Electronic government Services Usage, Adoption and Evaluation: A Review Paper

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Abstract

This article provides information about the electronic government services adoption, usage, and evaluations; in addition to that it discusses the technology acceptance model used in the topic area as well as the theoretical framework that are constructed in this field. This paper presented number of relevant authors and there focuses area in both developed and developing nations. Some discoveries were made during this study, this includes the comparison on the e-government services within the US cities and other research are comparison between the selected developed nations. Finally, few suggestions were found based on the electronic government services in the Federal Republic of Nigeria in addition to other developing nations.

Keywords: Acceptance, e-government, Evaluation, Framework, Model

1. Introduction

Developments within information technology (IT) or information communication technology (ICT) have ushered a new era. Communication methodologies between Governments and various shareholders, including citizens, businesses and various agencies have significantly impacted and influenced the implementation of e-government processes after the late 90s. Consequently, the government department has invested deeply in developing various information technologies and processes towards ensuring more effective communication channels with the various stakeholders [1]. Government functions and processes are gradually evolving from laborious paper based processes to online functions which contribute to efficiency and effectiveness, ensuring greater satisfaction within the general population and businesses that have to deal regularly with the Government machinery [2],. Besides, e-government initiatives also contribute to greater transparency, making government functionaries more accountable for their actions [3].

Nevertheless, there are certain challenges associated with successfully implementing e-government functions, including the availability and development of adequate infrastructure, ensuring aspects of privacy and security and working upon aspects of efficient services [4, 5]. This is a difficult process to correctly perceive how individuals would react to the induction of new processes and technologies [5].

However, there is still much input required to fully understand the multiple dimensions associated with the issue and how the general public perceives the same, which would ensure the continued success and sustainability of any initiatives undertaken in this regard [5, 6].

An electronic service offered by any government translates to electronic government, and is also known as e-government. It is concerned with how modern technology associated with the Internet and associated platforms are utilized towards concluding services, enabling greater

efficiencies in communication and the transaction of data amongst the general public and within the multiple dimensions of government functions [7-9](UN e-government survey, 2005, 2008, 2012).

This aspect is also alluded to by [10] in the perspective such e-Government and e-Governance are two separate and distinct entities in the sense that the former relates to the technological processes and systems which need to be implemented, while the latter relates to the actual functioning and performance of the systems in place.

E-government processes could therefore be instituted at multiple levels of government, be that at the council level, at the legal or the organizational level. However, wherever implemented, it should contribute to efficiency and effectiveness of the functions conducted. In this regard, the relevant models include Government-to-Citizen which is also stated that Government to Government to Customer (G2C), Government to Government (G2G), Business (G2B), and Government to Employees (G2E). Effectively most governments have adopted some form of e-government processes in their systems [11].

The multiple governments worldwide are facing diverse challenges in encouraging their citizens to accept and utilize the processes installed [4-6, 12-18] since there is seemingly difficulties in getting the projects to be actually utilized successfully. Al-Shehry [1] is of the opinion that some 35% of projects initiated are concluded to be significantly off-the-mark, with an additional 50% of initiatives undertaken having gone significantly off-track. A major reason concluded in this regard relates to shortcomings in the quality of electronic services adopted, i.e. the e-service quality, which in turn has hindered the success of multiple initiatives undertaken [19-22]

The value as well as the importance of services in e-government provided to the populace is measured by evaluating the reliability and the dependability of the website when used by the public, related businesses and associated agencies [13, 14, 23].

This treatise is primarily concerned with evaluating the importance of the e-government projects initiatives concerning government and general population. This study intends gaining an understanding of the multiple dimensions associated with how e-governments function, summarizing the experiences of the end-users of the systems implemented with regard to such diverse functions including disseminating information, providing multiple services or placing relevant enquiries. A description of the user's experiences would form the basis of further improvements in the systems towards fulfilling end-user expectations. In implementing online services, it is generally intended that a major portion of the agency's functions would henceforth be web based and accessible from anywhere.

Besides summarizing the end-user expectations, the treatise details how the various government agencies responded to the feedback received periodically. This would ensure that the responses and investments made are relevant. Appropriate customer feedback goes a long way towards improving standards. Further, the same would direct e-service managers on their shortcomings and guide them on how to improve delivery standards. The treatise therefore intends contributing towards enhancing public awareness of the various e-government portals, with a focus on African economies.

Although researches on e-government functions have concluded much, the recommendations are seldom adopted. Kumar, [17] have observed this to be a global phenomenon, even though enhancements in this regard could contribute towards greater acceptance and use of the processes implemented [24]. Indeed, there are seemingly severe shortcomings in the review of quality standards related to e-government processes.

Patriotism and contributing towards the development of one's country are very noble acts. This study therefore intends urging citizens to guarantee the progress of Nigerian citizen's e-government services. Ibrahim, Hilles, Adam and El-Ebiary [13], Alshomrani [25] contends that implanting effective e-government processes in Nigeria would contribute to a major transformation of the public sector since adopting effective communication processes would significantly contribute to the development of the Nigerian economy [14, 26]. Correspondingly, various studies have assessed the processes within Nigeria, highlighting the corresponding challenges and obstacles [27-31].

Considering the importance within the service standards and efficiencies in information technology, the majority of government ministries have their individual web portals [25, 27, 32]. Building upon the same execution of electronic services offered government processes supports in the development and productivity of the various departments, although the current standards in this regard leaves much to be desired (Economic, 2010), with significant opportunities in the major improvements within the prevailing standards [27, 29, 30].

2. Related Work

Evans and Yen (2006) are of the perspective that the protocols enable various state agencies in maintaining greater accountability and transparency in the operations. This contributes to arranging for an administrative system which is smoother; enabling the various government departments to be of more service to the public in consideration of the latter's needs and requirements [33-38].

The basic aim of implementing electronic government processes relates to ensure efficient conveyance of information and associated services, encouraging multiple associated stakeholders in successfully concluding issues [39, 40]. Ibrahim, Hilles, Adam and El-Ebiary [13], Ibrahim, Hilles, Adam, Jamous and Yafooz [14], Al-Tourki, El-Sofany, Al-Sadoon and Al-Howimel [29] conclude that e-government processes contribute towards interaction amongst citizens and within the private sector. [5, 15] has concluded various studies in multiple global locales towards summarizing the benefits of e-government processes.

Governments therefore try for increased participation of their citizens towards rationalizing the system and make the process low-cost, flexible, efficient and ensure the operation of the system at all times [5, 15, 16]. Ibrahim, Hilles, Adam, Jamous and Yafooz [14], Irani, Kamal, Al-Sobhi, Weerakkody and Mustafa Kamal [30] are of the perspective that changes, progress and developments in e-government functions is a gradual process, encompassing multiple stages and phases. Individual stages reflect unique service characteristics and associated functions [15, 16].

Andersen and Henriksen [41], Fan and Jiang [42] aligned with [43], directing their efforts with regard to specific IT applications towards enhancing the efficiencies of specific processes and activities towards evaluating the objectives of the e-government users. [44] concluded six phases of how e-governments mature, and recommending researchers and practitioners to be aware of the same in designing corresponding measurements

Nigerian public agencies have implemented certain framework of ICT resources that probably come up with the Tayo's standards for the sake of e-government due to the increasing competition in the commercial market [45, 46]. The framework is the major obstacle in the road of appropriate implementation of ICT resources in the e-government that further makes the users incapable of allowing it as they do not fit in the present framework [28, 30, 47, 48].

In accordance with the [49] the e-government can be implemented effectually by means of harmonizing a correlation among

partners, as indicated by the e-government report. The citizens of Nigeria showed reluctance in the e-government's implementation and its admittance because of the security and privacy concerns [28, 30, 47, 48].

It is known that every government body has created its official website in which an assortment of services and information has been listed regardless of their standard level that may comply with the Taiwo's model as it is prioritized by citizens [50]. In accordance with [51], theory of reasoned action provides groundwork related to eminently utilized model as it is a conceptual model founded on the determinants of intended behaviour discriminating the behaviour, beliefs, attitudes, and intentions [1].

2.1. Theoretical framework used in e-government

Ajzen [52] carried forward one limitation of the theory of reasoned action i.e. individual behaviour regulated by volitional control but this does not happen every time. On this ground, theory of reasoned action was further researched in addition to transformed into theory of planned behaviour after summing up a significant predictor i.e. perceived behavioural control [53]. This theory was partially rejected by Sheppard & [54]

By the year 1989, Davis offered the technology acceptance model which serves as practical model that explicates the fundamental elements that can be conveniently accepted by the user through which the technology adoption in IS research can become convenient [55-57]. Technology acceptance model further become more essential component with regards to the IT/IS and it is actually developed out of the theory of reasoned action [43, 58, 59].

Theory of reasoned action has further carried considering [55] in which he made certain transformations in its various attitude measures that utilize two technology acceptance elements i.e. perceived expediency and perceived accessibility. Davis [55] clarified the conception of perceived accessibility like the proportion of the belief of an individual as he deems about the utilization done by a specific system will not need any exertion whilst perceived usefulness is defined in the words, the proportion of the belief of an individual that tells if that person will utilize a specific system then it will result in his performance improvement.

The major objective of the enhance technology acceptance model was the endowment of the components that can elaborate the behaviour of the consumer when he uses the new technology (Davis). [60] conferred about the prior technology acceptance models that were TAM1 and TAM2 in which the detailed elaboration of the utilization intention elements (attained by correlating cognitive and social elements) like voluntariness, experience, job relevance, and image. The last model TAM2 was further amended and named as TAM3 in which the elements linked with the assistance of decision makers were added as these involve to lead the technology utilization and acceptance [61]. These new technologies are a combination of internet banking [62], e-learning [63], e-commerce [64, 65], and e-government [66].

As proposed by [67], the first model was not accepted for more time due to the absence of social elements in it that impacts the new technology's acceptance. The other researchers like [68] put forward his standpoint and stated that the first model did not have the required significance and rigidity for which the theory cannot be formulated in the domain of information system. However, [69-71] believed that such technology acceptance model diverted the attention of researchers that they could not focus on other attention-seeking areas linked with the field.

A fresh model, Unified Theory of Acceptance and Use of Technology (UTAUT) was established after assimilating eight (8) relevant models and theories that concerns the information technology [72]. Based on [73-75] claimed that the evaluation of user technology acceptance is convenient within the companies' context but its implementation is not that much convenient. The UTAUT was transformed into UTAUT 2 after summing up the components of habit, price value, and hedonic motivation so that admitted by users and consumer's utilisation of technology can be studied [76]. Diffusion of Innovation, as well as Theory of Planned Behaviour [75, 77-79].

In the public sector, the e-services have been given a clear direction after the revolution and extensive utilisation of internet and making higher success rates for e-business in the private sector

[80]. Likewise, [81] demonstrated the presence of an international trend that emerged with the widely acceptance of IT (Information Technology) and ICT (Information and Communication Technologies) concerning the public sector that created quite big space for the existence of e-government and its implementation in more countries.

3. Discussion

Numbers of research have been reviewed to which few ware of those researches are presented in the table below:

Table 1. Electronic Government Researches and Focuses Area

Author	Focuses
[82]	Government on the web: comparison between two developed nations
[83]	The essence of e-governance is comparison within cities in one of the developed nations. e-government services implementation.
[13]	Methodological Process for Evaluation of E-government Services base on the Federal Republic of Nigerian Citizen's E-government Services usage
[39, 40]	e-government services social media usage Issues, challenges, and recommendations. E-government around the world: Lessons, challenges, and future directions. Improving e-government for the people.
[84-86]	Influential Factors for E-Government Success (Middle East) Adoption of electronic government services
[87, 88]	Key Success Factors of E-Government Projects E-Government: Evolving relationship among the stockholders
[89, 90]	Value Assessment in E-Government and M-Government A knowledge-based approach for developing multi-channel e-government services
[14]	Theoretical Framework Formation for e-government Services Evaluation: Case Study of Federal Republic of Nigeria

[91] evaluated certain programs of e-government's implementation but the scarcity of the framework of information technology and political determination did not give this opportunity and served as the main obstacles held in this road to progress. One other considerable obstacle is the language concern that hinders the admitted by users of e-government in a particular state. English is the most common language so large number of websites utilize this language (no other language option is given).

UTAUT theory was implemented in Kuwait to evaluate the e-government's implementation and the data evaluation was completed with the logistic regression [75, 77, 79]. Focus group approach and found elements (value of the services offered by the e-government) are utilised for the analysis of the Kuwait residents' attitudes and thoughts in regard with the e-service [75, 77]. The appropriate interpretation of the convenience of services offered by the e-government will enable residents to get their work done rapidly and efficiently. The adoption of the services offered by the e-government by the individuals will become convenient when they will overlook government bureaucracy.

The e-government's admittance is highly affected by the determinants of cultural influence, acknowledgement of the residents regarding the e-government service and drought of the facilitating circumstances [75, 77] whereas certain other elements like facilitating condition and effort expectancy are also regarded as to impact the behavioural intention that further impacts the

residents' accessibility to the services offered by the e-government [13, 14].

Malaysia is referred to a standard for the developing countries of Asia so the e-government's model initiative and tax e-filing, in Malaysia, has been introduced by [11] and claimed that the residents suppose the services offered by the e-government perilous to which the TAM (Technology Acceptance Model) was given to indicate the risk dimension. This model was presented by [11] but it lacked certain elements like performance risk (a significant part of perceived risk.

3.1. The Comparison of the Theories/Models

Assessment of the model will be formed from these theories yet critically slanted on the TAM, TAM 2, TPB, C-TAM-TPB in addition to UTAUT because of the united factors since the attitudes associated utilizing individual values in recognizing IT acceptance and use. As these theories will be assessed, they will help in recognizing any deviations or unities incorporated in it.TAM and TPB Models assessment [72].

Table 2. Comparison of Theories / Models of Technology Acceptance for Electronic Based Researches [R2 = in voluntary setting before the effect of moderators, Time 1 (T1) = post-training, Time2 (T2) = one month after implementation, Time 3 (T3) = three months after implementation].

Theory/ Model	Belief	Core Construct	Moderator	Predicting Intention (R2)*
1. TPB	1. Behaviour beliefs 2. Normative beliefs 3. Control beliefs	1. ATB 2. SN 3. PBC	No	T1= 0.37, T2= 0.25, T3= 0.21
2.TAM	1. PU 2. PEOU	1. ATB	No, but based on voluntary	T1=0.38, T2=0.36, T3=0.37
3.TAM2	1. Subjective norm 2. Image 3. Job relevance 4. Output quality 5.Result demonstrability (All determine PU)	1. PU 2. PEOU	Two: Experience (exp.) & voluntary (vol.)	T1=0.38, T2=0.36, T3=0.37
4. C-TAMTPB	1. PU 2. PEOU (determine attitude)	1. ATB 2. SN 3. PBC	Experience & inexperience	T1=0.39, T2=0.36, T3=0.39
5.UTAUT	No	1. Performance expectancy 2. Effort expectancy 3. Social Influence 4. Facilitating conditions	Four: gender, age, exp., and vol.	T1=0.35, T2=0.38, T3=0.36, Pooled = 0.69

4. Conclusions

This paper presented relevant studies that provide the fact evidence to show the impact of usage and adoption of e-Government in the developed countries and in few developing countries. On top of that, this study also looked in to the gap within the topic area and other relevant details within the research area. Technology Perception and the impact of technology perception are also discovered, attitude towards internet, risk levels and internet anxiety on behavioural intention[14]. In addition to that, a brief explanation of the key elements of Information Technology adoption was provided in this paper. In the beginning, a discussion of the electronic government adoption with regards to developing nations that had implemented other methods was carried out. The Unified theory of adoption and usage of technology, as well as the trust model, was subsequently discussed. An extensive explanation of the theories, constructs and relationships

between the constructs was then provided. This paper also presented that UTAUT has been used on a broader level to study the intention to employ e-Government and other IT systems among other models.

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