



**PUBLIC VALUE AND QUALITY FACTORS FOR CONTINUOUS  
USAGE OF POLICE M-GOVERNMENT SERVICES AMONG  
USERS**



**DOCTOR OF PHILOSOPHY**

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**Institute of Technology Management and Entrepreneurship**



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**Saqr Khalfan Ali Alkaabi**

**Doctor of Philosophy**

**2022**

**PUBLIC VALUE AND QUALITY FACTORS FOR CONTINUOUS USAGE OF  
POLICE M-GOVERNMENT SERVICES AMONG USERS**

**SAQR KHALFAN ALI ALKAABI**

**A thesis submitted  
in fulfillment of the requirements for the degree of  
Doctor of Philosophy**



**Institute of Technology Management and Entrepreneurship**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

**2022**

## DECLARATION

I declare that this thesis entitled “Public Value And Quality Factors for Continuous Usage of Police M-government Services Among 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.

Signature

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Name

: SAQR KHALFAN ALI ALKAABI

Date

: 10/7/2022



## 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.

Signature : *Safiah Sidek*

Supervisor Name : Assoc. Prof. Dr. Safiah binti Sidek

Date : 18. 7. 2022



## DEDICATION

I dedicate this thesis to my family.



## ABSTRACT

Government of the UAE has adopted M-government as one of the ways to transform their cities to smart cities. In this case, the continuous usage of the M-government services is considered crucial for the sustainability of smart cities. Recognizing the importance of quality factors and value of public services that are provided through M-government services, this study aims to investigate the relationship of quality factors and public value of M-government services on the continuous usage of M-government. Thus far, there has been a minimal study of the relationship between public value and continuous use of M-government services. Adopting two theories, namely the Information System Success Factors (IS) theory and Public Value theory, this study hypothesized the direct relationship of the quality factors and public value, and the mediating relationship of two variables, namely trust and satisfaction with the continuous intention to use M-government services. To test and validate these relationships, a quantitative survey research has been adopted, in which data were collected from the users of M-police services. A simple random sampling technique was used for determining the sample and data from 379 respondents were analysed for multivariate analysis, confirmatory factor analysis, reliability analysis of the constructs and structural equation modelling. This study found public value and quality factors have significant positive relationship with continuous usage and trust of m-police services, while public value did not have significant relationship with trust, and satisfaction did not have significant relationship with continuous usage of m-government. With respect the effect of trust and satisfaction as mediators, both partially mediate the relationship between quality factors and continuous usage, and between public value and continuous usage of M-government services. Although this study focuses on the use of m-police services, it can be generalized to other usage of M-government services provided by other government bodies. Further, the examination of M-government services as public value is relevant considering that M-government services are used by all citizens. Hence, the findings of this study are valuable for theoretical and practical knowledge. It is also valuable for the government, particularly the UAE to consider the factors that contribute to satisfaction, trust and continuous usage of M-government that contributes to the sustainability of their smart cities.

# **NILAI AWAM DAN FAKTOR KUALITI BAGI PENGGUNAAN BERTERUSAN PERKHIDMATAN POLIS M-KERAJAAN DALAM KALANGAN PENGGUNA**

## **ABSTRAK**

*Kerajaan UAE telah menggunakan M-kerajaan sebagai salah satu cara untuk mengubah bandar mereka kepada bandar pintar. Dalam kes ini, penggunaan berterusan perkhidmatan M-kerajaan dianggap penting untuk kemampuan bandar pintar. Menyedari kepentingan faktor kualiti dan nilai perkhidmatan awam yang disediakan melalui perkhidmatan M-kerajaan, kajian ini bertujuan untuk menganalisa hubungan faktor kualiti dan nilai awam perkhidmatan M-kerajaan terhadap penggunaan berterusan perkhidmatan M-kerajaan. Sehingga kini, kajian tentang hubungan antara nilai awam dan penggunaan berterusan perkhidmatan M-kerajaan masih berkurangan. Mengguna pakai dua teori, iaitu teori Faktor Kejayaan Sistem Maklumat (IS) dan teori Nilai Awam, kajian ini menguji hubungan langsung di antara faktor kualiti dan nilai awam dengan hubungan pengantara dua variabel iaitu, kepercayaan dan kepuasan dengan niat berterusan menggunakan perkhidmatan M-kerajaan. Bagi menguji dan mengesahkan hubungan ini, kajian tinjauan kuantitatif telah dijalankan, di mana data dikumpulkan daripada pengguna perkhidmatan M-polis. Teknik persampelan rawak mudah digunakan untuk menentukan sampel dan data daripada 379 responden telah dianalisa untuk analisis multivariate, analisis faktor pengesahan, analisis kebolehppercayaan konstruk dan pemodelan persamaan struktur. Kajian ini mendapati nilai awam dan faktor kualiti mempunyai hubungan positif yang signifikan dengan penggunaan berterusan dan kepercayaan perkhidmatan m-polis, manakala nilai awam tidak mempunyai hubungan yang signifikan dengan kepercayaan. Kepuasan juga tidak mempunyai hubungan yang signifikan dengan penggunaan berterusan perkhidmatan m-kerajaan. Berkenaan dengan kesan kepercayaan dan kepuasan sebagai pengantara, kedua-duanya menjadi pengantara sebahagian di antara faktor kualiti dan penggunaan berterusan, dan di antara nilai awam dan penggunaan berterusan perkhidmatan M-kerajaan. Walaupun kajian ini memfokuskan kepada penggunaan perkhidmatan m-polis, ia boleh digeneralisasikan kepada penggunaan perkhidmatan M-kerajaan lain yang disediakan oleh badan kerajaan. Seterusnya, kajian perkhidmatan M-kerajaan sebagai nilai awam adalah relevan memandangkan perkhidmatan M-kerajaan digunakan oleh semua rakyat. Justeru, dapatan kajian ini adalah bernilai untuk pengetahuan teori dan praktikal. Kajian ini juga bernilai bagi kerajaan, khususnya UAE untuk mempertimbangkan faktor-faktor yang menyumbang kepada kepuasan, kepercayaan dan penggunaan berterusan perkhidmatan M-kerajaan yang menyumbang kepada kemampuan bandar pintar mereka.*



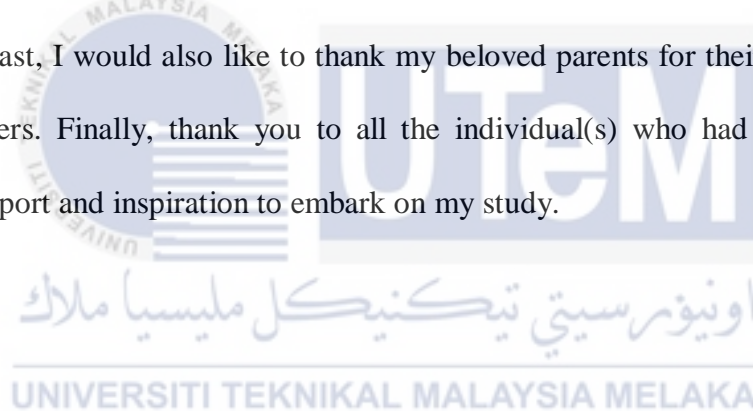
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## LIST OF SYMBOLS

$R^2$  - Squared Multiple Correlation



## LIST OF ABBREVIATIONS

UAE	-	United Arab Emirates
DOI	-	Diffusion of Innovation
UTAUT	-	Unified Theory of Acceptance and Use of Technology
TAM	-	Technology Acceptance Model
IT	-	Information Technology
SEM	-	Structural Equation Modelling





## LIST OF APPENDICES

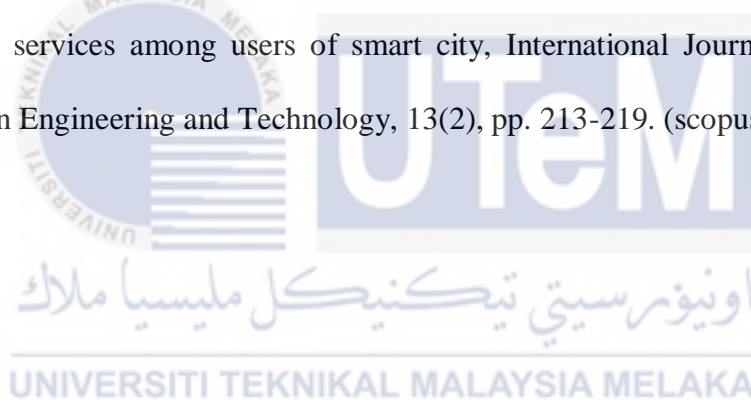
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## LIST OF PUBLICATIONS

The followings are the list of publications related to the work on this thesis:

1. Alkaabi, S.K.A., Sidek, S., and Modqli, N.A., 2022. Mediating model of factors affecting continuous use of M-government services of Abu Dhabi Smart City, *International Journal of Sustainable Construction Engineering and Technology*, 13(2), pp. 141-152. (scopus indexed)
2. Alkaabi, S.K.A., Sidek, S., 2022. Causative factors for continuous usage of M-government services among users of smart city, *International Journal of Sustainable Construction Engineering and Technology*, 13(2), pp. 213-219. (scopus index)



# CHAPTER 1

## INTRODUCTION

This chapter is an introduction chapter of a thesis that aims to investigate the effect of quality factors and public value on continuous usage of M-government among users in the UAE. To gain further understanding of the effect of quality factors and public value, two variables, namely trust and user' satisfactions are considered as the mediating factors that influence the relationship of quality factors and public value on the use of M-government services in cities of the UAE. This study is driven by the needs to provide knowledge on how to ensure continuous usage of M-government services, which is recognized as a crucial aspect for sustainable smart cities in the UAE.

As an introduction to this thesis, this chapter is organized into eight sections. The first section presents the background of the research, followed by the problem statement of this thesis. The third and fourth section state the objectives and the research questions addressed in this research. The fifth and sixth section present the significance and the scope of the research, while the seven section presents the operational definitions of the constructs considered in this research. The final section presents the organization of this thesis.

### 1.1 Background

Governments all over the world are taking the advantage of the advanced development of technology particularly the mobile and digital technologies to provide quality public services to their stakeholders. The mobile and digital technologies have been adopted in the diverse areas of public services such as health, transportation, finance and taxes, communication, agriculture, education as reported by Watkins, Goudge, Gomex-Olive

and Griffiths (2018); Park and Lee (2018); Sanchez-Torres et al. (2018); Wang (2020). The increasingly adoption of these technologies contributes to the transformation to smart cities, which emphasizes the making cities livable, sustainable and efficient (Malaquias and Siva Junior, 2021) for social stability and economic prosperity (Yeh, 2017; Aggarwal and Solomon, 2020). It has been claimed that the transformation to smart cities is resulted from the adoption of mobile technologies (Oliveira Malaquias and da Silva Júnior, 2021).

Pardo et al. (2011) describe a smart city, in the context of government management, as one that improves management for both front-office and back-office operations. In this case, smart government's managerial innovation is considered as "a mechanism to create managerial and organizational capabilities by effective use of technological tools and conditions". The differences between smart city and smart government were proposed during the 20th Gulf Cooperation Council E-government and E-services Conference (2014) to clarify the differences in terms of its major drivers, roles, geographical and vertical orientation, technology coverage, and approach.

Smart governance is primarily a bottom-up approach led by a management team made up of various stakeholders, while a smart city is primarily a top-down approach led by the prime minister. The core drivers of smart city development are economic growth, competitiveness, and environmental sustainability (Yeh, 2017; Alajmi and Rorissa, 2018; Aggarwal and Solomon, 2020). In this respect, smart government technology domains put a stronger focus on business processes and technologies to ensure information is disseminated flawlessly through government departments.

Giffinger et al. (2007) claimed that smart governance is emphasized in the smart city model as a wider category that includes smart government, where the smart governance component includes participation in decision-making and transparent decision-making. Additionally, Van Walravens et al. (2010) believed that the secret to smart governance is an

efficient city administration that delivers services to its residents and fosters enterprises, which is important in today's service-based economy.

M-technology has arisen as the next wave in the IT boom, due to two distinct characteristics: convergence and cellular connectivity. The most well-known benefit of m-technology is mobility. Smartphones, notebooks, wireless phones, and tablets are examples of mobile computers that liberate consumers from physical connections to the desktop. The term "wireless" refers to the transmission of data between a computing device and a data source without the use of a physical link.

Even in rural and isolated areas, nationwide broadband coverage leads to greater telephone than landline penetration (Patel, 2005), especially in developing countries that suffer from insufficient telecommunication infrastructure (Kushchu and Kushchu, 2003). Furthermore, M-government is well-suited to the developing world, where internet penetration is poor but cell phone penetration is increasingly increasing, particularly in urban areas (Halaweh, 2019). As a result, in developing countries where e-government applications have run into problems, the bulk of the population lives in rural areas, and technology is lacking, M-government is the most effective way to provide government services to rural populations. These applications vary from basic purchases such as tax payments, bill payments, and inquiries to mobile identity cards, in which a citizen's mobile phone serves as a phone, an identification card, a cash wallet, a driver's licence, and a health care card all in one. In developing countries, specifically the East African Countries, the M-government services have been implemented in the areas of information dissemination, agricultural services, financial services, and law enforcement.

Recently, the Middle East cities are emerging as the global benchmark for renewable energy production, transmission and use, resulting from the strong government policies that are moving cities away from depending on hydrocarbon energy toward clean technology

energies, such as solar and wind (Desouza et al., 2020). These cities are moving towards becoming smart cities that emphasize on the use of technology for livable, efficient and sustainable cities for social stability and economy prosperity (Yeh, 2017; Aggarwal and Solomon, 2019). In many Middle Eastern cities, smart city initiatives are being implemented at a rapid pace in the Middle Eastern cities such as Dubai, Abu Dhabi, Jeddah, and Doha.

The United Arab Emirates (UAE) which is a federation of absolute hereditary monarchies are also moving towards implementing M-government in their efforts to transform into smart cities. This country pioneered the smart idea when oil and gas were a major contributor to the country's economy. However, in the mid-1990s, the UAE's visionary leaders recognized the need to diversify the economy in order to minimize dependence on oil by developing policies that include finance, tourism, real estate, and services. Understanding this diversification strategy makes it critical for businesses and institutions to improve their customer service performance in order to stay competitive. As a result, the UAE has steadily increased its involvement in service-based industries, while also improving the efficiency of its various sectors in order to move toward a knowledge-based economy. The United Arab Emirates has made significant investments in the adoption and implementation of information and communication technology (ICT) in both the private and public sectors (Dutta and Mia, 2011). For second year in a row, Abu Dhabi and Dubai have been ranked as the smartest cities in the Middle East and North Africa region in the Smart City Index 2021 (Bris, Cheong and Lanvin, 2021)

The UAE's leaders have placed a strong focus on transforming its cities to become smart cities by establishing a number of strategic and forecasting services that operate at a macro-level of quality and excellence. There are also a number of other initiatives, including the creation of international excellence systems, certification programs, standards, e-Government initiatives, research, and strategic collaborations with quality-focused

organizations and institutions (Eid, Selim and El-Kassrawy, 2020). These initiatives have intensified the UAE's race for efficiency, productivity, customer service, and competitiveness, especially in federal and local government departments and sectors during the last two decades.

According to the Saudi Gazette (2016), there are 226 million internet users in the Arab world by 2018. The research also showed that the Gulf countries' GDP accounts for 60 per cent of the Arab world's GDP. In addition, Internet penetration hit a new high of 55 per cent in 2018, up from 37.5 percent in 2014. Until March 2021, the number of internet users in the Arab World reached (199,845,130) out of the total population of (265,587,661), which means that the number of users is over 75%. Given these potentials, it is clear that the economic implications of such transformations are critical for the UAE's economic development. The UAE announced its initiative for transition to Smart-Government, as part of its vision to offer all of its governmental services 24/7 to all of its people, regardless of where they are. The Telecommunications Regulatory Authority collaborates with all government agencies to enforce the smart government program, and the federal smart government plan is implemented by the Telecommunications Regulatory Authority (Halaweh, 2019).

Through technology implementation processes, most governments are on the verge of embracing and extending innovative ways of providing government knowledge and services (Dutta and Mia, 2011, Consistent with the growing popularity of mobile technology, governments across the world is transforming from e-government to m-government (Wang, 2014; Eid, Selim and El-Kassrawy, 2021). Similarly, the UAE are transforming from e-government to M-government (Eid, Selim and El-Kassrawy, 2021), in which they are all running on M-government services platform. M-government refers to the use of various mobile platforms for example cell phones and smart tablets for the governments to provide

a variety of services to different stakeholders, independent of time and locations of users (Liu et al., 2014; Wang, 2014).

Advanced technologies have resulted in the value creation in public sectors (Criado and Gil-Garcia, 2019). M-government services are contributing to a better governance and providing innovation in the delivery of public services (Reddick and Zheng, 2017). Ziemba et al. (2014) suggest that in order to effectively implement the M-government approach, high-quality, sophisticated web portals are needed. The UAE government has its own official site, which is part of the federal government's e-Transformation program and has achieved a major milestone. Both the local and federal governments provide e-services to their residents through a single portal where they can access them all. In addition to providing avenues of contact between citizens/customers and government officials through platforms such as social media, surveys, blogs, polls, and forums, the portals often serve as a single-entry point for accessing M-government services from a variety of local and federal government e-services. Visitors and business people will profit from the facilities as well. Open data systems, which have benefited scholars, teachers, and the general public, are also used to make government information accessible to the public. Drawn from this scenario, it is clear that the continuous use of M-government has the potentials to contribute to the transformation of smart cities. It is expected that the adoption of M-government facilitates efficiency customer services, productivity, and competitiveness, especially in federal and local government departments and sectors.

Many initiatives to implement M-government for the transformation to smart cities have been taken by the government of UAE. However, the success of this initiatives depends on the continuous usage of M-government among its citizens. Considering that quality is one of the essential factors that contribute to continuous usage (Kim, Lee, 2019; Li and Shang, 2020), this research aims to investigate the relationship of quality factors that influence the