

## Factors affecting online buying behaviour in Indian E-commerce sector

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### **Abstract**

*The growth of internet and affordability of data usage has brought about exponential growth in most of the industries. E-Commerce or online shopping can be touted as a child of internet itself. There are different ways The E-Commerce works be it in B2B, B2C, C2C or C2B. The two major factors that have helped in the growth of online shopping are, first is widespread internet i.e. increasing internet penetration in India and democratization of it, which includes affordability of wireless internet and accessibility of wired internet. The second factor is the smartphone revolution which effectively put a mini computer on people's palm allowing them to use the internet to maximum. The growth of smartphone industry has been exponential and increasing affordability for masses. The research was conducted using primary data collected from online shoppers in India based on multiple factors that affect the buying decision and the overall behavior of a consumer which includes price, delivery time, User interface, consistency of promised vs received product also called as product consistency, return policy and recommended product using the various recommendation algorithms used by businesses. The focus of this study is to understand the factors influencing the buying decision and the extent to which the recommended product is useful. Data of 105 valid responses was collected and analyzed by conducting reliability testing, exploratory factor analysis and multiple regression.*

**Keywords:** *E-commerce, Online Shopping, Digital Revolution, Reliability Testing, Exploratory Factor Analysis, Multiple Regression*

### **1 Introduction:**

Online shopping has brought about a fundamental change in the way people approached buying. One of the most important revolution that online shopping brought was bringing the world closer. Globalization and opening up of economies are also significant here. The offline shopping restricted from the sample space available for a customer to buy from to the factors like locality, majority demand in the local market, convenience in terms of traveling and the extent to which a particular market and the city has developed. With online shopping platforms like Flipkart, Amazon, Myntra, Snapdeal etc, gave a channel to the aspirational buyer looking to buy according to the changing taste due to rapidly transforming world. One of the biggest hurdles for a buyer was concentration of products in select market as well limited availability of vintage products. Looking at the percentage distribution of online versus offline retailing about 4% of the total sale takes place through online medium hence the improvement scope for the online shopping is tremendous in the near future. Coexistence of online and offline retail is a much-debated topic where touch and trust factor come into to play. To overcome this one can, see many e-commerce companies marking their presence in offline market.

Now let's look at the various factors that fuelled the online commerce economy. The first and the most important factor is the spread of internet, online commerce is highly based on the accessibility of the internet to the masses that is the absolute prerequisite to the growth of the sector. The digital revolution

that we have seen in 2nd decade of the 21st century that is 2011 onwards has been exponential. Introduction of the Jio network by Reliance has changed the scenario tremendously which was unforeseen in data revolution. To put things in perspective the prices were slashed approximately by 50 times. The E-Commerce companies existed in India from 2005 onwards but the actual growth these companies saw was in the second half this decade. The second most prominent factor in the growth of e-commerce was the institutional as well as non-institutional funding institutions showing their confidence in the longevity and profitability for these startups in the long run. We have seen an unprecedented amount of investment in this sector in the last decade that has fueled the growth. Around 7 billion US dollars were invested in 2018 alone in Indian digital startup sector. The industry is expected to reach a valuation of US\$ 200 billion by 2027. Reach of the sector can be understood when the sector is delivering to almost 20,000 pin codes out of nearly 1,00,000 in this country. The internet penetration in India was at 4% in 2007 which has grown 52.08 percent in 2019, registering a CAGR of 25% between 2007 and 2019. Smartphone revolution has contributed equally if not more than any other factor in this E-Commerce revolution. The affordability of the smartphone over the expensive desktops and laptops along with E-Commerce companies putting emphasis on the mobile apps has helped the growth of the industry as a whole. Many of the companies are using the phased out strategy to move completely mobile only. Another factor that has contributed to the growth is adoption of the regional languages by these E-Commerce companies to reach the majority of the population not accustomed with English.

The following study aims to understand the various factors such as price, user interface, delivery time, consistency of promised versus receive product, return policy and the recommended product using recommender systems in Indian context. Reliability Analysis was performed for these factors along with Exploratory Factor Analysis and Multiple Regression..

## 2 Data And Methodology:

### **A. Multiple factors were used to understand and gain valuable insights into the buying behavior of an online shopping customer. The dependent variable is Customer Satisfaction(CS)..**

Customer Satisfaction (CS)- Customer satisfaction in the following research is the dependent variable which is intended to measure the overall experience a customer has while using any e-commerce application which eventually leads to final buying decision. Various techniques and methodologies used by these companies to convert as many customers as possible can be summed into to the final buying of the product. Various dependent variables are explained below.

1) Price (P) : the fundamentals of any shopping activity is the return on investment of money. Hence price plays a very important role in determining whether to buy a particular product or not. Especially in a price sensitive country like India. Definite line that is the intersection of right price and expected utility is where a particular customer agrees to buy a product. India being country which is highly price conscious the prices of the products on E-Commerce platform are always going to be one of the most important factors that affect the buying decision of a consumer. Many E-Commerce companies have indulged in competitive pricing using their financial resources of raised through investors.

H1-There is a significant link between Customer Satisfaction (CS) and Price (P) of a product on e-commerce platform.

2) Delivery Time (DT) - One of the fundamental reasons people adopted E-Commerce faster than expected is the time saved as compared to buying a product offline. when consumer knows what to buy and can find more options than usual in an online store saving a lot of time in delivery, turns out to be an important factor to be considered for customer satisfaction. E-Commerce companies have worked in

many ways to reduce delivery time as much as possible. introduction of one day delivery as well as same day delivery by Amazon and Flipkart like giants has proved to be instrumental. but the extent to which it affects the customer satisfaction is what this variable would try to gauge.

H2-There is significant link between Delivery Time (DT) and Customer Satisfaction (CS).

3) User Interface (UI) – User interface is an extremely looked after parameter when it comes to online buying. Customer trying to find the right product needs to have the interface which is easily accessible and as intuitive as possible. E-Commerce companies give a lot of importance on user experience whose integral part is user interface, the color combination, the placement of various features, the response time of various features and the overall shopping journey of a customer forms part of user interface. This independent variable would try to understand how much user-friendly user interface affects the overall shopping decision on a particular website or an app.

H3-There is a significant link between User Interface(UI) and Customer Satisfaction(CS).

4) Product Consistency promised vs delivered (PC) –One of the earliest detractors for customers to put the trust on online buying was if product promised on the website would be same as the product delivered. This varies according to the product categories; electronic product of a known brand would not face the similar distrust as a product which is non-branded especially in the categories of apparels. Considerable number of transactions on a particular e-commerce website is supposed to reduce this distrust by providing product consistency. Various companies are working highly like Amazon and Flipkart towards certifying certain sellers because of their consistency calling them trusted by e-commerce website. The customer lifetime is highly dependent on the first few transactions that he or she conducts through the website. This factor relatively affects people in the age group of 40 plus as compared to the younger ones who are more willing to take risks and try new things out.

H4-There is a significant link between The consistency of promised Vs delivered product (PC) and Customer Satisfaction (CS).

5) Return Policy (RP) – Return policy that is a customer who has bought a particular product can return it in exchange of another product or the money paid. If the product is not according to the needs or is faulty. The E-Commerce companies have always thought a good return policy can increase customer loyalty and at the same time a prominent check on it would always help the company. There is a section of customers who would always try to misuse return policies, like a 30-day return policy can be misused by using the particular product for less than 30 days for various purpose like a specialized location for clicking a photo and putting it on social media and then returning it. E commerce companies have employed specialized algorithms to find such customers on a particular pattern and still continue the return policy for the greater good of the customer base.

H5-There is a significant link between Return Policy (RP) and Customer Satisfaction (CS).

6) Recommended Product (RCP) - Big data analytics is a big part of e-commerce companies considering the tremendous amount of data that is generated on a daily basis. Big data includes user behavior and the analytics provides patterns about a particular user using which certain recommendation algorithms are used to provide recommendations to the customers based on their past behavior. The algorithms are of two types content-based that is a particular customers preference and history as well as the other consumers data-based that is any customer buying the same product and the analysis of his buying pattern to recommend a particular product. The effectiveness of the recommendation system is supposed to help a particular customer find the right product in the least possible time of their choice

H6- There is a significant link between Recommended Product (RCP) and Customer Satisfaction (CS)

## B. Scale Development

The Six constructs identified by me were measured using a five point Likert Scale where 1 - strongly disagree, 2 - disagree, and so on leading to 5- Strongly Agree. This type of scale gives us the ease of understanding various factors related to a particular study. Such a scale also makes analysis of the data so collected easier and more comprehensive.

## C. Collection and Analysis of data

A structured questionnaire was made and circulated amongst 130 Management Students across different business schools in India. Out of which 105 filled the questionnaire. The response rate for the questionnaire was  $105/130=0.807$  which is more than 0.4 indicating that the response rate is acceptable to go deep into further data analysis (Callegaro et al ., 2015) . Convenience sampling was used as the sampling technique to collect the responses for the study. The questionnaire comprised five questions for each of the constructs so discussed in the paper along with five questions related to User Behaviour.

Reliability Testing was conducted to test how reliable the measurement scale was and Cronbach’s alpha value was calculated for all the factors discussed in the paper. Exploratory factor analysis was performed and finally multiple regression was used to calculate R square value and determine the efficiency of the model.

## 3 Results And Discussion:

### A. Reliability Analysis

Firstly, Reliability Testing was done to understand the reliability of the questionnaire and the measurement scales. The table highlights the values of Cronbach’s Alpha for all the factors

**Table 1.** Reliability Analysis

Factors	Mean Value	Std. Deviation	Communalities	Cronbach's Alpha Value
P5	4.09	0.945	0.600	0.755
P4	3.80	1.053	0.784	
P3	3.63	1.024	0.710	
P2	3.63	0.974	0.687	
P1	3.94	1.088	0.695	
DT5	3.44	1.140	0.774	0.762
DT4	3.70	0.952	0.769	
DT3	4.19	0.780	0.770	

DT2	4.16	0.793	0.805	
DT1	4.31	0.808	0.481	
UI5	4.56	0.638	0.721	0.769
UI4	4.30	0.888	0.662	
UI3	4.12	0.915	0.516	
UI2	4.81	0.461	0.642	
UI1	3.46	1.059	0.638	
PC5	4.32	0.747	0.705	0.789
PC4	3.46	1.132	0.550	
PC3	3.62	1.090	0.651	
PC2	4.48	0.793	0.695	
PC1	3.93	0.988	0.567	
RP5	4.10	1.010	0.541	0.777
RP4	4.41	0.749	0.639	
RP3	4.56	0.606	0.546	
RP2	4.67	0.635	0.658	
RP1	4.10	1.010	0.541	
RCP5	4.41	0.749	0.639	0.765
RCP4	4.56	0.606	0.546	
RCP3	4.67	0.635	0.658	
RCP2	4.12	0.915	0.516	
RCP1	4.81	0.461	0.642	

From the above table, we can see that the Cronbach's alpha values for all the factors or constructs is between 0.755 and 0.869. For the Security construct, there was one question which was removed in order to get a higher value for Cronbach's alpha. The threshold for Cronbach's alpha value is 0.7 (Hair et al, 2015).

## B. Exploratory Factor Analysis

Since every variable had five similar questions which were asked in the questionnaire, it was important to do. Exploratory Factor Analysis so as to understand the various factors in a comprehensive manner. Rotated Component Matrix was obtained. We got four factors in this rotated component matrix. The factors have been renamed basis the similarity of the different questions which were obtained as part of the Rotated Component Matrix. The new variable is composed combining Delivery time (DT), Product

Consistency (PC), Return Policy (RP) as a new variable named Product Experience (PE). Rest of the three variables remaining as they were. The Kaiser-Meyer-Olkin Test (KMO) is computed to be as 0.812 which is comfortably above the benchmark of .5 (Hair et al, 2015). According to the Exploratory Factor Analysis, more than 65 percent of the variation is explained by the four factors.

**Table 2.** Factor Analysis

	P	PE	UI	RCP
P1	0.659			
P2	0.599			
PE1		0.752		
PE3		0.810		
RCP3				0.544
RCP1				0.687
PE5		0.654		
PE2		0.654		
UI1			0.712	
P3	0.586			
RCP5				0.815
UI2			0.683	
P4	0.745			
P5	0.732			
UI5			0.745	
RCP2				0.655
RCP4				0.720
UI3			0.813	
UI4			0.612	
PE4		0.784		

As per the above table, the factors or constructs indicated are the final factors which have further been used to conduct multiple regression.

### C. Multiple Regression

Multiple regression was performed taking Customer Satisfaction (CS) as the dependent variable and the above Price, Product Experience, User Interface, Recommended Product as independent variables.

**Table 3.** Regression

	Unstandardized Coefficients	
	B	Std. Error
(Constant)	8.922E-18	0.060
Price	0.261	0.060
Product Experience	0.366	0.060
User Interface	0.159	0.060
Recommended Product	0.630	0.060

**Table 4.** Regression

	Standardized Coefficients	t	Sig. less than 0.5
	Beta		
(Constant)		0.000	1.000
Price	0.262	4.348	0.000
Product Experience	0.379	6.280	0.000
User Interface	0.161	2.671	0.009
Recommended Product	0.628	10.415	0.000

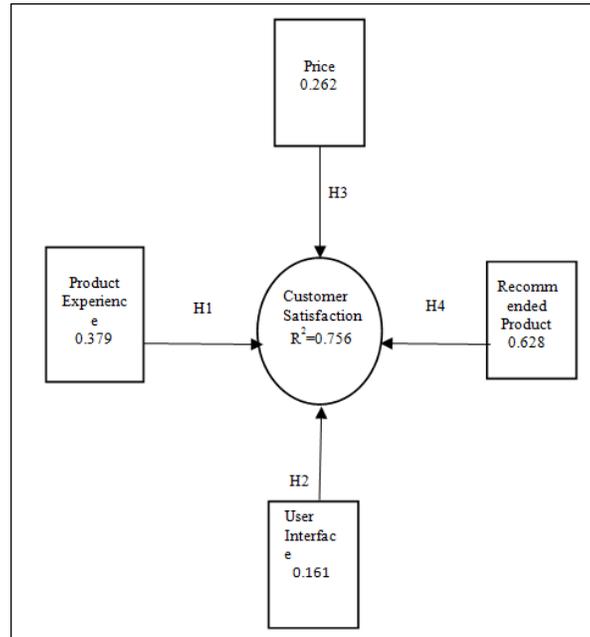
As per the significant values in the above tables, it can be seen that for all factors, the significant values are below 0.05 which means that for factors – Price, Product Experience, User Interface, Recommended Product, the null hypothesis is rejected.

**Table 5.** Regression

Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.756	0.713	0.56645292

As can be seen from the above table, the R square value is 0.756 which is above 0.7. This means that

more than 75 percent of the variation can be explained by the model. Due to the high R square value, our model is acceptable



#### 4 Conclusion:

With various factors like internet penetration data accessibility, smartphone availability, Government support and accepting customer base e-commerce has really great future. High-end applications on the internet area required to have broadband connection but with widespread 4G internet and upcoming 5G internet in India the internet speed is no longer a barrier to access heavy E-Commerce websites. All the E-Commerce companies like Amazon, Flipkart, Myntra

Etc. has mobile apps on all the platforms including Android and IOS. Many of the companies have provided light version apps that work is less space, processing power and internet speed especially for non-tier 1 cities Until recently government did not have structured and specific guidelines for e-commerce companies but, with the recent amendments in IT act most of the things have been given a structure which is an ongoing process. We have seen dedicated efforts by the government to facilitate online transactions. UPI which is universal payment interface has been a great catalyst to the overall growth of online businesses and E-commerce.

The lengthy procedure of paying online which was the great detractor for shoppers which has been reduced to just three step payment procedure making the checkout from the e-commerce website very easy. availability of wallets and payment options individually on the websites is yet to be tested in terms of its effectiveness and acceptance like Amazon pay, Paytm wallet etc.

With a data analysis price, product experience, user interface, and the recommended product using the recommender algorithm of a particular website have been an important feature that affects how a customer is satisfied with the website. The extent to which a particular factor affects the final buying decision would have many more variables depending on the requirement of a consumer their ability to pay and willingness to buy; my research was restricted to see if a particular factor affects the final buying decision or not. India being a price sensitive market, price has always been an important factor before

taking any buying decision. Hence discounts have been one of the goes to ways of marketing and increasing sales for E-Commerce companies. When we look at the major E-Commerce companies in the country including Amazon, Flipkart, Myntra, Snapdeal none of them is profitable as of now and all of them a surviving through the funding they have. the organizations or institutions funding these E-Commerce companies have placed safe bet according to their variables to see these companies go profitable in the stipulated period of time. Many of the investors are foreign based specially United States of America, Europe and China. this model has been successful in United States of America as well as in China in the form of Amazon and Alibaba respectively. With the growing population of India and highest number of people in the age bracket of 15-45 makes India a lucrative market for the growth of business in all and especially online business.

To conclude my research the customer satisfaction is significantly dependent on price, product experience, user interface and the recommended product plays a significant role. These factors should be given more importance when it comes to increasing customer satisfaction.

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