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CITIZEN-CENTRIC ADOPTION MODEL FOR SMART GOVERNMENT AMONG UNITED ARAB EMIRATES PUBLIC USERS

FAHAD ISMAIL AHMED KHALIFA ALHOSANI



Institute of Technology Management and Entrepreneurship

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

DECLARATION

I declare that this thesis entitled "Citizen-Centric Adoption Model for Smart Government Among United Arab Emirates Public Users" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



APPROVAL

I hereby declare that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Doctor of Philosophy.



DEDICATION

I would like to dedicate my highest acknowledgement to my beloved; parents, my wife, and also my precious siblings for always being with me through all the hardship of my study by giving consistently support and encouragement.



ABSTRACT

Tremendous advancements in information and communication technology, coupled with the usability of smart mobile devices, have brought enormous growth in the appeal of highquality government services. This appeal has, in turn, encouraged governments to deploy services to citizens using a smart government channel. Worldwide, governments have recognized the need to deliver better-integrated services to the public to meet their expectations. Therefore, the transition from the conventional modes of delivering government services to a smart government format involves substantial considerations in the operational aspects of services delivery and drastic changes in existing core business systems across governmental public institutions. The concepts of smart government and smart services have emerged as new ways to deliver such services to meet citizens' demands by developing tools and setting practical standards for services delivery. However, the smart government concept is still difficult to adopt in developing countries including United Arab Emirates (UAE) among public users. Although preparations for adopting the smart government concept in UAE have started running, the implementation of this concept is still not optimal. This means that most smart government studies are still focusing on problems in the early stages of the adoption phase. Thus, this study proposes a Citizen-Centric Adoption Model for Smart Governments among UAE Public Users. There are three objectives of this study. The first objective is to determine the attributes of a citizen-centric design model in smart government. Second, to build a new citizen-centric design model for adoption in the UAE smart government among public users. Third, to validate the proposed model in a smart government among public users. The study opted for an exploratory study using a systematic literature study to identify the significant attributes of the proposed model. The research study was conducted in UAE with an estimated sample size of 323 respondents. To develop a citizen-centric model towards public users when using the online information of a smart government, the data were analyzed based on the regression model to test six hypotheses. The results derived show significant values on openness, transparency, responsiveness, usability, and trust, which recorded p-values of 0.010, 0.000, 0.006, 0.005 and 0.000, respectively that implies a significant relationship with influence on enhancing the citizencentric model is accepted, while the hypothesis related to security factor is rejected. Based on the hypothesis testing and analysis, there is a strong relationship between the significant attributes of the proposed model with the significant R-value. Overall, the adoption of a citizen-centric model in enhancing the public user experience when using online information of a smart government can be used by government agencies as helpful resources while adopting a smart government.

MODEL PENERIMAAN BERPUSATKAN WARGANEGARA UNTUK KERAJAAN BESTARI DALAM KALANGAN PENGGUNA AWAM EMIRIAH ARAB BERSATU

ABSTRAK

Kemajuan yang luar biasa dalam teknologi maklumat dan komunikasi, ditambah pula dengan kebolehgunaan peranti mudah alih pintar, telah membawa pertumbuhan yang besar dalam tarikan perkhidmatan kerajaan yang berkualiti tinggi. Rayuan ini, seterusnya, menggalakkan kerajaan untuk menggunakan perkhidmatan kepada rakyat menggunakan saluran kerajaan bestari. Di seluruh dunia, kerajaan telah menyedari keperluan untuk menyampaikan perkhidmatan bersepadu yang lebih baik kepada orang ramai untuk memenuhi jangkaan mereka. Oleh itu, peralihan daripada mod konvensional penyampaian perkhidmatan kerajaan kepada format kerajaan bestari melibatkan pertimbangan yang besar dalam aspek operasi penyampaian perkhidmatan dan perubahan drastik dalam sistem perniagaan teras sedia ada merentas institusi awam kerajaan. Konsep kerajaan bestari dan perkhidmatan pintar telah muncul sebagai cara baharu untuk menyampaikan perkhidmatan sedemikian bagi memenuhi permintaan rakyat dengan membangunkan alat dan menetapkan piawaian praktikal untuk penyampaian perkhidmatan. Bagaimanapun, konsep kerajaan bestari masih sukar diguna pakai di negara membangun termasuk Emiriah Arab Bersatu (UAE) dalam kalangan pengguna awam. Walaupun persediaan untuk menerima pakai konsep kerajaan bestari di UAE telah mula berjalan, namun pelaksanaan konsep ini masih belum optimum. Ini menjadikan kebanyakan kajian kerajaan bestari masih tertumpu kepada masalah pada peringkat awal fasa pakai. Oleh itu, kajian ini mencadangkan Model Penerimaan Berpusatkan Warganegara untuk Kerajaan Bestari dalam kalangan Pengguna Awam UAE. Terdapat tiga objektif kajian ini. Pertama, adalah untuk menentukan sifat model reka bentuk berpusatkan rakyat dalam kerajaan bestari. Kedua, adalah untuk membina model reka bentuk berpaksikan warganegara baharu untuk diterima pakai dalam kerajaan bestari UAE dalam kalangan pengguna awam. Ketiga, adalah untuk mengesahkan model yang dicadangkan dalam kerajaan bestari di kalangan pengguna awam. Kajian ini memilih kajian penerokaan menggunakan kajian literatur sistematik untuk mengenal pasti atribut penting model cadangan. Kajian penyelidikan dijalankan di UAE dengan anggaran saiz sampel ialah 323 responden. Untuk membangunkan model berpusatkan warganenara terhadap pengguna awam apabila menggunakan maklumat dalam talian kerajaan pintar, data telah dianalisis berdasarkan model regresi untuk menguji enam hipotesis. Keputusan yang diperolehi menunjukkan nilai yang signifikan terhadap keterbukaan, ketelusan, responsif, kebolehgunaan dan kepercayaan yang mencatatkan nilai-p masing-masing 0.010, 0.000,0.006, 0.005 dan 0.000 yang membayangkan hubungan yang signifikan dengan pengaruh ke atas peningkatan model berpusatkan warganegara diterima, manakala hipotesis berkaitan faktor keselamatan ditolak. Berdasarkan ujian dan analisis hipotesis, terdapat hubungan yang kukuh antara atribut-atribut penting dalam model ccadangan dengan nilai R yang signifikan. Secara keseluruhannya, penggunaan model berpusatkan warganegara dalam meningkatkan pengalaman pengguna awam apabila menggunakan maklumat dalam talian kerajaan bestari yang dibangunkan boleh digunakan oleh agensi kerajaan sebagai sumber yang berguna semasa menggunakan kerajaan bestari.

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LIST OF ABBREVIATIONS

PICOC	- Population, Intervention, Comparison, Outcomes, and Context	
	Criteria	
SLR	- Systematic Literature Review	
XML	- Extensible Markup Language	
JSON	- JavaScript Object Notation	
GeoJSON	- Geographic JSON	
ICT	- Information and Communication Technology	
PLS	- Partial Least Squares	
UEA	- Unified Entry Access	
MVC	Model View Controller	
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LIST OF PUBLICATIONS

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- Alhosni F. I. A. K., Basari A. S. H., Akmal S., Suhaimin N., Hakimi H., 2023. Citizen Centric Model for Enhance Public User Experience in Using Smart Government. Springer, pp. 64-74.
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CHAPTER 1

INTRODUCTION

1.1 Introduction

Smart governments are becoming one of the dominant and preferred sectors that intensely inpoe their services and facilities to attract citizens as well as to improve their delivery of information and service to them. On top of that, citizen perspective has become the main concern as it involves every service and technology in a smart government. This proposal aims to provide a new citizen-centric model for the adoption of smart governments among UAE public users. Here, we provide a detailed background of the study followed by the motivation and review of previous studies or literature in the context of citizen issue in smart governments. This is followed by the problem statement, in the light of which the research aim, objectives and questions are developed. The next section presents the significance and scope of the research, along with the proposed methodology that will be considered to accomplish the aim and objectives of the research.

1.2 Research Background

Smart government or smart city is a relatively new concept where its adoption is highly dependent on the country itself, natural and social resources, as well as citizen's knowledge in information and communication technology (Weisi and Ping, 2014). Smart government is a complex innovation because its adoption and implementation take a long time with high operational cost and involve various risks and uncertainties (Yang et al., 2015). Therefore, the smart government concept is still difficult to adopt in developing countries including Emirates Arab United (EAU) among the public users. Although preparations for adopting the smart government concept in EAU have started running, the implementation of this concept is still not optimal. This means that most smart government studies are still focusing on problems in the early stages of the adoption phase.

ICT is the backbone for online information revolution in a smart government. The use of ICT redefines and redesigns traditional formats of process and structural organization, specifically the digitization of information. It hosts different purposes such as collecting data, using data to make better decisions, and improve service delivery as well as enable great accountability through more transparency (Gil-Garcia, Pardo and Aldama-Nalda, 2013). Information needs to be shared, reused, and integrated in the smartness and public acceptance. This has made the computer-supported facilities efficient for sharing and reusing the core issue of smart government integration as well as interoperability (Alenezi, Tarhini and Sharma, 2015; Jiménez et al., 2016).

Recently, with the development of Web 2.0, social media which includes social networking, blogging, wiki, tagging, and crowdsourcing are seen as one of the components in a smart government (Criado et al., 2013; Westermen et al., 2014). It has been accepted in literature as a way to engage with citizens, improve social consciousness, exchange opinions, provoke debate, and sharing information about social and political problems. Furthermore, social media benefits smart governments in terms of having two-way communication, soliciting innovative ideas from the masses, collecting feedback on government services, and increasing transparency in government interaction with the public. Therefore, social media, one of the online information, plays a vital role in enhancing smart government communication.

Motivated by the high number of registered mobile devices, a number of Smart Apps forsmart government have been developed, such as Abu Dhabi City guard (Abu Dhabi, 2015), smart Fujairah (Fujairah Municipality, 2015), Abu Dhabi Gateway (Dahi and Ezziane, 2015), and mobile apps for healthcare (Latif et al., 2015). The Abu Dhabi City guard allows Abu Dhabi residents to report incidents and connect with several government departments. This helps citizens engage in improving security and the general safety of Abu Dhabi. The Abu Dhabi Gateway provides services of government-to-customer and government-to-business. Through these two gateways, services like health, interior affairs, education, and paying traffic fines are made available in real-time.

Public departments should rediscover the role of online information as a source of growth and innovation for designing and creating effective and efficient performance of public tasks and values (Romanelli, 2017). AlAwadi and Scholl (2013) suggested that online information in the public context is intended to enhance the efficiency of the use of public resources and increase the effectiveness of public services. To date, many works have been done to overcome the challenges faced in smart governments to ensure the efficiency of usage that includes legislation and standard data policy (Bertot et al., 2014; Jaekel et al., 2014; Al-Jaroodi et al., 2014), security protocols (Saad, Jaekel et al., 2014), interoperability (Bertot, 2014; Mondorf and Wimmer, 2016), robust technology infrastructure (Bertot, 2014; Palaniswam M., 2016), and open data. However, there has been a limited number of works that systematically study the creation of citizen perceptive in smart governments. Gaining public trust has become one of the most urgent issues in cultivating the acceptance of the public with a smart government to provide better services and gain a better understanding of their communities (Gil-Garcia, 2014). To successfully implement a smart government in this way, it requires the consideration of various aspects, in particular, developing new business and operation models, as well as establishing an information infrastructure and a respective decision support system.

Therefore, in this study, the public from different backgrounds will be evaluated in

terms of the citizen perspective in a smart government. It would add value in establishing a better understanding of the public requirements that would strengthen the government's initiative in shaping a smart government, specifically in Abu Dhabi, UAE. It will provide the Abu Dhabi government's public administrator feedback on how close they are in accomplishing their goals and visions.

1.3 Problem Statement

Smart governments need to provide effective information infrastructure and environment for better users or citizens, as well as to build public trust. However, considered as disruptive technology, the most challenging task for a smart government is to gain the citizen's trust.

Mind scaping is a process of convincing the public to accept a change. Here, it is a process of changing the mindset of the people and administrator to commit in the migration from an e-government of a smart government. A smart government is open, transparent, collaborative, and community engaged. Therefore, to build public trust is often the primary objective of a smart government to gain the public's acceptance. However, the smart government security often impinges on the public trust.

It needs to be properly managed to meet citizen's expectations when they experience using a smart government system or services in the United Arab Emirates. It is necessary to consider human or user or citizen perspective to model the infrastructure of smart governments in order to meet the physical and emotional expectations of the citizen. However, many studies have overlooked the aspect of human when it comes to the smart government system or application in the United Arab Emirates. Likewise, the smart government system implemented in Abu Dhabi is still in the infancy stage. Among the issues faced by the citizens are a lack of public trust and availability of information. As a result, the citizens face difficulties in receiving the correct information.

Another issue is technology. Governments often consider the technological possibilities rather than the citizens' (users') needs in determining the design of government online services. Much more attention is given to technology than to the real needs and expectations of citizens (IPTS, 2004; Reddick, 2005; Bertot and Jaeger, 2008; van Dijk et al., 2008; Ebbers et al., 2008; Pieterson and Ebbers, 2008). For effective and efficient smart government services, understanding citizens' needs, and seeking to discover as well as meet their expectations are essential. These can only be determined through the evaluation of service effectiveness, where the objective of the government is not technological and self-serving, but rather to achieve the practical expectations of delivering efficient and effective services that meet the social expectations of the countries' citizens, as well as increase citizen engagement and government literacy. To get to that point, the evaluation of smart government service effectiveness through a citizen-centered lens is absolutely essential (Jaeger and Bertot, 2010).

It is widely acknowledged that smart governance can be immensely useful in raising the efficiency of government functioning and improving public service delivery, and also in bridging the geographical divide. Several smart governance projects are being run across states in the country by various agencies, both public and private sectors. However, in spite of such efforts, there remain areas of concerns affecting the performance of smart governance in the service delivery. Among the prominent areas are the lack of a citizencentric approach to identify citizens' requirements, portal design, process design, and IT system architecture, as well as inadequate capacity of the delivery system to deliver, and a lack of responsive work culture. To achieve the optimal benefits of smart governance, a citizen-centric approach to service delivery is essential. This model will enable governments to achieve essential efficiency gains and improve service delivery levels, raise citizen satisfaction with government services, and enhance quality of life. To fill in this research gap, this research seeks to develop a citizen-centric model for adoption in a smart government.

1.4 Research Questions

We have formulated the following research questions in order to conduct this study:

- i. What are the attributes to determine the citizen-centric design model in a smart government?
- ii. How to build a new citizen-centric design model for adoption in UAE smart government among public users?
- iii. How to evaluate the proposed model in a smart government?

1.5 Research Objectives

The main objective of this study is to propose a new citizen-centric design model for adoption in the UAE smart government among public users. Basically, our research is aimed to achieve the following objectives:

- i. To analyze the attributes to determine the citizen-centric of public users in a smart government.
- To design a new citizen-centric design model for adoption in the UAE smart government among public users.
- iii. To validate the proposed model in a smart government.

1.6 Scope and Limitation of Study

The primary focus of this research is to explore the citizen-centric model as a way for smart governments to prepare, use, and benefit from the adoption of new innovations, such as e-business, e-government, e-procurement, e-learning and others, based on the citizens' requirements in order to understand how new technology has increased in the smart government organization. In other words, the research has the scope to explore how the citizen-centric model should be designed for the United Arab Emirates smart government.

1.7 Significance of Study

We believe that this research will provide positive results with significant contributions for a smart government to model their structure and service-based user requirements. With this new model, it is believed that the smart organization can improve their services and facilities to attract and improve their accessibility information.

1.8 Organization of Research Proposal

This proposal is structured in three chapters, each addressing a distinct point related to carrying out this research study. The following is a brief outline of the chapters.

Chapter 1: Introduction SITI TEKNIKAL MALAYSIA MELAKA

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This chapter gives an introduction to the problem area of this research proposal, outlines the objectives, research questions, and scope and limitation of the study. The chapter ends with the organization of the research proposal.

Chapter 2: Literature Review

This chapter provides a summary of literature and work done so far in this research area. It gives an overview of a citizen-centric model for adoption by smart governments among UAE public users. This section explains a citizen-centric model and its related works. This chapter also explains the theoretical framework and conclusion.