THE INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SERVICE ACCEPTANCE AND CUSTOMER SATISFACTION: CASE STUDY IN THE UAE POLICE DEPARTMENT.

MAYMOUNA SAIF RASHED SAIF ALSALMI[1], SURAYA AHMAD [2],

[1,2] *Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka, Melaka 76100, Malaysia*

*Corresponding author: Maymouna Saif Rashed Saif AlSalmi (ma8077@gmail.com)

ABSTRACT: *Public sector organizations need to adopt Information and Communication Technology (ICT) to cope with the general development strategic plans of the state, the range of services provided by the Abu Dhabi police department to citizens has been multiplying over the past several years, services have attracted a great deal of attention as mean of increasing customers perception of citizen-department activities since they reduce the waiting time incurred by traditional service provision routines. Service quality is important for any business when involved with online activities. Improving service quality will improve and create service satisfaction and increase customers' perceived service value. Customers' assessment of department service quality is usually based on their experience of interacting with the department as well as post-interaction service with core service quality, therefore it is important to determine dimensions of service quality to meet customer needs in a public environment. This paper reviews the adoption of ICT in public sector organizations, Service quality, Theories regarding user acceptance of information technology, Technology acceptance model to determine user acceptance of ICT, Customer satisfaction, ICT service quality and technology acceptance, ICT service quality and customer satisfaction and Technology acceptance and customer satisfaction in Abu Dhabi police department.*

1. INTRODUCTION

The emergence of Information and Communication Technology (ICT) has revolutionized the way work is managed and automated, reducing the reliance on human labor and utilizing technological tools to accomplish tasks more efficiently. However, despite the design and development of services, there may be quality issues that can affect the satisfaction of end-users and recipients of ICT services.

Numerous research studies have been conducted to investigate the quality issues that impact and shape the provision of ICT services at the Abu Dhabi Police Department and to examine the effects of service quality on customer satisfaction [1, 2]. It is essential for public sector organizations, regardless of their size, to adopt ICT due to its numerous benefits such as improved financial, operational, and environmental performance, better internal communication within the organization, increased development opportunities, access to new trends of services, effective working procedures, and enhanced organizational learning.[3].

Information and Communication Technology (ICT) has had a significant impact on how government functions at the local, state, and national levels. ICT encompasses advanced electronic devices, the internet, intranets, extranets, ERP, and other technologies that improve operations and services in an organization.

The adoption of ICT in public sector organizations results in E-Government, which aims to enhance access to and delivery of government services to citizens, business partners, and employees at all levels of government. ICT adoption has been defined from various perspectives, such as the use of ICT to improve public administration processes, building better government-to-consumer interactions similar to Customer Relationship Management in the private sector, and using internet technology to enable greater interaction between government organizations and citizens [4, 5].

Traditionally, ICTs have been discussed as a valuable tool to reduce inefficiencies and increase the effectiveness of public services. They have been deployed to digitalize existing procedures and increase procedural efficiency and effectiveness [6]. ICTs have been considered valuable resources to help restructure public sector organizations to adopt private and business organization configurations and coordination mechanisms to improve organizational performance and overcome the limitations of bureaucratic organizations in the production and delivery of public services [7, 8].

This paper offers a new conceptualization of the role of ICTs in the value-creation process of public services. It presents ICTs as enablers of new forms of interaction between public sector organizations and citizens within the co-production perspective. It analyzes ICTs as valuable resources to enable new forms of co-production in the context of public service production and provision. The paper develops a theoretical framework to identify two major value-creation logics and to analyze the value-creation potential of ICTs in the production of public services. It lays on existing examples where ICTs have been combined with other organizational capacities to produce value.

2. Adoption of ICT in public sector organizations

The extent of implementation and adoption of ICT in public sector organizations varies widely based on their size and the level of competence of the ICT tools being adopted. Smaller public-sector organizations often have more limited resources for the implementation and adoption of ICT tools [9]. In developing countries, these organizations may lack their own ICT infrastructure, and the adoption of ICT is strongly linked to cooperation with other organizations, as well as different governmental regulations and external actors. These factors

can impact the adoption of technology-based solutions, which can cause challenges for users who are accustomed to traditional governmental procedures. Collaboration with external factors is essential for deploying different tools of technology and possessing the necessary influence, knowledge, and competence to legitimize technology change and mobilize motivation to renewal [10, 11].

1.1. The impact of adopting ICT in the public sector

The adoption of ICT in the public sector is often perceived as slower than in the private sector, possibly due to slower decision-making processes and the absence of competitive pressure. However, the public sector has been observed to learn from the private sector's experiences and try to avoid their mistakes [12]. Research has examined the impact of ICT on the public sector, with some researchers noting a limited number of impacts on value distribution and orientations. In the past, the impact of ICT on the private sector was primarily studied in the context of e-government, which focused on the development and acceptance of e-services. Electronic services need to be designed to meet the needs of citizens, businesses, and partners. There is a current debate among researchers regarding e-services in the public sector, with some categorizing them as e-public services and e-government services, and others defining e-service as the provision of services over an electronic network. Some researchers have identified four domains of ICT's impact on the public sector: capabilities, interactions, orientations, and value distribution [12].

1.2. ICT Emergence in the Public Sector

According to previous research, ICTs have traditionally been used to reduce inefficiencies and increase the effectiveness of public services [8, 13] . In this context, ICTs are often used to digitize existing procedures and improve procedural efficiency and effectiveness. Additionally, ICTs can be used to restructure public sector organizations to improve organizational performance and overcome limitations imposed by bureaucratic organizations[14, 15] However, a new perspective proposes that ICTs can enable new forms of interaction between public sector organizations and citizens, promoting co-production of public services. Therefore, ICTs

are analyzed as valuable resources that enable new forms of co-production in the context of public services. This perspective is based on existing examples where ICTs have been combined with other organizational capacities to produce value.

3. Service quality

Service quality can be defined as the provision of quality services to the end-users, where the term quality focuses on the standards or specifications promised by a service-generating organization. The satisfaction of service quality is the result of the resources and activities expended to provide service that meets or exceeds user expectations. Service quality can be categorized into two types: technical quality, which refers to the use of technology or innovation to improve service quality and functional quality, which focuses on improving the quality of service offered by employees through their work culture, behavior, and other factors [16]. To enhance service quality, organizations need to identify the reasons for customer dissatisfaction and take appropriate measures, whether technical or functional, to address them. [17]. Improving service quality can be achieved through two approaches: technical measures and functional measures. Technical measures focus on utilizing technology and innovation to improve service quality, while functional measures aim to improve the quality of services provided by employees through their work culture, behavior, and other related factors. Improving service quality is essential for companies to increase profits and retain customers, as it creates a competitive advantage in the market [18]. Although there is no universal definition of quality of service in the field of technology management or other areas, several definitions exist. For example, one definition defines service quality as the difference between customer expectations and their perceptions of the actual service delivered [19]. Service quality has become a crucial area of research for scholars in service marketing and business development. Organizations of all sizes must improve and measure service quality. However, there is a lack of consensus among academics and researchers on how to measure service quality in terms of instruments, methods, and dimensions [20 - 24] . **Figure 1 shows the measurement dimensions for the quality of service.**

Figure 1: Quality of service dimensions.
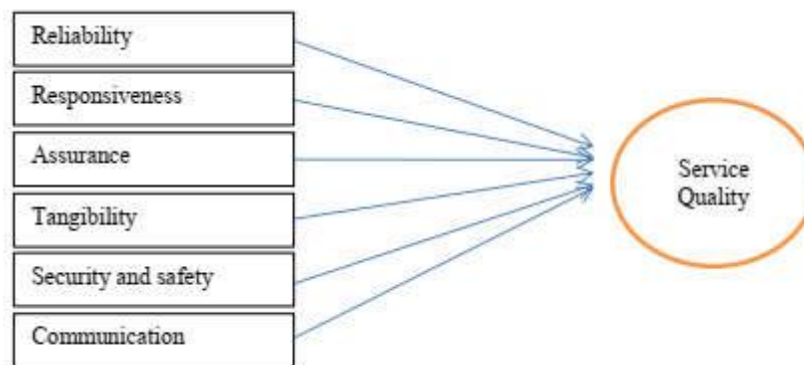
1.3. Service quality model (SERVQUAL)

The SERVQUAL model is a model for measuring service quality based on the pioneering work of [19]. The model talks about the way a customer distinguishes the service quality by comparing the expected service with the perceived service, the model is utilized by managers within an organization to ensure that their services are customer-focused and that continuous performance improvement is being delivered. Given the financial and resource constraints under which organizations must manage; it is essential that customer satisfaction considerations are properly met and measured and that from the customer satisfaction, any gaps in service quality are identified. Understanding the information regarding service quality is crucial for managers as it helps them identify cost-effective ways to close service quality gaps and prioritize which gaps to focus on with limited resources. One widely used model in service quality research is the SERVQUAL Model, which is commonly applied in marketing research, as well as in other industries like hospitality and the economy. The model was first introduced in a study b[25] and is based on the expectation-perception gap model. In their study, the authors illustrated that consumers 'quality perceptions are influenced by a series of four distinct gaps occurring in organizations. These gaps are on the service provider' s side, which can impede the delivery of services that consumers perceive to be of high quality, are:

Gap1: Difference between consumer expectations and management perceptions of consumer expectations.

Gap 2: Difference between management perceptions of consumer expectations and service quality specifications.

Gap 3: Difference between service quality specifications and the service delivered.

Gap 4: Difference between service delivery and what is communicated about the service to consumers.

Gap 5: Difference between service expectation and perceived service quality.

Figure 2.2 shows the block diagram of the Service Quality model SERVQUAL.
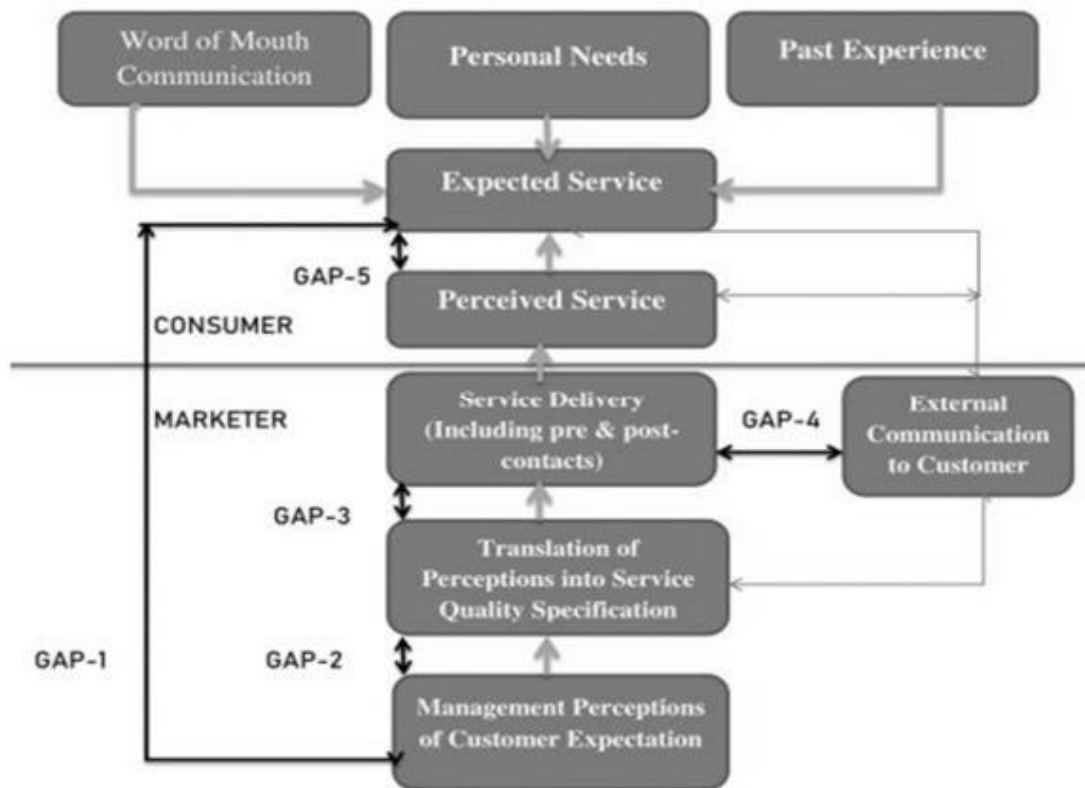

Figure 2.2: The Service Quality SERVQUAL model.

According to authors in The SERVQUAL Model defines perceived service quality as the difference between customer expectations and perceptions, which is influenced by four gaps that arise from the delivery of service on the marketer's side. Brown and Bond also emphasize the value of the expectation-perception gap model, which identifies gaps related to managerial perceptions and service delivery tasks [26]. Gap 1, Gap 2, Gap 3, and Gap 4 are identified as gaps resulting from the way services are delivered, while Gap 5 is considered the true measure of service quality as it pertains to the customer.

1.4. Dimensions of SERVQUAL model.

According to David Garvin's article 'Competing on the Eight Dimensions of Quality', service quality is perceived by customers based on multiple contributing factors, not just a single reference. To effectively improve service quality, service providers must understand all dimensions used by customers to evaluate it. Garvin identified the eight dimensions of quality applicable to both goods and services,

including performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality or prestige [26]. According to A. Parasuraman, L. L. Berry, and V. A. Zeithaml, the following five dimensions are crucial for service quality: reliability, responsiveness, assurance, empathy, and tangibles [19].

1.   Tangibility

According to A. Parasuraman, L. L. Berry, and V. A. Zeithaml, tangibility is one of the five crucial dimensions of service quality. Tangibility refers to the physical facilities, equipment, and appearance of a service firm's employees, which customers use to assess quality. Tangibles are associated with the physical facilities, tools, and machines used to provide the service, as well as representations of the services, such as statements, cards, speed, and efficiency of transactions. The research article by[27] also identifies tangibles as physical facilities such as equipment, personnel, and communications materials. The article further emphasizes that the physical image of the service is multifunctional. The importance of tangibles is reflected in several privileges such as external appearance, counters in the bank, overdraft facilities, opening hours, and speed and efficiency of transactions. The article by [28] states that tangibles are as important as empathy in service quality.

2.   Responsiveness

Responsiveness refers to the willingness and ability of service providers to provide prompt and helpful service to customers. Service staff should be able to assist customers in resolving their queries, handling special requests, and addressing any complaints effectively. Customers may have unique problems that require personalized attention, and it is the willingness of the service staff to go above and beyond in providing this attention that determines their level of responsiveness [16], [28]. Some important aspects of responsiveness include providing customers with clear timelines for service delivery, giving them undivided attention, promoting services, and responding quickly to their requests [29]. In the SERVQUAL model, responsiveness is ranked as the third dimension of service quality [30].

3.   Assurance

Assurance is a crucial dimension of service quality that involves the ability of a company to inspire trust and confidence in the service delivery and to transfer this confidence to the customers. This dimension is particularly important for services that entail high risk for the customers, as they may not be able to evaluate all the uncertainties involved in the process [31]. Assurance is also related to

employees' courtesy and knowledge, and their ability to inspire trust and confidence in the customers towards the company [32]. However, there are different opinions among researchers regarding the ranking of assurance among service quality dimensions, with some ranking it first and others ranking it lower [33]. Assurance involves keeping customers informed in their native language, listening to their needs regardless of their background, and providing friendly, confidential, courteous, and competent services [34].

4.   Empathy

Empathy in service quality refers to the ability of a service provider to understand and address the individual needs of their customers and to provide them with personalized attention and care [31]. When a service provider puts himself in the shoes of the customers, he may see the customer's viewpoint better [22]. By putting themselves in their customers' shoes, service providers can better understand their perspective and provide better service. Empathy is about making customers feel like a priority and providing them with individual attention and care [32]. This involves conveying to customers that they are unique and special and that their needs are being met in a personalized manner. Previous studies have used security, credibility, and access as metrics for measuring empathy in service quality models [33].

5.   Reliability

Reliability is an important dimension of the SERVQUAL model, which refers to the ability of a company to provide services accurately, on time, and in a dependable manner [25]. This requires consistency in meeting the commitments made to customers and is crucial for ensuring error-free service or product delivery. Studies have shown that reliability has the greatest impact on customer perceptions of quality [35]. Reliability can also be defined as the ability to perform services as promised, consistently and accurately, and to pay attention to results [36]. It is often ranked as the first dimension in the SERVQUAL model, with studies indicating its high importance   [37]. In situations where service delivery fails, the service provider may have a chance to recover and provide the service again. However, the expectations of the customer during the recovery phase are usually higher than before, increasing the potential for customer dissatisfaction. The reliability dimension can help service providers meet customer expectations fully and at the lowest level of service expectation [38]. Figure 3 shows the five key dimensions of the SERVQUAL model.

Figure 2.3: Five key dimensions of the SERVQUAL model.

1. Theories regarding user acceptance of information technology

The Technology Acceptance Model (TAM) [39]), the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB) [40], the Innovation and Diffusion Theory (IDT), and recently, the Unified Theory of Acceptance and Use of Technology (UTAUT) [41] have all identified factors that affect an individual's intention to use or the actual use of information technology. This review focuses on the acceptance and adoption of information and communication technology (ICT) in public sector organizations. To better understand this process, the authors propose a three-stage model: pre-adoption, adoption, and post-adoption. During the pre-adoption stage, individuals may consider adopting a new technology if they perceive a specific need or immediate benefits. The adoption stage involves forming an intention to adopt, planning for it, and ultimately purchasing and using the technology. Finally, during the post-adoption stage, individuals may either continue to use the technology or abandon it, possibly seeking a replacement. To examine ICT acceptance in public sector organizations, the authors provide an extensive review of technology acceptance models, including the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT).
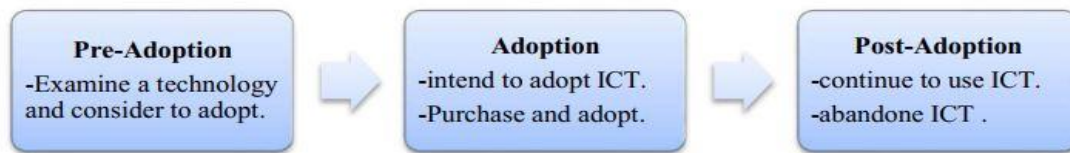

Figure 4: Stages ICT adoption.

Various studies have found that public sector organizations tend to adopt simple ICT infrastructure, such as basic email and web services, which are more useful for operational purposes rather than strategic ones. This preference for low-complexity ICT applications is likely due to the lack of necessary ICT skills or capacity in public-sector organizational hierarchies. Similarly [42]. some researchers suggest that small and medium-sized enterprises (SMEs) may avoid advanced ICT services due to feasibility issues or because they are not suitable for their businesses. Furthermore, ICT providers typically target large firms that can afford more complex ICT services, making their products unmanageable and expensive for SMEs [43]. This review also notes that there are numerous models and theories used to study ICT adoption and post-adoption behaviors, with many of them being modifications or extensions of principal models to suit particular operational conditions or organizations. Social psychology and its applied theories are a dominant aspect of this research domain, with many models focusing on the intention to adopt and use ICT as a theoretical foundation. The most influential theories and models for studying ICT adoption can be categorized into the following sections.

1.1. The theory of reasoned actions (TRA) model

The Theory of Reasoned Actions (TRA) model was first introduced in 1980 by Azjen and Fishbein. This model originates from social psychology and consists of three general constructs: behavioral intention, attitude, and subjective norms. The purpose of TRA is to explain the relationship between an individual's beliefs, attitudes, norms, intentions, and behaviors. The theory assumes that a person's behavior is determined by their behavioral intention to perform it and that the intention itself is determined by the person's attitudes and subjective norms towards the behavior. In Figure 5, we can see that the two main aspects of this model are attitude toward behavior and subjective norms, which lead to intention. Intention is the ultimate motivating factor influencing one's behavior [44].
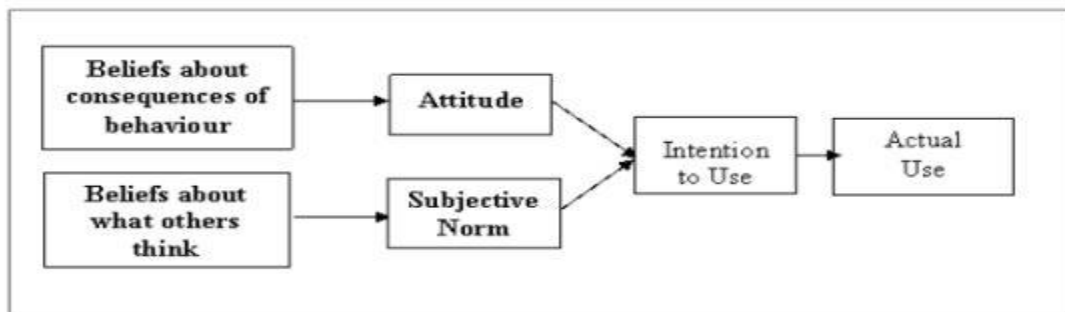

Figure 5: Theory of reasoned actions model.

1.2. Theory of planned behavior (TPB) model

The Theory of Planned Behavior (TPB) is a common social psychology theory that believes that specific salient beliefs influence behavioral intentions and subsequent behavior [40]. The Theory of Planned Behavior (TPB) model was developed as an extension of the TRA model by adding another construct called perceived behavioral control (PBC), which refers to the individual's perception of control over the

performance of a given behavior. The TPB model has been widely used in ICT adoption research as a theoretical framework due to its ability to explain the intention and behavior of individuals towards ICT adoption. The model considers three main constructs, namely attitude toward behavior, subjective norms, and perceived behavioral control, which collectively influence the individual's intention to perform a specific behavior [35, 45]. These studies also found

21 significant relationships between attitudes, subjective norms, perceived behavioral control, and behavioral intention. PBC, as an additional construct in TPB, sheds light on the importance of the perceived difficulty of the behavior and the person's perceived ability to act out the behavior. Figure 6 shows the block diagram of the theory of planned behavior model.
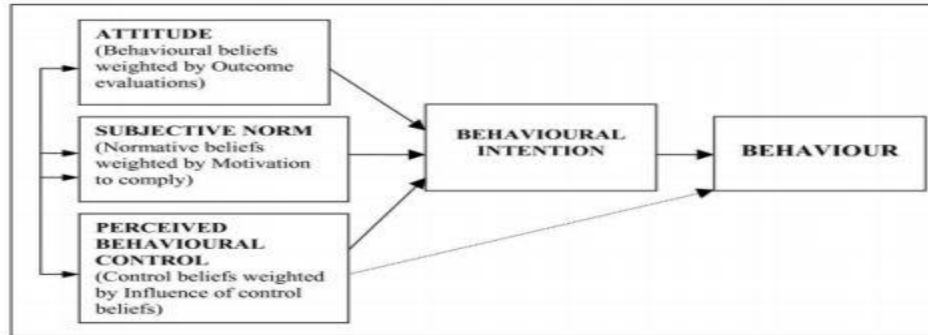

Figure 6: Theory of planned behavior.

Several recent research studies concluded that PBC directly influences technology adoption intention and continuance usage intention, although this model is derived from the TRA model, it is also compared to the TAM model, but studies proved that there are three main differences between this model and TAM model, the three main differences that were identified by Mathieson in [46]:

1. The TAM posits that perceived usefulness and perceived ease of use are the primary factors that influence user decisions. On the other hand, the TPB mainly focuses on specific beliefs that are relevant to each situation and suggests that some beliefs may be generalizable to other contexts, while others may not be.
2. The TAM model is less focused on social variables when compared to the TPB model.
3. TPB provides a more robust treatment of behavioral control compared to TAM, which only considers ease of use as a factor in technology adoption.

According to [46] while TAM is useful in obtaining broad insights into people's perceptions of a system, TPB can offer more detailed information about its components that may pertain to a specific demographic..

1.3. The technology acceptance model (TAM)

The TAM model was developed based on the Theory of Reasoned Action (TRA) from social psychology to measure

user acceptance of ICT-based solutions [47]. It aims to provide a general explanation of the determinants of computer acceptance that can explain user behavior across a wide range of end-user computing technologies and user populations. The TAM model focuses on perceived ease of use and perceived usefulness as two factors that affect an individual's attitudes toward using technology-based solutions. The adoption of ICT solutions within an organization impacts an individual's intention to use information technology, which in turn affects actual utilization and performance [39]. After finding limited support in his original model, the authors skipped the attitude variable, and again they modified the original TAM to include the variables of perceived ease of use, perceived usefulness, behavioral intention to use, and actual system use[41]. Perceived Usefulness (PU) is defined as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context. Perceived Ease of Use (PEOU) is defined as the degree to which a prospective user expects the target system to be free of effort [39]. In short, TAM states that PU and PEOU affect behavioral intention to use a system, which in turn affects actual use. Figure 7 shows the block diagram of the technology acceptance model [48].
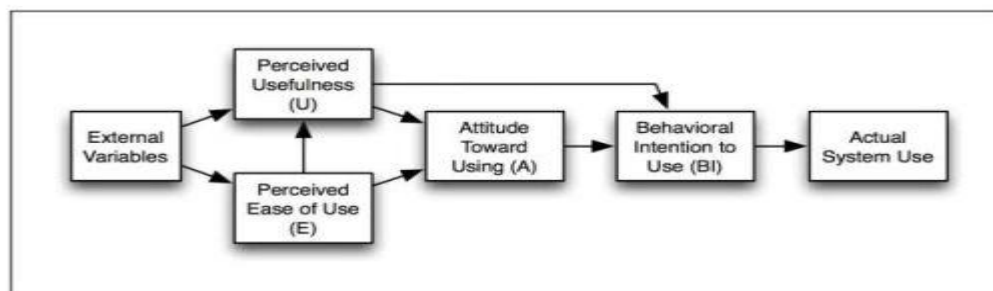

Figure 7: The technology acceptance model (TAM).

Support for TAM in studies across the world has been mixed. A meta-analysis of several TAM research studies indicated that among the three factors of TAM, PEOU, PU, and technology acceptance, both the relationships between PEOU and PU, and between PU and technology acceptance are strong, while the relationship between PEOU and technology acceptance is weak[39].

2. Technology acceptance model to determine user acceptance of ICT

The technology acceptance model is widely accepted and has proved applicable in identifying the intentions of users to use information communication technology (ICT) and its exact usage. The theory postulates that individual attitudes are influenced by perceived ease of use and perceived usefulness, while behavioral intention is influenced by attitude, The Technology acceptance model is adopted from the theory of reasoned action. The technology acceptance model ascertain that attitudes predict intentions, and predict the behavior of intentions [40]. The technology acceptance model established two beliefs (perceived usefulness and perceived use) to foretell an individual's attitude toward using technology. Davis[39] defined the attributes of the Technology acceptance model which are perceived usefulness perceived ease of use, attitude, and behavioral intention to use.

2.1. Perceived ease of use

Perceived ease of use in the context of the Technology Acceptance Model (TAM) refers to the user's trust that using a specific system would require little effort [39]. The term "ease" in this definition refers to the "freedom from difficulty." Effort is considered a limited resource that individuals allocate to their responsibilities, and a system is perceived as easy when it requires less effort compared to other alternatives [42]. External factors such as user characteristics, task requirements, political influence, and organizational factors can indirectly affect the acceptance behavior of technology by influencing perceived usefulness and perceived ease of use. However, the role of perceived ease of use in TAM has been viewed differently in previous studies. Some authors have argued that perceived ease of use is a complex concept that includes motivation based on the assessment of convenience and ease of learning the interfaces and process of using it, which can be considered an intrinsic part of information technology. Since most studies have focused on the external aspects of information technology, perceived ease of use does not directly influence technology adoption [49].

2.2. Perceived usefulness

The Technology Acceptance Model (TAM) focuses on the acceptance or rejection of an innovation by users in an organizational setting. The two main components of TAM are perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that using information technology will improve their job performance. Both perceived usefulness and perceived ease of use are critical factors influencing the adoption and usage of online banking services [50, 51]. Perceived usefulness is determined by several factors, including the perceived significance of the technology, the significance of the goal associated with using the technology, the perceived validity of the operations, and the perceived ingenuity of the technology. TAM can be used not only in organizational settings but also in private settings [39]. Researchers [52] have shown that perceived usefulness plays a vital role in shaping users' intentions and behavior. Studies have also shown that perceived near-term usefulness is more strongly related to users' intentions to use an innovation than perceived long-term usefulness. For example, in a study of the utilization of ICT services, researchers found that perceived near-term usefulness had a more significant impact on users' intentions to use the technology than perceived long-term usefulness [52].

3. Customer satisfaction

Managers are increasingly prioritizing customer satisfaction, as they believe that it leads to customer loyalty and increased returns for the organization. In the past, organizations have not focused on retaining customers but maintaining existing customers is much more cost-effective than acquiring new ones. In the UAE public sector, visitors to the Abu Dhabi police department who use ICT services include internal staff members and external users, such as UAE citizens, international residents, and agents. Customer satisfaction is crucial for the success of an organization and is defined as an overall evaluation of the service experience over time.[53], Measuring customer satisfaction is not a straightforward process as it is not easy to understand and satisfy the complex and varied needs, expectations, and emotions of consumers. Different interpretations of customer satisfaction based on varying concepts of needs and emotions lead to different approaches to its measurement. While efforts have been made to standardize the approach to measuring customer satisfaction, such as through quality management systems, these regulations are still quite general. As a result, there exist several methods of measuring satisfaction based on arbitrary approaches to their authors, and science cannot provide a clear answer to what customer satisfaction is and what factors determine it. [53]. Measuring customer satisfaction has become increasingly important in modern countries, leading many governments to establish dedicated administrations to continuously measure satisfaction levels for goods and services provided by the public and private sectors. The American Customer Satisfaction Index (ACSI) is an economic barometer that measures customer satisfaction levels across industries in the US. It evaluates both domestic and foreign goods with significant market share in the US, benefiting commercial organizations, researchers, statisticians, policy-makers, and customers by measuring the strength of customer satisfaction, and competitiveness among customer-oriented organizations, and predicting future opportunities for improving satisfaction. The ACSI surveys around 180,000 customers to understand their satisfaction levels with the products and services they frequently use. To promote ICT adoption, an ICT impact framework was developed in [54], the author notes that while there are many theoretical studies of the impact of ICT on different sectors, there is a lack of detailed comparisons between the impact of ICT on the private and public sectors. The impact of ICT on both the private and public sectors is critical to understand to

promote its adoption. Increased productivity and efficiency, economic development, and growth are some of the main impacts identified in various research studies, which are common to both sectors. The use of ICT can improve the quality of service delivery, increase efficiency, cut expenses, and enhance transparency, efficiency, and effectiveness in the public sector. The proposed conceptual framework for ICT impact assessment includes 4 dimensions for both the private and public sectors. This framework can help researchers develop hypotheses and test them in different countries, markets, and sectors by considering different factors that facilitate or hinder ICT adoption. While these hypotheses may be based on earlier theoretical or empirical observations, the verification of these hypotheses will differ in different countries, markets, or sectors.

4.   ICT service quality and technology acceptance

The importance of service quality is often neglected by organizations, according to research by others [31, 51], which shows that most organizations only pay lip service to customer care rather than committing resources to ensure customer satisfaction. There are challenges in determining the relationship between customer satisfaction and business performance due to delays in measuring profit improvement, the influence of other variables such as price and competition, and the presence of other causality factors such as behavioral changes [40]. However, a study in a hospital setting by [56] found that service quality leads to increased customer satisfaction, market share, and customer loyalty. In the UAE, automation of organizational services and operations has reached 80%, including customs services, domestic services, and road transport services, through the implementation of various automation systems such as ERP, VMS, CCRS, and Revenue Portal [55] found that service quality leads to increased customer satisfaction, market share, and customer loyalty. In the UAE, automation of organizational services and operations has reached 80%, including customs services,

domestic services, and road transport services, through the implementation of various automation systems such as ERP, VMS, CCRS, and Revenue Portal [56]. However, the quality of ICT services in the UAE Authority is affected by operational costs and inadequate infrastructure, resulting in system unavailability [53]. The best practices for ICT development in the public sector, as defined by the IMF, include service availability, staffing, and financial investment in the ICT sector [57]. It is recommended that the operational costs for ICT-related systems and services should be about 14% of all the running costs of the organization while the recommended minimum number of staff to execute and maintain ICT-related activities is above 10% of the entire population of staff in the organization. The resources, both human and financial, have a significant influence on the satisfaction levels of ICT services provided to the consumer.

5.   ICT service quality and customer satisfaction

Figure 8 depicts the methodology of customer satisfaction; this methodology is based on three different values: Customer expectations, perceived quality, and perceived value, these three values determine first whether the customer is satisfied or not, i.e., the customer satisfaction exists or not, and if exists, what is the level of that satisfaction, this will be indicated with the customer loyalty in case the level of customer satisfaction was very high, or by customer complaints in case the level of customer satisfaction was significantly low or even doesn't exist. The researchers in emphasized on the importance of measuring the quality and satisfaction of technology in terms of the cost of organizational administration, the efficiency of organizational performance, integrity, and transparency of the systems. They suggested that these factors should be considered to improve auditing and ensure good quality of service. The study aimed to examine service quality with the overall organizational performance and the overall performance of the country.
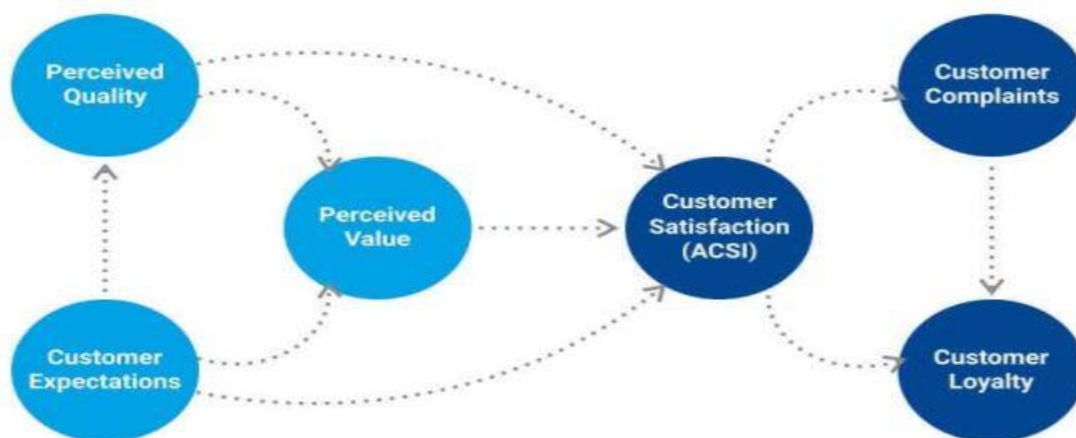

Figure 8: Customer satisfaction methodology.

1. *Customer expectations*: assessing the customer's perception of a product or service involves examining their anticipated perception and the experience they encounter. Such expectations can be influenced by word-of-mouth, previous market research, or confidence in an organization's established reputation..

2. *Perceived quality*: customer satisfaction is a measure that assesses the customer's experience with a product or service in the recent past, taking into account factors such as market competitiveness, exposure to competitor products or services, and frequency of usage.

3. *Perceived value:* the value refers to the level of quality of a product or service in comparison to its cost to the customer. Initially, value can significantly influence a customer's decision to make a purchase, but as time passes, other factors become more important in building and sustaining customer satisfaction.

4. *Customer complaints:* the customers who experience a significant difference between what they were promised and what was delivered are referred to as dissatisfied customers. This gap often leads to dissatisfaction, which is a crucial factor in measuring customer satisfaction since higher dissatisfaction levels indicate lower customer satisfaction.

5. *Customer loyalty*: This is determined by the likelihood of a customer making a repeat purchase from the same organization, regardless of the costs associated with the various products and services offered by the organization.

6.   Technology acceptance and customer satisfaction

According to research, customer satisfaction in online platforms refers to the evaluation of a product or service based on whether it has met the customer's needs and expectations [58]. Satisfaction has a positive impact on loyalty, and this effect is even stronger in online environments. Technology acceptance plays a significant role in customer satisfaction, as satisfied users tend to use the service more frequently, have stronger engagement, and are more likely to recommend the product or service to others. Several factors influence the acceptance of technology and ICT-based services in both public and private organizations. The Technology Acceptance Model (TAM) is a crucial theory in this area, which evaluates the factors that influence users' decisions to adopt new technologies based on ease of use and usefulness [39]. The importance of compatibility and ease of learning is another perception adopted by organizations and citizens when using online services. A

study by [59] measured users' satisfaction with both online and offline services offered by governmental departments and identified factors that affect the attitude and acceptance of technology-based services. Results indicated some support for the idea of reliable services provided manually that significantly improved the willingness of businesses to use e-services instead of using traditional service channels, other factors proposed to influence the adoption of new technology are explored in the literature like ICT-based services quality and information quality; such factors are theorized to affect perceived usefulness and perceived ease of use. Other factors related to the acceptance of new technology which was mentioned and discussed extensively before like compatibility, external influence, interpersonal influence, self-efficacy, perceived facilitating conditions, attitude, subjective norm, perceived behavioral control, intention to use, risk, personnel innovativeness, and trust. Previous recent studies have shown that perceived usefulness, ease of use, and enjoyment influenced customer attitude and satisfaction [60]. The findings showed that perceived usefulness impacts customer satisfaction [61]. This is congruent with the finding of [62]. A positive attitude towards ICT service's usefulness contributed to customers' satisfaction. The ease of use of an ICT-based service also increased customer satisfaction and loyalty in public sector organizations [63]. The authors also found that ease of use influenced loyalty. Furthermore, studies highlighted that perceived usefulness and perceived ease of use positively impacted consumers' attitudes and intentions to use e-services. Generally, technology acceptance factors lead to customer satisfaction, and perceived usefulness is part of the post-use expectations that relate to satisfaction and influence attitudes towards ICT services.

7.   Framework

Previous research on customer satisfaction has mainly focused on either customer relations or the service itself, but it is important to recognize that the service and the ICT service provider are interdependent when it comes to quality. Therefore, there is still much promise in this research area, and it is necessary to consider the service as a whole to effectively determine its contribution to customer satisfaction. The study also suggests that user motivation and satisfaction are influenced by the perceptions of users and customers, highlighting the importance of emphasizing this area when striving for customer satisfaction. The constituting variables and constructs of this research that are to be measured and correlated are shown in Figure 9.
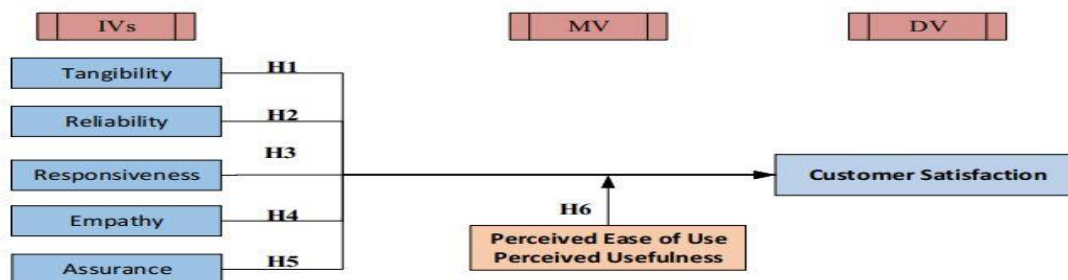

Figure 9: Research framework.

8.   CONCOCTION:

This study investigates the impact of both the ICT service provider and service quality on the satisfaction of both internal and external consumers of services in a public-sector organization, specifically the Abu Dhabi Police Department. This particular case study is unique and sets this research apart as the first of its kind. The study emphasizes the importance of considering the entirety of ICT services to effectively determine the overall contribution to customer satisfaction. The research also introduces moderators such as collaboration and resources, which are key contributors to service quality and customer satisfaction. Ultimately, this study adds to the existing literature on customer satisfaction and service quality.

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