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THE IMPACT OF QUALITY MOBILE E-GOVERNEMENT SERVICIS ON SERVICE USAGE : THE MEDIATING ROLE CITIZEN'S SATISFACTION

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ABSTRACT

In order to determine how pleased residents are with M-government services and how frequently they use them in the United Arab Emirates, this study will look at many aspects of service quality. 520 people who were both UAE citizens and residents contributed the data. The study used the statistical package for social sciences (SPSS 26) and appropriate statistical procedures to evaluate the hypotheses. This study revealed that the relationship is partially mediated by citizens' satisfaction, and the results of the analysis can be used to motivate UAE society to increase the availability of mobile government services and improve the ones that are already provided in light of a better understanding of its citizens' needs. The acceptance of these mobile services would increase as a result. The study's conclusions allow for the formulation of a number of recommendations. Future studies are required, for example, to examine how to enhance government services for the benefit of users, developers, and decision-makers.
Keywords: *Citizen Satisfaction, Service Use, And Quality Of Service In Mobile Government, E-Government.*

1. INTRODUCTION

By promoting international communication, globalization aims to broaden the scope of governmental operations. When selling their services, several companies communicate with customers via cellphones. Due to the rapid development and spread of information and communication technology (ICT), as well as the growing demands of the public, the government has had to adapt and modify how it operates in order to attain a higher level of citizen and resident satisfaction. New advancements take place every minute around the globe as a result of the quick growth of technology and services.

The electronic government (E-government), a technological advancement created by the government to provide equally accessible access to government services for residents and businesses over a wired connection, is one of the rising technologies [16]. E-government overlooks the great majority of mobile users despite being in its infancy. Since mobile has become a standard component of daily life and an increasing number of people have access to mobile phones and mobile internet connections, m-government is necessary [36]. Mobile government (m-government) is therefore seen to be the logical extension of e-government and is thought to be the result of the use of wireless technologies [20]. The UAE's 2021 goal, which calls for "a high quality of life founded on world-class public infrastructure, governmental services, and a rich recreational environment," was made possible by the introduction of this service.

If we want to keep up with technological advancement in mobile-government services, we must understand the many elements (factors) that could affect the people's satisfaction with the usage of the government services. This survey discusses how satisfied the general public is with the mobile services provided by the government.

This poll is significant because it provides information on public satisfaction with services to government decision-makers. This helps them improve their M-services and develop new ones so that service recipients can use them more effectively and efficiently.

2. RESEARCH OPJECTIVES

In order to determine how satisfied residents are with M-government services and how frequently

they utilize them in the United Arab Emirates, this study will examine characteristics of service quality. The study wants to do the following things,:

To ascertain the relationship between service quality and the degree of citizen satisfaction with smart M-government services.

To ascertain the relationship between the use of smart M-government services and citizen happiness.

To establish a link between the utilization of M-government smart services and the level of service.

To ascertain how the employment of M-government smart services as a mediating variable influences the relationship between service quality and degree of citizen satisfaction.

3. REVIEW OF THE LITRATURE AND DEVELOPMENT OF HYBOTHESEASE

As a result of the development of multiple information and communication technologies (ICT), governments have used ICT, and more specifically mobile technologies, to provide services to their populations [2]. These mobile government services include mobile alerts, which let people get in touch with their government, mobile services, which let people use their phones to conduct government business, mobile administration of government operations, and mobile democracy, which enables people to take part in political decision-making like voting using their mobile devices [4]. The accuracy varies depending on the government, the technology employed, and the population who would use these mobile government services. This review of the research will look at the efficacy of mobile government use and citizen satisfaction

3.1 Adaptive Services

Central optimization has traditionally been thought of as improving "service" in the broadest sense. Through decentralized autonomous interactions that supply personally optimized solutions, the Internet of Things (IoT), which has upended the business world, offers a new sort of intelligent service and agility [14]. This may contradict some people's beliefs that centralized governance in smart cities is centralizing ever more. In addition to the challenge of recognizing the value of cities and their residents and selecting which smart services to embrace to promote participation, cities have extremely serious concerns about the costs of operating smart services [17]. Budgets for IT are still tight, so it would be challenging to justify the costs of introducing a new layer of technology unless there were definite benefits.

3.2 The UAE's M-Government Smart Service

The UAE smart concept started to take shape as soon as oil and gas started having a substantial impact on the economy. However, in the middle of the 1990s, the UAE's visionary leaders made an effort to reduce its reliance on oil by establishing policies that benefited from other economic and industrial resources like trade, tourism, real estate, and services [15]. Economic diversification was regarded as being necessary. Enhancing customer service efficacy is necessary to recognize this diversification phenomenon and give businesses and institutions the tools they need to stay competitive [11]. In order to make the shift to a knowledge-based economy, the UAE started to broaden its service offerings and improve the quality of such services [47].

The government has had to adjust and change how it operates in response to the rapid growth and evolution of ICT and the growing needs of the populace in order to raise the level of satisfaction among people and residents. The Information & e-Government Sector of the Telecommunications Regulatory Authority launched the UAE M-government to provide access to government services around-the-clock (Mobile government). H. On May 22, 2013, H. unveiled the first Mobile Government initiative to move customer service centers to each customer's phone. Sheikh Mohammed bin Rashid Al Maktoum is the vice president, prime minister, and ruler of Dubai in the United Arab Emirates. He claims that this is how the administration showcases its successes [50]. Additionally, every effort is made to allow the federal government's departments to prioritize "providing government services to the public through their mobile phones" [5]. This review of the research aims to evaluate the effects of M-government reliability, including how reliability and consistency affect people' satisfaction.

3.3 Excellence in Service

Information quality has a service quality dimension for M-Gov. This aspect is concerned with the content, particularly its appropriateness, accuracy, completeness, and timeliness. The quality of the information is said to have an effect on all mobile services and to favorably correlate with M-Gov services and usage satisfaction [8]. System quality is defined as "the evaluation of the information processing system itself and focuses on the

outcome of the interaction between user and system," according to Hajar S. Al-Hubaishi [8]. Users' worries about security and privacy, connectivity problems, and the general public's concern over the possibility of identity or information theft, a lack of access, delays in responding, and other problems all have an impact on system quality. Complete information must be provided in order for the user to complete the service promptly and conveniently. includes the stability of the M-Gov system; stability is the property of remaining steady and unchanging. The service's variability, dependability, efficiency, and privacy are its four key characteristics. Its technology aspect is as follows. As a result, there is a positive correlation between system quality and M-Gov usage satisfaction.

The more the information quality, service stability, and consistency, the greater the likelihood that more people will be lured to the benefits offered by m-government. The integrated Expectation-Confirmation Model (ECM) is reportedly used to assess users of Information Systems (IS) rather than just taking satisfaction into consideration [32]. The premise that customer satisfaction increased when the service agreed with their expectations for improved delivery, fast and accurate information, and transactional services is similar with the findings of Alain Y.-L. Chong [27].

Governments are offering citizens with more digital mobile services as a way of attaining social and economic goals. According to Nasser A. Saif Almuraqab [38], mobile services essentially increase a government's effectiveness through fostering socioeconomic progress. The authors do acknowledge that it is a problem that UAE residents have access to technology but are not aware of the availability and value of m-government services [15]. If people knew where to go for prompt government services, they would feel more secure. The UAE government has a significant issue with its ignorance about the existence of e-services accessed through smartphone applications.

It's important to comprehend a few essential terms while examining the quality and accessibility of mobile government services. Reputable academics have thoroughly studied the meaning of availability in terms of performance and functionality in the context of information technology. The researchers define availability as authorized access to essential data for people who need it. Assume that the phrase also refers to "a requirement aimed to ensure that systems run swiftly and that service is not denied to authorized users" [43]. Services should be accessible to users without discrimination or restrictions. In accordance with this idea, the people should have access to UAE m-government services. Most nations appreciate the delivery of government services via mobile platforms since the basic infrastructure is becoming more accessible. Nripendra Rana and others' [44] asserts that over the past ten years, wireless technology has advanced and most governments have increased their usage of internet-enabled mobile devices. Access to crucial communication infrastructure is necessary for the government to deliver services to people all around the world. They occasionally create significant opportunities for increasing the reach of smart services [14] Due to their lack of digital literacy and the high fees associated with using the systems in other countries, like India, some people do not fully utilize government services [44]. A person feels driven to refrain from using a product when they are unfamiliar with it. If the UAE government's objectives call for reaching more substantial macroeconomic goals, it should inform the public about increasing availability and utilization. Additional explanations for the decreased availability of government services are suggested by further investigation of the UAE mobile systems platform. Other factors that influence the adoption of mobile services in the UAE, in addition to the accessibility of mobile IT systems, include regular user interaction, frequent promotion of governmental services to foster greater usability, active emergency management, and sparse management and correction suggestions [29].More people are aware of how to use educational services through mobile applications because they are readily available. However, a lack of enrolment in these programs raises the issue of availability, which obstructs the effective provision of government services.

In general, earlier research offers helpful insights into the moderating and dependent variables. A nation's citizens have high expectations for the promptness and responsiveness of their government. For instance, the government can begin the process of renewing licenses, getting health insurance, and offering police services via m-mobile devices. Customer satisfaction, however, depends on how the government manages these services. Peer-reviewed studies suggest that there are additional factors that can affect availability, which in turn can affect satisfaction before having an effect on how often a service is used. Simply said, responsiveness refers to a problem's quickest practical solution. Availability and service consumption, which are excessively dependent and

independent aspects in this research, are only briefly examined in studies. One example is when a customer emails thorough product information. A new metric for responsiveness is how quickly you respond to emails with the required details [29]. when people can communicate and reciprocate in a relationship without feeling criticized or remorseful. Another important idea is reactivity. Acceptance is one of the most crucial factors in helping loved ones hear, perceive, and appreciate [33].

The success of the mobile government is largely due to the increase in cellular subscribers around the world and the infrastructure that connects consumers to government services [15]. Mobile government is supported by a sizable public desire for more adaptable government institutions, and it is commonly recognised that the rate of government e-adaptation is beginning a new trend.

Reliability is defined as "the ability to execute the promised service dependably, accurately, and consistently" by Saysoth Keoduangsine [34], which is in line with the UAE's objective of placing customer support centers at the fingertips of every client.

If the services offered accurate, complete, and clear information about a distinct area of government activities, procedures, and services, users are more likely to believe that the government's decisions, processes, and actions are fair [26].Reliability serves as the independent variable in this study, measuring the relationship (effect) on several aspects.

Target citizen accuracy and mobile technology accuracy can be summed up as two areas that describe the capacity of mobile government services to meet their aims and objectives without errors. The advancement of technology has made it possible for the government to properly and efficiently convey information to the intended populace, enabling the mobile government to be very exact in its deployment and delivery.

Khalid Alghawi and Ali Ameen and Amiya Bhaumik [7] make the case that governments should focus on smart technology to enable the cross-organizational transmission of information across boundaries. The technology-based platforms tend to be swift, compared to the conventionally sluggish and onerous procedures of providing services to people, increasing the pleasure of a country's citizens.

Ali Ameen and others [21] examines the degree of satisfaction reported in 147 public administration personnel' interviews and discovers that satisfaction levels are influenced by the caliber of service provided by online systems. Obeid Alshamsi [18] also identify efficiency, relationship with governmental agencies, leadership, openness, and information system quality as key success factors for smart technology in the UAE.

Studies have been done to evaluate the efficacy of mobile governments since they have been introduced. For instance, in order to increase the utilization, adoption, and accuracy of mobile governments, one study by Se-Jeong Park [41] tried to pinpoint their shortcomings. Another study by Zhen J. Chen [25] focused on the accuracy of mobile government usage and sought to understand how mobile governments function in comparison to traditional governments and whether they produce better or worse results.

3.4 Utilizing Services

User satisfaction illustrates how happy users are that their demands and expectations have been met by M-services. User happiness encourages consumers to use a program longer, which improves performance. This kind of measurement, which describes a user's overall consumption activity, is also known as "Service usage."

More governments are using Mobile Government technology (mGov) to deliver services to the public and other key stakeholders electronically as online and smartphone usage rises. Governments mandate mobile devices to encourage better communication with the general populace.

According to research by Mohammed T. Nuseir and others [40], responsiveness is one of the major determinants of customer satisfaction. Explaining responsiveness aids in understanding many metrics, such as optimization and website loading time. People can explore various websites, navigate their searches, and solve problems thanks to its responsiveness. If responsiveness is not taken into account, it may result in website crashes on various mobile phones, leaving a permanent mark.

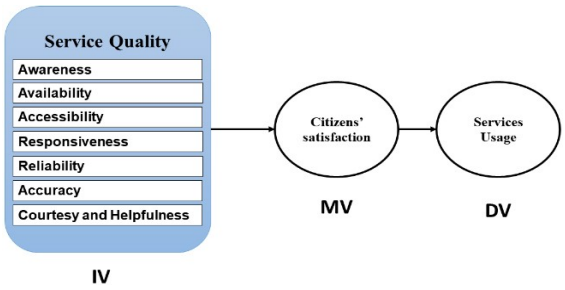
4. STUDY HYBOTHESES

In light of the foregoing review of the study's key principles and the relevant studies that are currently available, the following hypotheses are presented:

H1: The service quality of M-government smart services has a beneficial impact on the degree of satisfaction of citizens with those services.

H2: The degree to which citizens are satisfied with M-government smart services has a beneficial impact on their use.

H3: The service quality provided has a beneficial impact on how often M-government smart services are used.
H4: The satisfaction of citizens can operate as a mediator in the relationship between the utilization of M-government smart services and service quality.



Model For The Study, Figure 1.

5. ANALYSIS METHODS

5.1 Research Approach

The target population's 520 respondents made up the sample size, and the non-probability sampling technique (random samples) was used because it was more practical and straightforward to access the main target population. Knowing our target population, which were UAE citizens, was the first step in the research design.

5.2 Sources Of Data

While the secondary data mostly came from scholarly journal articles and evaluations of prior work, the primary data was gathered using an online survey questionnaire that was sent via emails and WhatsApp links. The four sections of the online survey questionnaire were adopted: the first portion gathers demographic data to learn about the participants; the second section inquires about their opinions; and the third section inquires about their experiences.

5.3 Adequacy Of Measures

The study has been suitably consistent for the survey instrument that assesses the notion of service quality and people' happiness with using the app in order to pass reliability tests. The study did note, however, that test-retest reliability, which increases reliability and coefficient w, also evaluates data stability.

5.4 The research tool

5.4 The Research Tool

The researchers evaluated the user satisfaction of UAE mobile government services using a Lime survey electronic questionnaire using Likert-type scales with five points from (1 to 5), where 5 indicates "Strongly agree" and 1 represents "Strongly disagree."
The first section of the electronic survey consisted of nine demographic questions about gender, age, education, location, nationality, level of computer proficiency, mobile operating system, and whether or not respondents had ever used any UAE government apps. A total of 47 questions were used to collect data for the survey's four sections. Information about the Service Quality of UAE Mobile Government Smart Services was to be gathered in the second area, and the third section was to collect data.
A total of 707 responses were gathered throughout the course of the 30-day data collecting period, 187 of which were excluded due to incompleteness, leaving 520 that could be used for analysis.

6. DATA ANALYSIS

Descriptive statistical analysis, reliability analysis, T-tests, ANOVA analyses, correlation analyses, regression analyses, and hierarchical analyses are all included in the analysis process. The "Data Analysis package" in Microsoft Excel was used by the researchers to analyze the data.

6.1 A Demographic Variables

Table 1 from the sample study illustrates important statistics, showing that out of 520 respondents, men responded with 35.4% while women responded with 64.6%. The poll seemed to be more willingly accepted by women. After merging participants aged 18 to 24 in one group (9.2%), participants aged 25 to 34 in the second group (40%) and participants aged 35 to 44 in the third group (40%) the age categories were divided into four groups.

Table 1 : Demographic Information.

Gender	Male	184 (35.4%)
	Female	336 (64.6%)
Marital Status	Single	104 (20%)
	Married	416 (80%)
Age	18-24 years	48 (9.2%)
	25-34 years	208 (40%)

	35-44 years	224 (43.1%)
	45+ years	40 (7.7%)
Education	High School	120 (23.1%)
	Bachelors	368 (70.8%)
	Masters	16 (3.1%)
	Doctorate	16 (3.1%)
Emirate	Abu Dhabi	408 (78.5%)
	Dubai	8 (1.5%)
	Sharjah	40 (7.7%)
	Ajman	8 (1.5%)
	Fujairah	8 (1.5%)
	Umm al-Qaiwain	8 (1.5%)
	Ras al-Khaimah	32 (6.2%)
	UAE Visitor	8 (1.5%)
Nationality	UAE National	224 (43.1%)
	Arab Countries National (excluding GCC)	272 (52.3%)
	Asian	16 (3.1%)
	African (excluding African Arab countries)	8 (1.5%)
computer skills	Beginner	48 (9.2%)
	Intermediate	224 (43.1%)
	Advanced	160 (30.8%)
	Expert	88 (16.9%)
Mobile OS	IOS	272 (52.3%)
	Android	248 (47.7%)

6.2 Reliability test.

Joseph and Jum state [31, 39] The lower limit for Cronbach's alpha was commonly accepted to be 0.7, and 0.6 in exploratory research. All variables, as shown in Table 2, exceeded the minimum criterion of 0.70 [31, 39]. Each variable's coefficient attained a high level of reliability. The variables' Cronbach's Alpha results were (0.94) for service quality, (0.96) for citizen happiness, and (0.94) for service usage. These are the inquiries used to construct the scale [48] that measures the same characteristic.

Table 1. Reliability Test

Variable	Cronbach's Alpha	No. Items
Awareness	0.74	4
Availability	0.87	3
Accessibility	0.78	2
Responsiveness	0.88	3
Reliability	0.74	4
Accuracy	0.82	3
Courtesy and Helpfulness	0.74	2
Service Quality	0.94	21
Citizens' Satisfaction	0.96	7
Service Usage	0.94	8

Table 2 demonstrates that the coefficient for each variable attained a high degree of dependability and that all variables were greater than the minimum criterion of 0.70 [31, 39]. Service quality, citizen happiness, and service utilization all attained Cronbach's Alpha values of (0.94), (0.96), and (0.94), respectively. These are the inquiries used to develop the scale that assesses utilization, satisfaction, and service quality.

6.3 Comparison Test

It was possible to distinguish a group that used M-government smart services from one that had computer skills using just ANOVA analysis. To ascertain whether the mean scores of demographic characteristics differ with regard to the utilization of M-government smart services, the authors conducted T-test and ANOVA analyses.

H0: The use of M-government smart services requires the same level of beginner, intermediate, advanced, and expert computer skills.

H1: The use of M-government smart services does not require the same level of beginner, intermediate, advanced, or expert computer skills.

Table 2. ANOVA Test

ANOVA: Single Factor						
SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Beginner	24.00	97.50	4.06	0.49		
Intermediate	112.00	469.50	4.19	0.35		
Advanced	80.00	352.00	4.40	0.28		
Expert	44.00	201.50	4.58	0.34		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	6.88	3.00	2.29	6.76	0.00	2.64
Within Groups	86.76	256.00	0.34			
Total	93.64	259.00				

According to Table 3's representation (F > F Critical) (6.76 > 2.64) and (P-Value =0.0 0.05), we have rejected the null hypothesis [49] and accepted the alternative hypothesis.

6.4 The relationships between the variables

For the purpose of better understanding the type and significance of relationships between the study's dimensions, the authors computed Pearson correlation coefficients.

Table 4: Pearson correlation coefficients

	Service Quality	citizens' satisfaction	Service Usage
Service Quality	1.00		
citizens' satisfaction	0.75	1.00	
Service Usage	0.74	0.73	1.00

According to James D. Evans [30], Table 4 shows a highly significant positive correlation between all parameters

6.5 Regression and Hierarchical analysis

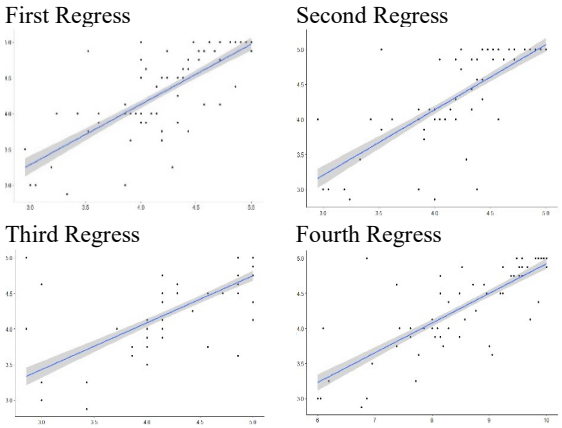
The fourth values (R-squared, Significance F, P-value, and Coefficients) in regression analysis, which assess the dispersion of data points around a suitable regression line and indicate the variance ratio explained by the model, were the authors' main concern. The Baron & Kenny Approach, often known as the "causal stages approach," was utilized by the authors to investigate the interaction between the independent, mediating, and dependent variables.+

Table 3. Regression model

REGRESSION	Variables	*Coefficients*	*P-value*	R Square	*Significance F*
First Regress (IV* & DV)**	Intercept	0.76	0.00	0.55	0.00
	Service Quality	0.84	0.00		
Second Regress (IV* & MV*)**	Intercept	0.40	0.07	0.55	0.00
	Service Quality	0.93	0.00		
Third Regress (MV* & DV**)**	Intercept	1.45	0.00	0.53	0.00
	citizens' satisfaction	0.66	0.00		
Fourth Regress (IV*+MV* & DV**)**	Intercept	0.62	0.00	0.62	0.00
	Service Quality	0.51	0.00		
	citizens' satisfaction	0.36	0.00		

*(IV) Independent Variables - (Service Quality)
** (DV) Dependent Variable (Service Usage)
*** (MV) Mediation Variable (citizens' satisfaction)

Table 5 shows the regression model analysis based on Hierarchical Linear Modeling (HLM) analysis for the fourth experimentally formulated hypothesis (H4), which entails regression analysis to independent variables (IV) and mediation variables (MV) with dependent variables (DV).



The first experimentally formulated hypothesis (H3), the second experimentally formulated hypothesis (H1), the third experimentally formulated hypothesis (H2), and the fourth experimentally formulated hypothesis (H1) all refer to regression analysis to an independent variable (Service Quality) with the dependent variable (Service Usage).

Table 6. Hierarchical linear modeling outcomes

First Regress	Second Regress	Third Regress	Fourth Regress	Decision
Significant	Significant	Significant	Significant	Partial Mediation

The path from independent variables (Service Quality) to dependent variables (Service Usage) is reduced in absolute size but still distinct from zero when the mediator is inserted, which is how the citizens' satisfaction mediates the relationship as partial mediation (see Table 6).

7. DISCUSION OF FINDINGS

In this section, we present the results and conclusions for each of the hypotheses.

H1: The service quality of M-government smart services has a beneficial impact on the degree of satisfaction of citizens with those services.

According to the outcomes, the first hypothesis (H1) is supported by R2 = 0.55, Sig. Highly significant results include F = 0.00 and P-value for IV (Service Quality = 0.00). Additionally, R2 = 0.55 demonstrates that service quality can account for 55% of the variation in service utilization, and the model was accepted between IV and MV. In contrast to mean citizens' satisfaction being equal to

0.40, when Service Quality is equal to zero, the Y-intercept is equal to b0. The Program

H2: The degree to which citizens are satisfied with M-government smart services has a beneficial impact on their use.

When it comes to the second hypothesis (H2), the findings indicate that R2 = 0.53 and Sig. The model is highly significant, as indicated by F = 0.00 and P-value for MV (citizens' satisfaction = 0.00). Additionally, the model was accepted between MV and DV, and R2 = 0.53 shows that 53% of the variation in service utilization can be attributed to citizens' happiness.

H3: The service quality provided has a beneficial impact on how often M-government smart services are used.

According to the results, R2 = 0.55, Sig. for the third hypothesis (H3). F = 0.00 and P-value for IV (Service Quality = 0.00) show that the model between DV and IV is accepted and that service quality can account for 55% of the variation in service usage. The Y-intercept is equal to b0 when service quality is equal to zero, which indicates that mean service utilization is equal to 0.76. The b1 value for service quality is positive (0.84).

H4: The satisfaction of citizens can operate as a mediator in the relationship between the utilization of M-government smart services and service quality.

R2 = 0.62, Sig. regarding the fourth hypothesis (H4) is revealed by the data. F = 0.00, P-value for IV (service quality) = 0.00, and P-value for MV (citizens' satisfaction) = 0.00 all show that the model was highly significant and that service quality and citizens' contentment can account for 62% of the variation in service utilization.

Because the results of Steps 4 and 3 of the hierarchical linear modeling were statistically significant, the contentment of the citizens partially mediates the link.

8. RECOMMENDATIONS

On the basis of the study's findings, a number of recommendations can be made, including the need for additional research into government services and how to develop them to benefit users, enhancing the current services in light of a deeper comprehension of citizen needs that would increase the acceptance of these mobile services, and expanding the accessibility of these services.

The user's preferences and expectations can be quickly, meaningfully, and objectively understood by measuring user satisfaction. On the basis of these dimensions, the effectiveness of the Organization can be evaluated in order to identify the strengths and weaknesses of the services. Utilization and customer satisfaction outline a contemporary strategy for quality in organizations and foster a management and culture that is genuinely customer-focused.

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