Project Dissertation

On

"ADOPTION OF M-GOVERNMENT IN INDIA"

Submitted By:

Varun Gupta

2K15/MBA/57

DSM, DTU

Under the guidance of:

Dr. Shikha N Khera

Assistant Professor

DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road, Delhi 110042

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CERTIFICATE FROM THE INSTITUTE

This is to certify that the Project dissertation titled '**ADOPTION OF M-GOVERNMENT IN INDIA'**, is a bona fide work carried out by Mr. Varun Gupta, of MBA 2015-17 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Degree of Masters of Business Administration.

Signature of HOD (DSM)   **Signature of Mentor**

Seal of HOD

Place:

Date:

DECLARATION

I, Varun Gupta, student of MBA 2015-17, of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42, declare that the project report on 'ADOPTION OF M-GOVERNMENT IN INDIA', submitted in partial fulfilment of Degree of Masters of Business Administration, is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge.

This report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

Varun Gupta

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ACKNOWLEDGEMENT

EXECUTIVE SUMMARY

In the past decade, the mobile communication technologies revolution and the growth of high-speed broadband and wireless access have begun to make a considerable impact on economic and social development worldwide, reinforced by the expansion of the public sector's capacity to leverage the use of ICTs to improve its internal functioning, as well as its interactions with citizens and businesses. However, the level of access to fixed broadband, particularly in developing countries, is lower than the access to mobile technology. This is due, in great part, to the high cost of the broadband technology and required infrastructure, in comparison to the cost-effectiveness and impact of mobile technology on citizens' lives and on their interaction with governments.

By creating new and expanded communication channels, mobile technologies provide access in areas where the infrastructure required for Internet or wired phone service is not a viable option. The development of mobile communication technologies has not only created a new venue for governments to reach out to a much greater number of people than ever, but it has also brought citizens previously unimaginable opportunities to communicate with each other conveniently, and to access both public and private information and services, with diminishing time and space boundaries and limits. Cheap and ready-for-use mobile devices are removing existing barriers and are empowering citizens to connect to governments to access a wide range of information and services in a number of policy areas, e.g. legal information, health, education, finance, employment, transportation and public safety. Furthermore, new generation mobile phones, or "smart phones", and the realisation of 3G and 4G networks with new built-in functions and a plethora of mobile applications, are providing unprecedented possibilities in terms of communication, networking and interactive experiences to actors across the globe.

M-Government – the adoption of mobile technologies to support and enhance government performance and foster a more connected society – can help improve government performance and strengthen public good governance provided that the emphasis is not placed on the "m". Focus should be indeed on the needs of the public sector and of the end-users, be these citizens or businesses, to ensure that technology is exploited to reorganise the way civil

servants work and to meet the needs of citizens through improved service delivery".

Innovating service delivery

M-Government is not intended to eliminate existing on-line and off-line modalities of service delivery, but it affords powerful and transformational capacity to the public sector not only by increasing access to existing services, but also by enabling the design and delivery of new services (e.g. through new levels of civic engagement in policy development and democratic decision-making). Hence, it supports those governments that recognize that they have reached 'the limits' with their current approaches to service delivery. Examples include considerable advancements in education and innovative health services.

Empowering digitally deprived citizens

By empowering citizens, m -government is improving the quality of life of many individuals who were previously digitally excluded. Specifically, mobile technologies enable convenient access to public information and services. Citizens in remote areas can, for example, receive improved m-health assistance, notifications and emergency medical alerts. Mobile technologies also facilitate financial transactions (e.g. process cash transfers, deposits and withdrawals, payroll credits, international remittances and similar banking activities) and allow the delivery of educational content to students who would normally have limited access to public education. However, as there are still limits in the capacity of m-government to reach out to certain segments of the population, and in order to not widen the digital gap, governments should avoid enforcing the use of mobile channels, and provide access to new technologies only to those who are willing to use them.

Intensifying partnerships and exchange between the public and private sectors

Mobile technologies are also bringing new momentum to the business world. Key advances in wireless technology, faster and wider networks, larger device displays and better technical platforms for applications are creating opportunities for citizens, while allowing companies to reduce costs of both subscriptions and physical infrastructure. The private sector's growing knowledge and expertise may have a major impact on public sector activities. For example, more sophisticated mobile technologies are being used to support more efficient business processes in the public sector, through real-time communication and quick data access, and more agile and mobile public work forces. This is a key driver for exploring intensified and new public-private partnership models that allow governments to understand what is possible and adequate, and the private sector to better comprehend the public sector's needs and offer relevant solutions.

Enhancing public sector performance and good governance

Mobile communication technologies can be expected to provide governments with significant opportunities to achieve greater cost optimisation, improved communication, and data exchange, expanded service delivery and stronger digital equality. With mobile technologies, information and actions can be co-ordinated in any location and among agencies, improving collaboration and co-ordination between public authorities across levels of government; this is particularly critical in emergency response and crisis management. Furthermore, mobile phone penetration extends outreach and access to groups which are often difficult to reach, e.g. citizens in rural areas, and expands governments' accountability and transparency to a higher number of citizens.

In conclusion, the rapid uptake of mobile technologies – even in remote locations of low-income countries – together with the emergence of many innovative mobile applications and services, has radically increased the potential for ICT to play a constructive role in supporting ubiquitous good governance,

and in fighting poverty. In the years to come, governments worldwide will be challenged by the need to look into developing m-government by adopting strategies that will enable them to harness the opportunities offered by mobile technologies and maximise their benefits.

Mobile government builds upon two decades of governments developing their e-government capacity. This experience shows that adopting any new technology implies adjustments which in most cases are not quick and bear costs in terms of infrastructural, organisational and cultural changes.

Adoption rate, demographics, and economy will influence the transition time, and governments will need some time to design, develop and implement national m-visions. This will not be an easy task and the extent to which the potential of m-government will be exploited will depend on government's' capacity to capture new opportunities brought about by mobile technologies in a meaningful manner, given the national needs; on their ability to build on progresses already made in e-government development; and on their readiness to address the challenges and barriers to m-government highlighted in this report.

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CHAPTER I

1. INTRODUCTION

In the past decade," the mobile communication technologies revolution and the growth of high-speed broadband and wireless access have begun to make a considerable impact on economic and social development worldwide, reinforced by the expansion of the public sector's capacity to leverage the use of ICTs to improve its internal functioning, as well as its interactions with citizens and businesses". However, "the level of access to fixed broadband, particularly in developing countries, is lower than the access "to mobile technology. This is due, in great part, "to the high cost of the broadband technology and required infrastructure", in comparison to the "cost effectiveness and impact of mobile technology on citizens' lives and on their interaction with governments".

By creating new and expanded communication channels," mobile technologies provide access in areas where the infrastructure required for Internet or wired phone service is not a viable option". The development of "mobile communication technologies" has not only "created a new venue for governments to reach out to a much greater number of people than ever, but it has also brought citizens previously unimaginable opportunities to communicate with each other conveniently", and "to access both public and private information and services, with diminishing time and space boundaries and limits". Cheap and ready-for-use mobile devices are "removing existing barriers and are empowering citizens to connect to governments to access a"

Wide range of information and services in a number of   policy areas, e.g. "legal information, health, education, finance, employment, transportation and public safety". Furthermore, new generation mobile phones, or "smart phones", and the realization of "3G and 4G networks" with new built-in functions and "a plethora of mobile applications, are providing unprecedented possibilities in terms of communication", networking and "interactive experiences to actors across the globe" .

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1.1 WHAT IS M_GOVERNMENT?

M-Government – "the adoption of mobile technologies to support" and "enhance government performance and foster a more connected society" – can help improve "government performance and strengthen public good governance" provided that the emphasis is not placed on the "m". "Focus should be indeed on the needs of the public sector and of the end-users", be these citizens or businesses, "to ensure that technology is exploited to reorganize the way civil servants work and to meet the needs of citizens through improved service delivery".

Internet banking is a world leaping technology which is now making "payments and transactions easier for people" and "providing them with the status of worldwide purchasers or consumers". Be it retail marketing or e-commerce "this new technology is creating a kind of boom for the economy".

Innovating service delivery

M-Government is not intended to eliminate existing "on-line and off-line modalities of service delivery", but it affords "powerful and transformational capacity to the public sector not only by increasing access to existing services", but also by "enabling the design and delivery of new services" (e.g. through new levels of "civic engagement in policy development" and "democratic decision-making"). Hence, it supports those "governments that recognize" that they have reached 'the limits' with their current approaches to service delivery. Examples include "considerable advancements in education and innovative health services".

Empowering digitally deprived citizens

By empowering citizens, m-government is improving "the quality of life of many individuals who were previously digitally excluded". Specifically, "mobile technologies enable convenient access to public information and services". Citizens in remote areas can, for example, receive "improved m-health assistance, notifications and emergency medical alerts". Mobile technologies also "facilitate financial transactions" (e.g. "process cash transfers, deposits and withdrawals, payroll credits, international remittances and

similar banking activities") and allow" the delivery of educational content to students who would normally have limited access to public education".

However, as "there are still limits in the capacity of m-government to reach out to certain segments of the population, and in order" to not widen the digital gap, governments should "avoid enforcing the use of mobile channels, and provide access to new technologies only to those who are willing to use them".

Intensifying partnerships and exchange between the public and private sectors

Mobile technologies are also bringing new momentum to the business world. Key advances in" wireless technology, faster and wider networks, larger device displays and better technical platforms for applications are creating opportunities for citizens, while allowing companies to reduce costs of both subscriptions and physical infrastructure". The private sector's" growing knowledge and expertise may have a major impact on public sector "activities. For example," more sophisticated mobile technologies are being used to support more efficient business processes in the public sector", through real-time communication and quick data access, and "more agile and mobile public work forces". This is a key driver for exploring intensified and new public-private partnership models that "allow governments to understand what is possible and adequate, and the private sector to better comprehend the public sector's needs and offer relevant solutions".

Enhancing public sector performance and good governance

Mobile communication technologies "can be expected to provide governments with significant opportunities to achieve greater cost optimization, improved communication, and data exchange, expanded service delivery and stronger digital equality. With mobile technologies, information and actions can be coordinated in any location and among agencies, improving collaboration and co-ordination between public authorities across levels of government"; this is particularly critical in emergency response and crisis management.

Furthermore, "mobile phone penetration extends outreach and access to groups which are often difficult to reach, e.g. citizens in rural areas, and expands governments' accountability and transparency to a higher number of citizens".

In conclusion, "the rapid uptake of mobile technologies – even in remote locations of low-income countries – together with the emergence of many innovative mobile applications and services, has radically increased the potential for ICT to play a constructive role in supporting ubiquitous good governance", and in fighting poverty. In the years to come, governments "worldwide will be challenged by the need to look into developing m-government by adopting strategies that will enable them to harness the opportunities offered by mobile technologies and maximize their benefits in order to achieve the policy goals".

Mobile government "builds upon two decades of governments developing their e-government capacity. This experience shows that adopting any new technology implies adjustments which in most cases are not quick and bear costs in terms of infrastructural, organizational and cultural changes".

Adoption rate, demographics, and economy will influence the transition time, and governments "will need some time to design, develop and implement national m-visions. This will not be an easy task and the extent to which the potential of m-government will be exploited will depend on governments' capacity to capture new opportunities brought about by mobile technologies in a meaningful manner, given the national needs; on their ability to build on progresses already made in e-government development; and on their readiness to address the challenges and barriers to m-government".

1.2 EMERGENCE OF M_GOVERMENT IN INDIA
1.2.1 THE INDIAN CONTEXT
Mobile Seva

Mobile Governance (m-governance): Mobile governance (m-governance) aims "to leverage wireless and new media technology platforms, mobile devices and applications

for delivery of public information and services to all citizens and businesses". It aims at "widening the reach of, and access to, public services to all citizens in the country, especially in the rural areas by exploiting the much greater penetration of mobile phones in the country". It also leverages "the innovative potential of mobile applications in providing public services". The overall strategy aims at making India a world leader in harnessing the potential of mobile governance for inclusive development. The initiative has been "conceptualized and formulated by the Ministry of Electronics and Information Technology (MeitY), Government of India. Centre for Development of Advanced Computing (C-DAC), a MeitY organization, is the technical implementing agency for the project".

1.2.2 What is Mobile Seva ?

Mobile Seva is an "innovative initiative aimed at mainstreaming mobile governance in the country. It provides an integrated whole-of-government platform for all Government departments and agencies in the country for delivery of public services to citizens and businesses over mobile devices using SMS, USSD, IVRS, CBS, LBS, and mobile applications installed on mobile phones. The diagram below depicts the various components of Mobile Seva".
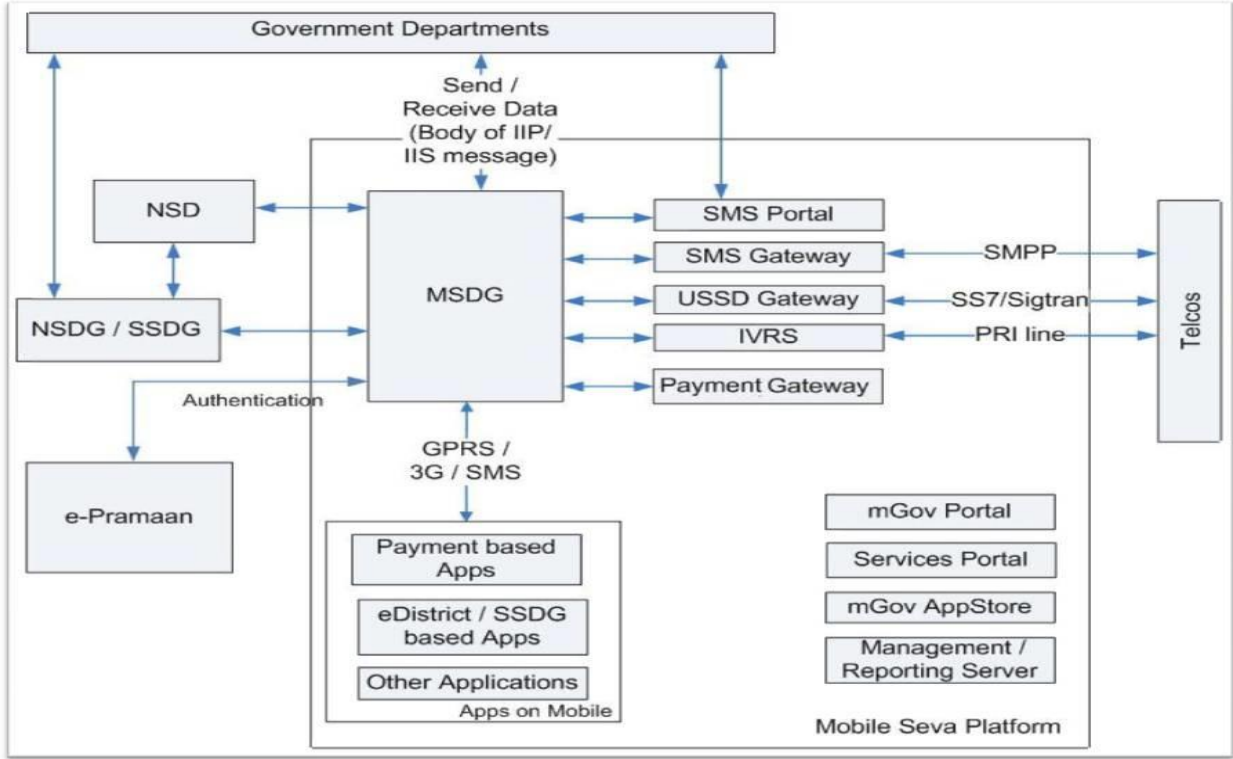
Figure 1A

1.2.2.1 Sate wise Mobile Applications

S No.		Service Type (Central/State/UT) ▲/▼	Total No. of Applications ▲/▼	Total No. of Downloads ▲/ ▼
1	+	Central Government Service	513	283676
2	+	General Application	230	31326
3	+	Others	34	22305
4	+	Andhra Pradesh	26	16736
5	+	Arunachal Pradesh	4	1383
6	+	Bihar	12	4912
7	+	Chandigarh	4	4798
8	+	Chhattisgarh	4	3278
9	+	Delhi	4	1229
10	+	Goa	11	3598
11	+	Gujarat	10	1342
12	+	Haryana	7	3461
13	+	Himachal Pradesh	35	14313
14	+	Jharkhand	10	21857
15	+	Karnataka	4	1259
16	+	Kerala	11	1058
17	+	Madhya Pradesh	13	13496
18	+	Maharashtra	68	27800
19	+	Manipur	11	5877
20	+	Meghalaya	6	852
21	+	Mizoram	2	76
22	+	Nagaland	1	812
23	+	Odisha	12	645
24	+	Punjab	20	17162
25	+	Rajasthan	30	21545
26	+	Sikkim	61	31090
27	+	Tamil Nadu	2	718
28	+	Uttar Pradesh	3	29844
29	+	West Bengal	27	12647
30	+	Demo Application	62	18848

Figure 1B

1.2.3 Why Mobile Seva ?

Considering the huge penetration of mobile phones in the country "especially in the rural areas, it has become imperative to offer government services over mobile-devices to ensure that the vision of the National e-Governance Plan (NeGP) to provide government services to citizens near their doorsteps becomes a reality".

Mobiles can become the most common access devices "for government services

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provided through the national e-Governance exchange middleware comprising National e-Governance Services Delivery Gateway (NSDG), State e-Governance Services Delivery Gateway (SSDG) and various domain gateways, e.g. Passport Gateway, MCA21 Gateway, etc. The current architecture of NSDG/SSDG or the domain gateways should be supplemented with a framework for mobile governance".

A separate infrastructure for Mobile Seva is required as:

Seamless integration with backend department needs to be ensured through existing NSDG/SSDG eGov exchange infrastructure.

Common interface needs to be provided for "various mobile based services, e.g., Short Message Service (SMS), USSD (Unstructured Supplementary Service Data), IVRS (Interactive Voice Response System), CBS (Cell Broadcasting Service), LBS (Location Based Services), mobile applications, etc".

There is a need to generate as well as "render the contents for delivering services on the mobile platform as mobile devices present a constrained environment".

1.2.4 MOBILE SEVA SUBSYSTEMS

Mobiles Service Delivery Gateway (MSDG):-
The MSDG enables delivery of "public services over mobile devices through various mobile based channels, such as SMS, USSD, IVRS and mobile applications. As MSDG has been developed based on IIP/IIS (Interoperability Interface Protocol / Interoperability Interface Specifications) standards of Government of India, it provides seamless integration with the backend departments through existing NSDG/SSDG eGovernance exchange infrastructure. Backend departments are connected to the MSDG for mobile based services".
MSDG consists of the following components.

1.2.4.1 SMS Gateway

The SMS Gateway provides the common service of "SMS to the eGovernance exchange and is used to deliver SMS based services to all citizens and businesses. It supports both push and pull based services". Using push services, common informational services can be pushed to citizens as a group. Departments can use "the SMS Portal or a programmatic interface to push SMSs to citizens". Citizens can also request for specific information through pull based SMS services. Short codes 51969 and 166 have been allotted by Government of India for mobile governance services in the country. These "short codes have already been made operational for pull services. In addition, a long code, 9223166166, has also been made operational for pull services. At any time, At anyplace and At anywhere for the customers. 24/7 access and valued information about their account to the customers".

1.2.4.2 USSD

Unstructured Supplementary Service Data (USSD) is a "session based service unlike SMS, which is a store and forward service. USSD can be used by the user to send command to an application in text format". USSD acts as a trigger for the application. Currently this service is mainly being used for checking balance in financial accounts and mobile prepaid recharge. A three digit short code "*166# has been allotted to Mobile Seva for this service". USSD is "more interactive as compared to SMS but nothing is stored on the phone". This can be very useful for "submitting requests for a service through an interactive menu and for tracking their status".

1.2.4.3 IVRS (Interactive Voice Response System)

IVRS is an example of a "computer-telephone integration (CTI)". The most common way for "a phone to communicate with a computer is through the tones generated by each key on the telephone keypad". These are known as "dual-tone multi-frequency (DTMF) signals". A computer needs special hardware called "a telephony board or telephony card to understand the DTMF signals produced by a phone". A simple IVR system only requires a computer hooked up to a phone line through a telephony board and some

IVR software. The IVR software allows "pre-recording of greetings and menu options that a caller can select using his telephone keypad. More advanced IVR systems include speech-recognition software that allows a caller to communicate with a computer using simple voice commands". Speech recognition software "has become sophisticated enough to understand names and long strings of numbers. In the context of mobile governance, the IVRS application is intended to serve the C2G and G2C services within the e-governance domain". Through IVRS based services, "status enquiries for a large number of services can be automated and the requisite information provided to the service seekers without causing undue overheads on the e-governance infrastructure".

1.2.4.4 Location Based Services (LBS)

Location Based Services (LBS) can be very useful for "the departments for customizing their services according to the location of the service seeker". There are various ways in which location of the service seeker can be determined. Most popular are GPS and cell tower based locations. GPS based location is more accurate compared to cell tower based location. MSDG "will connect to such systems and will provide a unified interface to departments or developers of mobile applications, which can be used by them for customizing or developing the applications".

1.2.4.5 Cell Broadcasting Services (CBS)

Cell Broadcasting Services (CBS) are "particularly relevant when certain notifications or alerts have to be sent to citizens in a particular area". This can be very helpful in case of disaster or emergency situations. MSDG "will connect to all the telecom operators for CBS for this service and will provide a unified interface to the departments". Departments can then use this unified interface for notifications and alerts in a particular area.

1.2.4.6 Mobile Payment Service

Many transactional government services involve "some amount of payments to be made by the service seekers to the Government departments". A Mobile Payment Gateway

has been "developed incorporating various channels for making electronic payments through mobile devices". These include "credit/debit/cash/prepaid cards, SMS based payments through Mobile Money Identifier (MMID), mobile wallets, net banking, etc". The Mobile Payment Gateway "has been made available to Government departments and agencies for integration with their applications". Citizens can use this facility to make payments for various government services through their mobile devices.

1.2.5 BENEFITS OF M_GOVERNANCE

- Cost Saving
- Proficiency
- Transformation/Modernization of public sector organizations
- Added convenience and flexibility
- Better services to the citizens
- Easy interaction

1.2.6 FUTURE OF M_GOVERNMENT IN INDIA

In India, "m-Governance is still at new stage and still need for more improvement to get a better m-Governanc"e. While many innovative applications are underway in both private sector as well as government domains, "it may be a little premature to celebrate its success and still need for the improvement". The proposed suggested plan for the m-Governance in India "is to give better e-Governance environment in each phase". The proposal covers "the strategy that could be accepted by Government of India in order to make m-Governance success and get acceptance by all citizens". Currently, "m-Governance in India is still facing challenges in both management and technology". Hence, to improve the m-Governance in India, "some suggestions have been recommended which are to overcome those challenges in order to implement m-Governance and make it successful in next few years".

1.3 OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE:

➢ The objective is to study the adaption of M_Governace in India and to investigate the factors that influence the intention of Indian citizens to use a mobile government (mGov) platform and to promote the factors which govern intention to adopt m_governance .

SECONDARY OBJECTIVES:

➢ To analyze how much a customer is satisfied with the m_governance services.
➢ To know about the customer appropriation on m_governance services.
➢ To find the reasons which affected the adoption of m_governance services amongst consumers
➢ To find the factors behind passive use of m_governance services even after having traditional governance.
➢ To study the relationship of Perceived Usefulness in accordance with consumer appropriation of m_governance.
➢ To study the relationship of Perceived Ease of Usage in accordance with Consumer appropriation of m_governance.
➢ To study the relationship of Social Influence in accordance with consumer appropriation of m_governance.
➢ To study the relationship of Compatibility in accordance with consumer appropriation of m_governance.
➢ To study the relationship of Trust in Government in accordance with consumer appropriation of m_governance.
➢ To study the relationship of Trust in Government in accordance with consumer appropriation of m_governance.
➢ To study Demographics in accordance with the consumer appropriation of m_governance.

CHAPTER II

2. REVIEW OF LITERATURE

This section shows the review of literature. An outline of Mobile Government is introduced trailed by its relationship of moving from eGov to mGov, the adoption of eGov and mGov in India, the research model, research questions, and research hypotheses.

2.1 INTRODUCTION

With the far-reaching reception of the Internet and mobile devices, more and more governments are using mobile government (mGov) technology to supply services electronically to the public and other significant partners. Governments are transferring to mobile-based technology to facilitate better interaction with citizens and to enhance the quality of services (Abdelghafar &Magdy, 2012). The mGov approach provides access to several areas of government services; for example, education, climate gauging, medical services, payment services, and metro services, among others. Using smartphones, citizens can access mGov from anywhere at any time, thus saving them time and expense. The use of mGov has the further advantage of optimizing transparency between government and its citizens by cutting through bureaucratic structures and procedures (Alsenaidy & Ahmad, 2012).

It has been suggested that the UAE government should accelerate the implementation and adoption of mGov. This has been based, in part, on the fact that there has been a significant increase in the use of Internet services in India over the last few years. According to August 2016 statistics from the Telecommunications Regulatory Authority (TRA), the number of registered mobile Internet users (371 million) in India (By June 2017) exceeded the number of fixed Internet line subscribers (80 million). In 2010, the high number of mobile devices in India exceeded the number of computers and laptops in several countries worldwide (Ekong & Eknong, 2010).

The high rate of smartphone use among citizens has prompted many governments to move toward mGov as a means of providing adequate services to their citizens. However, despite the widespread use of mobile Internet-enabled devices, citizens in many countries still prefer the traditional channels for communicating and interacting with government departments. This fact is reflected in the low adoption rate of electronic services, especially in developing countries. In India, the Hindustan Times (2015)

reported that a survey-based study in 2015 showed that, although 96% of respondents had smartphones, 65% of them never used the phone's mobile applications for government services.

Theoretical investigations have shown that the success of mGov services requires engagement and use by the people (Al-Thunibat et al., 2011b). With regard to India, however, there is a scarcity of research in Indian context for understanding the adoption factors of mGov . Because of the scant number of studies pertaining specifically to India, there is a critical need for research that will provide better insight into and understanding of the factors required for better implementation (Wu et al., 2009).

Considering the initial phases of implementation (Dwivedi et al., 2013), the low rate of adoption of mGov services, and the absence of thorough studies in the context of India, the current study investigates citizen adoption of various components that might be essential for empowering across-the-board acceptance of mGov services (smartphone-based applications) in the context of India.

2.2 From eGov to mGov

Most governments around the world use the most recent information and communication technology (ICT) to improve services provided to nationals through eGov (Mofleh & Wanous, 2008; Choudrie & Dwivedi, 2005). There has been a quick development of mobile devices and Internet-empowered mobile phones in several countries (Hassan, Jaber, & Hamdan, 2009; Ekong & Eknong, 2010). This development has influenced governments to move toward mGov as the next stage for improving the quality and availability of services (Al-khamayseh, Lawrence, & Zmijewska, 2006; Antovski & Gusev, 2005). Among several factors that influence the move from eGov to mGov are the infiltration of mobile devices, the existence of computing power on smart mobiles, and the availability of mobile applications.

2.3 eGov and mGov Adoption in INDIA

Despite all the country's progress in the IT sector, cyberspace initiatives, "India still lags considerably in global indices of human development and information society parameters". While the "IT triangle" of the cities Bangalore, Chennai and Hyderabad is showing good progress in eGov, "other areas although in the race, can't be classified as the ones who are fast catching up". According to a recent NASSCOM-McKinsey report (http://www.nasscom.org), "the eGov infrastructure and services sector in India is $1 billion market for IT vendors, software and training companies". Thus although there is a huge incentive for "the corporates to venture in this arena, the current scene justifies our claim that the eGov status in India is in want for more, plainly speaking". Current Online services provided by the Indian government's National Informatics Centre include "passport application, registration procedures, school exam results, trade guidelines, telemedicine, customs EDI, and the Land records computerization in Talukas (administrative unit)". But the average citizen's statistics are to be seen and then studied critically. The non-availability of "relevant online data is again a hindrance for critically taking this issue in this paper". Based on the active interaction and interviews "with several IT Secys, Governors, IAS officers, and average citizens, the author hypothesizes that for the eGov or for that matter mGov to be successful, some element of e-Commerce/ m-Commerce (eCom/mGov) should be taken into account". Right now this is not fully there or is there is none at all. A simple example "was cited by a high ranking Rural Development Official that there is no incentive for a farmer to go to the e-gov site?" "…If it would have been that the rates of fertilizers, crop details, online help about the problems etc were there, then may be the 'average illiterate citizen farmer' may have happily embraced the portal and its contents!" That's one case of rural governance. For "urban areas, however, the most critical issues are TIME and EASE". NGOs and voluntary organizations, "like "Grameen Sanchar Society" etc are expected to play a key role in taking the Net/Mobile governance tools to rural areas, as well as in compiling traditional knowledge in sectors like medicine, cuisine, and folk culture". For eGov, "while Internet backbone costs are coming down, last mile costs are still high in

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India, thus leading to low penetration of phones and Internet". By way of comparison, India with a population of over a billion has only 25 million phone connections – "as compared to China which has 150 million phone connections today increasing at the rate of almost 30 million new phone connections each year". The current spread of the mobile phones and the mobile gadgets in India implies that this is one market which has great scope and hence the use of such fast growing backbone could be utilized for the quick implementation of mGov.

Heeks (2008) argues that "it is critical to explore and understand the adoption factors for electronic government, noting that just 15% of eGov projects are effective". One of the main problems "associated with the high rate of implementation failure is the lack of understanding regarding the major factors that may cause citizens to embrace eGov (Sang & Lee, 2009)".

In India, the Hindustan Times (2015) reported in 2015 that, although 96% of respondents in a survey-based study had smartphones, 65% of them had never used smart-government (mGov) applications. The newspaper also reported that 71% of respondents had fewer than 10 applications on their smartphones. These facts indicate that there is a problem regarding mGov adoption in India. It is essential, therefore, that research be conducted to pinpoint the basic factors affecting citizen conduct with regard to accepting and using mGov services in Indian context, particularly since mobile services (e.g., mPayment and mBanking) are available and accessible.

A review of the literature shows that the adoption of mGov (mobile- applications-based), or what is now called "smart-government" in GCC, is not considered seriously by academicians and professionals. By reviewing the literature on the adoption factors of eGov, mGov, and other mobile-based services (e.g., mBanking, mCommerce, and mMarketing), the current study aims to identify the main determinants for acceptance of mGov, which would assist in mGov implementation.

There have been two studies that urge eGov adoption. The studies focused on web-based services or web-portal government services. In the first study, Mouakket (2010) conducted an empirical study and proposed a modified technology acceptance model (TAM) with a set of exogenous influences; namely, security issues, website features,

computer self-efficacy, and quality of Internet connection. Structural equation modeling (SEM) analysis revealed that the extended TAM model predicted citizen intention to use eGov. The analysis also revealed the significant effect of these factors on citizens, mediated by perceived ease of use (PEOU) and perceived usefulness (PU). In the second study, Dahi and Ezziane (2015) examined the adoption factors of the e-government using an extended TAM. Their empirical analysis of results from 845 participants showed that all proposed factors – perceived usefulness (PU), perceived ease of use (PEOU), subjective norms, and trust – significantly influenced citizens' intentions to use eGov.

An mGov study by El Sherif et al. (2016) focused on the effect of these factors on citizens' satisfaction, service quality, and efficient transactions and found that speed, privacy, and trust are the main determinants of attitude toward mGov services. In terms of service quality, the study found that availability and accessibility and reliability and accuracy are important elements in determining attitude toward mGov services.

2.4 CONCLUSION

It can be plainly observed from the above reviews that there is not one single review in India examining all the key indicators of adoption of m_governament in India. It can likewise be seen from the review that awareness of mobile governance affecting m_governance adoption by consumers. Also statistic elements like age, gender, wage and education have blended outcomes to the extent where impact on mobile governance is concerned.

In achieving its goal, the current study reviewed previous studies and found that several researchers have identified different eGov and mGov adoption factors. These include, for example:Yong et al. (2014); Mahmud et al. (2012); Al-Thunibat et al. (2011); Ovais et al. (2013); Alomari et al. (2012); Rehman et al. (2012); Hussein et al. (2011); Carter (2008); and Al-Awadhi &Morris (2008). The current study also reviewed recent studies relating to other mobile computing-based services (mServices; e.g., mBanking,

mCommerce, mMarketing, and mPayment) since these services are also provided via mobile phones. Previous research studies are summarized in Table 1.

Table 2A: Previous Studies of mGov, eGov, and mServices Adoption Factors

Author(s)	Research Field	Region	Dependent Variable	Adoption Factors
Abu-Shanab (2015)	mGov	Jordan	Intention	Social influence, perceived usefulness, perceived ease of use, perceived compatibility, and perceived responsiveness
Yong et al. (2014)	mGov	China		Perceived ease of use, near-term usefulness, long-term usefulness, integrity, benevolence, image and social influence
Abdelghaffar & Magdy (2012)	mGov	Egypt	Intention	Perceived usefulness, compatibility, awareness, social influence and face-to-face interactions
Mahmud et al. (2012)	mGov	India	Adoption	Perceived ease of use, perceived security, perceived reliability, and relative advantage
Al-Thunibat et al. (2011c)	mGov	Malaysia	Intention	Social influence, services quality, perceived usefulness, perceived risk, cost of service, perceived

				compatibility, trust in government, trust in technology and services quality

Table 2A (Cont'd)

Author(s)	Research Field	Region	Dependent Variable	Adoption Factors
Abu-Shanab (2014)	eGov	Jordan	Intention	Perceived ease of use, perceived usefulness, social influence, privacy and security, trust in government, trust in technology, information quality, trust in e-government
Dahi & Ezziane (2015)	eGov	UAE	Intention	Perceived usefulness, perceived ease of use, subjective norms, and trust
Mouakket (2010)	eGov	UAE	Intention	Perceived usefulness, perceived ease of use, quality of internet connection, computer self-efficacy, security issues and website features
Alomari et al. (2012)	eGov	Jordan	Adoption	Trust in government, website design, beliefs, complexity and perceived usefulness
Rehman et al. (2012)	eGov	Pakistan	Intention	Information quality, awareness, perceived ease of use, service quality and transaction security

Hussein et al. (2011)	eGov	Malaysia	Intention	Perceived ease of use and perceived usefulness, trust of the government, image, compatibility and service quality
Sang et al. (2010)	eGov	Cambodia	Intention	Perceived usefulness, relative advantage, and trust, perceived ease of use
Carter (2008)	eGov	USA	Intention	Perceived usefulness, trust of the internet, and perceived ease of use

Table 2A (Cont'd)

Author(s)	Research Field	Region	Dependent Variable	Adoption Factors
Suki et al. (2010)	eGov	Malaysia	Intention	Perceived usefulness, perceived ease of ese, attitude, facilitating conditions, self-efficacy, subjective Norms, perceived behavioral control, interpersonal influence, external influence
Cyril et al. (2008)	mServices	Malaysia	Intention	Perceived usefulness, trust, perceived ease of use
Hans et al. (2005)	mServices	Germany	Intention	Social norms, perceived information utility, perceived utility, and a negative impact like perceived risk

Luarn & Lin (2005)	mServices	Taiwan	Intention	Perceived ease of use, perceived usefulness, credibility, self-efficacy, financial cost
Wu et al. (2009)	mServices	Taiwan	Intention	Perceived risk, perceived ease of use, perceived usefulness, and financial cost

Table 2A (Cont'd)

Author(s)	Research Field	Region	Dependent Variable	Adoption Factors
Gerhard et al. (2009)	mServices	Germany	Intention	Perceived compatibility, Individual mobility, Subjective norm, perceived usefulness, perceived security, and Perceived ease of use
Riquelme et al. (2010)	mServices	Singapore	Adoption	Perceived usefulness, social norms and social risk, ease of use, and social norm
Lee & Han (2015)	mServices	Korea	Intention	Perceived usefulness, convenience and monetary values
Bhatti (2007)	mServices	UAE	Intention	Perceived ease of use, subjective norms, behavioral control

Jeong & Yoon (2013)	mServices	Singapore	Adoption	Perceived usefulness perceived ease of use, and perceived self-efficacy
Sanjeev & Krishna (2013)	mServices	India	Intention	Perceived ease of use, expressiveness, trust, and perceived usefulness
Li & Lv (2007)	mServices	China	Intention + actual use	Perceived risk, cost, perceived usefulness, perceived playfulness, perceived ease of use

Table 2A (Cont'd)

Author(s)	Research Field	Region	Dependent Variable	Adoption Factors
Kuo & Yen (2009)	mServices	Taiwan	Intention	Perceived ease of use, perceived cost, and perceived usefulness
Tang & Chiang (2009)	mServices	Taiwan	Intention	Perceived ease of use, perceived usefulness

CHAPTER III

3. METHODOLOGY OF RESEARCH

This is the empirical study to investigate the factors that influence the adoption of mGov or smart-government services (mobile-applications-based services) in India. To test the research model, we designed an empirical study using a survey tool that measures the variables anticipated to predict a person's intention to use mGov. The questionnaire constructs are defined in research method.

3.1 RESEARCH DESIGN

This study bases the construction of its model on major theories of technology adoption (e.g., TAM, DOI, and trust model). This work also proposes a set of factors that are hypothesized to affect the intention of citizens to use mGov (mobile-applications-based). The factors used in this study are adapted from the earlier relevant works in areas of eGov, mGov, and several mServices (e.g., mBanking, mCommerce, and mMarketing). The factors that influence intention to use (ITU) mGov are as follows.

- Perceived ease of use (PEOU)

- Perceived usefulness (PU)

- Social influence (SI)

- Trust in technology (TIT)

- Trust in government (TIG)

- Perceived compatibility (PC)

The anticipated relationships and research tool are depicted in Figure 3. As shown, the integrated research framework identifies six main factors as significant predictors of Indian citizens' intention to use mGov. The framework, relies on several adoption theories, such as the technology acceptance model (Davis,1989); diffusion of innovations (Rogers, 1995), and trust model (Carter & Be´langer, 2005) and follow previous literature on mGov and eGov studies; namely, Yong Liu et al. (2014); Mahmud et al. (2012); Abdelghaffar & Magdy (2012); Al-Thunibat et al. (2011); Babullah et al. (2015); Dahi & Ezziane (2015); Sabraz et al. (2015); Omar & Al-Nasrallah (2014); Ovais et al (2013); Alshehri et al. (2012); Alomari, et al. (2012); Rehman et al. (2012); Hussein et al. (2011); Sang et al. (2010); Carter (2008); Al-Awadhi & Morris (2008); and Suki et al. (2010).

The definition of the proposed variables and measurement items are shown in Table 2.

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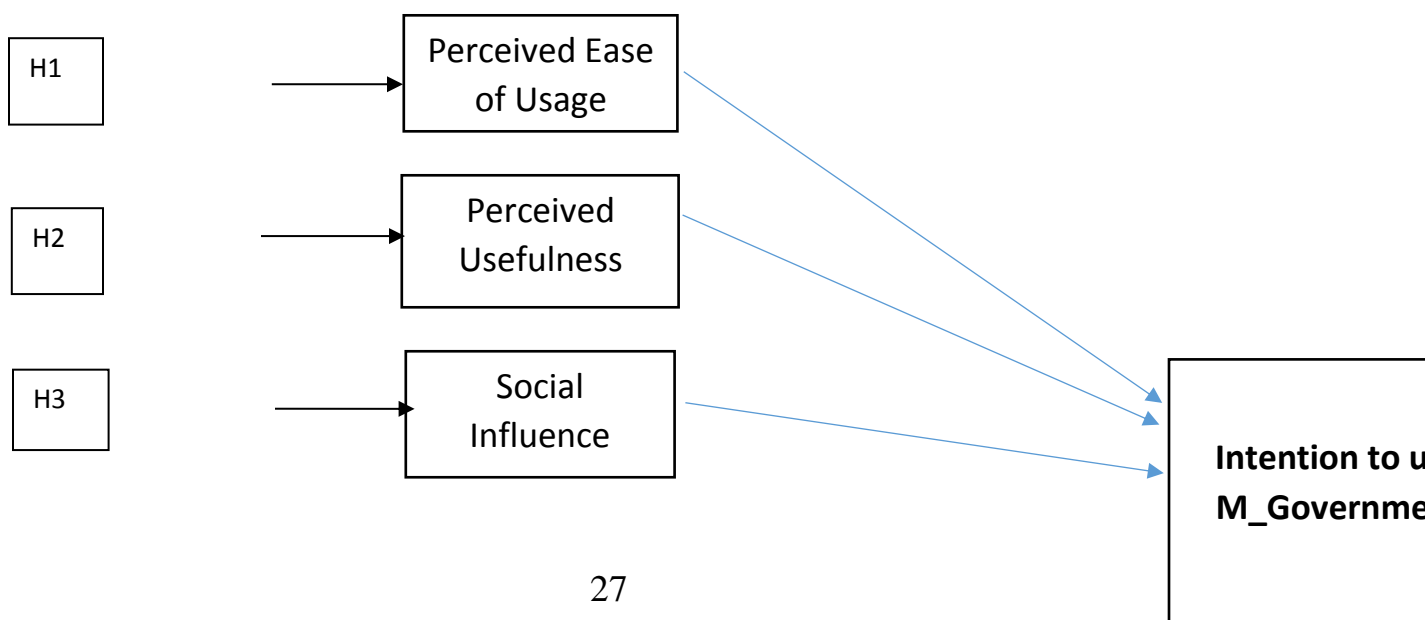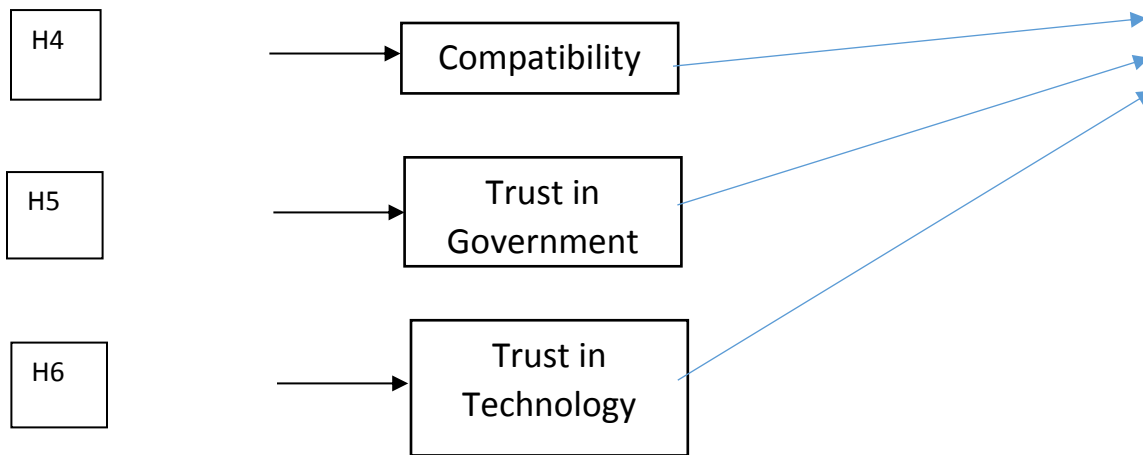
FIGURE 3A: Conceptual Model of the Study

3.2 RESEARCH METHOD:

This survey consists of two sections. The first section included demographic questions (age, gender, and education). The second section included 29 items designed to measure seven constructs, which were adapted from previous mGov research (Yong et al., 2014; Abdelghaffar & Magdy, 2012; Mahmud et al., 2012; Abu-Shanab, 2015; Al-Thunibat et al., 2011c). This adaptation supports the validity of the instrument and improves its reliability.

In addition to the PEOU and PU constructs, this study extended the technology acceptance model (TAM) to include assumed constructs from other theories and models, such as DOI and the trust model. For the trust constructs TIG and TIT, items were adapted from Abu-Shanab (2014). Distribution of the items is shown in Table 2, which includes an estimate of the average and standard deviations of the items. This process enhanced content strength and the reliability of the tool.

Based on the model shown in Figure 3A, this study seeks to answer the following research questions:

• What are the factors that influence citizens' acceptance of mGov services (mobile-based-applications) in India?

• And how do citizens in India perceive them?

TABLE 3A: Definition of Constructs and Survey Items

FACTORS	ITEMS	ADOPTED FROM
Perceived ease of use: The degree to which an individual believes that using mGov will be simple and free from effort	- PEOU1: Learning to use m-government services is easy for me. - PEOU2: I find m-government services easy to use. - PEOU3: m-government services are clear and understandable. - PEOU4: Using m-government services is flexible to interact with.	Davis (1989); Moore & Benbasat (1996); Taylor & Todd (1995) Venkatesh & Davis (2000)
Perceived usefulness: The degree to which an individual believes that the mGov will enhance his or her productivity or job performance	- PU1: m-government enables me to complete my transactions more quickly. - PU2: m-government enables me to perform transactions that are not close in my location. - PU3: m-government services are effective. - PU4: m-government services save my time.	Davis (1989); Moore & Benbasat, (1996); Taylor & Todd (1995) Venkatesh & Davis (2000)

	- PU5: I find m-government useful in my life.	
Social influence: The degree to which an individual believes that others think that he or she should use mGov services	- SI1: People who can influence my behavior would think that I should use m-government services. - SI2: People who are important to me would think that I should use m-government. - SI3: People who are important to me would find using m-government services beneficial.	Becker & Luthar (2002); Chen & Dhillon (2003); Venkatesh & Morris (2000)
Trust in government: The degree to which an individual believes that inter-actions with govern-ment are expectable and can be trusted	- TIG1: I trust public departments and institutions. - TIG2: I trust government's capability in providing safe mobile services. - TIG3: I trust that citizens' interest is government's first priority.	Bélanger & Carter (2008)

TABLE 3A: Definition of Constructs and Survey Items

FACTORS	ITEMS	ADOPTED FROM
Trust in technology: The degree to which an individual believes that interactions with Internet/systems are expectable and can be trusted	- TIT1: I trust the security of the Internet. - TIT2: Legal/technical infrastructure is sufficient in protecting my information. - TIT3: I trust computers when I use them in m-government transactions. - TIT4: I trust smart phones when I use them in m-government transactions.	Bélanger & Carter (2008)
Perceived compatibility: The degree to which an innovation (mGov) is consistent with existing facilities and practice	- PC1: Using m-government services technology fits with the way I work. - PC2: Using m-government services technology fits with my practice preferences. - PC3: Using m-government services technology fits with my services transactions.	Agarwal & Prasad (1998); Carter & Bélanger (2005); Chen (2008); Rogers (1995)

Intention to use: The degree to which an individual intends, expects, and plans to use mGov	- ITU1: I intend to continue using m-government services in the future. - ITU2: I will always try to use m-government services in my daily life. - ITU3: I plan to continue to use m-government services frequently.	Davis (1989); Moore & Benbasat (1996); Taylor & Todd (1995); Venkatesh & Davis (2000)

3.3 SOURCE OF INFO

Primary Info

Essential information has been gathered specifically from Indian Citizens through organized questionnaires.

Secondary Info

Secondary information was collected from different magazines, articles, site of mobile government of India as well as other countries and so forth.

3.4 SAMPLING METHOD

The populace incorporates male and female with the criteria: Respondent should be citizen of India. In this venture convenience sampling technique is taken into account.

Convenience Sampling

In this method, a specimen is acquired by choosing required populace components from the given populace.

Sample Size

The initial Sample size was 150, out of which 150 fulfilled the base criteria- Respondent being a Indian citizen.

Data collection technique

Self-processed individual study strategy was utilized to gather the vital information. For this reason proper questionnaires were outlined. This questionnaire was then sent through different online networking channels, for example, WhatsApp, Facebook and so forth and furthermore sent through mails.

Data collection instrument:

Fittingly planned questionnaires to encourage self-directed studies with basic standard inquiries were utilized to gather information.

Questionnaire Format:

The questions were defined in an organized and non-camouflaged manner. The questions provided us all ways to get the fundamental data and to assure that the correspondents could answer with ease. The formulated pattern thus helped in dissecting the information.

Nature of questions:

1. MCQs

Numerous selections of reactions are given and the customer selects a single reaction. The upside of this sort is simple classification and brisk reaction by the customer.

2. DQs (DICHOTOMOUS)

This sort of question is of "Yes" or "No" structure. There are just two selections of answers and the customer has to pick either "Yes" or 'No'.

3. OQs (OPEN)

These are otherwise called fill up the blanks based questions.

3.5 TESTS USED

T-test

In this dissertation we have used the **Independent Samples T-test.**

It is utilized when two separate arrangements of autonomous and indistinguishably dispersed examples are acquired, one from each of the two populaces being looked at.

ANOVA

Analysis of variance (ANOVA) is an investigation device utilized as a part of insights that parts the total fluctuation found inside an informational collection into two sections: systematic factors and random factors. The systematic factors affect the given informational collection, yet the random factors don't. Experts utilize the analysis of the

variance test to decide the outcome autonomous factors have on the needy variable in the midst of a regression study.

Analysis of variance is useful for testing at least three factors. There are two sorts of examination of variance: one-way (or unidirectional) and two-way. A restricted or one-way ANOVA assesses the effect of a sole component on a sole reaction variable. It decides if every one of the samples are the same.

Two-way ANOVA enables an organization to look at specialist profitability in light of two autonomous factors. It is used to watch the cooperation between the two variables. It tests the impact of two variables in the meantime.

In this dissertation we have used the **One-Way ANOVA.**

Regression Analysis

Regression is an accurate measure used to choose the nature of the association between one ward variable (as a rule implied by Y) and a movement of other advancing elements (known as autonomous components).

The two crucial sorts of regression are straight regression and multiple regression, regardless of the way that there are non-direct regression methods for more bewildered data and examination. Direct regression uses one autonomous variable to illuminate or envision the aftereffect of the dependent variable Y, while multiple regression uses no less than two free factors to predict the outcome.

In this dissertation we have used the **Linear Regression Analysis.**

Post-Hoc Analysis

Practically speaking, post hoc examinations are generally governed towards discovering designs and additional connections between subgroups of inspected populaces that would somehow stay undetected and unfamiliar were an academic group to depend entirely upon a priori statistical strategies. Post hoc examination fortifies acceptance by constraining the likelihood that critical impacts will appear to have been found between subgroups of a populace when none really exist.

Post hoc investigation is an essential strategy without which multivariate speculation testing would extraordinarily endure, rendering the odds of finding false positives unsuitably high.

In this dissertation we have used the **TUKEY'S RANGE TEST**.

- Tukey's strategy is appropriate for pairwise correlations.
- It assumes autonomy of the perceptions being tested, as well as equal variation across observations (homoscedasticity).

CHAPTER IV

4. DATA ANALYSIS AND INTERPRETATION

TABLE No 4A

GENDER MODE		
Gender	**No. of Respondents**	**Percentage**
Male	90	60
Female	60	40
Total	**150**	**100**

CLASSIFICATION OF RESPONDENTS BY GENDER

CHART NO. 4A

GENDER

- Male
- Female

40%

60%
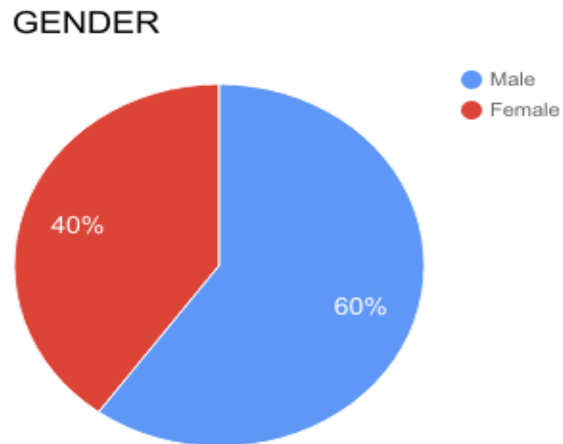
INFERENCE: It is found that 60% of the respondents are Male while 40% of the respondents are Female.

TABLE No 4B

CLASSIFICATION OF RESPONDENTS BY AGE

Age group		
Age class	**No. of. Respondents**	**Percentage**
17-30	66	44
31-45	57	38
46-60	24	16
Above 60	3	2

Total	150	100

CHART No 4B

AGE

■17-30 ■31-45 ■46-60 ■Above 60
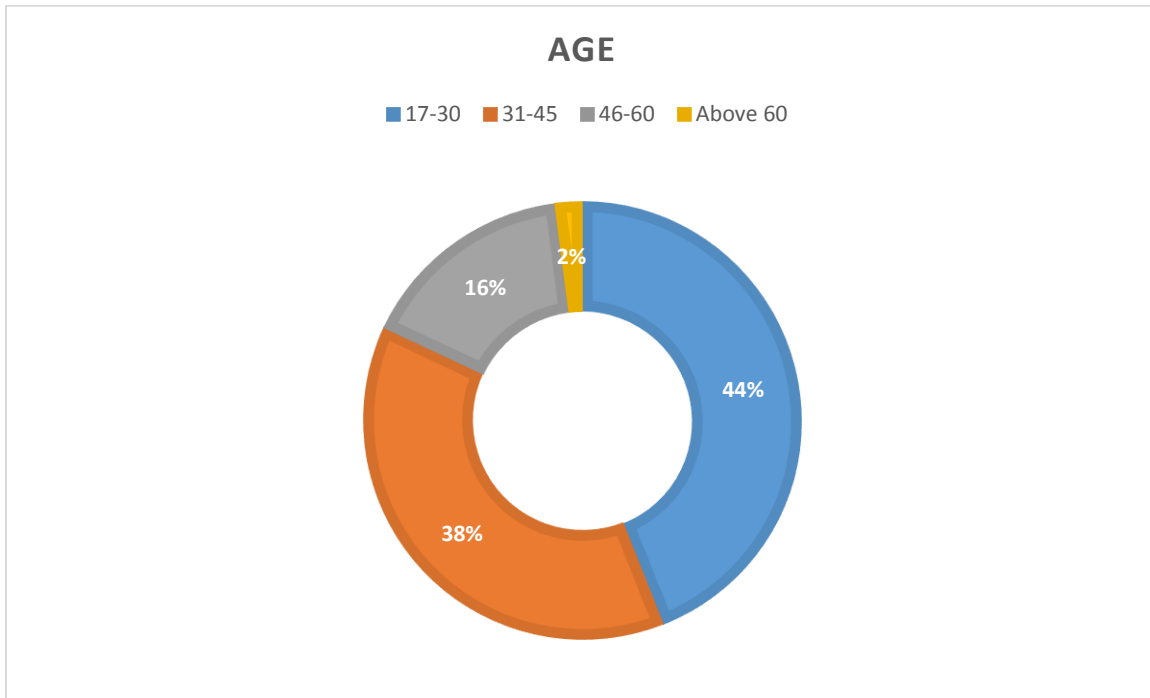
INFERENCE:

It is found that 44% of the respondents are of 17-30 years old, 38% of the respondents are of 31-45 years old, 6% of the respondents are of 46-60 years old and the remaining 2% of the respondents are Above 60 years.

TABLE No 4C

EDUCATION		
Education	**No. of. Respondents**	**Percentage**
Matriculate	3	2
Senior Secondary	12	8
Bachelor Degree	75	50
Master's or Doctorate	60	40

Total	150	100

CLASSIFICATION OF RESPONDENTS BY EDUCATION

CHART No 4C

EDUCATION

- Matriculate 2%
- Senior Secondary 8%
- Master's or Doctorate 40%
- Bachelor Degree 50%
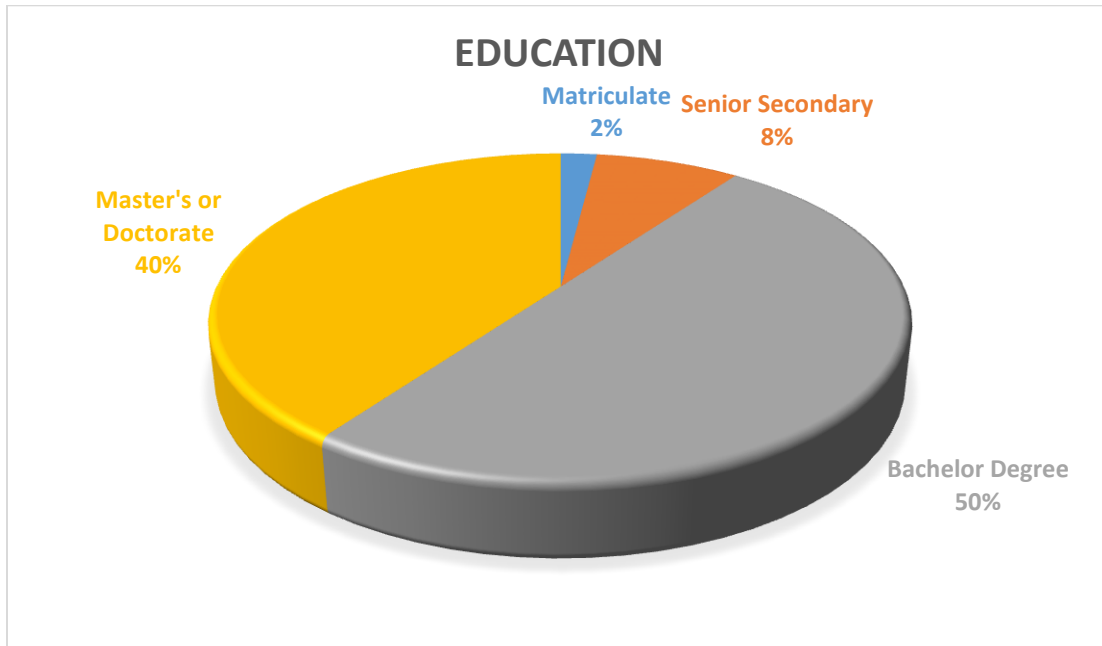
INFERENCE:

It can be inferred that 2% of the Respondents are MATRIC PASS, 8% of the Respondents are SENIOR SECONDARY, 50% Respondents are GRADUATE and the remaining 40% are POST-GRADUATE or DOCTOTATES.

4.1 REGRESSION ANALYSIS

IV	DV	R Square	P value	Beta Value	Null Hypothesis
PE			0.05	0.144	**Rejected**
PU			0.036	0.151	**Rejected**

SI	**CAIB**	**0.389**	0.385	0.067	**Accepted**
TG			0.000	0.651	**Rejected**
TT			0.000	-0.578	**Rejected**
PC			0.004	0.224	**Rejected**

Table 4.1: Regression analysis between independent and dependent Variables

INFERENCE:

From the above table it can be found that

➢ R-Square value is 0.389 (>0.25) This means that 38.9 percent of the Dependent Variable is explained by the coefficients of Significance (Independent Variables)

➢ According to P- Value, Null Hypothesis is rejected in case of PU, PE, TT, TG and PC (P value<0.05), while it is accepted only for SI. This means that PU, PE, TT, TG and PC have a significant contribution towards Adoption of M_Governance in India. Perceived Value is not significant in this case as it has a negative Beta Value (β= -0.578).

➢ From the Beta Value it can been seen that TG is the most powerful contributor towards Adoption of M_Governance in India. (β=0.651)

4.2 HYPOTHESIS OF THE STUDY

H$_{07}$: There is no distinction in Males' and Females' observation for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

H$_{A7}$: There is noteworthy contrast in Males' and Females' observation for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

H$_{08}$: There is no distinction in Age and recognition for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

H$_{A8}$: There is noteworthy contrast in Age and observation for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

H$_{09}$: There is no distinction in Education and recognition for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

H$_{A9}$: There is noteworthy contrast in Education and observation for PE, PU, SI, TG, TT, PC and Adoption of M_Government by Indian Citizens.

4.3 T-TEST Analysis

Independent variable	Dependent variable	Significant level	Null Hypothesis
GENDER	Perceived Ease of Usage	0.128	accepted

	Perceived Usefulness	0.820	accepted
	Social Influence	0.065	accepted
	Trust in Government	0.957	accepted
	Trust in Technology	0.785	accepted
	Perceived Compatibility	0.800	accepted
	Adoption of M_Government by Indian Citizens	0.574	accepted

Table 4.3: T-Test analysis between GENDER and Independent Variables

INFERENCE:

After doing the T-test, it can be inferred from the table that **Males' and Females'** perception for PE, PU, SI, TG, TT, PC and Adoption of M_Government are same (Value of P>0.05).

4.4 ANOVA ANALYSIS

Independent variable	Dependent variable	Significant level	Null Hypothesis
AGE	Perceived Ease of Usage	0.233	accepted

	Perceived Usefulness	0.382	accepted
	Social Influence	0.626	accepted
	Trust in Government	0.001	rejected
	Trust in Technology	0.002	rejected
	Perceived Compatibility	0.201	accepted
	Adoption of M_Government by Indian Citizens	0.315	accepted

Table 4.4.1: ANOVA between AGE and Independent Variables

INFERENCE:

After doing the ANOVA, it can be inferred from the table that **AGE** and perception for PE, PU, SI, PC and Adoption of M_Government by Indian citizens are same (Value of P>0.05) while in case of TG and TT it is different (Value of P<0.05). Further, **TUKEY Test** was applied on both TG and TT & it was found that there was significant difference between the 17-30 and 46-60 and 60 ABOVE as well as 31-45 and 60 ABOVE age groups.

Independent variable	Dependent variable	Significant level	
EDUCATION	Perceived Ease of Usage	0.097	accepted
	Perceived Usefulness	0.649	accepted

	Social Influence	0.566	accepted
	Trust in Government	0.108	accepted
	Trust in Technology	0.042	rejected
	Perceived Compatibility	0.853	accepted
	Adoption of M_Government by Indian Citizens	0.662	accepted

Table 4.4.2: ANOVA between EDUCATION and Independent Variables

INFERENCE:

After doing the ANOVA, it can be inferred from the table that **EDUCATION** and perception for PE, PU, SI, TG, PC and Adoption of M_Government by Indian citizens are same (Value of P>0.05) while in case of TT it is different (Value of P<0.05). Further, **TUKEY Test** was applied on TT and it was found that there was significant difference between the MASTER'S or DOCTARATES and OTHERS.

CHAPTER V

5. FINDINGS, CONCLUSION & RECOMMENDATIONS

5.1 FINDINGS

With the help of literature review, 6 factors were identified and 25 questions were taken.

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These factors are the dimensions of adoption of M_Government by Indian citizens. There was one dependent factor on Intention to use m_governance services by Indian citizens.

ANOVA, T-test, Regression and Post-hoc was applied to these factors to understand their influence on consumer adoption.

Factor 1: The first factor has four variables, which deals with Perceived Ease of Usage. From regression it was found to have a P-value of 0.05 which means H_0 was rejected and H_A was accepted. Thus it had a significant contribution towards adoption of m_government.

Factor 2: The second factor has five variables, which deals with Perceived Usefulness. From regression it was found to have a P-value of 0.036 which means H_0 was rejected and H_A was accepted. Thus it had a significant contribution towards adoption of m_government.

Factor 3: The third factor has three variables, which deals with Social Influence. From regression it was found to have a P-value of 0.385 which means H_0 was accepted and H_A was rejected. Thus it did not have such a significant contribution towards adoption of m_government.

Factor 4: The Fourth factor has three variables, which deals with Trust in Government. From regression it was found to have a P-value of 0.000 which means H_0 was rejected and H_A was accepted. Thus it had a significant contribution towards adoption of m_government. Moreover it was the strongest determinant of consumer adoption (Beta Value=0.651)

Factor 5: The fifth factor has four variables, which deals with Trust in Technology. From regression it was found to have a P-value of 0.000 which means H_0 was rejected and H_A was accepted. But it had a negative Beta Value (= -0.578). Thus it was not taken as

a significant contributor towards adoption of m_government.

Factor 6: The sixth factor has three variables, which deals with Perceived Compatibility. From regression it was found to have a P-value of 0.004 which means H_0 was rejected and H_A was accepted. Thus it had a significant contribution towards adoption of m_government.

➢ Most of the respondents were either MBA students, working professionals, or common people.

➢ 60 per cent of the respondents were Male while 40 Percent of the respondents were female.

➢ 44 Percent of the customers were of 17-30 years old, 38 Percent of the respondents were of 31-45 years old, 16 Percent of the respondents were of 46-60 years old and the remaining 2 Percent of the respondents were Above 60 years old.

➢ 2 Percent of the respondents were Matriculate, 8 Percent of the respondents were Senior Secondary Pass, 50 Percent of the respondents were Graduate and the remaining 40 Percent were Post Graduate or Doctorate.

5.2 CONCLUSION

In conclusion, because mGov services are still in the early stages, there are rich and varied opportunities for research regarding emerging technologies, new government processes, and citizen behaviors relating to this important topic. In developing and testing a model of citizen acceptance of mGov services, the current study advances academic research on the topic and opens doors for additional studies aimed at better understanding people's intention to use such services. Along these lines, PE, PU, TT and PC could lead the citizens in adopting mobile government.

In the Indian context, this research reveals a promising future for mGov services. It provides insights that can help improve these services and allow India to better serve its citizens through perceived compatibility, perceived ease of use, social influence, and trust in technology.

5.3 RECOMMENDATIONS

Mobile technologies "are empowering citizens in all aspects of their daily lives, improving the quality of life for many". More people "can afford a mobile phone than a personal computer and are comfortable learning to use mobile devices in their daily lives". The popularity of "social media and use of Web 2.0 tools is also transferring easily to mobile applications". M-Government can "affect the activities of any public sector agency, ranging from tax and customs administration to health, social security and personal identification".

The prevailing use of mobile phones by citizens across the world "provides a communication channel that vastly improves the timeliness and ease with which citizens can access and interact with government". More importantly," mobile technologies present government with opportunities to increase citizens' take-up and adoption of connected government processes".

At the same time, "governments should address the challenges of ensuring privacy and

extending digital inclusion". Further personalization and location-based services are additional strategies that can enhance benefits for citizens, "resulting in greater citizen engagement and satisfaction". Evaluating the ongoing effectiveness of public officials or public bodies through m-government "applications ensures that the officials and institutions are performing to their full potential, providing value for money in the provision of public services, instilling confidence in the government and being responsive to the community they are meant to be serving".

ANNEXURE

1. GENDER

- o MALE
- o FEMALE

2. AGE

- o 17-30
- o 31-45
- o 46-60
- o ABOVE 60

3. EDUCATION

- o MATRICULATE
- o SENIOR SECONDARY
- o BACHELORS
- o MASTERS or DOCTORATE

The following questions determine your perception about adopting the Internet Banking Service. Please rate them on the following LIKERT scale:

SL.NO	PERCEIVED EASE OF USE	RATING
1.	Learning to use m-government services is easy for me.	1 2 3 4 5
2.	I find m-government services easy to use.	1 2 3 4 5
3.	m-government services are clear and understandable.	1 2 3 4 5
4.	Using m-government services is flexible to interact with.	1 2 3 4 5

SL.NO	PERCEIVED USEFULNESS	RATING
5.	m-government enables me to complete my transactions more quickly.	1 2 3 4 5
6.	m-government enables me to perform transactions that are not close in my location.	1 2 3 4 5
7.	m-government services are effective.	1 2 3 4 5
8.	m-government services save my time.	1 2 3 4 5
9.	I find m-government useful in my life.	1 2 3 4 5

SL.NO	SOCIAL INFLUENCE	RATING
10.	People who can influence my behavior would think that I should use m-government services.	1 | 2 | 3 | 4 | 5
11.	People who are important to me would think that I	1 | 2 | 3 | 4 | 5

	should use m-government.					
12.	People who are important to me would find using m-government services beneficial.	1	2	3	4	5

SL.NO	TRUST IN GOVERNMENT	RATING				
13.	I trust public departments and institutions.	1	2	3	4	5
14.	I trust government's capability in providing safe mobile services.	1	2	3	4	5
15.	I trust that citizens' interest is government's first priority.	1	2	3	4	5

SL.NO	TRUST IN TECHNOLOGY	RATING				
16.	I trust the security of the Internet.	1	2	3	4	5
17.	Legal/technical infrastructure is sufficient in protecting my information.	1	2	3	4	5
18.	I trust computers when I use them in m-government transactions.	1	2	3	4	5
19.	I trust smart phones when I use them in m-government transactions.	1	2	3	4	5

SL.NO	PERCEIVED COMPATIBILITY	RATING				
20.	Using m-government services technology fits with the way I work.	1	2	3	4	5
21.	Using m-government services technology fits with my practice preferences.	1	2	3	4	5

| 22. | Using m-government services technology fits with my services transactions. | 1 | 2 | 3 | 4 | 5 |

SL.NO	INTENTION TO USE	RATING				
23.	I intend to continue using m-government services in the future.	1	2	3	4	5
24.	I will always try to use m-government services in my daily life.	1	2	3	4	5
25.	I plan to continue to use m-government services frequently.	1	2	3	4	5

REFERENCES

Al-Khamayseh, S.; Lawrence, E.; & Zmijewska, A. (2007). Towards understanding success factors in interactive mobile government, Proceedings of the Second European Conference on Mobile Government (Euro mGov) – Opportunities for eGovernment: Adapting to Mobile and Ubiquitous Business (2006), pp.3–5.

Al-Thunibat, A.; Zin, N.; & Sahari, N. (2011a). Identifying user requirements of mobile government services in Malaysia using focus group method, Journal of eGov Studies and Best Practices, 2: 1–14.

Al-Thunibat, A.; Zin, N.; & Sahari, N. (2011b). The effect of social influence on mobile government adoption in Malaysia, Journal of Theoretical and Applied Information Technology, 25(2),103–110.

Al-Thunibat, A.; Zin, N.; & Sahari, N. (2011c). Modelling the factors that influence mobile government services acceptance, African Journal of Business Management 5(34),13030–13043.

Almuraqab, Nasser A.; & Jasimuddin, Sajjad M. (2016). A literature survey of m-government services adoption: Lessons for a smart city Success, 22nd GCC Smart Government and Smart Cities Conference, May 2016. Link:
https://www.researchgate.net/publication/308597491_A_literature_survey_of_m-government_services_adoption_Lessons_for_a_smart_city_Success

Alomari M.; Woods, P.; & Sandhu, K. (2012). Predictors for eGov adoption in Jordan, Information Technology & People, 25(2), 207-234.

Abu-Shanab, E. (2015). Major factors influencing the adoption of mGov in Jordan, Electronic Government, An International Journal, DOI: 10.1504/EG.2015.071394

Abu-Shanab, E. (2014). Antecedents of trust in e-government services: An empirical test in Jordan, Transforming Government: People, Process and Policy, 8(4), 480-499.

Abdelghaffar, H., & Magdy, Y. (2012). The adoption of mobile government services in developing countries: The case of Egypt, International Journal of Information and Communication Technology Research, 2 (1), 333–341.

Agarwal R. & Prasad, J. (1998). The antecedents and consequents of user perceptions in information technology adoption, Decision Support systems, 22: 15-29.

Al-Hujran, O. (2012). Towards the utilization of mGov service in developing countries: A qualitative e-investigation, International Journal of Business and Social Science, 3(5), 155–160.

Alsenaidy, A., & Ahmad, T. (2012). A Review of Current State M-Government in Saudi Arabia, Department of Biochemistry, King Saudi University.

Anas, R.; Al-Soud, H.; Al-Yaseen, S.; &Al-Jaghoub, H. (2014). Jordan's eGov at the crossroads, Transforming Government: People, Process and Policy, 9(4), 597-619.

Antovski, L., & Gusev, M. (2005). M-government framework, Proceedings of Euro mGOV 2005: The First European Conference on Mobile Government, Brighton, UK.

Becker, B.E., & Luthar, S.S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap, Education Psychology, 37: 197-214.

Bhatti, T. (2007). Exploring factors influencing the adoption of mobile commerce, Journal of Internet Banking and Commerce, 12(3).

Carter, L., & Be´langer, F. (2005). The utilization of eGov services: Citizen trust, innovation and acceptance factors, Information Systems Journal, 15(1), 5-25.

Carter, L. (2008). Egov diffusion: A comparison of adoption constructs, Transforming Government: People, Process and Policy, 2(3), 147-161.

Choudrie, J., & Dwivedi, Y. (2005). A survey of citizen adoption and awareness of e-government initiatives, the 'government gateway': A United Kingdom Perspective, E-Government Workshop, London: Brunel University.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences, 2nd ed., Hillsdale, NJ: Erlbaum.

Dahi, M., & Ezziane, Z. (2015). Measuring eGov adoption in Abu Dhabi with technology acceptance model (TAM), International Journal of Electronic Governance, 7(3).

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, MIS Quarterly, 13(3), 319-339.

Ekong, U., & Ekong, V. (2010). M-voting: A panacea for enhanced e-participation, Asian Journal of Information Technology, 9(2),111–116.

Fornell C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error, Journal of Marketing Research, 18(1), 39-50.

Gefen D.; Straub, D.; & Boudreau, M. (2000). Structural equation modelling and regression: Guidelines for research practice, Communications of the Association for Information Systems, 4(7), 1-77.

Hair, J.; Black, W.; Babin, B.; Anderson, R. & Tatham, R. (2006). Multivariate Data Analysis 6th ed., Upper Saddle River, NJ: Prentice Hall.
Hatem, M. El Sherif; Alomari, Khaled Mohammad; Al Haddad, Ahmad S.; & Alkatheeri, Ahmed O. (2016). Mobile government services satisfaction and usage analysis: UAE government smart services case study, International Journal of Computer Science and Mobile Computing, 5(3), 291-302.

Hans, H.; Stuart, J.; Tina, R.; & Marcus, M. (2005). Driving consumer acceptance of mobile marketing: A theoretical framework and empirical study, Journal of Electronic Commerce Research, 6(3).

Hassan, M.; Jaber, T.; & Hamdan, Z. (2009). Adaptive mobile-government framework, Proceedings of International Conference on Administrative Development: Towards Excellence in Public Sector Performance, Riyadh, Saudi Arabia.

Heeks, R.B. (2008). E-government for Development, Institute for Development Policy and Management, University of Manchester.

Hernan, E.; Riquelme, Rosa; & Rios, E. (2010). The moderating effect of gender in the adoption of mobile banking, International Journal of Bank Marketing, 28(5), 328-

Hussein, R.; Mohamed, N.; Rahman, Ahlan A.; & Mahmud, M. (2011). E-government application: An integrated model on G2C adoption of online tax, Transforming Government: People, Process and Policy, 5(3), 225 -248.

Kesavarapu, S., & Choi, M. (2009). A theoretical framework of knowledge management in mGov, International Journal of Computer and Communication Technology, 1(1), 3–13.
Khaleej Times. (2015).
http://www.khaleejtimes.com/nation/government/96.3-marks-for-m-government-initiative-in-41-entities

Kuo, Y.F., & Yen, S.N. (2009). Towards an understanding of the behavioral intention to use 3G mobile value-added services, Computers in Human Behavior 25(1),103-110.
Lee, E., & Han, S. (2015). Determinants of adoption of mobile health services, Online Information Review, 39(4),556 – 573.

Li, G., & Lv, L. (2007). Study on influencing factor analysis and application of consumer mobile commerce acceptance, In: Wang, W.; Li, Y.; Duan, Z.; Yan, L.; Li, H.; & Yang, X. (eds.), Vol. 252, IFIP International Federation for Information Processing, Integration and Innovation Orient to E-Society, Vol. 2, pp. 132-141, Boston: Springer.

Mahmud, S.; Akhter, Norm A.; & Dwivedi Y. (2012). Examining adoption behavior of mobile government, The Journal of Computer Information Systems, 53(2), 39.

McKnight, D.H.; Choudhury, V.; & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model, Journal of Strategic Information Systems, 11: 297-323.

Moore, G., & Benbasat I. (1996). Integrating Diffusion of Innovations and Theory of Reasoned Action Models to Predict Utilisation of Information Technology by End Users, Boston: Springer.

Ovais, A.M.; Markkula, J.; & Oivo, M. (2013). Factors affecting eGov adoption in Pakistan: A citizen's perspective, Transforming Government: People, Process and Policy, 7 (2), 225-239.

Padashetty, Sanjeev, & Krishna Kishore, S.V. (2013). An empirical study on consumer adoption of mobile payments in Bangalore city – A case study, Journal of Arts, Science & Commerce, 4(1), 83.

Paul, G.S.; Oliver, S.; & Bernd, W.W. (2009). Understanding consumer acceptance of mobile payment services: An empirical analysis, Electronic Commerce Research and Applications, 9 (2010), 209–216.

Pavlou, P.A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust, Information Systems. Research, 15: 37-59.

Pavlou, P.A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model, International Journal of Electronic Commerce, 7: 101-134.

Rehman, M.; Esichaikul, V.; & Kamal, M. (2012). Factors influencing eGov adoption in Pakistan, Transforming Government: People, Process and Policy, 6 (3), 258-282.

Ringle C.; Wende, S.; & Will, S. (2005). SmartPLS 2.0 (M3) Beta, Hamburg http://www.smartpls.de

Rogers E.M. (1995). Diffusion of Innovations, New York: Free Press.

Samar, Mouakket. (2010). The motivations for citizens' adoption of e-government: An empirical study in the UAE. International Journal of Business Information Systems, 6(2).

Sang, S.; Jeong-Dong, L.; & Lee, J. (2010). E-government adoption in Cambodia: A partial least-squares approach, Transforming Government: People, Process and Policy, 4(2), 138-157.

Sang, S., & Lee, J.D. (2009). A conceptual model of e-government acceptance in public sector, Proceedings of the 3rd International Conference on Digital Society.

Schierz, P.G.; Schilke, O.;& Wirtz, B.W. (2005). Understanding consumer acceptance of mobile payment services: An empirical analysis, Electronic Commerce Research and Applications, 9: 209-216.

Suki N.M.; Sabah U.M.; & Ramayah T. (2010). User acceptance of the e-government services in Malaysia: Structural equation modelling approach, interdisciplinary, Journal of Information Knowledge Management, 5: 5.

Sulaiman, A.A.; Richard, M.C.; & Gary, B.W. (2014). Factors affecting the citizen's intention to adopt e-gov in Saudi Arabia, World Academy of Science, Engineering and Technology, 81.

Tang, Jeung-Tai E., & Chiang, Chihui. (2009). Towards an understanding of the behavioral intention to use mobile knowledge management, WSEAS Transactions on Information Science and Application, 6(9), 1601-1613.

Taylor S., & Todd, P.A. (1995). Understanding information technology usage: A test of competing models, Information Systems Research, 6: 144-176.
UAE Telecommunications Regulatory Authority (TRA). Open data link:
http://www.tra.gov.ae/en/open-data.aspx

Uchenna, Cyril; Eze, G.; John, A.; & Samson, T. (2008). Modelling user trust and mobile payment adoption: A conceptual framework, Communications of the IBIMA, 3.

Venkatesh, V.; & Davis, F.D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies,Management Science, 46: 186-204.

Venkatesh V.; & Morris, M.G. (2000). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior, MIS Quarterly, 12: 115-139.

Warkentin, M.; Gefen, D.; Pavlou, PA.; & Rose, G.M. (2002). Encouraging citizen adoption of eGov by building trust, Electronic Marketing, 12: 157-162.
Welch, E.W.; Hinnant, C.C.; & Moon, M.J. (2005). Linking citizen satisfaction with Egov and trust in government, Journal of Public Administration Research and Theory, 15: 371.
Wu, H.; Ozok, A; Gurses, A.; & Wei, J. (2009). User aspects of electronic and mobile government: Results from a review of current research, Electronic Government, an International Journal, 6(3), 233–251.

Wu, J.H., & Wang, S.C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model, Information & Management, 42(5), 719-729.

Yong, L.A.; Hongxiu, Li B.; Vassilis, K.A.; Jorge, G.A.; Simo, H., & Feng, H. (2014). An empirical investigation of mobile government adoption in rural China: A case study in Zhejiang province, Government Information Quarterly, 31: 432-442.

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