

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

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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 although in some 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 any of the Under Developed Country or Least Developed Country like Pakistan. Therefore the data has been collected from the customers of mobile commerce of Pakistan and to collect data we have circulated the questionnaire through using Google docs in order to prove the claim through having significant sample size, and after applying tools it has been found that the customers of one of the major city of Pakistan preferred M-Commerce over E-Commerce. But some of the point of difference are misunderstood by the customers due to lack of their knowledge and hence companies needs to increase customer knowledge associated with significance of M-Commerce.

I. INTRODUCTION

Tremendous level of investigation has been done in order to conceptualize E-Commerce and M-Commerce not only in the context of academia but also in world of business. As we know that these fields are in their growing phase which is responsible for development of more ways for conduction of business through electronic or mobile mediums. Though research clarified that there is a blur but permanent boundary lies between both of these technologies (Okazaki, 2005) which can leads to misconception while conducting research in these associated disciplines. (Omonedo & Bocij, 2014) 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 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) Tough there is also a drawback of this definition as this does not include activities which are non-commercial 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 emphasis on some of the other variety of commerce like E-Commerce and M-Commerce. But it is a common practice that we use 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 literature, it is evident that E-Commerce is the integral part of E-Business and all the subsets of E-Commerce regardless of the 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 hand research of Wakefield and Whitten (2006) indicated M-Commerce is the extension of E-Commerce the research of 2008, classified M-Commerce is classified as type of payment, featuring mobile phone (Au & Kauffman, 2008) Though research work of Tiwari and Buse (2007) research work also argued that if we restrict the definition of M-commerce to 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. Thus this concept initiated more 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 definition is treated as the broader as compared to the prior definitions we have discussed in order to underline those opportunities which we will achieve through the use of M-Commerce. **(Omonedo & Bocij, 2014)** though 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 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)**

Moreover definition provided by this research does not seems 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) **(Omonedo & Bocij, 2014)**. 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. THEORETICAL FRAMEWORK & 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 e.g. convenience and also have some common disadvantages like security, which is even indicated as major issue for conduction of E-Commerce **(Clarke III., 1997; Coppel., 2000; Lawrence. & Tar, 2010 & Omonedo & Bocij, 2014)** as well as M-Commerce **(Adebiyi, 2007 & Omonedo & Bocij, 2014)**.

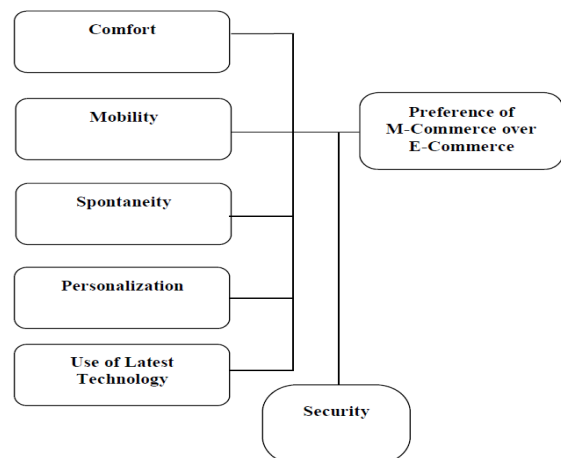
It has been also indicated by the research work that E-Commerce users are dependent upon power supply in order to complete their transaction, but users of M-Commerce are not and they can easily continue their use from anywhere. **(Omonedo & Bocij, 2014)** and this is even highlighted as the most important 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 treated as a country whgere there is a serious lacking of infrastructure e.g. 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. Thus 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)** Moreover this is also evident that 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 & we should try to compare these technologies through specific topics like preference of the technology over the other in 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. **(Wolcoot et al., 2001 & Travica, 2002)**

Coupled with the facts that in Pakistan the growth rate in the use of mobile phone in 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.

RESEARCH MODEL



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 with the adoption of our proffered 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) (Linked with Problem)**

It is evident that considerable number of users might believe that the advantages we are achieving through both of the above mentioned technologies are almost similar with some variation in degree of benefit they are providing. Thus 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 has been also under the consideration that M-Commerce is treated as more beneficial under those parts of the world which are included in developing ones, as M-Commerce is easily available in those regions when we compare its availability with the availability of 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 reduced production and transaction, accompanied by potential increase in sales **(Shahram., Danesh., Amiri., Mousavian. & Eskandarpour., 2011)**. Moreover benefits of E-Commerce are not only limited to the producers and sellers but customers are also achieving some valuable benefits like they are experiencing decrease in search cost moreover increase in their access to variety of products through E-Commerce is also a potent advantage. Moreover E-Commerce is also decreasing the impact of distance from 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)**

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)** Thus 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 capability to connect with internet anytime and thus companies have the opportunity to send their message to the potential and existing customer in the real time. In fact M-Commerce has more capability to

disseminate information more as compared to E-Commerce, say for example a hungry customers who received promotional coupon will passing through the fast food restaurant are 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)**

M-Commerce over E-Commerce in Developing Countries:

In the context of under developed countries 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 previous portion of research we tried to provide various similarities & distinction between E-Commerce and M-Commerce based on the basis of prior research work conducted in this regards. But while presenting distinctions between E-Commerce & M-Commerce some of the authors pointed the difference as connectivity while in motion. But according to the research conducted in the year 2014 this 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 phones which have the ability to gain access to internet connections then we are excluding the use of tablets and laptops from the definition of M-Commerce. **(Omonedo & Bocij, 2014)**

But according to the research conducted in the year 2004 there are two more key variables associated with M-Commerce i.e. comfort in use and spontaneity in the delivery of message **(Buellinen & Buse)**

Though according to the research of Tiwari and Buse (2007) there are some other variables too which are increasing the importance of M-Commerce i.e. Availability of Service at Remote locations, Customization of Messages and Offerings as per the requirement of the user, On spot Recognition of user and Easy Method for analyzing the authenticity of user. **(Tiwari. & Buse, 2007)**

But it has also been observed that, with minor variations these variables of M-Commerce are also indulged in E-Commerce, as for instance online shopping through laptop might look 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)**

Although 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 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 i.e. Mobility of the device, Availability of service at remote locations, 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 or variables 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 beneficial for society as it enable businesses not to only in connecting 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 offices 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)**

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)** Thus 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)**

Moreover 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 & Adebisi, 2007 & Jianping, 2011)** 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)**

III RESEARCH DESIGN:

This is a type of “*Descriptive Research*” as it is based upon significant amount of literature, though the type of investigation was “*Co-relational*” as data was extracted from researches on different contexts. Moreover in order to collect data properly we have circulated questionnaire through Google docs which can be filled by respondents at ease. Thus the study setting for this purpose was “*Non-Contrived*” and the time horizon in this case was “*Cross sectional*”.

IV SAMPLING DESIGN:

The frame of sampling for this research was all the customers 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*”. Furthermore 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 250

(*Jianping, 2011*) which makes this evident that E-Commerce as well as M-Commerce have some disadvantages therefore according to researcher their comparison must conducted on some specific bases like on preference of technology in developing and develop 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*)

V STATISTICAL TESTING:

Initially researchers tested the reliability for all of their research variables through the use of Cronbach Alpha and after analysis it has been found that all the variables are reliable to test further through the use of inferential statistics. Reliability is shown in Table No. 01

Analysis: As highlighted all the variables have reliability value more than 80% thus according to the research the reliability is appropriate enough to test. Thus we are going to implement further statistical tools in order to clarify the impact of each and every independent variable which is a Point of Difference (PoD) of M-Commerce over E-Commerce. But as we have a moderating variable as security therefore initially we draw research model through SPSS, which is as shown in Figure No. 01

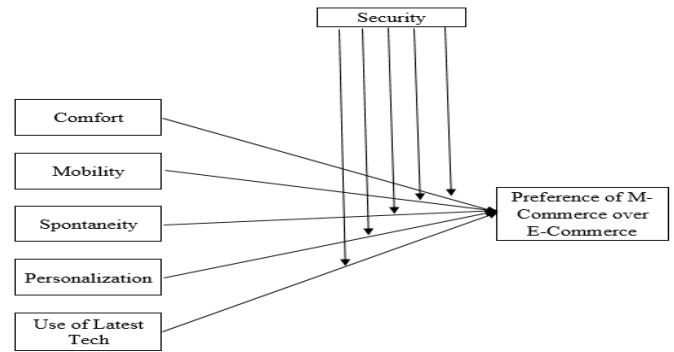


Figure No. 01

Then after these we have implemented Hayes Model in order to check the impact of all the independent variables as well the moderator on the relationship of independent and dependent variables. The relationship and numeric values can be observed in Table No. 01

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Model = 1
Y = Preferen
X = Comfort
M = Security

Statistical Controls:
CONTROL= Mobility Spontane Personal Use_of_L
Sample size
250
*****
Outcome: Preferen

Model Summary
R          R-sqMSE      F      df1df2      p
.9791     .9587      .0553   801.6450    7.0000   242.0000   .0000

Model
      coeff      se      t      p      LLCIULCI
constant  -.1647   .1648  -.9993   .3186  -.4893   .1599
Security  2.4387   .1918  12.7161  .0000  2.0609   2.8165
Comfort  -2.4821   .1838 -13.5031  .0000 -2.8442  -2.1200
int_1     .0093    .0179   .5195   .6039  -.0260   .0447
Mobility   .6263    .0318  19.6690  .0000   .5636   .6890
Spontane   .0231    .0186   1.2414   .2156  -.0135   .0597
Personal  -.0037    .0152  -.2411   .8097  -.0336   .0262
Use_of_L   .3959    .0366  10.8085  .0000   .3238   .4681
Technology

Product terms key:
    
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int_1  Comfort  X  Security
R-square increase due to interaction(s):
R2-chng      F      dfldf2      p
int_1      .0000      .2699      1.0000      242.0000      .6039

*****
Conditional effect of X on Y at values of the moderator(s):
Security      Effect      se      t      p      LLCIULCI
1.9107      -2.4643      .1820      -13.5434      .0000      -2.8227      -2.1059
2.7600      -2.4564      .1832      -13.4088      .0000      -2.8173      -2.0955
3.6093      -2.4485      .1857      -13.1870      .0000      -2.8142      -2.0827

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:
95.00
----- END MATRIX -----

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Table No. 02

Analysis: After the analysis of reliability for each of the variable associated with the research we have implemented inferential test known as “Hayes Model” in order to estimate the impact of each and every point of difference of M-Commerce on its level of preference. Thus after evaluating results for each variable it has been observed that “*Personalization*” and “*Spontaneity*” are those PoDs which are not creating impact upon the preference of M-Commerce. Moreover there is also no impact of the moderation i.e. “*Security*”. Other than this all the PoDs associated with M-Commerce i.e. “*Comfort*”, “*Mobility*” and “*Use of Latest Technology*” all have significant impact on the preference of M-Commerce.

Discussion: After analysis it has been observed that Comfort, Mobility and Use of Latest Technology are the PoDs which are really perceived as PoDs in the scenario of Pakistan. This means customer will prefer those devices and application which enables them in communicate in better, easier as well as in comfortable way. Thus these all in combination will also increase time spent on social media and probability of purchase. Therefore in short it can be stated that M-Commerce is actually preferred because of is convenience and comfort in association with projections of advertisements, information and content through latest technology which will foster interest of viewers.

Managerial Implications: Through this research manager working in advertising and marketing companies will understand that spontaneity which is treated as major PoD of M-Commerce is actually not producing desired results on the minds of the customers. Moreover there is also no impact of Risk i.e. customers are not reluctant in using their cell phones, devices, PDAs to communicate, shop and socialize. Thus it is evident that focusing on those messages which gives discount to customers

during their presence in nearby locations of malls, restaurants and shopping malls etc is not workable plan in Pakistan. This might be because of increased in the rate of inflation and customers fell hesitant in shopping unnecessarily. Moreover sending messages without proper tracking and profile management is one of the most common habit of marketers in recent days thus customer are least bothered in paying attention towards these promotions, hence resulted only in discomfort and dejection.

Therefore managers must understand that theme of marketing through M-Commerce must be changed and companies must use M-Commerce more in order to market services, consumer durable goods and hybrid goods etc rather than FMCG products and food stuff. In addition to these one must also understand that M-Commerce is the best way to provide information at times when customers feel relax. Therefore in order to optimize the sales therefore frequency of advertisements must be increase after 5 to 6 PM in Pakistan.

VI RESEARCH AREAS FOR FURTHER RESEARCH:

We after conducting thorough research on the difference of Point of difference between E-Commerce and M-Commerce recommended that further research is need to be conducted by dividing the country in different provinces in order to check the level of perception for the residents of different cities. Moreover the research might further be enhanced by diving the respondents on the basis of their demographics into various sub groups. At the last research might further be enhanced by linking it with the Mixed Methods which might entails the perception of experts of the industry especially working with data proving companies.

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