying provides more reliable and varied information easily				.532
<i>Extraction Method: Principal Axis Factoring ,Rotation Method: Varimax with Kaiser Normalization.</i>					
<i>Source: Primary Data</i>					

In total 32 variables were considered for study and the variables were converged into 4 factors. Factor 1 was loaded with 12 variables. These variables were related to the risk/threats associated with online shopping. So the Factor 1 is labeled as *'Perceived Risk'*. Factor 2 loaded on 7 variables, related to attitude of consumer in using internet. Hence factor 2 is labeled as *'Internet Traits'*. Factor 3 was loaded with 7 variables, and it was labeled as *'Attitudinal Traits'*. Factor 4 was named as *'Convenience'* and 7 variables get loaded. Consumer behavior with respect to online shopping among the Engineering students can be concluded as follows with the given model.



**Limitation of the study :** Only Engineering students were taken into consideration. Study was limited to college of Nagpur only.



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**Future Research :** The same topic can be studied by taking the respondents from all spheres and with more sample size and more variables. Can be carried out as a national study, and also as International study , by having a comparison with respondents of other countries also.

**CONCLUSION:**

Study showed that the consumer behavior with respect to online shopping is dependent of 4 main factors , namely 'Perceived Risk', 'Internet Traits', 'Attitudinal Traits' and 'Convenience'. This research will help the marketers , as it highlights the factors important in internet purchasing in the context of Nagpur city and that too in Youngsters. Youngsters are very keen to experiment and to embrace the new technologies and techniques. So marketers should focus on how to reduce risk in online shopping. Providing an information navigation facility based on such risk-reduction strategies , such as money-back guarantee, cash on delivery option, timely delivery of goods, desirable purchasing experience etc. decreases consumers perceived risk and increase their purchase on the internet.

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