

USE OF MOBILE/SMART PHONE FOR E-COMMERCE IN INDIA: AN EMPIRICAL INVESTIGATION

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ABSTRACT

In this modernized world, the use of smartphones or mobile phones have gained huge attention in changing the business landscape concerning the e-commerce market growth in India. India has been known to be increasing with many mobile subscribers with the forecast of second largest mobile cellular market after China. This has provided a bigger platform for the business developers to step in into the market and grow their business especially for e-commerce. This study has depicted the facts and factors that have supported the growth of e-commerce in India by the increasing number of smartphone users. The factors, issues and challenges that affect the e-commerce market in India has been explored in detail. The commercial transactions involved in e-commerce along with the buying and selling of goods and services by using smartphones have been implicated in this paper. This paper also focuses on the advantages and disadvantages of using smartphones in e-commerce industries in India. An empirical investigation has been done by conducting a survey process among the users for understanding the view of using smartphones for e-commerce. The study finds customers are more convenience and comfort while using smart phone in their shopping. The study also finds that most of the m-commerce customer are comparing the price variation while purchasing offline market and customer are secure more security for their payments of bills. The future recommendations for improving the e-commerce and m-commerce industries have been also implemented in this paper.

Keywords: E-commerce, Communication, M-commerce, Cellular, Community, Security, subscribers.

INTRODUCTION

Mobile phones have been considered as the most important means of communication being used by the people for personal and professional purposes. The drastic use of mobile phones has evolved its identification as the greatest technology equalizer in India. Also, it has contributed towards the growth and development of e-commerce in India. Hence, use of mobile phones or smartphones have become an important platform for increasing the growth of e-commerce in India. Large number of Indian users have started using smartphones to fulfil their daily needs through the source of the internet. The development in technology has led towards the sale of smartphones at a cheaper rate. The user's activity on smartphones with the involvement of different applications and their willingness to use them frequently has increased the demand of mobile phones with the growth of e-commerce in India (Chmielarz, 2016).

The e-commerce of mobile phones are often termed as m-commerce which is a process of indulging into the transaction details of mobile phones that includes buying, selling and the mode

of payment used for marketing of mobile phones. The users are able to purchase the goods and services by using the mobile phones. Hence, this leads towards mobile marketing. The mobile e-commerce mends a new path for discovery of purchasing. The e-commerce companies of such mobile phones have been targeting the smartphone users through the mobile website which led towards its existence. Using smartphones for e-commerce have evolved the growth of many businesses by getting involved into the market at large scale. Therefore, e-commerce through mobile phones has several benefits and drawbacks (Nor et al., 2011). The use of e-commerce through smartphones helps in growing the business as it has become easy for the users to reach out at any time by using mobile phones. The consumer deals have been increasing at a rapid scale as many companies are offering good deals through the m-commerce source. The companies are now able to reach directly to the consumer by avoiding going to the store by using smartphones which saves time and money. Buyers can screen several items on smartphones which makes the purchasing and selling process quite easier. But there are also some demerits with the invention of this m-commerce business. The buying and purchasing activities are sometimes restricted when using mobile phones due to the lack of big screens and navigation facilities on mobile phones. The risk of good security is also involved as e-commerce using mobile phones may lead to data transfer by hacking the wireless network and resulting in poor security access (Niranjanamurthy et al., 2012). E-commerce requires high connectivity to the internet which may sometimes be lacking when using the mobile phones.

The perception of Indian regarding the use of smartphones for ecommerce and m-commerce applications have changed drastically in the past few years due to the development of technology. The use of smartphones for ecommerce and m-commerce applications have been beneficial to large under-served populations across India by changing the living standard of the people (Deshmukh & Thampi, 2014). The availability of content in local language on smartphones have enhanced the quicker and easier adoption of e-commerce in India. Also, the existence of a regional and large B2B market for m-commerce in India has evolved success in using smartphones for ecommerce and m-commerce applications.

LITERATURE REVIEW

Current Scenario of M-Commerce in India

The availability of smartphones with high speed internet connectivity at a reasonable price has enhanced the use of m-commerce in India (Chauhan, 2019). The Indian economy is growing by using smartphones for m-commerce as it involves the growth of business and public sector at large and small scale. The facilities of payment and other banking availability have been made possible that has influenced a large population in using m-commerce in India. An open wallet system known as Kenyan Pesa has been introduced in India for m-commerce services (Kaur, 2015). Also, many growth factors have supported the growth of m-commerce through the use of smartphones in India. The sales in business offers short term discounts enhancing the use of smartphones for m-commerce. Security is another factor that implements secure transactions in m-commerce with easy mode of payment through mobile phones. Innovations of new applications for resolving payment issues and other major challenges along with the accessibility in purchasing through the online market are other important factors that support the growth of m-commerce in

India. The affordability of purchasing the smartphones at a reasonable price has influenced a large population in India towards using m-commerce. Different mobile applications for ticket and travelling, m-shopping, e-auction, education, enabling delivery of mobile phones, and other important services have changed the living standard of people in India (Srinivas, 2016). This has encouraged the e-commerce trends and evolved the presence of modern lifestyle in India to compete with the modern world.

Advantages and Growth Drivers of Using Smartphones for E-Commerce

There are various advantages of purchasing goods and services online through the use of smartphones (Niranjanamurthy et al., 2013). The use of smartphones for e-commerce has evolved the users to receive information of transactions anywhere at any time. The accessibility of using smartphones has enabled the users to contact virtually at any time by also limiting the accessibility to specific people. It is convenient to carry smartphones with the storage of important data and information. The smartphones in e-commerce have been useful in providing localization details which will enable the users to relevant information and act accordingly. The instant connectivity of the internet in smartphones with higher speed has increased the growth of e-commerce. The personalization and localization together helps in developing new business opportunities for attracting customers to use e-commerce through the services provided on their smartphones. The use of smartphones for e-commerce also evolves good security inheritance by updating the users about their transaction details.

Issues and Challenges for Using Smartphone for E-Commerce

The studies on e-commerce have revealed that there are certain key issues that are involved while using smartphones for e-commerce. Some appropriate steps should be taken to meet the challenges evolved from the issues faced in e-commerce by using smartphones (Satinder, 2015). The issues involved in this are illustrated below:

- The lack of awareness regarding the transaction details while using e-commerce may result in fraudulent acts with the chances of hacking of information from the smartphones.
- Poor internet connectivity in the smartphones may lower down the e-commerce services being provided by the users with insufficient availability of goods and services.
- Sometimes lack of an easy mode of payment creates problems in financial transactions for e-commerce. Therefore, more applications should be developed for enhancing other modes of payments.
- The lack of communication between the service providers and the network providers may develop as a major issue as most of the e-commerce business are uplifted by the network providers to attract the purchasers and it comes difficult for the service providers in fulfilling the demands of the customers.
- Poor security system is another major issue as it may lead towards the hacking of data while the transaction is being made by the users through their smartphones.

- Lack of assuring privacy may involve the disclosure of personal information during the time of transactions which creates more chances of hacking.

The above mentioned have brought challenges that are being faced by the e-commerce industries. The major common challenges involve the security issues, wireless coverage of networks in smartphones, high prices of smartphones, poor internet speed and technical mismatching among the different smartphones.

RESEARCH OBJECTIVES

The use of smartphones have allowed many users to choose the means of online purchase by using the internet in their smartphones. A number of users have been browsing through the online shops before implementing their final decision. This initiation evolves the e-commerce platform. The transactions are made during the buying and selling of the goods and services. These activities reveal the possibilities for development towards the e-commerce market by generation of mobile friendly websites. All these data have been established in this study and the following research objectives have been presented on the study basis:

1. To study the impact of smartphones on e-commerce
2. To identify the growth drivers of m-commerce
3. To determine the issues and challenges of using smartphones for e-commerce

HYPOTHESIS FORMULATION

Using smartphones for e-commerce through browsing the online stores have been considered as one of the most trending ways of purchasing goods and services with all our convenience. Hence, the users have been greatly influenced by the modern means of online purchasing by using smartphones and stepping forwards towards the world of digitalization. Similarly, m-commerce has been also introduced that has supported the activities of e-commerce and helped in growing the business of e-commerce at rapid scale. The empirical investigations regarding the use of smartphones for e-commerce have shown all the factors that have influenced the users to opt smartphones for e-commerce. This has evolved many changes in the living standards of the users choosing the e-commerce platform.

Different hypothetical statements have been formulated to understand the views regarding the use of smartphones in India for e-commerce. The relevant hypothesis evolved for reaching the major objectives of the study has been illustrated below:

H1. There is a significant relationship between the frequency goods ordered online and the type of goods ordered.

The goods ordered online and the type of goods ordered have been found to be quite relevant when being compared. With the modernization of the digitized world, the means of online ordering have been growing rapidly over the past few years (Asdecker, 2015). This paves the way for growing the trends of e-commerce. The frequency of the goods ordered online along with the types of goods being ordered depends on the factors such as product quality, the estimated delivery

time, comprehensive information regarding the product, streamlining of the product range and the offers related to the financial incentives that improves the ordering decisions (Mostert et al., 2017). This leads to good decision-making strategies among the customers regarding the frequency of goods being ordered and the type of goods that are being ordered online. Involvement of multiple steps in the operational approach such as receiving, sorting, processing, analyzing and support while online ordering of goods has been found to promote the online purchasing behavior among the customers.

H2. There is a significant relationship between payment methods used and demographic variables like occupation, monthly income, use of the internet, and devices to access the internet.

The online purchasing of the goods have brought into the relevancy of the payment mode and the demographic variables of an individual such as occupation, internet use, monthly income and the devices being used for the same. The transaction while purchasing the goods online have increased rapidly after the introduction of the demonetization concept in India. It has created a huge opportunity for the digital payments at the time of purchase while ensuring the security and privacy of the customers (Wamuyu, 2014). The applications related to the mobile wallet for transaction during the time of purchasing of goods have been introduced based on the convenience and affordability of the customers. The most important factor while doing the transaction involves the source of using the internet and the devices being used for transaction. Later, the monthly income and the occupation of an individual who has opted for the online purchase are also important factors for choosing the mode of payment. All these demographic variables affect the individual's method of payment during the online purchase.

H3. There is a significant impact on online shopping for certain aspects of the mobile phone.

The mode of online shopping has been greatly influenced by the means of mobile marketing that involves the personalized information of the consumer's choice (Calvo-Porrall & Lévy-Mangin, 2015). This is dependent on the customer's accessibility from their mobile devices with good connectivity level and context awareness concerning the online shopping (Ström et al., 2014). Many of the consumers have relied on purchasing behavior of goods through online shopping by browsing on their mobile phones. Hence, the mobile phones have become a powerful tool for the retailers that has helped in increasing the sales, loyalty and conversions by tracking and mining the data of the consumer to target the purchasing behavior. To promote these activities at larger scale, the retailers have introduced applications related to mobile commerce sites that have been launched for mobile devices to promote the online shopping experience among the customers along with the acceptance of existing e-commerce sites for other mobile users.

RESEARCH METHODOLOGY

Research Design

The implementation of research design evolves the combination of different perspectives with coherent and logical facts to fulfil the objective of the research. In this study, descriptive research design has been followed for addressing the major objective of the research. The

descriptive research design involves the independent variables in study. New theories along with the current approaches are applied in this research to reach the objective of the study. This research design helps in developing the relationship between the existing variables and evolves descriptive methods for accepting and rejecting the hypothesis.

Data Collection

In this research, primary data collection methods have been used. The data has been collected through a survey method using questionnaires as a research instrument. Various participants have been selected and the questionnaire set has been distributed among those participants for understanding the views regarding the use of smartphones for e-commerce and m-commerce. The questionnaire has been developed by using a 5-point *Likert* scale to measure the efficiency of using the smartphones concerned with e-commerce platforms. Hence pilot study. This collected data would help in analyzing the result of the given study by testing the research hypothesis.

Sampling

The sampling techniques that have been used in the present study involve judgmental sampling (non-probability sampling). In this sampling technique, respondents do not belong to the respective research area. The understanding of the perspectives of the participants concerning the questions being asked at the interview process are highlighted. The total sample size in this study that has been approached is 200. And pilot has conducted with 100 sample to validate the questionnaire. The respondents are the users of smartphones doing online purchase of goods and services from last six month has been considered.

RESULTS AND DISCUSSION

Data analysis tools have been used for the analysis of the collected data to find out the results in the given study. The quantitative data has been analyzed by using statistical tools involving SPSS. Descriptive statistics, reliability testing, factor analysis and hypothesis testing using Chi square test have been used for analyzing the result of the given study.

Demographic Profile of the Respondents

The demographic profile of the respondents has been analyzed by the implementation of frequency tables and graphs for better understanding of the research study.

Table 1 involves the basic information of respondents concerned with the use of smartphones for e-commerce and m-commerce platforms. The personal information of the respondents such as age (26-30 years with 52% respondents), gender (male with 67% of the respondents), educational qualification (59% respondents with intermediate), marital status (57.5% being unmarried), Occupation (73.5% being the government employees) and monthly income (45% of respondents with income of Rs. 25,001-35,000) have been estimated in the form of descriptive statistics.

TABLE 1 DEMOGRAPHIC REPRESENTATION OF THE RESPONDENTS			
		Frequency	Percentage
Gender	Male	134	67.0
	Female	66	33.0
Age	18-25 years	55	27.5
	26-30 years	104	52.0
	31-40 years	40	20.0
	41-50 Years	1	.5
Education	SSC	78	39.0
	Intermediate	118	59.0
	Degree	4	2.0
Marital status	Married	85	42.5
	Unmarried	115	57.5
Occupation	Govt. Employee	147	73.5
	Private Employee	47	23.5
	Self-Employed Professional	5	2.5
	Student	1	.5
Monthly Income	5,000-15,000	14	7.0
	15,001-25,000	77	38.5
	25,001-35,000	90	45.0
	35,001-45,000	13	6.5
	45,000-55,000	6	3.0
How long have you been using internet	Less than 1 year	12	6.0
	1-5 years	93	46.5
	5-10 years	89	44.5

	Above 10years	6	3.0
Device for accessing internet	Laptop	72	36.0
	Desktop PC	101	50.5
	Mobile Phone/ Smart Phone	27	13.5
Average time spend on internet during day	30 minutes	1	.5
	>30 min ≤ 1 hour	43	21.5
	1-2 hours	37	18.5
	3-4 hours	48	24.0
	More than 4 hours	71	35.5
Types of internet connection	Wi-Fi	18	9.0
	Broadband	63	31.5
	Mobile Data	119	59.5
How often do you purchase goods	At least once in a week	72	36.0
	At least once in a 15 days	101	50.5
	At least once in a month	27	13.5
What types of goods you purchase	Electronic Goods	101	50.5
	Non-Electronic Goods	99	49.5
Which payment method you used most often when you buy products	Debit card/Credit card	67	33.5
	Net Banking	74	37.0
	Mobile Banking	59	29.5

Reliability Testing

Cronbach Alpha is a reliability test that has been conducted for measuring reliability (Table 2).

TABLE 2
RELIABILITY STATISTICS

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	n of Items
0.535	0.547	4
0.669	0.678	4
0.875	0.876	9
0.831	0.847	11

Purchasing products through mobile phones, experience, online payment methods and benefits while purchasing products through mobile phones have been tested for reliability in the given study. The strong internal consistency is represented by the value of alpha ranging between 0.70-0.90 and moderate reliability if the value is below to 0.7 but above 0.5. Hence, this analysis suggests that the reliability test in the study is acceptable (Taber, 2018).

Hypothesis Testing

The hypothesis for the given study has been analyzed and tested by using Chi square test through SPSS software. Chi square test has been used for analyzing the relationship between the variables of the given study. The null hypothesis of the Chi square test involves the relevance of independent variables in the study. In this study, total three hypotheses have been formulated and analyzed as per the objective criteria. If chi square value with p value determination is compared with the significant value in chi square test that helps in analyzing the rejection and acceptance of the null hypothesis. The hypothesis formulated for the present study have been illustrated below:

Hypothesis 1

Ha1: There is a significant relationship between the frequency goods ordered online and the type of goods ordered.

Ha0: There is no significant relationship between the frequency goods ordered online and the type of goods ordered.

TABLE 3 CHI SQUARE TEST FOR HYPOTHESIS 1			
Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.023 ^a	2	0.134
Likelihood Ratio	4.038	2	0.133
Linear-by-Linear Association	0.133	1	0.715
N of Valid Cases	200		

^a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.37

In hypothesis 1, the chi square value is calculated with higher p-value, indicating that p value is more than the significant value of 0.05 (Table 3). Therefore, it has been revealed that there is no statistical relationship between the frequency goods ordered online and the type of goods ordered.

Hypothesis 2

Ha2: There is a significant relationship between payment methods used and demographic variables like occupation, monthly income, use of the internet, and devices to access the internet.

Ha0: There is no significant relationship between payment method used and demographic variables like occupation, monthly income, use of the internet, and device to access the internet.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.397 ^a	6	0.880
Likelihood Ratio	2.711	6	0.844
Linear-by-Linear Association	0.054	1	0.817
N of Valid Cases	200		

^a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 0.30

In hypothesis 2 also, it has been observed that chi square value with higher p-value is more than the significant value (Table 4). Hence, there is no significant relationship between payment method used and device to access the internet.

Hypothesis 3

Ha3: There is a significant impact on online shopping for certain aspects of the mobile phone.

Ha0: There is no significant impact on online shopping for certain aspects of the mobile phone.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.554 ^a	4	0.470
Likelihood Ratio	3.954	4	0.412
Linear-by-Linear Association	1.801	1	0.180
N of Valid Cases	200		
^a . 4 cells (40.0%) have expected count less than 5. The minimum expected count is 0.50.			

In hypothesis 3, the chi square value is calculated with higher p-value implicating more than the significant value of 0.05 (Table 5). This indicates that there is no significant impact on online shopping for certain aspects of the mobile phone.

The analysis of the data has helped in understanding the perspectives of using smartphones for e-commerce platforms. The use of mobile phones in purchasing of goods and services have been clearly implicated that has helped in analyzing the objective of the study. The response of the respondents have identified the major growth factors for m-commerce. The questions utilizing growth drivers of using smartphones has supported in understanding the impact of smartphones on e-commerce. The hypothesis formulation and its analysis has evolved in determining the issues and challenges of using the smart phones for e-commerce.

CONCLUSIONS AND RECOMMENDATIONS

The present study has evolved the views on using smartphones for e-commerce. The use of smartphones have increased the adoption of e-commerce and m-commerce and helped in the growth of the concerned business platform at a rapid scale. Both the positive as well as negative perspectives are involved for using mobile phones in adopting e-commerce. Different growth drivers have supported in growing the business of e-commerce and m-commerce. The easy accessibility and availability of smart phones at affordable prices and good connectivity of the network has attracted several users to follow the trends of e-commerce. This adoption has changed the lifestyle and living standard of a large number of populations especially in developing countries like India.

The use of smartphones for using this platform have given freedom to the users to grow their business from browsing of the new products and buying those products by easy mode of payments. Therefore, it can be said that use of smartphones for e-commerce and m-commerce can prove to be a game changer for the online market in near future. New applications and innovations of other technologies have been beneficial for the growth of the business related to e-commerce platforms. Its use has brought in utilizing opportunities related to the transactions, bill payments and other modes of payment for personal and business transactions. Also, the fastest internet connectivity has evolved new possibilities of growth in e-commerce and the m-commerce market. Some issues related to the use of smartphones while opting for e-commerce has also indulged into

implication of several challenges that have been faced to ensure the positive aspects of usage of smartphones in e-commerce.

Some important changes should be recommended for adopting better use of smartphones for e-commerce. This would increase the growth of business in e-commerce and help in competing with several other e-commerce companies. Some of the recommendations are illustrated below:

- The establishment of wireless network technology should be implemented for better connectivity options as network connectivity is the key factor while enhancing the growth of e-commerce.
- The building of the infrastructure according to the internet connectivity is important for browning of e-commerce applications with high speed of internet availability in the smartphones.
- Availability of smartphones at affordable prices so that all levels of people can use the e-commerce platform for improving their lifestyle.
- Security is the most important factor that must be taken into consideration as the cases of fraudulent acts have been increasing due to the improper maintenance of the information regarding the transactions and other details.
- Proper government policies should be implicated regarding the awareness of using smartphones to enhance the living standard of the people.

The mode of payments through different applications and gateways should be innovated for better security and future reference.

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