

The Impact of E-Government Communication on Citizen Satisfaction: Moderating Effect of Service Quality in Abu Dhabi

Mohammed Ateeq Al Dhaheri

Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia

Email: maldhaheri33@gmail.com

Mohammed Ateeq Al Dhaheri

Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Malaysia

Email: norlaile@fpe.upsi.edu.my

Abstract

E-government has become a valuable element for consumer satisfaction and organizational success worldwide and this importance of e-government motivates the researchers to examine the e-government communication impact on citizen satisfaction. Thus, the present study examines the impact of e-government communication such as e-government information sharing and e-government civic engagement on citizen satisfaction in Abu Dhabi. This research also examines the moderating impact of service quality among the nexus of e-government information sharing, e-government civic engagement, and citizen satisfaction. This study has used the questionnaires for data collection and also used the smart-PLS for data analysis. The results have revealed that e-government information sharing and e-government civic engagement have a positive association with citizen satisfaction. The results also indicated that service quality significantly moderates the links between e-government information sharing and citizen satisfaction. This research is suitable for the regulators while formulating the rules related to e-government success.

Keywords: E-government communication, E-government information sharing, E-government civic engagement, Citizen satisfaction, Services quality

Introduction

Communication processes are an integral part of modern society. The role of information flows in today's society has grown so much that since the 1970s. Many researchers talked about the emergence of a new type of society in which information plays a key role. In such conditions, the possession of information becomes an important managerial resource, which determines the configuration of managerial-power relations in society (Landsbergen Jr & Wolken Jr, 2001). Due

to the constantly increasing organizational challenges and issues related to communication policies, numerous organizations have recognized the importance of effective communication policies. From this point of view, Government communication policies are important to motivate, alert and assist the citizens enact government strategies, programs, and services offered to them. As stated by Hyland-Wood, Gardner, Leask, and Ecker (2021), effective communication policies by the Government orient residents' by encouraging them to take a specific outlook on the local plans and strategies regarding different aspects. Pan (2020) suggested that effective communication policy, which is practiced strategically, focuses on the management of the relationship between the government and the citizens.

In a modern setting, a group of different thoughts and ideologies have strived to expand the communication management process with the help of education and literature. To a greater level, education and literature have conceptualized and operationalized effective communication policy on different levels at educational institutions, non-government, and government entities (Darwish, 2017). As a result, scholars from the Middle East have also started to pay attention to the communication policies in different sectors. This attempt by scholars belonging from the Middle East in a different perspective on the management of communication policy, and specifically the introduction of effective communication policy in the governance system of UAE. However, attempts to improve the effectiveness of the scope of communication policy in governance at the city level remain neglected. In this context, this shows that the parts of effective communication policies are not yet completely examined, especially at the city level. In few circumstances, the government's management of effective communication policy does not practice as a management function for supporting government-related activities and welfare programs in the context of residents' related outcomes (Aljumah et al., 2021. Nugraha, 2020).

As a result, due to the reasons mentioned above, the research attempted to find out the effectiveness of communication policy by the government can help in providing proper services to the residents and maximize their satisfaction level at the city level of government. In accordance, effective communication policy may be important in finding out how the level of expectations, requirements, and needs of residents are acknowledged, particularly in Abu Dhabi, which is the research context. In addition, government communication policies, service quality, and customer satisfaction are very limitedly discussed in the literature. This study allows us to consider the increasing role of the numerously available communication practices that the Abu Dhabi government is welcome to implement in order to facilities its residence with the desired level of quality service that will increase the satisfaction rate and UAE government has a strategic plan for the year 2017 to 2021 whereby it intends to centralize and provide service to the people at the highest quality possible (Jasimuddin, Mishra, & A. Saif Almuraqab, 2017. Nuseir et al., 2021). This topic has not been studied and analyzed. More so, the Abu Dhabi government is not assessing the potential feedback that it can receive from its citizens. However, feedback is the first thing that one needs to consider as it provides the answers to the questions that the government may be having. The only possible way is to receive it through communication, and the less use of

communication is focused on employee involvement, setting up a creation policy qualitative change. The incentive system that rewards quality improvements, the less economic and financial indicators efficiency, and quality improvement. Nonetheless, communication has a direct influence on the development of a stable condition for quality improvement (Zhang & Lu, 2020).

However, a study by Pontones-Rosa, Pérez-Morote, and Santos-Peñalver (2021) who identified that citizen's satisfaction still lacks to explain whether it is due to miscommunications, different attributes of service quality, poor citizen care and lack of explanation about stipulated service failures. The studies conducted did not use service quality as a moderator between communication policy and citizen satisfaction variables. Service delivery by nature is complex when predicting citizen satisfaction because service failure is certain(Aljumah et al., 2021. Song, An, & Meier, 2020). The government must pay attention to those complaining and those who are not complaining and address the issues until satisfaction. This knowledge gap is identified, and it will investigate to explore the desired finding.

Furthermore, only a few studies confirmed the moderating effect of service quality on the relationship between government communication and citizen satisfaction. Those studies were conducted mainly in Nairobi, Uganda, Kenya, Malaysia, and UAE. Still, the difference between these studies is that they used service quality as one variable, as service quality 8 sub-dimension in groups was not checked as a moderating effect. This is a novel kind of research as previous research shows no evidence investigated eight (8) sub-dimensions of service quality in groups to examine the moderating effect. On the other hand, past studies like D. K. D. Kim and Kreps (2020) and Boholm (2019) only used a relatively limited number of samples. Therefore, this study will investigate the impact of government communication on citizen satisfaction with the moderating effect of service quality in Abu Dhabi E-government services.

Literature Review

Citizen satisfaction or dissatisfaction is an extensive concept that is formed in public management studies. In public management, the concept of citizen satisfaction has been used to explain differences between expected service and achieved services (Sun et al., 2020). Experts in this field have used the concept of citizen satisfaction as a common factor to describe differences between services achieved to the citizens of a country and the services they expected or desired. Government can give their citizens the best services with a high level of capacity. Nonetheless, if citizens do not get the expected results from the services, they will be dissatisfied. Therefore, it is highly important for the government to acknowledge how a citizen gets fulfillment with their quality of service. In other words, the government needs to understand how to satisfy their citizens and the factors influencing citizen satisfaction for maintaining the quality of life (Ocampo et al., 2019).

Similarly, a study conducted by Yousaf, Nisar, Ali, Hussain, and Zamir Kamboh (2019), stated that citizen satisfaction is a usual attitude of a citizen towards the e-government services or an assessment of citizens on the discrepancy between the expectation of the services and achievement of the services. It is also known as the citizen's attitude towards the e-government related services and the judgment made by the citizens on their expectation and their actual recipient of the services, related to the execution of few requirements, goals, or desires. The concept of citizen satisfaction is the outcome of perception and reasoning, where the principles are contrasted with the perceived efficiency. In case the perceived performance does not match the expectations, citizens are dissatisfied (Aljumah et al., 2021. Shair et al., 2021). On the contrary, if perceived efficiency exceeds the citizens' expectations, the citizens will get a maximum level of satisfaction. It has also been observed that government-related services achieve success or failure based on citizen satisfaction. Nguyen, Phan, Le, and Nguyen (2020) also supported that satisfied citizens are the important assets of the government because their level of satisfaction can help increase word of mouth to other citizens, who then use e-government services.

Citizen satisfaction in public services has become a center of attention for many researchers and an important topic of interest for the government in the past few years (Mahmood, Weerakkody, & Chen, 2019), which complements the major emphasis of government to provide 'citizen centric' public services. Such research has been majorly founded on few well-known models in the research (Skordoulis, Alasonas, & Pekka-Economou, 2017). Since customer satisfaction has been a leading notion in the field of marketing, it does not come out as a surprise to some extent that the majority of the government service research attempted to regard citizens with customers in an interchangeable manner. In actuality, considering citizens in the public domain with customers in marketing had a deep root in the past public administration school of thought (Chien, Pantamee, et al., 2021. Aljumah et al., 2021).

Citizen satisfaction is conceptualized as Abu Dhabi public perceptions about the e-government services delivered by the government. The particular public service delivery should maintain the causal relationship that fulfills the government obligations and keeps their citizens satisfied with the quality of public service delivered and is not as what is being communicated or projected via e-portals or services (Mohsin, Kamran, Nawaz, Hussain, & Dahri, 2021). Contrasting citizen satisfaction with customer satisfaction does not imply that the research of citizens' satisfaction could not understand and learn those theoretical frameworks that have been made in the marketing studies. In actuality, few critical factors related to customer satisfaction are taken from marketing studies. They have been used to find out the phenomenon of citizen satisfaction with e-government related services. Those researches highlight the studies conducted on citizen satisfaction with e-government related services. Studies that focus on citizens' satisfaction in relation to public services sometimes use marketing models such as OSS. Based on the above literature, the present study has developed the following hypotheses.

H1: E-government information sharing has a significant association with citizen satisfaction.

H2: E-government civic engagement had a significant association with citizen satisfaction.

Citizen satisfaction is the major factor in improving the public service sector (Chien, Sadiq, et al., 2021). Taking the satisfaction of the citizen for government administration services, numerous research has depicted that citizen satisfaction increases the level of trust to the government and the services offered. As indicated by Santa, MacDonald, and Ferrer (2019), citizen satisfaction is an important indicator to evaluate the government's overall performance and assist the local government in answering to demands of local citizens. Yap, Ahmad, Newaz, and Mason (2020), provided that government to citizens is required to consider the quality of service in a single framework of political as well as social values. The government to citizen model needs to get an advantage from the manufacturer-to-consumer model and should not be substituted. Therefore, citizen satisfaction is more than customer satisfaction, and it is also an indication of the quality of the government. In accordance, Santa et al. (2019) showed that citizen satisfaction in the government-related services is the requirements and expectations of citizens that are catered by the services provided by state administrative firms.

Showing a high level of concern towards the happiness of the citizens to whom the government-related services are given and providing a high level of support and trust of citizens are very considerable for government administration (Nawaz et al., 2020). The major focus should be on measuring to which level citizen satisfaction is achieved in the efficiencies of such services and realizing given citizen-related services by forming corrective and preventive measures (Van de Walle, 2018). In a similar setting, it is very important to find out and examine the profile of the citizen to whom the services are provided and then focus on whether they are happy or unhappy with the service as a factor of service quality.

Studies on citizen's satisfaction are important regarding showing the modification of paradigm in government services and administration-citizen relationship. This change has been opposed to describing citizens' rank before government services and institutions as customers. Apart from that, prioritizing the citizens' desires and satisfaction in government-related services is shown positive as if forms a way of oppression on government services and particularly on municipalities with the help of citizen satisfaction studies. In addition, different government municipalities have begun to research in order to evaluate the level of satisfaction among the citizen to who the government is providing the services. Thus, examining the outcomes of the research and reformulating the services in a way are evaluated as a factor improving the government entities' success and the level of satisfaction among the citizens (Shuib, Yadegaridehkordi, Ainin, & Feng, 2019).

According to the citizen and time, the desires and expectations of citizens from the government change depending on the economic and social aspects. The ones evaluating the service quality given by the government and the citizens who are happy or unhappy are the citizens who use the services. Apart from that, it has been seen that the citizens do not show objectivity in measuring

the level of satisfaction related to the provided services. Few citizens focus on the way services are provided to them, but some only form feeling of satisfaction related to the services achieved as per the experience and their expectations. The gender of the citizen, his experiences, his occupation, his social class, culture, political view, and related aspects come under the factors that somewhat influence their level of satisfaction towards e-government related services (Mishra & Geleta, 2020).

H3: Service quality has a significant association with citizen satisfaction.

H4: Services quality significantly moderates among the links of e-government information sharing and citizen satisfaction.

H5: Services quality significantly moderates among the links of e-government civic engagement and citizen satisfaction.

Research Methods

The research is aiming to investigate the impact of e-Government communication on Citizen Satisfaction in Abu Dhabi. Therefore, the objective here is to investigate the behavior of the citizens using the E-Government services of Abu Dhabi. Considering the objective and need of the research, the researcher is opting for survey research as a research approach. Since survey research owes much to the deductive approach and the data is collected through the surveys to test the hypothesis and test the theories, this strategy is feasible to be adopted in the study. The researcher will survey the citizens and find their perspectives on e-Government communication. This will help the researcher in making a generalized result regarding the topic under study. This study used questionnaires to collect the data.

The population of interest consists of all the residents of Abu Dhabi. Since Abu Dhabi residents can give the perception on the e-government communication effectiveness, the population of interest is the citizens of Abu Dhabi. The sample will be the individuals' citizens, both male, and female who are sensible and have experiences of interacting with e-government services. The respondents will be 18 years and above ages that hold citizenship of Abu Dhabi and are in a good position to answer all the research objectives. The sample will be based on all the Abu-Dhabi electronic government (or e-Government) application users who utilize the services for information and communication to government functions and procedures to increase efficiency, transparency, and participation. Given the requirements defined by the research questions and the hypotheses, this research adopts the 'convenient sampling' method. This sampling technique refers to the methods where the respondents are convenient and accessible to the researcher.

The ever increasing demand for research has created a need for an efficient method of determining the sample size needed to represent a given population. In the article "Small Sample Techniques," the research division of the National Education Association has published a formula for determining sample size. Krejcie and Morgan's sample size calculation was based on $p = 0.05$, where the probability of committing type I error is less than 5 % or $p < 0.05$. In other words,

determining the exact number of residents within Abu Dhabi context or identifying the list of units within the population was not easy. As of 2018, the citizens of Abu Dhabi above 18 years were recorded as 284,795. According to the results, 288 respondents are needed to be included in the research. Therefore, the sample size of the research is 288. A total of 490 surveys were sent, but only 290 return that show about 59.18 percent response rate after two weeks.

This study has used the smart-PLS to examine the relations between variables because the sample size is large, the framework is complex, and hypotheses testing is the purpose of the research (Hair Jr, Babin, & Krey, 2017). This study has taken e-government communication as the independent variables with two dimensions named e-government information sharing (EIS) with three items (Chen & Dimitrova, 2006) and e-government civic engagement (ECE) with seven items (Albeshar, 2016). In addition, this research also taken services quality (SQ) as the mediating variable with six items (Choi, 2019) and citizen satisfaction (CS) as the dependent variable with twenty-seven items (Zenker, Petersen, & Aholt, 2013). These variables are mentioned in Figure 1.

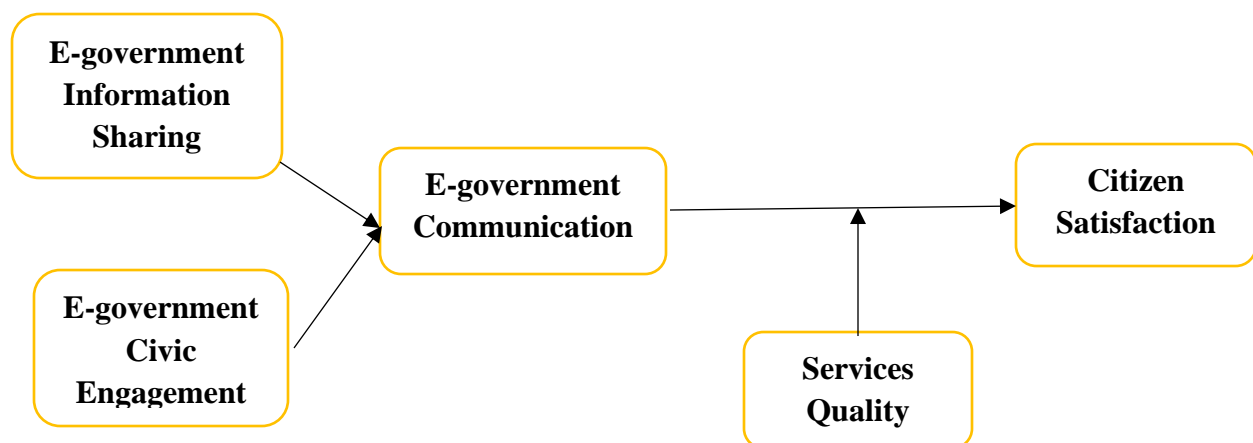


Figure 1: Theoretical Model

Findings

This study has investigated the correlation among items, and the figures highlighted that the factor loading values are larger than 0.40, Alpha values are higher than 0.70, AVE values are more than 0.50, and composite reliability (CR) are bigger than 0.70. These values indicated a high relation between items. These values are mentioned in Table 1.

Table 1: Convergent Validity

Constructs	Items	Loadings	Alpha	CR	AVE
Citizen Satisfaction	CS1	0.823	0.961	0.965	0.573
	CS10	0.825			
	CS11	0.812			

	CS12	0.813			
	CS13	0.802			
	CS14	0.710			
	CS15	0.782			
	CS16	0.726			
	CS18	0.817			
	CS19	0.780			
	CS2	0.810			
	CS20	0.812			
	CS23	0.800			
	CS25	0.798			
	CS26	0.710			
	CS27	0.779			
	CS3	0.778			
	CS5	0.492			
	CS7	0.531			
	CS8	0.525			
	CS9	0.827			
E-government Civic Engagement	ECE1	0.881	0.915	0.936	0.685
	ECE2	0.933			
	ECE3	0.562			
	ECE4	0.883			
	ECE5	0.931			
	ECE6	0.559			
	ECE7	0.933			
E-government Information Sharing	EIS1	0.889	0.845	0.907	0.764
	EIS2	0.879			
	EIS3	0.853			
Services Quality	SQ1	0.881	0.932	0.946	0.746
	SQ2	0.872			
	SQ3	0.852			
	SQ4	0.845			
	SQ5	0.865			
	SQ6	0.867			

This study has also investigated the correlation among variables by using Heterotrait Monotrait (HTMT) ratio. The figures highlighted that the HTMT ratios are not higher than 0.85. These values indicated a low relation between variables. These values are mentioned in Table 2.

Table 2: Discriminant Validity

CS	ECE	EIS	SQ
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CS				
ECE	0.579			
EIS	0.531	0.399		
SQ	0.562	0.634	0.434	

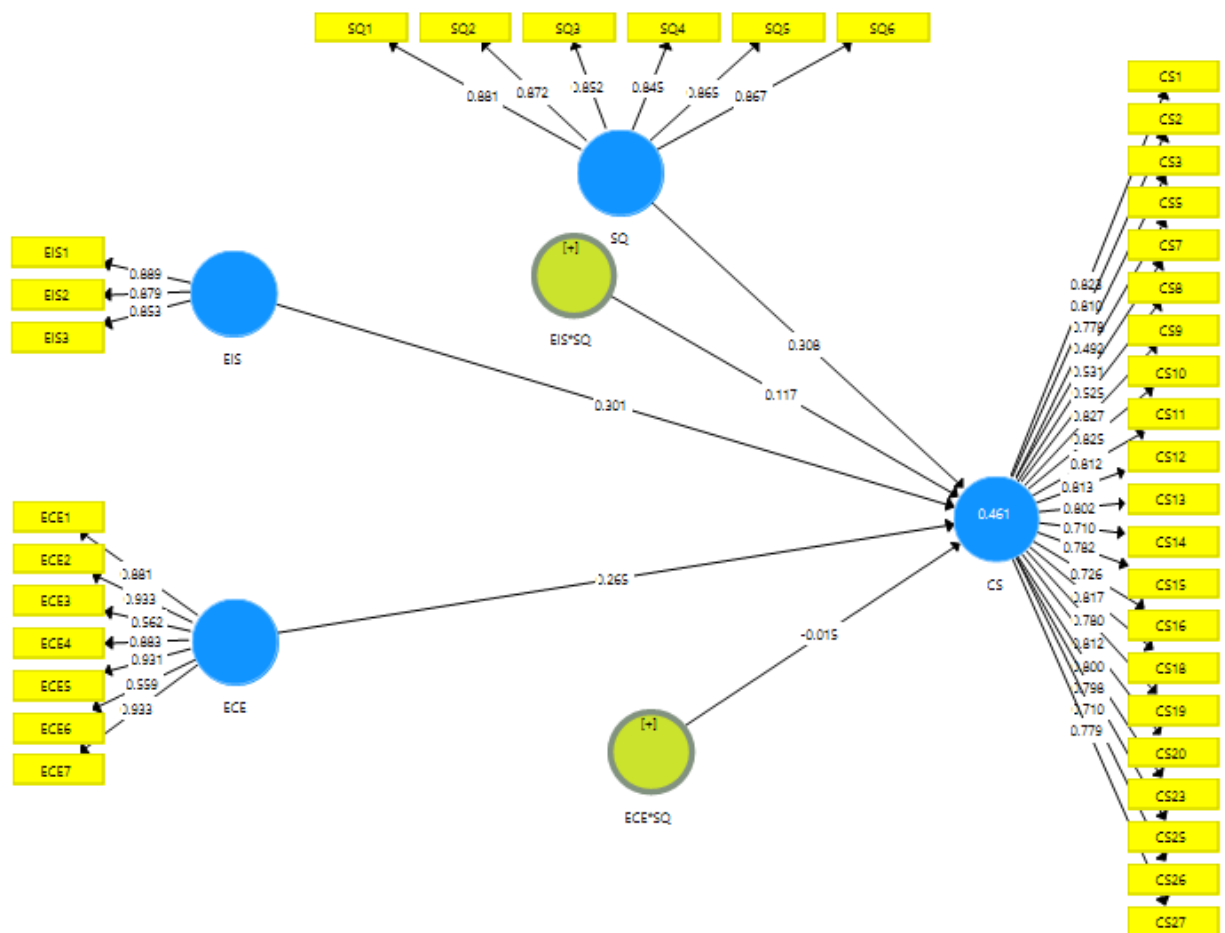
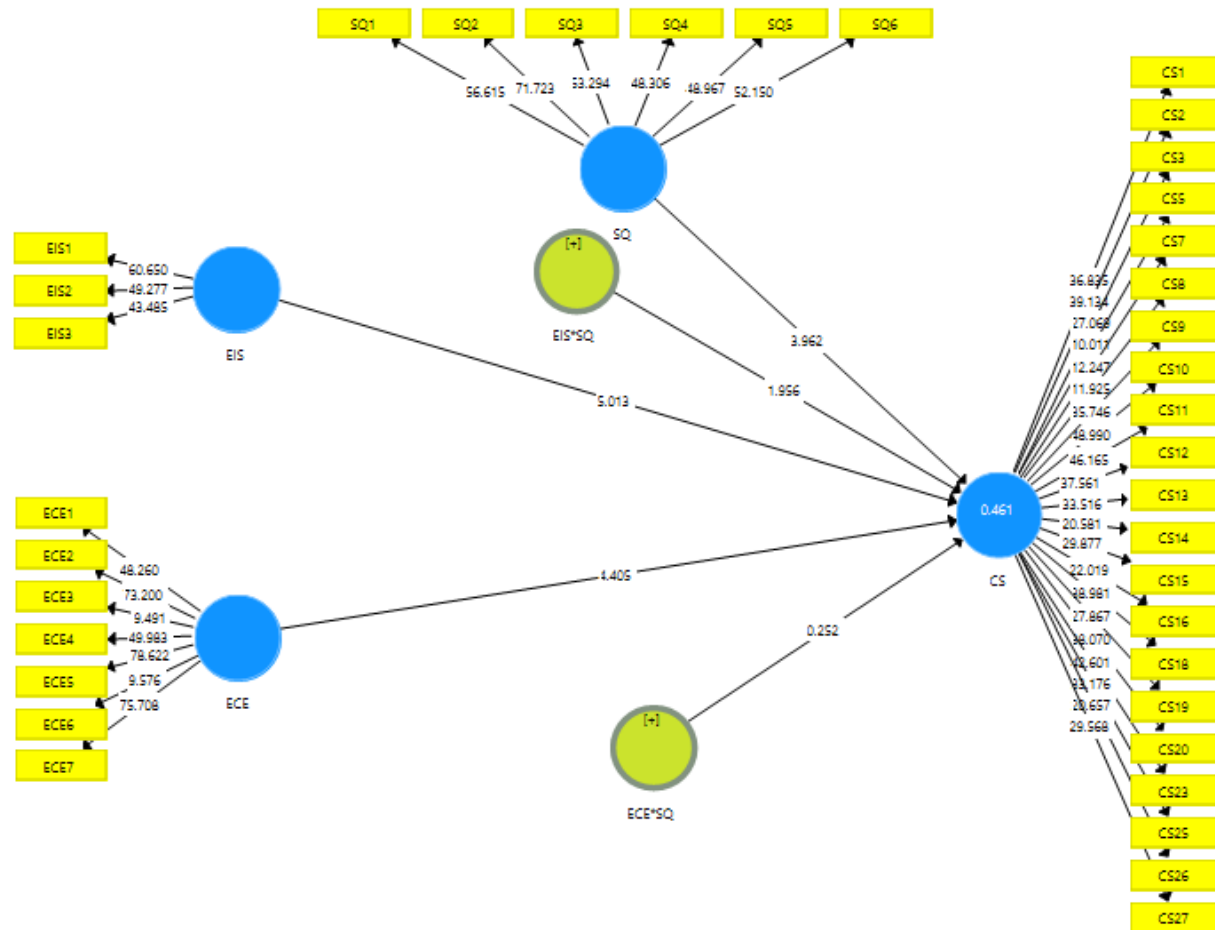


Figure 2: Measurement Model Assessment

The path analysis has been exposed the links among the variables. The results have revealed that e-government information sharing, e-government civic engagement, and service quality have a positive association with citizen satisfaction and accept H1, H2, and H3. The results also indicated that service quality significantly moderates the links between e-government information sharing and citizen satisfaction and accepts H4. However, the results also indicated that service quality insignificantly moderates among the links of e-government civic management and citizen satisfaction and reject H5. These links are mentioned in Table 3.

Table 3: Path Analysis

Relationships	Beta	S.D.	T Statistics	P Values	L.L.	U.L.
ECE -> CS	0.265	0.060	4.405	0.000	0.160	0.371
ECE*SQ -> CS	-0.015	0.060	0.252	0.401	-0.135	0.059
EIS -> CS	0.301	0.060	5.013	0.000	0.203	0.410
EIS*SQ -> CS	0.117	0.060	1.956	0.027	0.023	0.205
SQ -> CS	0.308	0.078	3.962	0.000	0.167	0.417


Figure 3: Structural Model Assessment

Discussions and Implications

It has been revealed by the study results that e-government information sharing, the part of e-government communication, has a positive association with citizen satisfaction. These results match with the results of the study of Yousaf et al. (2019), which shows that the effective use of electronic and online means of communication on the part of the government assists the government to share necessary information like information about military programs, voting, legal issues & services, or construction programs with the general public. This sharing of clear

information through digital technology and web portals increases citizen satisfaction. These results are also supported by the past study of Li and Shang (2020). This study analyzes the contribution of e-government to the satisfaction of citizens towards government services. This study analyzes that the country where the government applies electronic ways, internet, digital devices, software applications, and web portals to communicate with the general, it can better interact and share information with them. As complete, comprehensive, relevant, and reliable information about government-related decisions and programs received in this way proves to be beneficial for the citizens, they feel satisfied.

The study results have also indicated that e-government civic engagement, which is part of e-government communication, has a positive association with citizen satisfaction. These results are in line with the past study of Santa et al. (2019), which elaborates that effective communication with the general public on the part of government through the use of computer hardware & software, the internet, other digital devices, mobile apps, and web portals enables the citizens of the country to participate in the government activities and its constructive program. The ability to participate in government activities enhances citizen satisfaction. These results are also supported by the past study of Yap et al. (2020), which suggests that the citizens can participate in the economic, political, and social activities only when they have a clear and easy way to proceed in this regard and it is possible under the application computer hardware & software, internet, other digital devices, mobile apps, and web portals. When the citizens have the right to easily participate in the government decisions about their own economy and society, and activities, they feel satisfied.

The study results have also indicated that services moderates the association between e-government information sharing, the part e-government communication, and citizen satisfaction. These results are in line with the past study of Yousaf et al. (2019), which elaborates that when the service quality of government is high, it prefers to apply electronic and online means of communication to interact with and share information about economic, political, and social decisions and activities. This sharing of information removes the misconception of citizens about government decisions and activities; thus, it provides them a sense of security and satisfaction. These results are also supported by the past study of Park and Lee (2018), which demonstrates that the high service quality improves the e-government information sharing, the part of e-government communication, and enhances citizens satisfaction. The study results have also indicated that the services does not moderate between e-government civic engagement, the part e-government communication, and citizen satisfaction. These results agree with the previous study of Gasova and Stofkova (2017), which shows that the intention of providing high service quality sometime does not motivate the government to use electronic and online ways of communication to make the citizens engage in the government decision making and activities. This does not enhance the level of satisfaction in the government. These results are also supported by the previous study of Twizeyimana and Andersson (2019), which states the high service quality does not improve the e-

government civic engagement, the part of e-government communication, and does not enhance citizens satisfaction.

This study has a great theoretical significance because of its contribution to the literature on e-government. The study addresses the influences of two parts of e-government communication, like e-government information sharing and e-government civic engagement, on citizen satisfaction. Scholars in the past have discussed the direct impacts of e-government on citizens' satisfaction. But this study is an initiative in the existing literature as it delves deep into the e-government and analyzes two parts of e-government communication like e-government information sharing and e-government civic engagement in relation to citizen satisfaction. Moreover, the current study introduces service quality as a moderator between the two parts of e-government communication like e-government information sharing and e-government civic engagement and citizen satisfaction. The study has great empirical significance in the emerging and developed countries for providing guidance to the government on how to enhance citizen satisfaction. This study suggests that citizens' satisfaction can be enhanced with effective e-government communication, effective e-government information sharing, and high e-government civic engagement.

Conclusion and Limitations

This study explores the contribution of e-government communication to the achievement of a high level of citizen satisfaction in the developed region Abu Dhabi, the capital of UAE. In this regard, the study throws light on two parts of e-government communication, such as e-government information sharing and e-government civic engagement. The study implies that e-government information sharing, the part of e-government communication, helps to enhance citizen satisfaction. The use of electronic instruments, digital devices, the internet, and websites for communication on the part of the government assists in sharing necessary information like information about military programs, voting, legal issues & services, or construction programs with the general public, which enhances citizen satisfaction towards government performance. The study also posits that effective communication between the government and the general public through the use of a computer, smart devices, apps, internet, and different websites, enables the citizens of the country to take an active part in the government decision making and activities. Thus, it enhances citizen satisfaction. The study elaborates that when the government intends to provide good quality services to the general public, it is motivated to improve on two parts of e-government communication, such as e-government information sharing and e-government civic engagement, which improves citizen satisfaction.

The study has some particular limitations that must be removed by scholars in the future. The author of this study has acquired data from one source, like the issuance of questionnaires. The use of a single source of data collection makes the current study less comprehensive and, thus, less reliable. For a comprehensive and more reliable study, scholars in the future must collect data from more data collection sources. This study presents service quality as a moderator between two parts of e-government communication, such as e-government information sharing, and e-government

civic engagement, and citizen satisfaction. The parts of e-government communication, such as e-government information sharing, and e-government civic engagement, are helpful in improving service quality which improves citizen satisfaction. Thus, future should use the service quality as a mediator between two parts of e-government communication, such as e-government information sharing and e-government civic engagement and citizen satisfaction.

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