

The Digitization of Public Services and Its Contribution to the Quality of Service in Relation to User Satisfaction

Bernabé Fochie Tuebou

Project Department, Universidad Internacional Iberoamericana, Mexico City, Mexico

Email: bernabefochie@gmail.com

How to cite this paper: Tuebou, B.F. (2024) The Digitization of Public Services and Its Contribution to the Quality of Service in Relation to User Satisfaction. *Open Journal of Applied Sciences*, 14, 2697-2716.
<https://doi.org/10.4236/ojapps.2024.149177>

Received: August 22, 2024

Accepted: September 24, 2024

Published: September 27, 2024

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

In recent years, some governments have been working on solutions to transform public administrations and provide high-quality services to users. The United Nations has recommended integrating digital technology into various aspects of life, including public services. The objective is to offer real-time, high-quality digital services, improve the delivery of public services, enhance their effectiveness and efficiency, while achieving objectives such as transparency, interoperability and citizen satisfaction. However, most governments in developing countries are unable to keep up with this trend. As a result, they often create digital public services that fall short of users' expectations. This study aims to identify the fundamental factors influencing the quality of service in relation to user satisfaction and to explore the relevance of digital technology in implementing this quality within Cameroon public administrations. To achieve this, we used a qualimetric research method, which included non-directive interviews, questionnaires, and structured observations. The results showed that the public services offered in our study environment did not meet users' expectations. However, the study identified the fundamental aspects to be considered in providing quality public services connected to user satisfaction, as well as the strengths of digitization in achieving this quality.

Keywords

Digital Transformation, Public Services, Quality of Service, User Satisfaction

1. Introduction

Since the 1950s, digital transformation has become a fundamental concern for all organizations. The COVID-19 pandemic has limited direct contact, forced

organizations to change their behavior, and accelerated the adoption of digital technologies (Elhali A *et al.*, 2022) [1]. This transformation requires strategic changes and affects organizational structures and management concepts. Organizations must develop new management practices to navigate these complex transformation processes. In Cameroon, improving the efficiency of public services is a central issue, as public officials are often accused of lacking ethics, commitment, and professionalism, further damaging the country's reputation. Consequently, numerous attempts have been made to modernize the public sector by implementing management tools inspired by the private sector. According to the study, public organizations should focus on human behavior and attitudes to provide public services that meet users' needs. The digital revolution and its impact on all aspects of life have compelled all types of organizations to integrate digital technologies into their daily activities.

Integrating digital technology in the provision of services is important. It enables governments to automate tasks (Parviainen *et al.*, 2017) [2], improve relationships and citizen experience (Reis *et al.*, 2018) [3], communicate at low cost and dematerialize certain tasks, streamline administrative procedures, and share information in real time (Mimeche, 2016) [4].

This paper presents the concept of service quality in relation to customer satisfaction, evaluates the quality of public services in certain public administrations in Cameroon, and analyses the relevance of digital transformation in the implementation of this quality.

2. Conceptual and Theoretical Framework

2.1. Public Services and the Concept of Quality

2.1.1. History

Public services, which are defined by legal frameworks, date back to the medieval period and the Revolution of 1789. A higher authority, not necessarily the state, coordinated these activities in a social context. In medieval Europe, emperors with access to machinery monopolized certain activities. Municipalities played a role in local affairs, such as providing education and establishing monitoring centers. The 16th and 17th centuries were crucial for the management of public services, with the creation of the police dictionary. The concept of public service can encompass both material and organizational aspects, involving general activities under state authority, guaranteed by competent authorities, as well as an organizational perspective focused on public administration.

2.1.2. Principles of Public Services

The public sector often attracts attention due to its focus on the general interest and its limited control over funding and revenue sources. Public services operate under strict oversight, with most staff regulated by highly codified statutes. Public institutions may not fully understand the economic pressures faced by private enterprises, and the size and dependence on public authorities or institutional actors can lead to organizational contradictions.

Public services have traditionally been based on principles such as equality, continuity, and adaptability. However, J. Chevallier (1997) [5] highlights the growing public dissatisfaction as users increasingly demand public services. They expect better and cheaper public services than private ones, resulting in increased dissatisfaction among key players.

2.1.3. Public Sector Performance

The performance of public organizations is a complex and controversial subject that involves the quality of services, costs, time efficiency, user satisfaction, and compliance with existing standards and regulations. To improve performance, various theories and approaches are utilized, such as results-oriented management (GAR) and goal-based management (GPO). External factors, such as policies, government budgets, and public expectations, can influence the performance of these organizations. Therefore, it is essential for public organizations to be accountable, transparent, and effective in achieving their objectives.

Performance is defined as the achievement of goals or results while also creating value. In the public sector, it aims to optimize services provided to citizens. Although the public and private sectors share similarities, such as the production of goods and services and the management of financial, technical, and human resources, the objectives pursued in each sector are different. In the private sector, the primary objective is economic profitability, which enables self-financing of enterprise projects, whereas in the public sector, financial support from states and communities is the primary focus. Increased competition between public and private services accelerates the relationship between the two sectors.

The performance of public organizations is a complex and controversial topic that involves the quality of services, costs, time efficiency, user satisfaction, and compliance with existing standards and regulations. To improve performance, various theories and approaches are employed, such as results-oriented management (GAR) and goal-based management (GPO). External factors, such as policies, government budgets, and public expectations, can influence the performance of these organizations. Therefore, it is essential for public organizations to be accountable, transparent, and effective in achieving their objectives.

Performance is defined as achieving goals or results while also creating value. In the public sector, it aims to optimize the services provided to citizens. While the public and private sectors share similarities, such as the production of goods and services and the management of financial, technical, and human resources, the objectives pursued in each sector are different. In the private sector, the primary objective is economic profitability, which allows for the self-financing of enterprise projects, whereas in the public sector, financial support from the state and communities is the primary focus. Increased competition between public and private services accelerates the relationship between the two sectors.

2.1.4. The Model for the Provision of Public Services

There are four main delivery models for public services: citizen-to-citizen (C/C),

business-to-business (B/B), and direction-to-direction (D/D) within the same department, as well as relationships between directions and other government departments. Identification and understanding of the service delivery model are essential for choosing the tools to deliver public services to users. It is crucial for the quality of service.

2.1.5. Quality of Services for Public Administrations

Public organizations are increasingly incorporating the concept of “quality”, but it goes beyond simply transferring tools from the economic domain to a public model. The bureaucratic nature of public administration requires that physical and technical resources be adapted to the context of the public sector, rather than simply mirroring private practices. The concept of “quality in public service” is complex and necessitates preliminary assessments. Commitment to the quality process adds new objectives and reshapes work methods.

The quality of public services is a crucial aspect of a public organization’s mission, as it involves providing essential or complementary services. Public service quality issues stem from two main aspects: the fundamental elements and related considerations, as well as finding an optimal balance between initial user expectations, public actions, shared interests, and the resource constraints within the administration.

Public organizations view service quality as the outcome of a negotiation process between needs, user expectations, and the strategic approaches chosen by the organizations involved. This quality is defined by the extent to which recipients feel that the service meets their needs and expectations.

2.1.6. The Quality Approach

Traditional public behavior often lacks quality, as seen in hospitals with a “public/private” duality, where patients seek better quality, comfort, support, and attention. Trosa (2006) [6] posits that an excessive internal focus limits the quality of practice in public service. Technicians may consider the quality of products to be satisfactory based on their experience, but the will and perception of users are critical. Public administrations have moved away from their traditional model and now consult and treat users in a uniform and fair manner.

Guillon *et al.* (2003) [7] proposed a “user-based modernization” approach that improved customer conditions, simplified procedures and formalities, and decentralized service delivery. After twenty years of reform in Europe, this approach has remained positive and deserves to be continued. We encourage public services to implement quality standards that engage citizens in public decision-making processes.

The new principles of public management aim to improve service delivery methods, with an emphasis on service quality, user satisfaction, and compliance with all laws.

Developing nations like Cameroon increasingly view quality of service as a primary responsibility, not a secondary attribute. A strong workforce is crucial to

success. Organizations must choose the appropriate approach based on specific criteria and favorable conditions. The ability of a product or service to satisfy users, citizens, partners, or affiliates determines its quality. Adjustments between recipient expectations, public policies, service strategy, and missions—taking into account the service’s available resources—determine quality. The desired level of quality depends on these adjustments, which should be explicit to all stakeholders, including staff, beneficiaries, and citizens. Quality is an evolving concept that meets the needs of recipients without being substandard or excessive. Quality development in public administrations renews service management methodologies based on a comprehensive strategy that includes process, product, and service management.

2.2. Quality of Service Related to Satisfaction of Users of Public Services

The concept of satisfaction is both specific and approximate when assessing various aspects such as outcomes, the evolution of public services, and their context. According to Bartoli (2005) [8], satisfaction is not necessarily linked to the public administration’s common interest in judicial functions but rather to essential services. Savall and Zardet (2001) [9] propose a link between an organization’s performance and the quality of its services, categorized into three levels: product quality, operational quality, and management quality. The ISO (International Organization for Standardization) measures satisfaction by comparing the provided service to user expectations.

The quality approaches in the public sector are similar to those in the private sector, but the concept of “customer” differs. Public users are not only consumers but also active taxpayers, and the main actors in the public sector are often different. Quatrebarbes (1996) [10] proposes a distinction between five categories of actors: client, prescriber, direct user, indirect user, and payer.

Expectation Confirmation Theory (ECT) can be used to better understand the quality of public services in relation to user satisfaction.

In conclusion, a quality policy based on user satisfaction relies on the internal performance of public services and on addressing the needs of users in service provision.

2.2.1. Improving the Quality of a Public Service in Relation to User Satisfaction

Mercier (2003) [11] identifies four main areas for improving service quality in public administration: improved information, customer reception, and service quality; a more streamlined marketing approach with the development of new products and services; an evolution of the public service mission that leads to a new service relationship; and a user-client status.

To maintain service quality, public administrations must develop and improve their processes to avoid rigidity. Processes must be analyzed with the ultimate goal of satisfying recipients while ensuring the general interest. To this end, the new

challenge for public administrations is to take steps to enhance the quality of public services. This will involve introducing and developing information and communication technologies, reorganizing services internally, simplifying administrative procedures and language, and improving user reception.

2.2.2. The Relationship between Digital Transformation and the Quality of Public Services in Relation to User Satisfaction

Public organizations have implemented digital transformation to ensure the security and efficiency of organizational processes, improve the performance of public administration, and support administrative reforms. This transformation involves new approaches to working with stakeholders and a new form of service relationship. Digital tools such as online platforms, mobile applications, and electronic services simplify administrative procedures, facilitate access to public services, and enhance interaction between the administration and users. This helps citizens avoid long waiting times and unnecessary travel, while administrators and managers optimize workloads. Transparency and access to public information improve procedural and management accountability. According to the UN, the transition to digital technologies is part of the new public governance framework, which aims to standardize working procedures and improve organizational efficiency.

2.3. Digital Transformation

2.3.1. Generalities

The global process of digital transformation aims to incorporate new skills, transform processes, and change business models. It requires alignment of business needs with those of employees, customers, and decision-makers, which can lead to organizational breakdowns. To ensure success, all parties involved must embrace change. Employees who seek to eliminate complex and slow processes that fail to meet modern expectations can facilitate internalization. In a competitive market, organizations must adapt to the evolving landscape. Digital transformation seeks to accelerate and streamline internal communication through digital tools, improving the employee experience and contributing to user satisfaction. Collaborative platforms enable citizens to participate in public service activities, thereby fostering a relationship of trust between users and civil servants. The integration of digital tools also demonstrates an organization's dynamism, innovation, and adaptability, leading to a more sustainable business model.

Digital technology integrates various concepts, processes, and components by combining technologies such as smartphones, the Internet, 3D technology, GPS, drones, AI, robots, data collection and storage, cloud computing, predictive analysis, data mining, predictive modeling, and machine learning. These technologies, which enable the analysis and prediction of large data sets, bear similarities to human cognitive functions like learning and problem-solving.

2.3.2. Digital Transformation of Public Services

The digital transformation of public services is a phenomenon that promotes the

use of information and communication technologies (ICT) and the Internet in administrative acts. Introduced for the first time in France in 2000, this concept has been adopted by various organizations, including the *Association Franco-phone des Utilisateurs du Net* (AFNET) and the National Agency for the Improvement of Working Conditions (ANACT). Digitalization is defined as the transformation of all of an organization's components through the influence of ICT. It is characterized by the dematerialization of certain activities as well as improvements in various economic, technological, and social constraints in the workplace. It is a step-by-step approach that benefits from interoperability, access to information, automated assistance, and trends in decentralized decision-making. The Internet of Things (IoT) is regarded as one of the main drivers of digitization, referring to the use of new technologies such as mass media, social networks, and mobile devices to improve customer perception and satisfaction, simplify operations, and create new economic opportunities.

Digital transformation has evolved from a simple digitization of processes towards a more holistic approach that integrates a variety of advanced digital technologies and highlights focus on innovation, adapting to change and improving the experience users (Ivanova, M. *et al.* 2020) [12].

The United Nations (UN) has published a report on e-government, highlighting the increasing use of ICT for the provision of public services. The report urges governments to engage in decision-making mechanisms and support the implementation of Agenda 2030 for Sustainable Development, which outlines 17 goals. The UN has also developed an E-Government Development Index (EGDI) to assess the level of digital services in 193 member states. The EGDI consists of three sub-indices: the Telecommunications Infrastructure Index (TII), the Human Capital Index (HCI), and the Online Services Index (OSI). The report reveals that countries with high digital development potential (HEGDI), medium development (MEGDI), and low development (LEGDI) are expected to significantly increase their digital services by 2030. The UN also highlights gaps in the management of digital projects in many countries, particularly in developing nations.

2.3.3. Digital Transformation of Public Services in Cameroon

The analysis of three Cameroonian public administrations—Finance through DGI, DGSN, and MINFOPRA—shows significant progress in the digitization of public services. This digital transformation contributes to improving administrative processes and the provision of public services. However, some administrations still face difficulties in managing national information systems, which are crucial for digital governance. This presents an obstacle to digital transformation within Cameroonian public administrations. A clear strategy is essential for a successful digital transition. To overcome the many obstacles and ensure the success of digital transformation in this environment, companies and public actors must adopt approaches that ensure employee training, the implementation of appropriate infrastructure, and a culture of innovation and collaboration. If successful, Cameroon can fully leverage digital transformation and become a regional leader.

This atmosphere of digitalization underscores the importance of adopting a digital approach aligned with the global vision.

3. Methodology

This study aims to identify the fundamental aspects to consider when delivering quality public services in relation to user satisfaction and the relevance of using digital tools to achieve this quality. The constructivist paradigm used allows for reflection, construction, and validation of the acquired information. We conducted a qualimetric study using non-directive interviews, questionnaires, and structured observations. A documentary analysis provided information on public services, the quality of services in public administrations, user satisfaction, digital transformation, and the basic factors to be considered when delivering quality public services in relation to user expectations. Additionally, we conducted a questionnaire and interviews with users and employees to gauge their perceptions and expectations about the quality of public services and digitization.

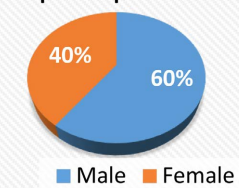
3.1. Sample Structure

The study presents the sample distribution among users and employees of certain public organizations (A, B, and C) based on factors such as gender, age, educational level, marital status, and work experience.

3.1.1. Respondents' Gender

Table 1 shows the gender distribution of respondents in three organisations: A, B, and C, indicating the diversity of traits related to masculinity and femininity.

Table 1. Respondents' gender.

Gender	Frequency	Percentage	<p>Graphic Representation</p> 
Male	90	60	
Female	60	40	
Total	150	100	

Source: author.

The table shows that 60% of the total respondents are men, while 40% are women.

3.1.2. Age of Respondents

Table 2 below presents the age distribution of respondents in this study, which includes staff and users from public organizations A, B, and C.

The table above reveals that 45 respondents, or 30 percent of the total, were aged between 21 and 28; 60 respondents, or 40 percent, were aged between 29 and 36; 40 respondents, or 27 percent, were aged between 37 and 44; and 5 respondents, or 3 percent, were aged over 45.

Table 2. Respondents' age.

Age of respondents	Frequency	Percentage
21 - 28 years old	45	30
29 - 36 years old	60	40
37 - 44 years old	40	27
45 years and over	5	3
Total	150	100

Graphic Representation

■ 21-28 years old ■ 29-36 years old
■ 37-44 years old ■ 45 years and over

Source: author.

This demonstrates that middle-aged individuals constitute the majority of users in public organizations A, B, and C. These organizations could take their needs into account to provide high-quality services. To ensure the long-term success of any public institution, individuals of all ages must be involved in all services and be aware of community needs and activities that address them. This table of respondents by age helps in formulating sample questions for this research and in verifying the data.

3.1.3. Study Level of Respondents

Table 3 presents data on the educational levels of employees of public organizations A, B, and C, as well as their random users in our study.

Table 3. Respondents' study background.

Frequency	Number of respondents	Part in %
Primary	30	20
Secondary	40	27
University	80	53
Total	150	100

Graphic Representation

■ Primary ■ Secondary ■ University

Source: author.

The majority of respondents in this survey had completed secondary or higher education, and 20% of them attended primary school.

3.1.4. Area of Training

Table 4 provides an overview of data on employees of public organizations A, B, and C, as well as their randomly sampled users. This table indicates whether the employees are IT professionals or not.

Table 4. IT and non-IT responses.

Frequency	Number of respondents	Part in %
IT	70	47
Not IT	80	53
Total	150	100

Graphic Representation

53% 47%

IT Not IT

Source: author.

4. Results and Discussion

This study aims to ensure consistency between objectives, empirical position, and methodology, thereby ensuring scientific validity. Through an in-depth immersion in the field and a review of the literature, it demonstrates the role of digital transformation in the provision of public services and identifies the fundamental factors contributing to the implementation of public services that meet user expectations. The study addresses this issue and provides valuable insights into the digital transformation of public services. It also identifies the fundamentals for quality in public services, evaluates the implementation of digital services in certain public administrations, and assesses the ability of digital tools to ensure service quality in relation to user satisfaction. Our analyses were conducted on three Cameroonian organizations, with the results presented based on the realities of these organizations. The study's objectives are to identify the fundamentals of service quality in relation to user satisfaction, assess the effectiveness of digital services in public administrations, and determine the capacity of digital tools to ensure public services meet the desired quality level.

4.1. Results of Document Analysis

This section reviews the theoretical framework presented in the literature review, verifying it through reference to studies conducted.

Review of the Proposed Theoretical Model

After addressing the research issue, we developed a conceptual framework to ensure service quality and user satisfaction through digital transformation. By reassessing and clarifying this framework, we propose a theoretical model to address the aforementioned issue. We reviewed all essential elements of the research and arrived at the following results:

1) Public service and user satisfaction

New Public Management (NPM) is a transdisciplinary approach encompassing organizational transformations in various functions of public organizations. Public service represents a relationship between a public operator and a user, and the quality of that service depends on the user's involvement. The primary goal of

NPM is not to improve public service or reduce the public deficit but to justify organizational actions against stakeholder opinions. In this context, transparency, a key concept, focuses more on external user control than on business operations. NPM aims to investigate and clarify user needs and expectations to meet them. To validate these results, we conducted questionnaires and interviews with certain users and staff of the public entities involved in our study. We identified three themes related to customer satisfaction: enhancing service conditions, streamlining procedures and formalities, and incorporating technological advancements in service provision.

2) The concept of quality in public service in relation to user satisfaction

The AFNOR NFX50-109 standards define quality management as an industry-developed concept. It refers to the characteristics of an entity capable of meeting the needs of users and their families, ensuring their health, social autonomy, and human dignity. Quality management involves organizing and managing to ensure satisfaction for both internal and external actors, as well as risk management. It can be divided into two practices: external quality management, which prioritizes user satisfaction, and internal management, which enhances service functionality. Quality management in the public sector involves listening to users, evaluating their satisfaction, engaging in service, and simplifying administrative processes.

3) Impact of digital transformation on user satisfaction

New Public Management (NPM) is a transdisciplinary approach involving profound changes in public organizations' functions, affecting service quality and user satisfaction. Public performance extends beyond management effectiveness or quality, hinging on meeting user expectations in areas such as social equity, precaution, and accountability. NPM must address themes related to user satisfaction, such as improving service conditions, simplifying procedures and formalities, and incorporating technological advances. One of NPM's major transformations is the use of information and communication technologies, which contribute to e-government implementation. Digital transformation is a comprehensive and progressive approach based on strategic alignment in the public sector and the harmonization of IT objectives with strategic goals. This conclusion aligns with the findings of the Blackburn study (2014) [13].

4.2. Results of the Analysis of Questionnaires and Free Interviews

The interactive nature of the research necessitated on-site execution within organizations A, B, and C. Employees and users of these structures provided data through surveys, questionnaires, and interviews. Users took two days to respond, and interviews lasted an average of 30 minutes. The results showed that 99.9% of respondents participated in the information collection process, allowing the researcher to continue editing, encoding, and tabulating the data using Microsoft Office 2016 Excel.

To achieve these goals, namely verifying our research hypothesis, the study must identify two main indicators: evaluating the quality of services provided by

public administrations, considering fundamental aspects of quality, and assessing user satisfaction with the proposed digital public services.

4.2.1. An Assessment of the Quality of Service Provided by Public Administrations

The document analysis identifies three basic criteria for service quality: improving reception conditions, simplifying administrative procedures and formalities, and demonstrating how technology can enhance service quality. These criteria are fundamental to the country's economic and social development.

1) *Quality of public service and improved reception conditions.*

- ❖ Analysis of stakeholders' perceptions of service quality and reception conditions.

The results are shown in the following **Table 5**.

Table 5. Actors' perspective on reception conditions.

Citizens' response	Number of respondents	Part in %
Desagree	6	4
A bit of agreement	9	6
Approximately agree	30	20
Pretty much agree	32	21
Strongly agree	73	49
Total	150	100

Source: author.

- ❖ An analysis of welcoming conditions within Cameroon's public administrations.

The results are shown in the following **Table 6**.

Table 6. The relationship between public administrations and users.

Frequency	Number of respondents	Part in %
Bad	80	53
Medium	40	27
Good	20	13
Very good	10	7
Total	150	100

Source: author.

The study analyzes the relationship between the quality of public service and improved hospitality conditions using the Chi-square (χ^2) test. To this end, we base our analysis on the null hypothesis (H_0), which states that public service quality variables and improved reception conditions are independent of each other. **Tables 7-9** present the results.

Table 7. Frequencies observed.

Table of observed frequencies						
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Desagree		0	0	0	6	6
A bit of agreement	2	0	0	0	7	9
Approximately agree	0	2	1	0	27	30
Pretty much agree	12	2	1	1	16	32
Strongly agree	6	3	3	4	57	73
Overall	20	7	5	5	113	150

Source: author.

Table 8. Theoretical frequencies.

Theoretical frequency table						
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Desagree	0.8	0.3	0.2	0.2	4.5	6
A bit of agreement	1.2	0.4	0.3	0.3	6.8	9
Approximately agree	4.0	1.4	1.0	1.0	22.6	30
Pretty much agree	4.3	1.5	1.1	1.1	24.1	32
Strongly agree	9.7	3.4	2.4	2.4	55.0	73
Overall	20	7	5	5	113	150

Source: author.

Table 9. calculation of khi 2.

Calcul du KHI 2					
	Officers	Chiefs of Service	Managers	Digitization Experts	Users
Desagree	0.8	0.3	0.2	0.2	0.5
A bit of agreement	0.5	0.4	0.3	0.3	0.0
Approximately agree	4.0	0.3	0.0	1.0	0.9
Pretty much agree	14.0	0.2	0.0	0.0	2.7
Strongly agree	1.4	0.0	0.1	1.0	0.1

Source: author.

This concludes the analysis of the Chi-square (χ^2) test:

- **Chi-square Sample Value (χ^2) = 29.3**

- Degrees of Freedom (df) = $(4 - 1) \times (4 - 1) = 9$
- Acceptance Interval for χ^2 at $\alpha = 5\%$ is $[0 - 16.92]$
- Comparison of Theoretical χ^2 and Sample χ^2 : Theoretical $\chi^2 < \text{Sample } \chi^2$

These results lead to the rejection of the null hypothesis (H_0), implying a dependence between the quality of public service and optimal user reception conditions.

The quality of service in relation to user satisfaction ensures a welcoming environment for the users.

2) Quality of service, simplifies administrative procedures and formalities.

To evaluate this criterion, we have:

- ✓ Initially, we collected the views of the actors in the public services of organisations A, B, and C, subject to our study on the existing administrative procedures and formalities. **Table 10** below presents the results obtained:

Table 10. Evaluation of administrative procedures and formalities in public organisations A, B, and C.

Frequency	Number of respondents	Part in %
Complex	80	53
Moderate	40	27
Simple	30	20
Very simple	0	0
Total	150	100

Graphic Representation

Complex Moderate Simple Very simple

Source: author.

- ✓ Secondly, we analyzed the perceptions of Cameroonian public administration actors based on the principle that quality public service should simplify administrative formalities and procedures. Following **Table 11** displays the results

Table 11. Assessment of the relevance of administrative procedures and formalities to quality.

Citizens' response	Number of respondents	Part in %
Disagree	0	0
A bit of agreement	0	0
Approximately agree	30	20
Pretty much agree	37	25
Strongly agree	83	55
Total	150	100

Graphic representation

Disagree A bit of agreement Approximately agree Pretty much agree Strongly agree

Source: author.

- ✓ In the third phase, we used the Chi-square (χ^2) test to analyze the dependence between service quality variables and the simplification of administrative procedures and formalities. Using the data collected and analysed in MS Excel 2016, we have formulated the H_0 starting assumption that the quality of the public service and the simplification of administrative procedures are not dependent. **Tables 12-14** present the results.

Table 12. Frequencies observed.

Frequencies observed						
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Approximately agree	0	2	1	0	27	30
Pretty much agree	12	2	1	1	21	37
Strongly agree	8	3	3	4	65	83
Overall	20	7	5	5	113	150

Source: author.

Table 13. Theoretical frequencies.

Theoretical frequencies table						
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Approximately agree	4	1.4	1	1	22.6	30
Pretty much agree	4.93	1.73	1.23	1.23	27.88	37
Strongly agree	11.07	3.87	2.77	2.77	62.53	83
Overall	20	7	5	5	113	150

Source: author.

Table 14. calculation of KHI 2.

KHI 2 calculation table					
	Officers	Chiefs of Service	Managers	Digitization Experts	Users
Approximately agree	4	0.25714286	0	1	0.85663717
Pretty much agree	10.1225225	0.04326898	0.04414414	0.04414414	1.69490712
Strongly agree	0.8497992	0.19691337	0.01967871	0.5497992	0.0978363

Source: author.

This concludes the analysis of Chi-square (χ^2):

- Chi-square (χ^2) Sample = 19.77679372;
- The degree of freedom can be calculated as $ddl = 2 \times 4 = 8$;
- Chi-square (χ^2) acceptance interval for $\alpha = 5\%$; $IA = [0 - 15.51]$;
- The present study compares the theoretical Chi-square (χ^2) with the sample Chi-square (χ^2). Theoretical Chi-square (χ^2) < Chi-square (χ^2) sample;

These results reject the H_0 hypothesis, demonstrating a link between the quality of public service and the simplification of administrative procedures and for-

malities.

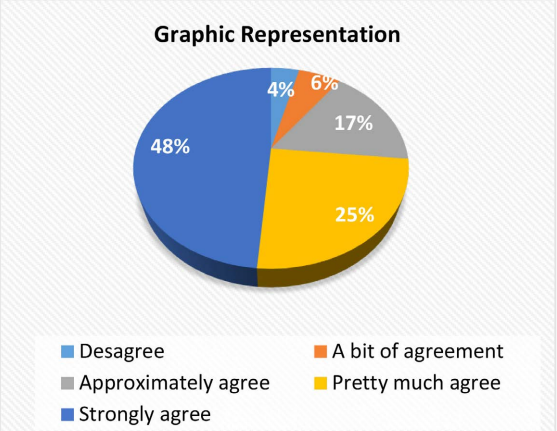
These findings demonstrate that the quality of service simplifies administrative procedures and formalities.

3) The quality of service and the integration of technologies in the provision of public service are important factors to consider.

We conduct two levels of analysis here:

- ✚ The first study examines how public service actors perceive the integration of digital technologies in the delivery of public services. It led to the results in **Table 15** below.

Table 15. Public service actors' perceptions of the inclusion of digital technologies in public service provision.

Citizens' response	Number of respondents	Part in %	Graphic Representation 
Desagree	6	4	
A bit of agreement	9	6	
Approximately agree	25	17	
Pretty much agree	37	25	
Strongly agree	73	48	
Total	150	100	

Source: author.

Table 15 above shows that 73% of respondents agreed that using digital technologies to provide public services would improve access, with 17% agreeing on average and only 10% disagreeing.

The study uses the Chi-square (χ^2) test to analyze the dependency between the quality of public service and the use of digital technologies. To this end, we base our analysis on the H_0 assumption, which holds that the quality of public services and digital technologies are independent. **Tables 16-18** present the results.

Table 16. Frequencies observed.

	Frequencies observed					
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Desagree	0	0	0	0	6	6
A bit of agreement	2	0	0	0	7	9
Approximately agree	0	2	1	0	22	25
Pretty much agree	12	2	1	1	21	37
Strongly agree	6	3	3	4	57	73
Overall	20	7	5	5	113	150

Source: author.

Table 17. Theoretical frequencies.

Theoretical frequencies						
	Officers	Chiefs of Service	Managers	Digitization Experts	Users	Total
Desagree	0.8	0.28	0.2	0.2	4.52	6
A bit of agreement	1.2	0.42	0.3	0.3	6.78	9
Approximately agree	3.33	1.17	0.83	0.83	18.83	25
Pretty much agree	4.933	1.73	1.23	1.23	27.87	37
Strongly agree	9.733	3.41	2.43	2.43	54.99	73
Overall	20	7	5	5	113	150

Source: author.

Table 18. Calculation of Chi-square (χ^2).

Calculation of Chi-square (χ^2)					
	Officers	Chiefs of Service	Managers	Digitization Experts	Users
Desagree	1.3	0.7	0.5	0.5	0.5
A bit of agreement	0.5	0.4	0.3	0.3	0.0
Approximately agree	3.3	0.6	0.0	0.8	0.5
Pretty much agree	10.1	0.0	0.0	0.0	1.7
Strongly agree	1.4	0.0	0.1	1.0	0.1

Source: author.

This concludes the analysis of Chi-square (χ^2).

- KHI 2 Sample = 23.5;
- The degree of freedom is $ddl = 4 \times 4 = 16$.
- KH2 acceptance interval for $\alpha = 5\%$; $IA = [0 - 26.30]$;
- The comparison of KHI2-theoretical and KHI-sample reveals that KHI2-theoretical is superior to KHI-sample 2.

These results refute the H_0 hypothesis, demonstrating that the quality of public service remains independent of the use of digital technologies.

These findings suggest that although service quality remains independent of technology, it can enhance the quality of public service.

4.2.2. Assessment of the Satisfaction of Users of Public Administrations from the Point of View of Digital Public Services

The ultimate goal of this analysis is to evaluate the electronic public services provided by Cameroon's public administrations.

Using the literature review and field work, we have identified three major axes to measure user satisfaction with the digital public services provided by public organizations A, B, and C.

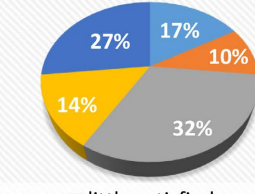
- Accessibility to the information system;
- The public administration provides high-quality electronic information;

- Managing online complaints and grievances;

1) *Accessibility of the information system*

Table 19 below shows that, for this variable, 41% of the surveyed population is satisfied with the level of accessibility to the public administration information system, 32% are averagely satisfied and ask for optimizations, and 27% are not satisfied.

Table 19. Actors' perceptions of access to e-services in public organizations A, B, and C.

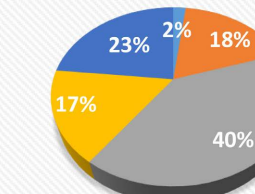
Citizens' response	Number of respondents	Part in %	Graphic Representation 
Unsatisfied	25	17	
little satisfied	15	10	
Medium Satisfied	48	32	
Pretty satisfied	22	14	
Very satisfied	40	27	
Total	150	100	

Source: author.

2) *Quality of electronic information provided by the public administration*

Public administrations provide information that users can follow to meet their expectations. As a result, electronic information is critical because it enables the establishment or restoration of trust and complementarity between public organisations and their various partners. The proposed questionnaire reflects the governments' decades-long commitment to providing quality electronic services within this framework. The survey results presented in **Table 20** below show that more than half of users are more or less satisfied with the electronic information provided by the Cameroonian public administration. The survey results indicate that 43% of users are satisfied, 36% are average, and 21% are dissatisfied.

Table 20. Quality of electronic information provided by the public administration.

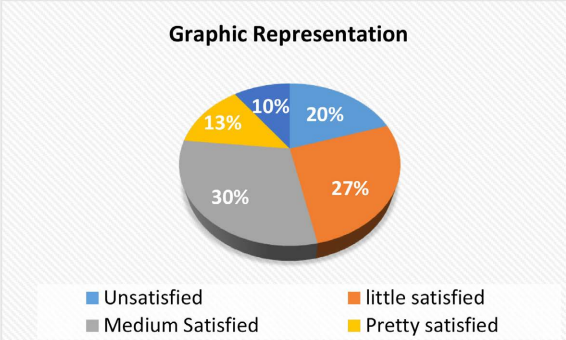
Citizens' response	Number of respondents	Part in %	Graphic Representation 
Unsatisfied	3	2	
little satisfied	27	18	
Medium Satisfied	60	40	
Pretty satisfied	25	17	
Very satisfied	35	23	
Total	150	100	

Source: author.

3) *Online complaint and grievance management*

The intention behind online complaints was to reduce paperwork within an administration and increase responsiveness. However, the results presented in **Table 21**, obtained from the questionnaire, show that more than half of the respondents are not satisfied.

Table 21. Analysis of online complaint and grievance management.

Citizens' response	Number of respondents	Part in %	<p>Graphic Representation</p> 
Unsatisfied	30	20	
little satisfied	40	27	
Medium Satisfied	45	30	
Pretty satisfied	20	13	
Very satisfied	15	10	
Total	150	100	

Source: author.

The results show that while most administrations in developing countries, like Cameroon, are working to modernize public services through digitization, they are often implementing digital public services that fall short of user expectations.

5. Conclusions and Prospects

Ultimately, this research focused on identifying the fundamental factors of service quality related to user satisfaction in public administrations, the role of digital transformation in the operation and management of public organizations, and how it contributes to the implementation of this quality. This study's interest arises from the growing importance of political and economic sciences and the relative scarcity of research in this field compared to the private sector. The results of the field data analysis help to validate the assumptions.

- ✓ The qualimetric analysis confirmed the primary assumption that digital transformation can enhance the functioning of public administrations in Cameroon concerning service quality relative to user satisfaction. This analysis collected data on various variables through documentary analysis, questionnaires, and interviews, followed by dependency analysis using the Chi-square (χ^2) test between those variables. Based on these findings, we can draw the following conclusions:
 - Public services are designed to serve the general interest and must address specific interests to avoid dissatisfaction.
 - For user satisfaction, fundamental service quality must meet the following basic criteria: improved reception conditions, simplified procedures, and administrative formalities. The integration of technology into public service provision is essential for ensuring the effectiveness of its implementation.
- ✓ **The digitization of public services involves measures to digitize services to facilitate access and improve effectiveness.** Digital platforms can play a crucial role in the quality of services by providing equitable and efficient services

to citizens.

- ✓ **Public organizations in Cameroon prioritize the quality and modernization of services to meet the growing demands of a discerning society.** Despite the presence of digital services in Cameroon, they often fall short of meeting user needs, raising the question: How can we ensure the success of digital transformation in public services?

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- [1] Elhali, A., *et al.* (2022) La crise du COVID-19 un élan à la transformation digitale au Maroc. *Revue Française d'Economie et de Gestion*, **4**, 396-412.
- [2] Parviainen, P., Tihinen, M., Kääriäinen, J. and Teppola, S. (2022) Tackling the Digitalization Challenge: How to Benefit from Digitalization in Practice. *International Journal of Information Systems and Project Management*, **5**, 63-77. <https://doi.org/10.12821/ijispm050104>
- [3] Reis, J., Amorim, M., Melao, N. and Matos, P. (2016) Digital Transformation: A Literature Review and Guidelines for Future Research. In: Rocha, A., Adeli, H., Reis, L.P. and Costanzo, S., Eds., *Trends and Advances in Information Systems and Technologies*, Springer, 411-421. <https://doi.org/10.1007/978-3-319-77703-0>
- [4] Mimeche, W. (2016) La contribution des salariés aux médias sociaux dans le cadre de leur présence numérique et celle de leur entreprise. Thèse de Doctorat en Sciences de Gestion, Université de Montpellier.
- [5] Chevallier J., (1997) Le service public. Presses Universitaires de France, 100.
- [6] Trosa S. (2006) Modernisation du service public, le pari de la qualité—Notes de benchmarking international, Institut de l'Entreprise.
- [7] Christian, G., Francoise, G. and Evah-Manga, E. (2003) Réussir le changement dans le service public. Deuxième édition, Editions d'Organisation.
- [8] Annie, B. (2005) Le management dans les organisations publiques. Dunod, 419.
- [9] Savall, H. and Zardet, V. (2001) Evolution des outils de contrôle et des critères de performance, face aux défis de changement stratégique des entreprises. *22ème congrès de L'AFC*, May 2001, France, 1-28.
- [10] de Quatrebarbes, B. (1996) Usager ou client? Marketing et qualité dans les services publics, Les éditions d'organisation.
- [11] Mercier, E. (2000) Les effets de la modernisation sur les pratiques de gestion des ressources humaines dans les entreprises publiques de service public. Une lecture conventionnaliste du processus d'évolution à la RATP et EDF-Lorraine. Thèse de Doctorat en Science de Gestion, Université Nancy.
- [12] Ivanova, M., Yakovleva, T. and Selenteva, T. (2020) The Models of Information Asymmetry in the Context of Digitization of Government. *Proceedings of the International Scientific Conference—Digital Transformation on Manufacturing, Infrastructure and Service*, Saint Petersburg, 18-19 November 2020, 1-6. <https://doi.org/10.1145/3446434.3446512>
- [13] Blackburn, G. (2014) Elements of Successful Change: The Service Tasmania Experience to Public Sector Reform. *Australian Journal of Public Administration*, **73**, 103-114. <https://doi.org/10.1111/1467-8500.12054>