

Studying the impact of Point of Differences of M-Commerce over E-Commerce: Are they really significant in providing edge to M-Commerce in developing areas of the world: Evidence from the customers of Karachi City

Muhammad Faisal Sultan *, Habib ullah Khan *, Shahid Khan **

* Lecturer KASBIT

** Assistant Professor KASBIT

Abstract- It has been evident through literature that previously M-Commerce is treated as the part of E-Commerce but with the passage of the time researcher's came o point that M-Commerce has its own unique features which can force customer to prefer M-Commerce over other type of virtual businesses. But there are some other risks which are associated with the use of M-Commerce therefore its use is not treated as the easy option for the customers. But in those location or countries where there is a scarce of resources and use of E-Commerce is not possible with ease customers are found to be more inclined towards M-Commerce and therefore the research work is required to check the level of significance of those points which are treated as point of difference for M-Commerce in the territories of Pakistan. Therefore this aim this research is conducted, and after applying tools from the Software known as Software packages for Social Sciences it has been found that the customers of one of the major city of Pakistan preferred M-Commerce over E-Commerce.

I. INTRODUCTION

Tremendous level of investigation has been done on the topics of E-Commerce and M-Commerce, not only in the academic field but also in world of business. As we know that these fields are not only in their growing phase which is responsible for the development of more and more ways to conduct business by using electronic or mobile mediums. But there is permanent and blur boundary that lies between both of these technologies (Okazaki, 2005) and therefore misconception can occur while conducting research in these associated disciplines. (Omonedo & Bocij, 2014)

According to International Business Machine Corporation E-Commerce is an activity which is the integral part of E-Business and its purpose is to sell products and service through internet. (IBM, 2001) There is a drawback of this definition as this does not include activities which are non commercial in nature like marketing and sharing of information. (Tiwari & Buse, 2007) But the definition of IBM introduces E-Business as a different and separate body which helps us in putting the other variety of commerce i.e. E-Commerce and M-Commerce in a nutshell. But it is a common practice that we use terms like E-Business and E-Commerce interchangeably which creates ambiguity for us whenever we want to differentiate between E-Commerce and other sub divisions of E-Business. Therefore clarity of concepts

associated with the difference between E-Commerce and M-Commerce is required. (Omonedo & Bocij, 2014)

According to the above mentioned divisions it is evident that E-Commerce is the integral part of E-Business and all the subsets of E-Commerce regardless of the amount of value they added falls under E-Business and therefore E-Commerce can be defined more comprehensively as "The conduct of activities that includes the transfer, exchange or sharing of information, goods and services over a network, particularly the internet, with the purpose of getting some form of direct or indirect commercial benefit". (Omonedo & Bocij, 2014, p 1-2) While other researchers define E-Commerce as the activity through which we conduct business activities over internet. (Mamaar, 2003 & Niranjnamurthey, Kavyahsree, Jagannath, Chahar, 2013) On the other side M-Commerce is classified as type of payment, featuring mobile phone (Au & Kauffman, 2008) Bur prior research work indicated that M-Commerce is the extension of E-Commerce (Wakefield & Whitten, 2006)

But the other research work argued that if we restrict the definition of m-commerce to those items which provides monetary value then it create some issues in understanding as through this definition the difference between M-Commerce and M-Business remains unclear. Research work argues that according to the prior definitions it is the prerequisite of M-Commerce that completion of all transactions must be completed through the use of telecom networks and therefore limited the scope of M-Commerce to those items only, which are qualitative and lesser important in nature. (Tiwari & Buse, 2007)

Furthermore research also provides the comprehensive definition of M-Commerce as any transaction which is through the remote access of computer associated network via electronic device in order to delegate rights of ownership or use. (Tiwari & Buse, 2007) This seems to be broader approach to underline those opportunities which we will achieve through the use of M-Commerce. (Omonedo & Bocij, 2014)

Conversely this definition also has some shortcomings as it excluded entire set of those activities which do not have the, direct commercial value. Therefore we have to adopt the more broader definition of M-Commerce, that "Content delivery (notification and reporting) and transactions (purchasing and data entry) on mobile devices such as Short Message Systems (SMS) devices, Wireless Application Protocol (WAP)-enabled devices, Personal Digital Assistants (PDA), etc." (Leung & Antypas,

2001) Through this definition authors want to indicate that M-Commerce is a type of commerce through the use of which we can perform transactions which are monetary as well as non-monetary in nature. (Omonedo & Bocij, 2014)

On the contrary the definition provided by this research does not seem to be dynamic in nature as it does not include the role of new technologies their uses, benefits etc as for example the use of Near Field Communication (NFC). Therefore the most updated definition of M-Commerce is “The conduct of activities that involves content delivery (notification and reporting) and transactions (purchasing, transfers, and data entry) on mobile devices capable of gaining access to a network, particularly the internet, which provides direct or indirect commercial benefit”. (Omonedo & Bocij, 2014, p 3611)

II. STATEMENT OF PROBLEM

The use of E-Commerce & M-Commerce is almost a compulsory element especially in the field of online retail marketing and due to this there is a significant increase in the user base of these technologies. (Omonedo & Bocij, 2014) In addition to this E-Commerce and M-Commerce have some common advantages like convenience and also some common disadvantages like security which is indicated by most of the researcher as the issue which affects these E-Commerce. (Clarke III., 1997; Coppel., 2000; Lawrence. & Tar, 2010 & Omonedo & Bocij, 2014) as well as M-Commerce in a negative manner. (Adebiyi, 2007 & Omonedo & Bocij, 2014)

Moreover it has been also indicated by the research work that E-Commerce users are dependent upon power supply in order to complete their transaction, but the users of M-Commerce are not dependent upon power supply and they can easily use the service easily from anywhere. (Omonedo & Bocij, 2014) While the other research highlighted this as the most important advantage of M-Commerce over E-Commerce (Niranjanamurthey, Kavyahsree, Jagannath, Chahar, 2013) and the research conducted in the topic of failure of E-Commerce highlighted that Pakistan is also a country which has lacking of infrastructure like level of security required for on-line

transaction, recurrent failure in electricity and scarcity of phone lines. (The Economist Intelligence Unit, 2006 & Petrony, 2009)

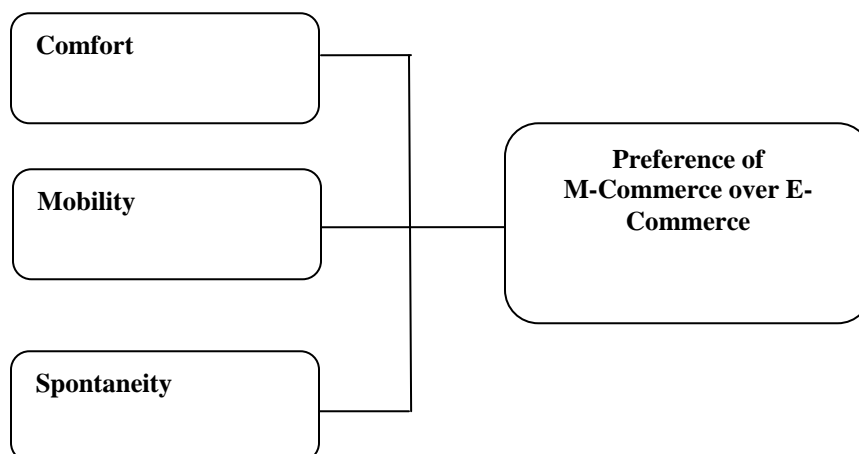
But with the increase in growth rate of mobile technology M-Commerce is now acting as the major tool for both organizational and individual consumers. As in Pakistan the growth rate in the use of mobile technology is phenomenal and covers more than the 62% of the entire population which is creating enormous opportunities for mobile network operators, banks and also for other financial institutions and we can say that the mobile commerce and its associated activities are the real future of business transactions. (Anus, Qureshi, Malik, Abbasi, Chaudhry & Mirza, 2011; Anwar, 2013 Ullah & Khan, 2012)

On the other hand both M-Commerce and E-Commerce has some advantages and disadvantages in common. On the contrary there are some advantages of one technology which is the disadvantage of the other one, therefore the purpose of research should not be the comparison of these technologies on general basis. But we should try to compare these on specific topics like preference of the technology over the other on basis of areas like developing or developed countries. (Omonedo & Bocij, 2014), as in developing countries there are several issues which are responsible for the lesser popularity of E-Commerce. (Wolcott et al., 2001 & Travica, 2002)

Coupled with the facts that in Pakistan the growth rate in the use of mobile phone is awesome (Ullah & Khan, 2012) and Pakistan is also treated as one of the developing countries as it has significant lacking of various resources like infrastructure, electricity etc (The Economist Intelligence Unit, 2006 & Petrony, 2009) Therefore there is a significant need of research in order to determine the preference of customers towards the type of virtual commerce in Pakistan.

The Research Question: Are factors of differentiation for M-Commerce working significant enough to provide edge to the technology over E-Commerce?

The Research Model: The research model for this descriptive research is as under



III. LITERATURE REVIEW

There are some advantages as well as disadvantages that are associated with the entire range of available technologies and we have to accept these advantages and disadvantages while adopting any technology. The point which is in limelight is that some of technologies have more advantages as compared to their disadvantages. Therefore before reaching any result we must also compare advantages and disadvantages of E-Commerce with M-Commerce. **(Omonedo & Bocij, 2014)**

It is evident that considerable number of users might believe that the advantages we are achieving through the use of both types of technologies are almost similar with some variation in the degree of benefit. But the point which is more fascinating is the degree of variation in achieved benefits is actually the point which causes preference for any one type of activity over another. As for example the most familiar and recurring benefit of both the technologies is convenience. On the contrary it can also be stated that in those areas of the world which are treated as developing regions or countries, M-Commerce provides more benefits to users as compared to E-Commerce and this might because means of using M-Commerce are easily available in comparison to the means of using the E-Commerce **(Omonedo & Bocij, 2014)**

On the other hand we already aware of the fact that, companies are achieving numerous benefits through their online visibility via use of E-Commerce, and these benefits includes various benefits like reduced production and transaction, accompanied by potential increase in sales **(Shahram., Danesh., Amiri., Mousavian. & Eskandarpour., 2011)**.

These benefits are not only limited to the producers and sellers but customers are also achieving some valuable benefits like they are experiencing decrease and search cost moreover they have also gained the access to more variety of products, through the use of E-Commerce. Moreover there are some other benefits of E-Commerce to companies are also decreasing the impact of distance from their business by increasing the ease of cross border transactions. But the introduction of M-Commerce expanded the boundaries of innovation even further. **(Omonedo & Bocij, 2014)**

IV. CONVENIENCE

As through E-Commerce we might conduct business by decreasing the impact of geographical boundaries, but by the introduction of M-Commerce we might conduct business from anywhere at any time according to our preference. That means we can conduct these transactions even when are on the move. In addition to this M-Commerce is also providing us the advantage of direct connection with the current and potential customers and also enable companies to deal effectively with the requirements and taste of specific groups and cultures. **(Tiwari. & Buse, 2007)** By using all these liberties companies are able to send their messages to their target markets based upon their position. **(Omonedo & Bocij, 2014)**

As the users of mobile phones have the leverage to be connected with internet anytime and therefore through the use of M-Commerce companies have the opportunity to send their

message to the potential and existing customer in the real time. The reason of enhancement of this feature through the use of M-Commerce is that location based information tends to become more emphatic and result oriented for the company. Say for example a hungry customer who received promotional coupon will passing through the fast food restaurant is treated as the more perspective customer to visit the restaurant as compared to the hungry one who received the promotional coupon, through computer situated in office. **(Omonedo & Bocij, 2014)**

Use of Latest Technology: While considering technological benefit of M-Commerce, then one of the most considerable advantages of M-Commerce over E-Commerce is the implementation of Near Field Communication (NFC). Through this technology telecom companies are able to interlink Rapid Frequency Identification (RFID) with mobile phones **(Ondrus. & Pigneur., 2007)** and via help of this integration customer now became able to pay through their cellular phones. While use of RFID technology also helps us in gaining convenient information by making closer contact of poster and their cell phone and these methods of making transaction and obtaining information is better than the E-Commerce. **(Omonedo & Bocij, 2014)**

Limitations of M-Commerce: Through the review of literature up till now, one might easily believe that M-Commerce is more advantageous than E-Commerce. But we all are aware of the fact that all the technologies have their own limitations, similarly E-Commerce and M-Commerce have their own limitations. But the point which makes this more interesting is that it is not only the M-Commerce which can deal with the limitations of E-Commerce, but E-Commerce is also capable of dealing with the limitations of M-Commerce. The smaller size of screen of mobile phone and type of display in most of the mobile phones is one of the hurdle and limitation of M-Commerce **(Clarke III., 1997)**

As in cell phone size of screen limits the display of information because of its shorter size in comparison to the screen of desktop computers and laptops which permits larger size of information to be displayed. and due to this size of display of information as well as chances of exposure to advertisements also decreased as compared to the user of laptops or desktop computers. **(Omonedo & Bocij, 2014)**

Security a Common Disadvantage of E-Commerce & M-Commerce : There are some factors which are treated as common disadvantage or limitation of E-Commerce and M-Commerce among them most common one is security which harms the growth of E-Commerce **(Vatanasakdakul., Tibben., & Cooper, 2004 & Lawrence. & Tar., 2010)** as well as M-Commerce. **(Ayo., Uyinomen., Fatundimu & Adebiyi, 2007 & Jianping, 2011)** which makes this evident that E-Commerce as well as M-Commerce have some disadvantages therefore according to researcher their comparison must be conducted on some specific bases like on preference of technology in developing and developed countries, rather than the general comparison of technologies and their edge over each other. Therefore in order to increase knowledge of our readers let us take the example of those countries which are in their developing phase. **(Omonedo & Bocij, 2014)**

Factors responsible for preference of M-Commerce over E-Commerce in Developing Countries: According to research under these locations M-Commerce found to be a type of virtual

Commerce which can be accessed more easily rather than E-Commerce because of high cost associated with computers (Kshetri, 2007) and lack of electricity. (Lawrence. & Tar., 2010) indeed power supply is one of the most critical issue which affect E-Commerce, as for conducting transaction we must connect our computers to power source (Omonedo & Bocij, 2014) which is treated as the scarce resource in the developing countries. (Lawrence. & Tar., 2010)

Therefore M-Commerce got preference in this regards as the users of M-Commerce can conduct any type of transaction by simple use of their mobile phones and the issue of power supply will be resolved by the extended recharge time of mobile phones. (Omonedo & Bocij, 2014)

In the paragraph given above we tried to provide various similarities & distinction between E-Commerce and M-Commerce based on prior research work conducted in this regards. While presenting distinctions between E-Commerce & M-Commerce some of the authors pointed the d the connectivity while in motion. But according to the research conducted in the year 2014 these methods of differentiation are not sufficient to provide dichotomy between E-Commerce and M-Commerce. That means if we restrict the scope of M-Commerce to cellular which have the ability to gain access to internet connections then we are trying to exclude the use of tablets and laptops from the definition of M-Commerce. (Omonedo & Bocij, 2014)

But according to the research conducted in the year there are to more key features of M-Commerce in addition to mobility of the device and these features are comfort of use and spontaneity in the delivery of message (38th Reference) While according to some other researchers other then these three features some other features are also are the part of M-Commerce, as for example, availability of service at remote locations, customization of messages and offerings as per the requirement of the user, on spot recognition of user and an easy method for analyzing the authenticity of user. (Tiwari. & Buse, 2007)

But some of these addition features of M-Commerce are also featured in the use of E-Commerce but with some variations in the applications. As for instance online shopping through laptop might looks more comfortable to consumer as compared to going for shopping physically. But if the consumer being able to shop online while relaxing at park, then it might produce more comfortable picture to consumer as compared to the E-Commerce. Similarly use of targeted advertisements is the feature which is attributed in E-Commerce as well as M-Commerce but as we discussed earlier the behavior of perspective customer while passing through the restaurant will be more focused towards purchase as compared to the one who is working in office. (Omonedo & Bocij, 2014)

But as these features are part of E-Commerce as well as M-Commerce therefore researchers are stick with the point that main features of M-Commerce are mobility, availability of service at remote locations, comfort of use and spontaneity in the delivery of message. That means that devices which are portable in nature say for example Tablet, Fablet, Laptops etc and able to connect with wireless network say for example Wi-Fi, Telecommunication network, internet and intranet etc are the means through which users can access M-Commerce. (Omonedo & Bocij, 2014)

In fact the phone which does not have any connection with the network but able to conduct transactions also falls under the category of M-Commerce. This provides us the clear difference among all devices which are related with the use of E-Commerce and M-Commerce say for instance any device which is able to perform commercial transactions in stationary condition represents the medium of E-Commerce. This means factors given above as the major difference of E-Commerce and M-Commerce like Mobility of the device, Comfort of use and Spontaneity in the delivery of message are the main source if we want to analyze the difference between these two types of virtual commerce as there is hardly any overlap associate with these features in both the forms of virtual commerce as these three features makes M-Commerce available each and everywhere at any instant of time. (Buellingen, , & Woerter, 2004 & Omonedo & Bocij, 2014)

As mentioned above personalization is one of the most important variable which is also a one of the most important source of differentiation between E-Commerce and M-Commerce and hence it is also proved by the review of prior research work that personalization can be specially helpful for the organization in developing effective customer relations. (Mohib Ullah & Khan, 2012)

Say for instant company must take into account information available to them as a result of the effective use of technique known as data mining and with the help of this achieved information they will be able to create a) Personalized services for their customers, b) Increase level of customer's satisfaction through advising and c) develop those programs which are able to develop customers loyalty in the long run. (Mohib Ullah & Khan, 2012)

While in addition to these benefits personalization is also beneficial for the customers of M-Commerce as it helps them in developing "Intelligent" decision system on the basis of information available to them. While on the other hand use of this type of virtual commerce technique is also in the benefit of the society as it enable businesses not to only connect with their customers but also with the other businesses. (Varshney, 2001)

Other opportunities which are available for M-Commerce and its prospects includes the use of Multimedia message through the use of which customer will achieve information in form of effective package of audio and video information (Leung, Chan & Chan, 2003) While the other advantage of M-Commerce is the transformation of physical office s into virtual offices and through the use of this organization can permit employees to work from remote locations at any time of the day. (Varsheny, 2001) While bidding is also made easy by the introduction of M-Commerce and its users are able to do perform bidding related tasks remotely and wirelessly. (Varsheny, 2003)

V. METHODOLOGY

This is a type of Descriptive Research as it is based upon significant amount of literature the study setting for this purpose was No-Contrived as for this purpose we approaches customers as well as employees of E-Commerce organizations in their natural work setting and ask t hem to fill out questionnaires. Moreover the time horizon in this case was Cross sectional as data is collected and analyzed once and there will be no

statistical testing on this data again. Researcher interference was minimal in nature and the type of research technique we used is Quantitative Technique. While the a sampling frame for this research was all the customers and employees of M-Commerce organization but for the ease of data collection and compilation we have selected all the customer s of M-Commerce living in reputed and well developed areas of Karachi city as our observed population, while frame of sampling for this research is all the customers of M-Commerce organizations lives in Defence, Fedral B Area, Gulshan e Iqbal, Muhammad Ali Society and North Nazimabad. While in order to obtain data we used

Convenience Sampling which is a popular method of Non Probability sampling of research and the sample size for this descriptive research was 456.

Statistical Testing:

In order to check the result of our quantitative research we have implemented Chi-square and Regression in order to have the detailed analysis of the factors which having an impact on the level of preference of M-Commerce.

Effect of Gender on the preference of M-Commerce over E-Commerce:

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.713 ^a	1	.100		
Continuity Correction ^b	2.413	1	.120		
Likelihood Ratio	2.721	1	.099		
Fisher's Exact Test				.111	.060
Linear-by-Linear Association	2.707	1	.100		
N of Valid Cases	491				

Effect of Living Area on M-Commerce over E-Commerce:

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	188.834 ^a	4	.000
Likelihood Ratio	235.784	4	.000
Linear-by-Linear Association	93.997	1	.000
N of Valid Cases	491		

Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.864 ^a	.672	.678		.28341

Coefficients^a

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	228.150	73.944		3.085	.002

Comfort	18.826	9.458	.288	1.991	.048
Mobility	-.394	.229	-.327	-1.719	.088
Spontaneity	3.065	.735	.343	4.172	.000

VI. ANALYSIS OF STATISTICAL TOOLS

After the analysis of implemented statistical tools it has been concluded by us:

That the M-Commerce is certainly a technology preferred in Karachi. But there is Difference in the rate of adoption of M-Commerce with respect to genders and different living areas of the city. city and among the three factors that are the point of difference of M-Commerce over E-Commerce two of the factors i.e. Comfort and Spontaneity have the significant impact on the preference of M-Commerce while the remaining one does not have the significant impact on the preference of M-Commerce.

Conclusion: At the compilation of work through selecting the important variables from literature review and by implementing statistical tools on these selected variables we became able to conclude that the factors which are indicated as the point of difference are creating impact on the level of preference of M-Commerce in Karachi city too that means the qualitative research conducted by Omonedo & Bocij, in the year 2014 has also an impact on the developing countries of South East Asia and further up gradation in the work will surely provide us the reference for working more emphatically on the betterment of technology and enhancement of revenue stream by linking M-Commerce with the needs of the customers of the developing countries

Research Areas for Further Research: We after conducting through research on the topic recommended that in future researchers must try to explore the effect of various cities on the preference of M-Commerce and its driving factors. Further more research might also be done on the preference of various categories of students in order to check their level of preference.

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AUTHORS

First Author – Muhammad Faisal Sultan, Lecturer KASBIT

Second Author – Habib ullah Khan, Lecturer KASBIT

Third Author – Shahid Khan, Assistant Professor KASBIT