

A Review of Various M-Commerce Adoption Techniques

Ashutosh Kumar Gupta^{1*}, Kuber Dwivedi¹, Anurag Jha¹

¹Mechanical Engineering Department,

G.L.Bajaj Institute of Technology and Management, Greater Noida, India¹

ABSTRACT

The use of mobile device has become wide unfold and continues to grow considerably in recent years. The mobile cellular market is that the quickest growing telecommunication market in terms of subscriber numbers and recognition. Initial and operating cost, potency of mobile device, security, convenient , interface design, pricing for location, leisure support, transfer speed and regularly disconnection factors that are widely have an effect on M-commerce adoption. The foremost aim of this work is to review various studies done so far to spot some factors that have an effect on the adoption of M-commerce supported traditional technology models like Theory of Reason Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Diffusion Innovation theory (DOI).

Keywords-M-Commerce, Perceived usefulness, Technology Acceptance Model, Consumer attitude towards use of M-commerce.

1INTRODUCTION

The evolution of electronic commerce (e-commerce) additionally has brought with it a new marketing channel called mobile promoting (m-marketing). Mobile promoting is that the use of the mobile medium as a method of promoting communications. Promoting specialists contemplate the mobile device as an especially promising promoting tool to beat major challenges in obtaining time and a spotlight from consumers. It additionally provides opportunities to focus on messages at customers in far better ways that than the current mass media. The benefits of using web EC, efficiency, convenience, broader alternatives, competitive rating, rich information, and variety are acknowledged. Consequently, the advances in fashionable web EC, as well as advertising, shopping, investing, banking and different on-line services (e-mail, data seeking, etc.) have created potential for people to move with the net in their daily lives. The quantity of web users has so continuing to extend. Such web use can facilitate MC development and applications.

As with “Electronic” business, “Mobile” business can expertise enhanced transactions and possibly increase profits and revenues. Yet, limited understanding of the customers’ pressing demands and lack of technological infrastructure are going to be impediments to MC success.

II. LITERATURE REVIEW

Some of the very important paper related to analysis for improvement of heat transfers are reviewed and mentioned here.

Matthew S. Eastin et al (2016) [18] they have investigated usually understood privacy issues like collection, control, awareness, unauthorized secondary use, improper access and a new tailored dimension of location following, trust in mobile advertisers, and attitudes toward mobile commerce, to predict mobile commerce engagement by utilize the theoretical foundation of communication privacy management (CPM), and supported that management, unauthorized access, trust in mobile advertisers, and attitude toward mobile commerce considerably predicted 43rd of the variance in mobile commerce activity.

WengOnn Lee et al (2016) [19] they have examined the relationships between e-service quality dimensions of potency, system convenience, fulfillment and privacy, and relationship quality dimensions of satisfaction, trust and commitment with customer loyalty in mobile commerce services by using the Structural Equation Modeling (SEM) technique. The result contributed considerably in filling up the data gap concerning the determinants of client loyalty in mobile commerce services. they have also assist mobile commerce service suppliers, marketers and managers in their higher cognitive process as well as up their profitableness, product and services.

DakshataArgade et al. (2015) [17] they have thought of a system, referred to as Mobile Commerce Predictor (MCP), for mining and prediction of mobile user behaviors underneath the context of mobile commerce. the most objective of this framework is to predict future m-commerce behaviour of the user on the premise of his current group action. They have also present results of applying this strategy to transaction information obtained from sample information (i.e. journey Works) that shows effectiveness of the strategy over existing ones.

MehrbakhshNilashiet. al (2015) [20] they have revealed the real importance level of trust factors on customers trust and decision making in choosing the appropriate trustworthy web site by using Analytic Network method (ANP) from the Multi-Criteria decision making (MCDM) approaches and fuzzy logic from AI (AI) approaches and terminated that decision-making system helps shopping websites managers and service suppliers to establish the trust level of their websites and adequately enable them to enhance the web site quality.

Geoffrey doctor Tanakinjal (2012) [8] they have investigated to explores the connection between technical information, perceived risk and also the innovation characteristics for the adoption of mobile selling and that they

found during this analysis is that not all innovation characteristics (i.e. relative advantage and complexity) will be used to form a favourable or unfavourable perspective towards the innovation.

RahmathSafeena,, et al (2011) [12] they have considered 5 factors perceived quality, perceived easy use, subjective norm, and shopper awareness regarding mobile banking and perceived risks related to mobile banking and points out that these factors have a robust and positive impact on customers to just accept mobile banking industry.

A.H.M. SaifullahSadiet. al. (2011) [13] they have studied to spot some factors that have an effect on the adoption of Commerce in malaysia based on traditional technology models like Theory of Reason Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM) and Diffusion Innovation theory (DOI). During this analysis, an exploratory correlational analysis was conducted on different measures to spot the underlying factors influencing the adoption of M-commerce and revealed that all the 13 factors were statistically vital and may have an effect on the adoption of m-commerce.

PoulcheriaBenou (2010) [10] they must be ready to adapt their interface, services and content towards a particular context. this can be the challenge address in this paper, through an abstract model that features a transparent and formal definition of context, and also the depiction of its specific characteristics as information, additionally a technique for its determination and also the presentation of an extension of class diagrams of UML for its illustration, all of them tailored to the special nature of mobile commerce applications.

Judy van Biljon, et al. (2007) [4] they have investigates technology adoption models as a technique to match itinerant style to users technological desires and expectations. supported the literature study we tend to integrate three existing technology adoption models so judge the planned model with interviews and a survey. They contribute a model for representing the factors that influence itinerant adoption.

Harry Bouwman (2007) [5] they have mentioned the importance of understanding the role of (physical, cognitive, security and economic) barriers and advantages (perceived recreation price and perceived flexibility) of mobile services yet because the role that useful variations of mobile service bundles play within the method of actual and future use of those bundles and that they have based that understanding the particular and future use is simply doable once the subtleties of the precise bundles, i.e. the characteristics of the concerned services, area unit taken into consideration.

Tariq Bhatti (2007) [6] they have given an extended technology acceptance model that integrates innovation diffusion theory to analyze what confirm user mobile commerce acceptance. This paper models the factors relationships like perceived quality, perceived easy use, personal originality, subjective norms, behavioural management and intention to adopt mobile commerce. the bulk of positive relationships between perceived easy use,

subjective norms, behavioural management and intention to adopt area unit supported by empirical knowledge. Results additionally reveal that behavioural management and subjective norms influence perceived easy use that affects then their adoption intention.

HaiqiFeng et al. (2006) [3] they have explore and establish the key factors for with success implementing mobile commerce in businesses. we tend to initial offer an end-user perspective of mobile commerce so a value-add-based acceptance model is planned supported the analysis. a group of things, that is deemed to absolutely have an effect on the success, was known, and a theoretical framework of CSF is given.

NiinaMallat et al (2006) [16] they have presented results from a study of mobile ticketing service acceptance publically transportation and prompt that quality and advantages of the mobile ticketing service are perceived otherwise in several use things which use scenario contains an important result on use intention also the results indicate that traditional adoption models ought to be increased with the employment scenario and quality constructs to raised perceive and justify the particular factors, that confirm the employment of mobile services.

Jen-Her Wu et al (2005) [1] This study presents an extended technology acceptance model (TAM) that integrates innovation diffusion theory, perceived risk and value into the tam to analyze what determines user mobile commerce (MC) acceptance and based that each one variables except perceived easy use considerably affected users' behavioural intent. Among them, the compatibility had the foremost vital influence. Moreover, a striking, and somewhat puzzling finding was the positive influence of perceived risk on behavioural intention to use.

Kenneth C.C. principle (2005) [2] they have done analysis to explores however Singaporeans are influenced to adopt the M-commerce by Technology Acceptance Model (TAM) to look at factors affecting Singaporean attitudes toward this rising mobile technology and applications and it's based that shopper originality, past adoption behavior, technology cluster adoption, age, and gender have an effect on their adoption behavior. Results from multiple correlation analyses any reveal that male respondents tend to perceived M-commerce favourably.

KengSiau, (2004) [11] they have targeted to grasp trust in mobile commerce and to spot factors that are necessary for trust development. The analysis builds on Siau and Shen's framework that depicts 2 key factors influencing trust in mobile commerce. This analysis not solely validates and expands on the present framework, however additionally provides an distended abstract model for future analysis.

Kwok-Yan Lam et al (2003) [9] they described a light-weight security mechanism for shielding electronic transactions conducted over the mobile platform. During typical mobile computing surroundings, one or a lot of the transacting parties' area unit supported some wireless hand-held devices. This analysis is a component of our effort in planning security infrastructure for electronic commerce systems that extend from the wired to the wireless net. A

light-weight mechanism was designed to fulfill the protection desires in face of the resource constraints. The planned mechanism is proved to be sensible in real readying setting.

UpkarVarshney et al (2002) [7] they have mentioned that a way to with success outline, architect, and implement the mandatory hardware/software infrastructure in support of mobile commerce. Also, to form mobile commerce applications a reality, we tend to address networking needs, discuss support from wireless carriers, and present some open analysis issues.

Adam P. Vrechopoulos et al (2002) [14] they have centered on the investigation of client attitudes and behaviors against mobile commerce in Europe, towards identifying the important success factors for fast its diffusion during this explicit market and it absolutely was found that mobile commerce penetration in Europe is on its infancy. However, up mobile devices, planning a lot of easy shopping interfaces, developing effective applications and services, along with reducing costs, influencing opinion leaders and determination security, bandwidth and coverage issues, represent the important success factors for fast mobile commerce diffusion in Europe.

III CONCLUSION

As a developing technique, the success of M-commerce in India, moreover as alternative elements of the world, still depends on several alternative factors. These factors embody government rules, telecommunications, and infrastructure, selling ways of service suppliers, and also the talents to shield client privacy and transaction security. There are some serious boundaries to our analysis is that we didn't embody socio-demographic variables in our exploration. There are several ideas and variables that we could have enclosed in our analysis and which may be thought of relevant to predicting the particular and future use of mobile services. several investigator haven't targeted variables like gender, age, income, occupation and education, for sensible reasons moreover as earlier experiences with analysis of datasets this is observed from literature survey that

- Sociology, perceived ,entertainment and timeliness has been not covered in majority of the research work in TAM model for developing attitude of customer towards adopting M-Commerce technology.
- Technical knowledge is also a barrier in using M-commerce technology, which has not been reviewed in most of the research papers.
- Behavior control and subjective norms has been not significantly used to developed Perceive usefulness and finally to develop attitude of customer towards the use of M-Commerce in Various model.

REFERENCES

1. Matthew S. Eastin, Nancy H. Brinson, Alexandra Doorey, Gary Wilcox “Living in a big data world: Predicting mobile commerce activity through privacy concerns”*Computers in Human Behavior* 58 (2016) 214-220.
2. WengOnnLeea,, Lai Soon Wongb “Determinants of Mobile Commerce Customer Loyalty in Malaysia”*Procedia - Social and Behavioral Sciences* 224 (2016) 60 – 67.
3. DakshataArgade, HariramChavan “Improve Accuracy of Prediction of User’s Future M-Commerce Behaviour”,*Procedia Computer Science* 49 (2015) 111 – 117.
4. MehrbakhshNilashi, OthmanIbrahim, VahidRezaMirabi ,LeiliEbrahimi ,MojtabaZare, “The role of Security, Design and Content factors on customer trust in mobile commerce”, *Journal ofRetailingandConsumerServices*26(2015)57-69.
5. Geoffrey Harvey Tanakinjal, “Exploring Technical Knowledge, Perceived Risk and the Innovative Characteristics in the Adoption of Mobile Marketing”,*American International Journal of Contemporary Research* Vol. 2 No. 8; August 2012.
6. RahmathSafeena, NisarHundewale, and Abdullah Kamani “Customer’s Adoption of Mobile-Commerce A Study on Emerging Economy”, *International Journal of e-Education, e-Business, e-Management and e-Learning*, Vol. 1, No. 3, August 2011.
7. A.H.M. SaifullahSadi, MohamadFauzanNoordin, “Factors influencing the adoption of M-commerce: An exploratory”, *Proceedings of the 2011 International Conference on Industrial Engineering and Operations Management* Kuala Lumpur, Malaysia, January 22 – 24, 2011.
8. PoulcheriaBenou · Costas Vassilakis,The conceptual model of context for mobile commerce applications,*Electron Commer Res* (2010) 10: 139–165.
9. Judy van Biljon, Paula Kotzé, *Modelling the Factors that Influence Mobile Phone Adoption*, SAICSIT 2007.
10. Harry Bouwman ,ChristerCarlsson Francisco J. Molina-Castillo, Pirkko Walden “Barriers and drivers in the adoption of current and futuremobile services in Finland”, *Telematics and Informatics* 24 (2007) 145–160.
11. Tariq Bhatti “Exploring Factors Influencing The Adoption Of Mobile Commerce”, *Proceedings of European and Mediterranean Conference on Information Systems 2007 (EMCIS2007)* June 24-26 2007.
12. HaiqiFeng, Tamara Hoegler, WolffriedStucky “Exploring the Critical Success Factors for Mobile Commerce”*Proceedings of the International Conference on Mobile Business (ICMB’06)* 0-7695-2595.
13. NiinaMallat, Matti Rossi, VirpiKristiinaTuunainen, AnssiÖörni “The Impact of Use Situation and Mobility on the Acceptance of Mobile Ticketing Services”, *Proceedings of the 39th Hawaii International Conference on System Sciences - 2006*.
14. Jen-Her Wua, Shu-ChingWanga, “what drives mobile commerce? An empirical evaluation of the revised technology acceptance model”, *Information & Management* 42 (2005) 719–729.

International Conference on Computational and Experimental Methods in Mechanical Engineering

G.L. Bajaj Institute of Technology and Management, Greater Noida (U.P) India

ICCEMME-2017

8th-9th December 2017, www.conferenceworld.in

ISBN: 978-93-86171-85-6

15. Kenneth C.C. Yang, "Exploring factors affecting the adoption of mobile commerce in Singapore" *Telematics and Informatics* 22 (2005) 257–277.
16. KengSiau, Hong Sheng and Fiona Nah "A qualitative investigation on consumer trust in mobile commerce", *Int. J. Electronic Business*, Vol. 2, No. 3, 2004.
17. KrassiePetrova, "Mobile Commerce Adoption: EnduserCustomer Views" *Proceedings of the 2004 GBATA International Conference* (pp. 604-615). June 2004, Cape Town, South Africa.
18. Kwok-Yan Lam, Siu-Leung Chung, Ming Gua, Jia-Guang Sun "Lightweight security for mobile commerce transactions, *Computer Communications* 26 (2003) 2052–2060.
19. UpkarVarshney, Ron Vetter, "Mobile Commerce: Framework, Applications and Networking Support" *Mobile Networks and Applications* 7, 185–198, 2002.
20. Adam P. Vrechopoulos, Ioanna D. Constantiou, Nikos Mylonopoulos, IoannisSideris, *Critical Success Factors for Accelerating Mobile Commerce Diffusion in Europe*. 15th Bled Electronic Commerce Conference Reality: Constructing the Economy Bled, Slovenia, June 17 - 19, 2002.