

What are the factors to successful implementation of Smart Government Services in Developing Countries?

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Abstract:

The introduction to employ m-government is considered as a modern trend in several developing nations. Also, the lack of studies that have addressed such issue. There are various factors associated with the developing countries. One of which their ability to execute the services of smart technology in their governments. This paper aims to reveal the various elements that will impact the users of smart government services. The technologies of mobile phones produced by the governments have a significant probability to affect the competence of the operation of the government to guarantee that such governments provide the optimal services to the people. Regardless the fact that a little of suggested technologies might not be accepted to the users who might not completely comprehend such process. As a result, the damage might be experienced. The governments gain a considerable opportunity for improvement if there are appropriate measures for improvement. The acceptance model proposed by Davis (1989) is considered as an additional technology. The importance of such model is embodied in its ability to cope with the factors that impact the end-user's acceptance of various countries. Therefore, the governments shall be anxious to guarantee the successful execution of the smart government services. Ten suggested factors have been determined to impact the consumers' adoption in the smart governments in the developing counties concerning the use of mobile application in the effective governments operation.

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1. Prologue

Governments in developing country are advocating for the implementation of smart city where they intend to ensure their residents are provided with accurate, easily accessible and high-quality services with preference to use high-speed gadgets across the cities. For an instant, countries that have already embraced smart governance are identified to offer both businesses and personal online services. Smart government welcomes the preference to use Mobile-application use services (MA-government), which promotes value for the government. The nationalists get the opportunity to use different mobile technologies such as the ability to use Wi-Fi enabled gadgets and another

wireless network [1]. The study on the paper uses the terms electronic government, smart government, m-government, and e-government interchangeably[2]. Furthermore, the preference to use internet-based mobiles has increased on their usage as opposed to the PCs that have been used for years.

The smart government refers to the different transactions that have been installed between the government and the citizens of the identified region with preference to use m-government, which is mobile technology[3]. Across the country, the choice to use m-government is considered to be vital as it helps significantly with the socio-economic development of the

country. [5].explore, for a government to be considered a success when leading smart government initiative, then it is paramount the citizens fully understand and accept m-government services. At times the technologies may not be welcomed by the citizens who will deter the government delivery of different services which can be derailing the government[6]. Thus, when the government end users are not thrilled with the technologies that are presented by the government, the claims of the smart city are considered to be meaningless[7].

Thus, despite the government introduction of smart technologies, the success of the projects is dependent on the acceptability of the usage by the citizens[8]. There has not been much research availed on the user's prefer to use the embracing of m-services provided by western nations. This research objective to identify the gap that is currently in existence better the developing governments that are objecting to introduce smart government services and the users implementation of the government services in the developing countries context[9]. A study conducted by Davis (1989) is the theoretical foundation study being used. Thus, the paper will illustrate the factors that enable a company to adopt success m-government service to its citizens with the implementation to right framework in respective developing countries.

There are different issues the paper explores on a mobile application that is preferred to be used to ensure the government conducts successful projects with ease[10]. Thus, the paper aims to provide a conceptual framework that will show a relation between the victorious completion of the smart government and the smart city that are developed across the developing countries[11]. Section 2 of the paper discusses the research method in the current study. The third section provides a relevant literature review in regard to the research and development of a research model with ten propositions that will be used throughout the study. Chapter four of the paper will give analytical research on the research and then followed by the discussion of several factors that need to be considered[12]. The last section of the paper will provide the different implications and limitations of the study that will also be used to provide a future direction that can be used by researchers in the coming years.

2. Research methods

The study proposed the use of three procedures to ensure there was a reduction of bias to provide the significance of the relevant studies. To check on the relevance of the research, a keyword search was done to identify keywords such as ISI, Web of Knowledge, ABI, and Google Scholar which were involved in gauging the relevant government preference to use the technology adoption. The data used for the study was conducted for six months from January 2016 to June 2016 and inclination to use different resources, the conference events (AIS, ACM) were then searched physically. The reference section which is the thirteenth step comprises of the well-researched journals that total to 44 journals that have been determined to give relevant information regarding the user effects on the embracing of the smart government services. The journals picked are from 2010 to 2018. For the literature search words popularly used were “factors that persuade e-government,” “factors regarding technology approval” and “factors that influence m-government services. Factors influencing smart health services”

3. Literature review

A multidimensional approach has been used for the m-government. Moreover, government across the world is using the most recent (ICT) to ensure their service deliverance to the nation is smooth and does not have any hiccups[13]. Therefore, there has been a preference to increase wireless tech preferential use of the internet-based mobile gadgets across nations. Moreover, employees across nations prefer to work at different locations as long as they have access to the right amounts of internet[14][15]. This has been a primary motivator for the government to move its services to be m-government to ensure there is an improvement in the quality of the services being delivered[16]. Better service delivery has been guaranteed with mobile device diffusion.

A study conducted [17]explains it is essential to appreciate the dynamics of an m-government operation. [18] The primary factor that is associated with the high failure rate is the lack of consciousness on unusual elements that are essential to allow the citizens to know how to use the m-government service A study was done by Khaleej-Times (2015) explore despite most of the residents in developing countries having

access to Smartphones being approximately 96% the percentage of the people who have used smart government applications is less than 36%. Moreover, only 74% of the citizens have installed more than 10 applications. This is a wide gap that needs to be utilized to ensure the smart government objectives are realized across the developing countries. [19]. Across different developing countries, many have not been severe about showing their citizens on the significance of using the m-government or smart

government by both practitioners and academia [20].

According [21], there are different m-government adoption factors that need to be surveyed to ensure there is a holistic approach that is identified for the e-government. The table below illustrates the existing literature with the proposed success factor that is required to ensure there is proper development on a conceptual framework based on the developing countries concept different m-services in Table 1.

Table 1: brief of review of E-government and m-services, Adoption of (m-government, m-banking, m- health, e-commerce, adoption smart cities etc.)

Author	Description	origin	Method, sample size	Model	Results
[22]	cognitive stimulation for the elderly	Paris	, survey, 15 senior users	Cognitive Therapy	good acceptability of the app's games that continues and improves with time
[23]	M-Health Services	UAE	Survey , 144	(TAM)	model. PU, PEOU, TR and SE found directly influencing the intention to use M-Health system
[24]	security in mhealth	USA, EU	Review and Recommendations	Review and Recommendations
[25]	mobile health-related	USA, Europe,	brief survey of evaluation studies	evaluation, regulation and certification, quality	Interactions may require substantial effort.
[26]	Mhealth	Developing Countries	CASE STUDY	capacity for improved access	RECOMANDATIONS
[3]	consumer's acceptance of mobile technology	Egypt and Yemen	302 survey	(TAM)	Positively Resistance to change, Technology anxiety factors
[27]	selection of health-related apps:		Interview	Case study
[28]	Adoption of E-government	UAE	Survey	UTAUT	Trust factors
[29]	e-government use	Kuwait	268 citizens	TAM	satisfaction; age; gender; education; trust; value
[30]	ehealth	Jordan, Syria	Questionnaire	TAM	Infrastructure, Funding
[31]	Adoption ehealth	Jordan	Questionnaire	UTAUT	Trust factor
[32]	Smart health	Jordan	Survey	UTAUT	Privacy ,trust
[33]	ICT Adoption	Malaysia	Survey	TRA	SMEs, Percept usefulness theory
[34]	Smart city	Devolvin	Review	Review	challenges; opportunities

		g country			
[35]	Internet of Things	Devolvin g country	Questionnaire	TAM	Cloud storage; Remote monitoring
[36]	Shopping Online	KSA	Survey	TAM	trust and risk
[3]	e-service technology	Malaysia	Questionnaire	ETAM	online customer satisfaction; service quality
[37]	E-health	Jordan	Survey	UTAUT	TRUST , GENDER
[38]	E-health	Jordan	Questionnaire	UTAUT2	age; gender; education
[39]	performing user evaluation	Spain	Survey, 50 physicians answered	Quality, Ease of Use,	Quality, Ease of Use, Availability, Performance

Research explores preference to use technology acceptance model (TAM) is identified as one of the most popular theories that explains the use of technology in a more elaborate manner based on several factors. A study conducted [40]there has been appeal over the last two decades the

number of individuals and support which has been witnessed for TAM use has increased on August 2016. Furthermore, Google scholar identified over 30,000 credentials introduced on TAM study [41]

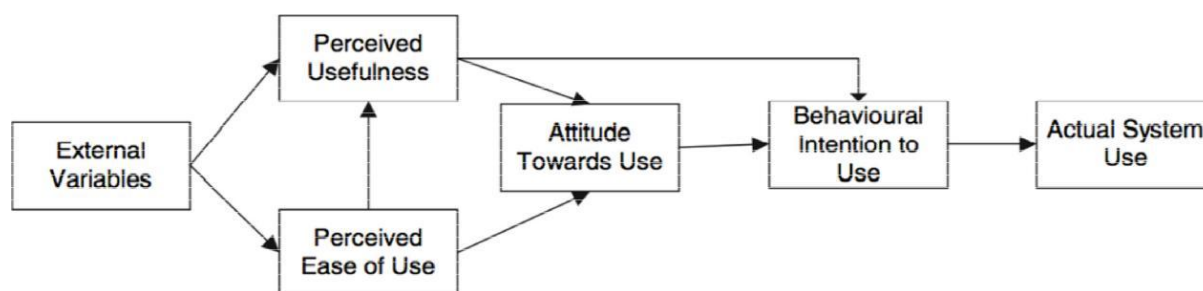


Figure 1: The figure illustrates technology acceptance model (TAM) by [42]

4. Research findings

individual thinks a system is useful to his or her A study conducted [43]there is need for the usersjob performance..

to ensure they customize the specific technologiesAcross the developing countries, many users who that are introduced by the model. Moreover,have been proposed on the idea of using the smart [4]further explain TAM could not be convenient togovernment services they have shown interest and describe the preferred types of service channelsagreed to try the offered services to weigh their and technologies to be used and there are otherfunctionality.

issues omitted like social influence, risk and trust.

Thus, other variables have to be included in TAM.

This study therefore uses TAM and other elements including; perceiver risk (PR), confidence in technology (TOT), perceived compatibility (PC), social influence (SI), awareness (AW) and facilitating conditions (FC) as some of the key

independent variables that are identified to**Perceived ease of use**

intentionally influence the behavior of the users ofResearch done by Davis (1989), explain perceived different smart government services. Figure 2usage to be the acceptable use to be the degree in gives an illustration of the theoretical frame of m-which a person believes the identified system is government services across developing countries. user-friendly. Perception if the second primary

Perceived usefulness

A research conducted by [42] explores thetechnology and the e-government. Scholars like professed value is defines as degree an element is[45] explore that varied participants in developing seen to be necessary, thus based on how well ancountries are likely to accept to use smart

Proposition 1: The apparent value of the identified smart government applications is likely to have a positive impact on the end-user intentions with the provision of smart government services.

government services if they are designed to be easy to use. [46] have also backed up the claim of **Perceived cost** the end-users being more open to using the system. The gadgets to be used for the m-government if they realize the system are easy to use. Research services needs to be cost-friendly to ensure the also conducted by [47] explain more users are end-users gets the devices required to access the likely to prefer to use the m-government services if [51]. Therefore, research was done by [52] explain they consider it to be ease of use. it is import that governments ensure they pay close attention to the different costs that are associated with services to be provided.

Proposition 2: the perceived ease of usage of e-government applications will have a positive impact on the end-user's intentions to make use of smart government services.

Awareness

Awareness if an individual's personal knowledge A citizen with high income is likely to prefer to on the specific technology and the ease available. use m-banking services as opposed to one who A nation that is well aware of the use of different does not have much money [6] Thus developing technology gadgets gets the opportunity to governments need to be keen to keep the costs as embrace suggestions given by the government. low as possible. Therefore, the proposition will be

A nation where citizens do not have the proper as follow:

needed awareness or acceptance of the m-government services, then the government is incapable of attaining its objectives of offering the services [48]. Therefore, according to [49] the government needs to object to ensure there is awareness for better implementation.. Thus, the end users prefer to use the service is determined by the level of awareness.

Proposition 3: When proper awareness is done, it will have a positive impact on the user's ability to get access to the smart government services offered.

Proposition 5: Perceived value will have a negative impact on users' intentions to use smart government services.

Social influence

A study done by [53] explains social influence to be magnitude an individual identify to be necessary. Thus friends and family have massive impact in life.

Proposition 6: Social control will have positive contact on end-users' intention to use smart government services.

Enabling conditions

Research conducted by [50] explains the facilitating terms to be the level to which the

Perceived trust in government

individual feels associated with the organization Trustworthy in government identified as the public based on the technical infrastructure that has been evaluation of the services they are given by put in place. Additionally, a specific facilitation authorities', agencies' and institutions' integrity conditions can be a definition of an individual thus the services are dependent on the citizen's regarding the extent which both a technical support expectations. Scholars [54] explain many people and the government is used by the. The developing have trust with the government and often see it as countries are finding it hard to get the smart card the best thing ever to help them out. When there is reader that is used for the registration process. lack of trust in government many projects [55].

Proposition 4: the specific facilitating conditions will likely have a positive impact on the end-user's intention to use the smart government services provided.

Furthermore, [56] research show belief in government, the more preferential the use of government services [57] argue most citizens deal with the government only if they trust the services being provided.

Proposition 7: The projected trust in the government is likely to have a positive impact on the user's intentions on different smart government services

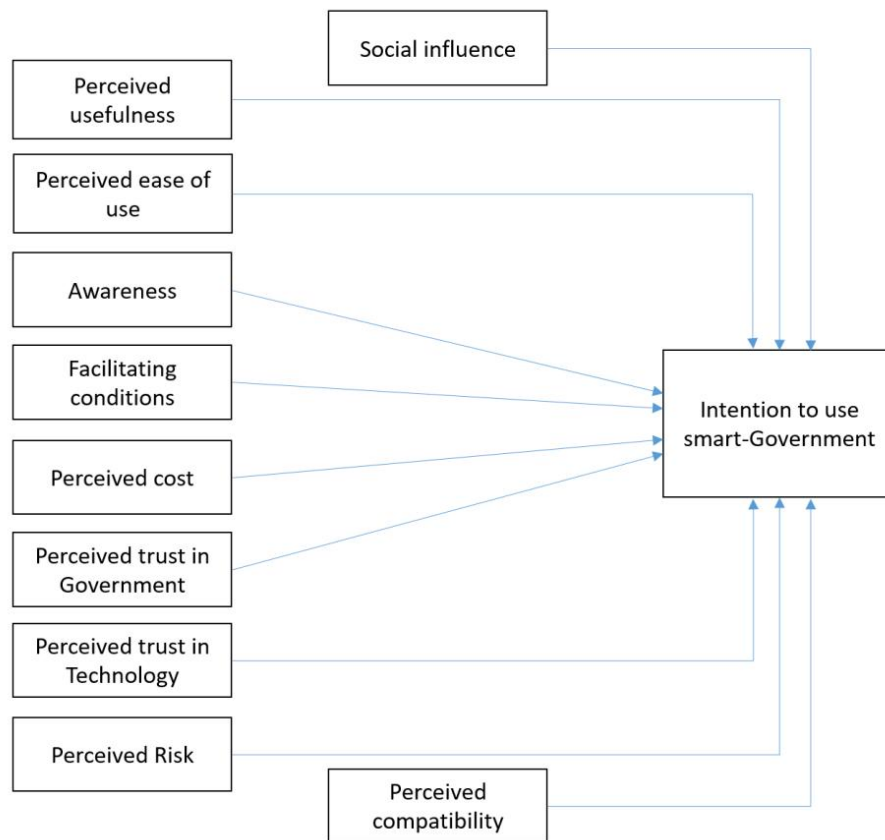


Figure 2: A projected theoretical structure of m-government services in the developing countries.

Perceived trust in technology.

To ensure effective adoption of the m-services for any government research conducted by [4] it explores there is a need for the government to ensure it can be trusted by the citizens of the state. This sort of belief is referred to be institution base [58] emphasize that institutional base trust is essential to ensure the objectives of the financial environment are identified where a sense of community spirit is witnessed. Based on the trust that has been established, it allows the government to adopt m-services with ease and the e-government.

Most developing countries are having difficulties with their legal framework in regard to the ICT technologies that are involved in regard to the cybercrime, consumer safety, and data retreat [59]. Most people in the developing work are much concerned with the security and privacy of their information, especially when having to deal with the government using their smart devices. This is an important issue that cannot be disregarded:

Proposition 8: where there is trust in the technology that has been used, then many users are likely to prefer subscribing to the smart government services.

Perceived risk

A study was done by [7] explore perceived risk is defined as the expected loss in pursuit of the favored outcome. Citizens are very keen on the risks they have to deal with, which makes them be keen on the uncertainty that is identified with the decision that has been made [60]

The primary m-government services risk is often data security. Thus the user's needs to be guaranteed their data are safe, and there is no manipulation of data upon getting access to the government services. Risks often affect government implementations directly.

Proposition 9: Perceived risk will have a pessimistic collision on end-users' intention using smart government services.

Perceived compatibility

[62] Explains compatibility to be the level of innovation that allows the existing facilities to be in a position to be used.. End users perceive an element to be compatible if it can make a good fit in their daily routine which needs to be consistent with the users' lifestyle to get the identified services.. The system needs to be fun and can be easily followed by the citizens, which allow it to be supportive and enhances the citizen's lifestyle. Research conducted by [63] explain most developing nation citizens are willing to interact with the government when they are certain their culture and level of lifestyle has been met, and they feel included. This has widely been supported by other citizens.

Proposition 10: Perceived compatibility identified to have an optimistic contact

on end-users' intention to use smart government operations.

5. Discussion

The paper has been intentional to investigate the different features that directly authority the adoption on (e-government) across developing countries. After checking studies, ten variables were exploited as an essential tool to ensure successful implementation of the e-government services. Furthermore, with preference to use the Davis model, it illustrates the use of other technology and services such as e-commerce, e-government, m-government, and m-banking. Technology advancement is accelerating with time, governments across the world are expected to ensure they find a way to manage their latest devices and ensure there are proper technology updates done for the citizens to get the best services with ease.



Figure 3: factors besides the main variables of TAM

Different studies have proved alertness is essential for the success of a project. Among many citizens across the developing countries, there lack of awareness of the m-government services that are offered. Scholars have identified the main facilitating conditions such as technical infrastructure and organization structure is important to support the m-Lastly, the element of compatibility can be used as an increase in intention to make more users of government services to feel better and have a better approach to lifestyle and behavior. Based on the review of relevant literature, the identified variables have to be well integrated in the system in the developing countries.

government services that are likely to be offered. The perceived cost is a critical determinant on the use of m-government services, both the smart gadgets and internet accesses are not free, and they cost. Moreover, not all individuals across developing countries can afford smart devices.

6. In Summary

The paper has been keen to explore different aspects of literature regarding smart technology adoption by governments for their citizens and their relationship with the different entities, for example, the mobile application based services. The study has provided a clear understanding of different mobile applications that are required

to assist the government in making successful implementations.

There are key determinants of the success of a smart government implementation. Based on different variables identified in the literature, it becomes easy for the smart governments to avoid any form of failure that may be identified on the proposed projects with ease. Identified on exhibit 2, there are different variables that are identified to showcase the implementation of a smart government. Based on the ten propositions that are presented in the literature, it becomes apparent on the end user's adoption of the smart government across the developing countries.

Studies indicated for the success implementation of the smart government there is need to ensure all the relevant stakeholders are involved in the planning and implementation of the government operation. When there is proper coordination of activities of different government agencies the staff also gets the opportunity to give all the needed support (employees, managers and IT specialists) to ensure the smart government program is fully implemented.

The study present different elements identified to affect user's ability to adopt the smart government services that needs to be taken care, but there is need to also check on the limitations of the study where not all factors have been considered to influence the end-user's adoption of smart government services. Additional factors need to be taken into account to ensure there is better inclusion of more factors.

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