# TWITTER USAGE IN SAUDI ARABIA:

# AN EMPIRICAL STUDY ON THE CHALLENGES FACED BY THE GOVERNMENT

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## Table of Contents

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## List of Figures

## List of Tables

## Abstract

During the last decade, Twitter has emerged as a prominent platform for digital governance in Saudi Arabia, offering a space for millions of users to engage in public conversations on a daily basis. At the same time, this growth has presented significant challenges for Saudi state institutions as they seek to optimize the platform's potential while mitigating its associated risks. This empirical study sheds light on the challenges faced by the Saudi government in managing Twitter usage within the context of digital governance.

Before formulating the research goals and questions, an extensive literature review was conducted to ensure the relevance of the topic and the theoretical and practical value of the results. It highlighted that Saudi Arabia is at the forefront of digital innovations in the MENA region, including the development of e-government. Despite the traditionally conservative nature of the Saudi government and society, the use of social media, especially Twitter, is very high. Thanks to the Vision 2030 national development plan and the digital development initiatives of Saudi leaders, almost all public institutions have started to provide digital services to clients. This has turned social media into one of the most effective channels of communication with citizens. Nevertheless, the knowledge on this topic is limited, particularly regarding the use of Twitter by Saudi public institutions. To address this gap, the present study provides a thorough analysis of the pace of development and key advancements of digital governance through Twitter among Saudi public institutions.

The study relied on qualitative and quantitative methodologies (interviews and questionnaires) to obtain a holistic understanding of the challenges and opportunities associated with digital governance. The researcher conducted 19 11-question interviews with representatives of Saudi public institutions regarding their use of Twitter for digital governance. In addition, 434 regular Saudi citizens participated in a questionnaire assessing

their opinions about and satisfaction with these services. The combination of these methods produced a rich and diverse set of perspectives on the topic.

The interviews, questionnaires, and secondary data analysis uncovered numerous challenges with the implementation of digital governance. The findings revealed the need to invest in infrastructure and digital skills development, address cultural barriers, and promote citizen engagement in the design and implementation of digital governance services. Additionally, the results showed the potential of social media and Twitter as a platform for social activism and their impact on public discourse in general.

Digital governance has significantly enhanced the provision of services to citizens in Saudi Arabia. The use of Twitter has been instrumental in this regard, but there is still room for improvement. Therefore, this study provides recommendations that could help Saudi public organizations provide better digital governance services in the future. As the world is increasingly online, this study offers valuable implications not only for Saudi Arabia but also for other countries seeking to improve their approach to digital governance services.

**Keywords**: Saudi Arabia, digital services, e-government, digital governance, social media, Twitter.

# Chapter 1: Introduction

## 1.1 Background

In recent decades, the Internet and social networks (such as Twitter and Facebook) have become part of the everyday professional and personal lives of people in Saudi Arabia. With time, they have also grown into useful tools for the government to manage the economic, political, and social life of the country. Of these, Twitter is one of the most popular social networks in Saudi Arabia, being one of the largest and most successful real-time platforms that allows users all across the globe to share information through public and private messages via user accounts (Waters & Williams, 2011). In turn, Twitter has rapidly become the leading online outlet for public debates and marketing campaigns (Aljabre, 2013), and its rate of usage in Saudi Arabia is among the highest in the world (Statista, 2019). As such, the Internet and social networking have greatly contributed to changes in the way Saudis communicate, think, access information, share thoughts, form friendships, and even interact with the government and local authorities (Kuppuswamy & Rekha, 2015).

The foundations of the e-government program in Saudi Arabia were laid in 1998 (Basamh & Qudaih, 2014, p. 298). Since that time, e-governance has evolved considerably, leading to significant digital transformations within the country. Up to now, it is popular not only in big cities (such as Mecca, Riyadh, and Medina) but all across the country. These changes within Saudi Arabia became possible thanks to two main pillars (Saudi National Portal, 2018). The first was High Order #7/B/33181, which established the foundation for e-government services. The second was the establishment of Yesser (the e-government program of Saudi Arabia) in 2005, whose main goals were to increase the efficiency and productivity of the public sector, to provide better services to businesses and individuals, to increase the returns on investments, and to present information in a timely and accurate manner. By 2010, basic e-government services were implemented throughout the country.

The main organizations that maintain the development of e-governance in Saudi Arabia are the National Committee for Digital Transformation and the Ministry of Communication and Information Technologies (Saudi National Portal, 2018). These institutions are responsible for creating strategies and policy-making related to digital transformation in all public sectors, as well as program planning and ensuring the coordination between different initiatives. Their other important responsibilities are the establishment of the governance framework for the initiatives of digital transformation, proposing different projects related to digital transformation, approval of the periodic reports developed by the National Digitization Unit, approval of annual operational and work plans related to the digitization program of the country, and supervision of the National Digitization Program.

Nevertheless, certain internal and external challenges have prevented the country from implementing e-governance more quickly (Basamh & Qudaih, 2014, p. 298). Paramount among these are the high cost of implementation, privacy and security, accountability, usability, authentication, accessibility, trust, computer literacy, and availability. Unfortunately, as with the rest of the world, a large part of the population of Saudi Arabia has not been able to access new digital technology and related services, has not used them, or has lacked the necessary skills to use them due to advanced age, low income, or low education. This digital divide is common not only in the general population but for government officials as well (whose skills often do not meet technical quality standards).

Although the government of Saudi Arabia is highly conservative, it actively uses social media (especially Twitter) for social interaction. This approach makes sense given that Saudi Arabia is among the top 10 countries in the world in terms of Twitter users (Statista, 2022a), accounting for the vast majority of active Twitter users in the Arab region. Thus, with the increased adoption of Twitter as a mode of communication, the government can start

implementing new services of digital governance for its citizens. It is interesting to note that the extent to which social networks have reached people in Saudi Arabia increased from 31.7% in 2015 to 35.74% in 2022, as shown in Figure 1 (Statista, 2019).

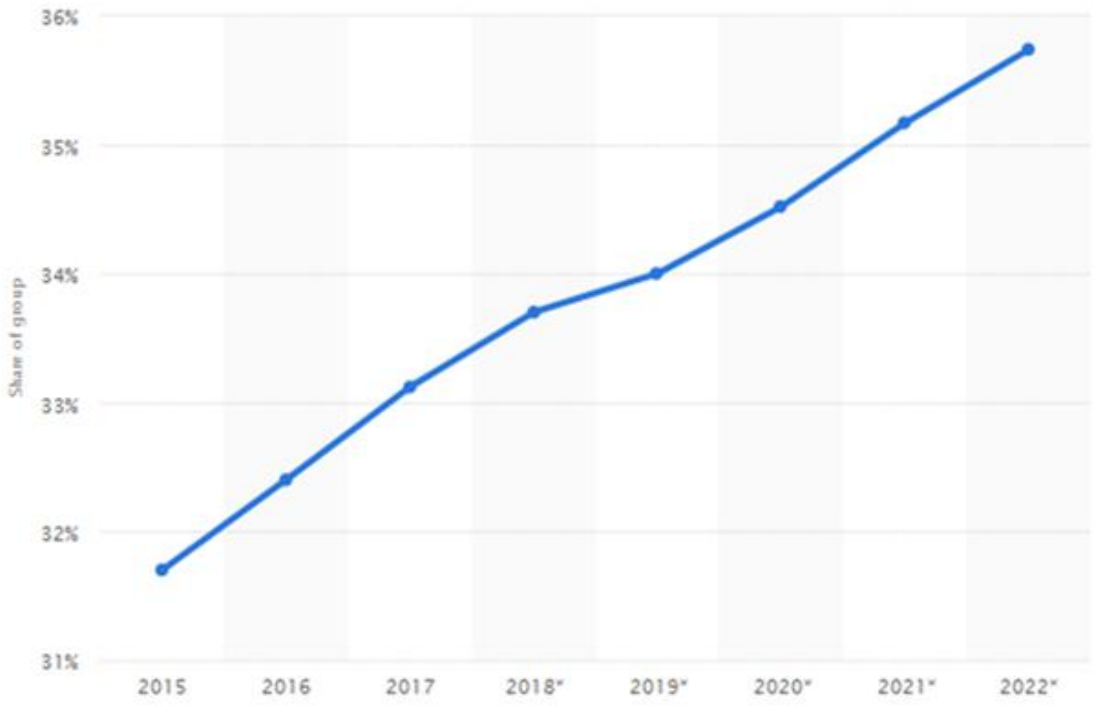



Figure 1. Social network user penetration in Saudi Arabia from 2015 to 2022 (Statista, 2019)

While discussing Saudi Arabia, it is important to note that the country is an absolute monarchy, with King Salman bin Abdulaziz Al Saud acting as the highest legislative, executive, and judicial authority, and the legal system is based on Sharia Law (Alboaouh & Mahoney, 2017). In this capacity, the king has emphasized that he will take all necessary actions for the further development of social communication with citizens and will actively support all efforts to popularize and implement e-government services.

Due to the conservative nature of the Saudi government and society, the use of social media, especially Twitter, is an indication of great social transformation, which some religious leaders have harshly condemned. With the increased adoption of Twitter as a mode of communication, the interaction between citizens and the government is expected to improve (Wigand, 2010). Digital communication, for instance, could result in a decrease in

paperwork, simplify government services, and help develop the state. In this context, Twitter, with its broad functionality, popularity, and possibilities, can serve as a good social platform for communication between the government and the public. Thus, it is crucial for Saudi Arabia to figure out how to maximize the benefits of this social network.

This dissertation explores core economic, political, and social benefits the Saudi government can gain by embracing Web 2.0 technologies, especially Twitter. The dissertation also explores how other governments have used social media and looks for ways the Saudi government can learn from other countries' experiences and mistakes.

### 1.2 Theoretical and Practical Value of the Research

This study has high theoretical and practical value. The use of social media for governance is a relatively new area of research, and this study can help expand our understanding of the benefits and challenges associated with this trend. From a theoretical point of view, this research will add to existing knowledge about the impact of Twitter and other social media on digital governance in general and in Saudi Arabia in particular. Thus, the study will be valuable for researchers, scholars, students, and other parties interested in this topic on the national level in the short- and long-term. Sunday (2019) noted how "theory is a model or framework for observation and understanding, which shapes both what we see and how we see it", enabling "the researcher to make links between the abstract and the concrete; the theoretical and the empirical" (p. 3). Similarly, this study can be used as a framework for understanding the current state of Twitter use for digital governance in Saudi Arabia and serve as a foundation for future studies. This topic is important according to several perspectives:

1. Digital Governance: The study will deepen people's understanding of the ways in which digital technologies can be used to enhance governance processes, promote transparency and accountability, and increase citizen participation.

2. Communication: The research sheds light on how Twitter can be used to engage with citizens, promote policies and ideas, and influence public opinion. It also explores the challenges and opportunities of using Twitter as a communication tool for public institutions.
3. Public Administration: The study provides insights into the ways in which public institutions can use digital technologies to improve public service delivery, enhance citizen participation, and promote democratic accountability. It also explores the challenges of implementing digital governance strategies in public institutions.
4. Political Science: The study provides information on the ways in which digital technologies can be used for political purposes, such as promoting policies and ideas, engaging with citizens, and influencing public opinion. As noted above, it also explores the implications of digital governance for political participation and democratic accountability.
5. Sociology: The study is important in the domain of sociology because it examines the impact of digital technologies on the relationship between citizens and public institutions in terms of social interaction, engagement, and networking. It also sheds light on how social media are shaping social identities and communities, as well as political participation and social movements.
6. Ethics: The study raises important ethical considerations related to privacy, security, and accessibility of information. Overall, the study could contribute to a better understanding of the ethical considerations related to the use of digital technologies in public governance and how these technologies may impact citizens in their interaction with the state.

In addition to theory, the study has practical implications as well. First, it could help public institutions better understand the benefits and challenges associated with using Twitter for digital governance. This understanding could inform the development of communication strategies that leverage the benefits of Twitter while mitigating risks and challenges. For example, public institutions could use the insights from this research to create guidelines for the dissemination of reliable information on Twitter and develop effective strategies for addressing misinformation.

Second, the research could inform the development of strategies for engaging with citizens on Twitter. Public institutions can use the insights from this research to better understand how to communicate with citizens in a way that is effective and engaging. This could foster greater trust and transparency between people and the government. As such, it could help improve the delivery of public services, increase citizen satisfaction with government services, and foster greater citizen trust in the government and greater public participation in decision-making.

Third, this research could be used as a case study by local public authorities, national public authorities, and public authorities in other countries. Finally, the study explores the topic from different perspectives and shows how to transform a challenge into an opportunity, providing a range of detailed recommendations.

### 1.3 Goals of the Study

This dissertation had two main goals. The first was to investigate Saudi government officials and citizens' perspectives on using Twitter and digital governance to interact with citizens in Saudi Arabia. Their responses were expected to contribute valuable insights into government engagement with Twitter and its implications for the overarching digital governance framework. In addition, the research sought to assess employee satisfaction with the quality of digital governance within key Saudi public agencies and identify factors

influencing employee satisfaction, thereby providing a comprehensive understanding of the strengths and weaknesses of the current digital governance landscape.

The second goal was to identify and analyse the challenges associated with using Twitter as a tool for digital governance in Saudi Arabia, as well as to explore the potential of Vision 2030 and other tools to overcome these challenges. Through this analysis, the study formulated recommendations for enhancing Twitter use in digital governance, contributing to the ongoing efforts to fortify the governance framework in Saudi Arabia.

### 1.4 Structure of the Study

This dissertation adheres to a classical structure, comprising five chapters designed to foster a comprehensive exploration of the research topic. These five chapters are the introduction, literature review, methodology, presentation and discussion of the results, and conclusions. Each of these elements is outlined in this section.

The first chapter introduces the central focus of the study: the exploration of Twitter's potential as a tool for e-governance by public institutions in Saudi Arabia. It provides a contextualization of the significance of e-governance in the digital age, emphasizing the growing role of social media platforms in fostering citizen engagement and government communication. The chapter sets out the research objectives, which encompass evaluating the extent of Twitter's utilization for e-governance purposes, analysing the benefits and challenges faced by public institutions in this context, and understanding citizens' perceptions regarding their interactions with government authorities through the medium of Twitter. Furthermore, the chapter emphasizes the theoretical and practical importance of the research, as it adds to the emerging body of knowledge on effective social media usage for e-governance in the unique context of Saudi Arabia.

The second chapter gives an extensive review of the existing literature related to e-governance and Twitter usage by public institutions across the globe. It traces the historical

evolution of e-governance and its fundamental principles, while highlighting the growing importance of social media platforms, particularly Twitter, in facilitating government communication and promoting citizen participation. By examining successful e-governance practices through Twitter in various countries, this chapter aims to identify lessons and insights applicable to the Saudi context. Moreover, the chapter critically assesses gaps in the current literature, demonstrating the need for further research to explore the specific challenges and opportunities confronted by Saudi public institutions when leveraging Twitter for e-governance.

The third chapter outlines the mixed-methods approach adopted for this study, involving both interviews and questionnaires to gather diverse perspectives from key stakeholders, including government officials and private citizens. The chapter explains the rationale for selecting this methodology, highlighting the complementary benefits of qualitative and quantitative data collection techniques. It provides a detailed account of the sampling strategy employed for participant selection and justifies the use of interviews and questionnaires to capture in-depth data and measurable responses. The data collection process, including the design of the interview questions and the construction of the questionnaire, is thoroughly described to ensure transparency and replicability. Additionally, the chapter addresses the methods used for data analysis, demonstrating how qualitative and quantitative data were synthesized and interpreted. Furthermore, it describes the measures that were taken to ensure the study's validity and reliability, such as triangulation of data and the establishment of trustworthiness through member-checking and peer review.

The fourth chapter presents the outcomes of the data analysis, which offers valuable insights into the current state of Twitter usage for e-governance in Saudi Arabia. This chapter highlights the extent to which public institutions were perceived to employ Twitter as a means of citizen engagement and service delivery. It delves into the challenges faced by these

institutions, including privacy and security concerns, the level of responsiveness to citizen inquiries, and the impact of the digital divide on citizen participation. Furthermore, the chapter sheds light on successful e-governance practices observed in select institutions, providing concrete examples of effective strategies that can be emulated by others in the Saudi context. The discussion component of this chapter provides critical reflections on the findings, contextualizing them within the existing literature and drawing meaningful conclusions.

The final chapter summarizes the key findings and conclusions of the study. It reflects on the significance of Twitter as a platform for e-governance in Saudi Arabia, considering its potential to promote transparency, responsiveness, and inclusivity in government communication. Building on these findings, the chapter presents a set of evidence-based recommendations for Saudi public organizations to enhance their e-governance practices on Twitter. These recommendations encompass strategies to improve citizen engagement through interactive and inclusive content, ensure data security and privacy, bridge the digital divide to promote equitable citizen participation, and develop mechanisms for prompt and effective responses to citizen inquiries. Furthermore, the chapter outlines the implications of these recommendations for e-governance policies and practices in the Saudi context.

### 1.5 Personal Motivation to Carry Out the Present Study

This topic resonates with me on both a professional and personal level, driving my determination to delve deeper and make a meaningful contribution to the field. In this section, I outline my motivations and explain why I find the topic of this study so compelling.

First and foremost, digital governance is a critical aspect of modern public administration. In today's digital age, the effective use of social media platforms has become increasingly important for public organizations to engage with citizens, disseminate information, and enhance transparency. As one of the most prominent social media platforms

locally and globally, Twitter offers a unique opportunity for Saudi public organizations to establish a direct and interactive channel of communication with the public. As a result, exploring the challenges they face in implementing digital governance through Twitter can lead to valuable insights and recommendations to improve the overall effectiveness of public administration.

Saudi Arabia has been rapidly embracing digital transformation in recent years. The Vision 2030 national development plan emphasizes the importance of leveraging digital technologies to enhance government services and improve citizen experience. By studying the challenges faced by Saudi public organizations, I aim to contribute to the national agenda of digital transformation and assist in overcoming the hurdles to the successful implementation of digital governance strategies.

In this context, Twitter has become a powerful platform for social and political discourse, providing a space for individuals to express their opinions and engage in public debates. Understanding how Saudi public organizations navigate the complexities of Twitter as a governance tool is not only academically stimulating but also relevant to fostering freedom of expression and civic engagement. By analysing the challenges faced by these organizations, I hope to shed light on how they can better leverage this platform to facilitate public participation and ensure that diverse voices are heard.

Another personal motivation stems from my interest in the Middle East and its unique socio-cultural context. Saudi Arabia, being a prominent country in the region, has experienced significant societal changes in recent years. Exploring the challenges faced by public organizations in implementing digital governance through Twitter allows me to gain a nuanced understanding of the socio-cultural factors that influence these processes. This knowledge will enable me to contribute to the ongoing discourse on the role of digital technologies in shaping governance practices in the Middle East.

Researching the challenges faced by Saudi public organizations in implementing digital governance through Twitter aligns with my academic and professional aspirations. This study presents an opportunity to apply theoretical knowledge and research methodologies in a real-world context. By collecting and analysing the data, I aim to develop practical recommendations to improve digital governance practices in Saudi public organizations.

As an employee of the Institute of Public Administration in Saudi Arabia, I am intrinsically motivated and deeply passionate about conducting research on the challenges faced by Saudi public organizations in the implementation of digital governance. This drive stems from a profound commitment to contributing to the advancement of public administration practices, fostering innovation, and ultimately better serving the citizens and the nation. My motivation as an employee of this institute can be summarized in the following key points:

1. Enhancing Public Service Delivery. At the heart of my motivation lies the desire to improve public service delivery and governance in Saudi Arabia. I firmly believe that the effective adoption of digital governance can streamline processes, reduce bureaucratic bottlenecks, and enhance the overall quality of services offered to citizens in my organization and other Saudi public organizations. By identifying and understanding the challenges that hinder the implementation of digital governance, I aim to be part of the solution, paving the way for a more efficient and citizen-centric government.
2. Empowering Government Officials. I am driven by the goal of empowering government officials and public administrators with the knowledge and skills required to navigate the digital era successfully. Through in-depth research, I aspire to develop targeted training programs and capacity-building initiatives that

will equip public-sector employees with the necessary expertise to embrace digital solutions effectively. Empowered employees can play a pivotal role in driving the digital transformation of their respective organizations and catalysing positive change across the entire public sector.

3. Promoting Evidence-Based Decision-Making. As a dedicated researcher, I firmly believe in the power of evidence-based decision-making. By conducting comprehensive research on the challenges faced by Saudi public organizations in implementing digital governance, I seek to provide data-driven insights and policy recommendations. This will enable policymakers and stakeholders in my organization and other Saudi public institutions to make more informed decisions that align with the specific needs and realities of the Saudi context, thereby fostering more sustainable digital governance solutions.
4. Contributing to National Development. Vision 2030 outlines ambitious goals for Saudi Arabia's development and prosperity. As an employee of the Institute of Public Administration, I am deeply committed to supporting this vision and playing an active role in achieving its objectives. By addressing the challenges in digital governance implementation, I hope to contribute directly to the country's progress and position Saudi Arabia as a leading player in the digital landscape regionally and globally.
5. Driving Innovation and Excellence. Researching the challenges faced by Saudi public organizations in digital governance has enabled me to identify emerging trends and best practices from around the world. Armed with this knowledge, I aspire to encourage a culture of innovation and continuous improvement within the Institute of Public Administration and other public organizations. I believe that embracing digital advancements will help the public sector operate more

efficiently, transparently, and proactively, ultimately leading to excellence in public service.

6. Building Collaborative Partnerships. I am enthusiastic about building collaborative partnerships with other public organizations, government agencies, and private-sector entities. By sharing these research findings and insights, I aim to foster a community of practitioners who can collectively work toward overcoming common challenges and accelerating the adoption of digital governance practices in Saudi Arabia. Such partnerships will enable cross-learning and synergies, contributing to a stronger, more connected administrative ecosystem.

Overall, as an employee of the Institute of Public Administration in Saudi Arabia, my motivation to conduct research on the challenges faced by Saudi public organizations in implementing digital governance is grounded in a sincere dedication to public service, a passion for innovation, and a commitment to advancing the nation's administrative landscape. By undertaking this research, I hope to contribute significantly to the improvement of governance practices, empower public sector employees, and ultimately contribute to the betterment of Saudi Arabia and its citizens in the digital era.

In conclusion, my motivation to complete this study on the challenges faced by Saudi public organizations in implementing digital governance through Twitter is driven by the significance of digital governance in public administration, the country's pursuit of digital transformation, the importance of social media platforms in civic engagement, my interest in the Middle East region, and my academic and professional aspirations. By undertaking this study, I hope to contribute to the ongoing discourse on digital governance, provide valuable insights, and offer practical recommendations that can enhance the effectiveness of public organizations in Saudi Arabia and beyond.

# Chapter 2: Literature Review

## 2.1 Introduction to Literature Review

The evolution of the Internet, digital technology, and e-governance has garnered considerable attention from numerous researchers and organizations worldwide. The intricacies of the dynamic interaction between government institutions and citizens within this realm have become a subject of great interest, primarily due to the potential mutual benefits it offers. This chapter gives a comprehensive review of the relevant literature, delving into the historical trajectory of government utilization of digital technologies since the 1990s. Furthermore, it explores the multifaceted application of social media, with a focus on Twitter, in diverse global contexts for digital governance purposes, encompassing economic, political, social, and cultural domains.

Extensive research has shed light on how governments around the world have harnessed the power of digital technologies to enhance governance, foster public participation, and bolster service delivery to citizens. Social media platforms, in particular, have emerged as pivotal tools in this process, enabling direct and real-time communication between the government and the public. This chapter analyses the varying approaches and strategies that have been employed by governments in different regions, elucidating the outcomes and challenges encountered in the pursuit of digital governance goals.

The study narrows this focus to the case of Twitter use in the Middle East, particularly in the context of Saudi Arabia's digital governance landscape. The unparalleled popularity of Twitter among Saudi citizens has captured the attention of the Saudi government, prompting an examination of its attitudes and responses towards the expanding influence of social networks. This investigation seeks to understand how the Saudi government harnesses the potential of Twitter to engage with its citizens, address their concerns, and disseminate information in a manner that resonates with the digitally connected populace.

An essential aspect of this exploration is to address the existing gap in knowledge concerning the Saudi context. Despite the vast reservoir of information available on the broader global domain of digital governance and social media usage, there remains a dearth of comprehensive understanding specific to Saudi Arabia's nuanced circumstances. Therefore, this chapter strives to bridge this gap by providing an in-depth analysis of the evolving digital governance landscape within the country, with Twitter acting as a catalyst for socio-political transformation.

Ultimately, the overarching aim is to assess how digital governance is influenced by the dynamics of social networks and how Saudi Arabia leverages these platforms to enhance the quality of life for its citizens. The analysis extends beyond the traditional governance practices to how technological advancements and social media interplay shape governance mechanisms to create a more comfortable, safe, and convenient environment for Saudi residents.

In summary, this literature review examines the evolution of digital governance and the role of social media, particularly Twitter, on a global scale. It then delves into the context of Saudi Arabia, exploring the government's response to Twitter's prominence and shedding light on the unique implications and outcomes within the Saudi digital governance landscape. The subsequent chapters build upon this foundation, offering empirical research and insightful analysis to address the existing knowledge gap and contribute to the field of digital governance studies.

### 2.2. Definition of Terms

Digital growth has significantly impacted how governments operate and citizens engage. Since a wide variety of related terms has been used in this area, to analyse the use and spread of e-governance technologies, it is necessary first to define certain basic concepts.

The closing years of the 20th century witnessed the emergence of a novel paradigm in governance: e-government. Sparked by the burgeoning e-commerce revolution (Grönlund & Horan, 2004), governments began to embrace the potential of the Internet to transform citizen interaction. The term e-government has garnered significant attention from scholars and policymakers alike. Defined by the Organisation for Economic Cooperation and Development (OECD) as "the use by the governments of information and communication technologies (ICTs), and particularly the Internet, as a tool to achieve better government" (2014, p. 6), e-government encompasses a wide range of technological applications. Online platforms, digital databases, and electronic communication channels all fall under this umbrella. The core objective of e-government lies in leveraging these technologies to streamline administrative processes, reduce bureaucratic hurdles, and ultimately enhance accessibility to public services (Solinthone & Rumyantseva, 2016). While the core definition provides a foundational understanding, scholars have further explored the multifaceted nature of e-government. Abu-Shanab and Bataineh (2014) offered a concise definition, framing it as "the utilization of Internet and World Wide Web for providing government information and services to citizens" (p. 209). Building upon this, they proposed four key dimensions that characterize e-government: "providing electronic services to citizens and businesses, improving government's performance, providing e-tools for democracy and participation, and social inclusion and the digital divide" (p. 207).

At the same time, the concept of digital governance has a slightly different meaning. It refers to the use of information and communication technology in the management and delivery of public services, as well as the broader governance processes within a society. It involves the integration of digital technologies into government structures to enhance efficiency, transparency, and responsiveness (Fountain, 2014). Key characteristics include the use of data analytics, automation, and digital platforms in decision-making and service

delivery. In contrast, the OECD (2014) defined digital government as the use of digital technologies as an integrated part of governments' modernization strategies to create public value. This relies on a digital government ecosystem comprising government actors, non-governmental organizations, businesses, citizens' associations, and individuals that supports the production of and access to data, services, and content through interactions with the government (p. 6). Both digital government and e-government "refer to efforts by public authorities to use information and communication technologies (ICTs) to improve public services and increase democratic participation" (Davies, 2015, p. 1). While these terms are related, they have distinct meanings. Davies (2015) claimed that e-government focuses on user-centric services that can be implemented to support the efficient and easy utilization of different public services by businesses and citizens. Digital government, in contrast, extends the model of e-government by expanding the new services that the public sector supports and by engaging the collaborative community of civil society, citizens, businesses, and public authorities that can develop them (Davies, 2015, p. 3).

In this context, it is important to provide clear definitions of government 1.0, government 2.0, and government 3.0. According to Osimo (2010), government 1.0 refers to the government using simple online discussions, SMS, e-mails, websites, and Internet portals to deliver public services to citizens (p. 38). Government 2.0 "is generally associated with the use of social media by the public sector" and "has assumed a greater definition through its association with the government as a 'platform' or provider of data and services for others to exploit as they see fit" (United Nations, 2016). At the same time, Osimo (2010) stated that government 2.0 involves podcasting, RSS, blogs, wikis, social software (giving the possibility to add and combine different functions), and social networks to provide public services to citizens (p. 40). Government 3.0 can be defined as "the utilization of Information and Communication Technologies and neighboring scientific and technological domains,

towards societal problems solving, resource optimization and citizen well-being, through civic and enterprise collaboration at [the] local and international level" (Information Systems Laboratory, 2015).

Another term is open government, which emphasizes transparency, collaboration, and citizen participation in government processes (Chun et al., 2010). As such, it involves making government data and information accessible to the public, fostering citizen engagement, and encouraging collaboration in decision-making (Louçao, 2024). Open government initiatives often involve citizen involvement in policy-making through digital platforms and efforts to enhance accountability and trust. Active citizen participation is crucial for a healthy democracy. In the digital age, this often occurs online through platforms and social media (Hovik & Giannoumis, 2022). These tools empower citizens to voice their opinions, engage in discussions, and actively participate in shaping their communities (Hovik & Giannoumis, 2022). This two-way communication between the government and its citizens is called state-citizen interaction. Digital platforms have become a critical tool for this interaction, enabling faster communication and collaboration (Abdulkareem et al., 2022). E-government and digital governance influence the nature of state-citizen interaction by providing new channels for communication, service delivery, and participation. Open government not only improves accountability and transparency but can also bring economic benefits, support public administration functions, and bring innovative solutions for community advancements (Chun et al., 2010). The quality of open government can be evaluated based on these principles: nature of data, accountability, openness, access to information, transparency, collaboration, participation, institutional arrangements, and legal obligations (Attard et al., 2015).

A related concept is e-democracy, which refers to using digital technologies to improve democratic processes, including voting, citizen engagement, and political participation. E-democracy is closely linked to e-government and open government, as digital

tools can facilitate more direct and immediate citizen involvement in democratic processes (Lindner & Aichholzer, 2020). Digital inclusion, a critical aspect of digital governance, focuses on ensuring that everyone in society has equal access to and equally benefits from digital technologies. It aims to bridge the digital divide (Nguyen, 2021). Digital transformation refers to the comprehensive integration of digital technologies across all aspects of government, aiming to enhance performance, services, and the experiences of stakeholders (Kraus et al., 2022).

The growing dependence of government on digital technology necessitates robust cybersecurity. Encompassing the protection of computer systems, networks, and sensitive data from cyberattacks, cybersecurity is fundamental for ensuring the secure and trustworthy operations of digital government initiatives. Cybersecurity refers to any measures undertaken "to protect a person, organization, or country and their computer information against crime or attacks carried out using the internet" (Cambridge Dictionary, n.d.). In the context of digital governance, maintaining a secure environment safeguards critical government infrastructure, protects sensitive citizen data, and fosters public trust in the digital delivery of public services.

The examples above demonstrate that there are many related digital technology terms with similar meanings. Therefore, it is necessary to understand the differences between them to avoid misinterpreting the data. As technology evolves, so too will the way people interact with their governments.

### 2.3 The History of E-Governance

Digital governance has evolved over time, shaping the landscape of administrative processes and decision-making in response to advances in technology and information. At the same time, scholars and practitioners have different views concerning the development of governance practices and their usage. This section seeks to determine the origins of digital

governance and the various possibilities of its transformation until today, looking through the eyes of different scholars, in order to shed light on the development of digital governance in the Saudi socio-cultural context.

Estonia was among the first countries to establish e-government services in the late 1990s (Heath, 2019). Nowadays, the country has one of the most developed e-government systems in the world (e-Estonia, e-Residency, e-Governance Academy, e-Banking, i-Voting, and others). Furthermore, "99% of the public services are available online 24/7, 30% of Estonians use i-Voting, and the country estimates the reduced bureaucracy has saved 800 years of working time" (Heath, 2019). Although Estonia has been a leader in e-governance implementation, other countries in the European Union have also actively conducted digital governance initiatives. However, the level of implementation significantly varies from state to state. By comparison, Saudi Arabia has shown a very positive tendency to implement e-government services, but its practical implementation began only a few years ago. Thus, Saudi authorities still have to put a lot of effort into popularizing, developing, and improving e-services in the country.

As noted above, e-governance development originated in the 1990s (Boughzala et al., 2014a). It started with the basic provision of information to the people, but today its functions are much more advanced. In the past, e-government was usually discussed from a technological view with no comprehensible correlation to the main objectives and values of the public sector (Boughzala et al., 2014a). Over time, research and policies regarding e-government started to be viewed from a less techno-centric perspective. The focus moved to consider the citizens as the customers and creating services that are customer-driven (Boughzala et al., 2014a). Moreover, with becoming more open and social-based, the rise of Web 2.0, and the development of social networks, the new and progressive e-government 2.0 appeared. Such an approach opened new visions that challenged the traditional relations

between businesses, citizens, and organizations. In the framework of e-government, the role of the citizen became much more central. Citizens and businesses were no longer regarded as service users and information consumers but also as service contributors and information generators (Boughzala et al., 2014a). In other words, citizens and businesses became more actively involved, and their participation and role as service consumers became more important. This is also true in the Saudi context, although this transformation has been realized more quickly, thanks to the large financial investments in this domain. Due to the relative novelty of e-governance on the technological and social levels, there was uneven progress and different motivations for states to implement it. With the rapid technological progress since the 1990s, governments 40 years ago likely could not have imagined how e-governance would evolve, transform, and progress.

Many factors have defined the development of e-governance around the world. For instance, according to Carter and Bélanger (2005), trustworthiness ("the perception of confidence in the electronic marketer's reliability and integrity") was among the key factors that determined the successful implementation of e-government (p. 9), as the citizens should believe in the effectiveness and safety of online service. Similarly, the fear of a lack of privacy and security significantly harms the development of e-government services not only in Saudi Arabia but all over the world. The second important factor that has determined the growth and spread of e-government is recent technological progress and its numerous advantages to users. The third factor is the cultural and social characteristics of different countries (Buaziz, 2008).

To understand the historical development of e-governance, Feroz Khan (2014) researched 200 government websites from 40 countries and around 45 Web 2.0 initiatives. The study concluded that the "public sector can be conceptualized at least in three different ways: electronic government, government 2.0 (or SMBG), and open government" (p. 25).

Thus, the conceptual model in Figure 2 can be used to explain the relationship between the people, the government, and the digital technologies in the country.

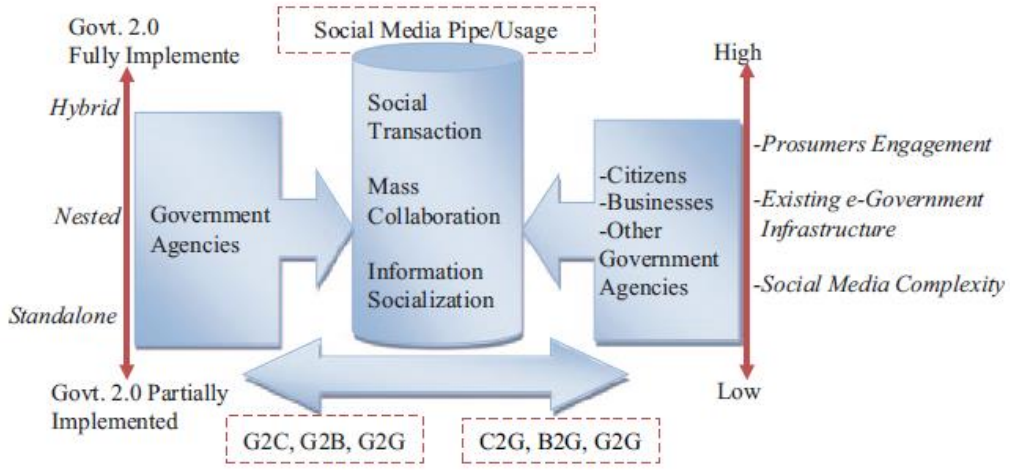



Figure 2. Conceptual model of social media use in the public sector (Feroz Khan, 2014, p. 21)

Information socialization, mass collaboration, and social transaction are the key pillars of the model, which offers three scenarios of government 2.0 implementation: standalone, hybrid, and nested (Feroz Khan, 2014). Each represents different stages of digital governance implementation, from partial to full. The standalone scenario is common for Fiji, Rwanda, and Zimbabwe. The nested scenario is common for Thailand, South Africa, Poland, Lithuania, Saudi Arabia, Kazakhstan, Pakistan, India, Estonia, and others. Finally, the hybrid government is common in the United States, Denmark, the United Kingdom, the Netherlands, and South Korea. Clear clarification of the three social media implementation scenarios is essential for a more complex understanding of the development of e-government services in different countries.

It is important to mention that a full implementation of digital governance has not been reached in any country (Feroz Khan, 2014). The majority are in a long transition due to a range of social, political, and economic reasons. However, the issue is still under-researched, and the full potential of e-governance is yet to be discovered.

Contrary to Feroz Khan (2014), Valde et al. (2011) proposed evaluating the progression and success of e-governments through the so-called e-Government Maturity Model, which can help evaluate the readiness and extent of development of public agencies to complete certain e-government initiatives and programs. This model allows for assessing the human capital, operational, organizational, and technological factors under an evolutionary, holistic, and multi-dimensional approach. The choice of approach depends on the situation in the country and the government's vision for future development. This model is not only based on the best international practices but provides important mechanisms to make it correspond to the latest requirements of the 21st century. The model was successfully tested on 30 public agencies in Chile, however, and can be easily integrated and adapted to various countries and policy contexts (Valdes et al., 2011). In addition, the model makes it possible to examine the readiness of different public agencies to implement e-government initiatives on a small or large scale, demonstrating the assessments, measurements, and rankings of e-government success. The main benefit of the model is that it provides certain variants for capability and maturity improvement in short-term and long-term perspectives at the agency and national levels. This means that regardless of the situation, each government institution will find the possibility for improvement. In addition, the e-Government Maturity Model allows one to see the progression of e-governance development. This model can also be useful for this study in order to evaluate the maturity of the e-government of Saudi Arabia and compare it to that of other countries.

It is necessary not only to analyse different present forms of e-governance but also to take into account the potential future development of Internet technologies and subsequent changes in governance. For instance, until today, there were three historical phases in the development of the Web, "namely, the Web of documents (Web 1.0), the Web of people (Web 2.0), and the Web of data (the still-to-be-realized Web 3.0)" (Kujur & Chhetri, 2015, p.

134). With Web 2.0, the Internet "became a platform with improved functionality, communication, and collaboration; it has allowed an explosion of content, connectivity, and the emergence of new applications and means for interconnectivity between people" (Martínez-López et al., 2016, p.11). In other words, Web 2.0 technologies allowed people to become "the active participants in creating, organizing, editing, combining, sharing, commenting, and rating Web content as well as forming a social network through interacting and linking to each other" (Chun et al., 2010, p. 2). Web 3.0 "is where the computer will be generating and thinking new information rather than humans" (Nath & Iswary, 2015, p. 2). There is still no clear definition of Web 4.0 ("an Ultra-Intelligent Electronic Agent, symbiotic web and Ubiquitous web"), however, it is predicted that it will be a "symbiotic Web". Through symbiotics, one can understand that machines and humans will interact in symbiosis, providing the most personalized and comprehensive information based on the needs and requirements of people (Nath & Iswary, 2015). It is believed that Web 4.0 could help develop "global transparency, governance, distribution, participation, collaboration into key communities such as industry, political, social and other communities" (Kujur & Chhetri, 2015, p. 137). Artificial intelligence could help transition to a new, more qualitative, complicated, and highly intelligent Web. Finally, the Web 5.0 technologies "would allow the Web's effects on users to be measured by the Web in such a way that it could register their emotions (e.g., through the phrases that they write or from their facial expression), allowing for greater personalization of each Web-user" (Martínez-López et al., 2016, p. 15). Overall, governments should be ready to adapt to new technology and be ready to use it effectively.

The Internet and social networks have greatly changed the ways people interact, think, access information, share thoughts, form friendships, and interact with their government and the services it provides (Abu-Shanab & Bataineh, 2014). Many forms of e-governance with unique characteristics and features have evolved over time, adapting to different

geographical, historical, social, and political contexts. There is a clear unity in the scholarly discourse concerning the need to use social media to develop digital governance in the 21st century. However, a key problem is to overcome the challenges of this transformation. Unfortunately, there is no universal solution that will fit the needs of all countries, making it necessary for each country to find its own way and learn from the successes and failures of others.

### 2.4 Benefits of Digital Governance

Today, people live in a digital society where "digitalization shapes how we communicate and socialize; how we work, learn, stay healthy and participate in politics and the economy" (Lagendijk et al., 2018, p. 5). In other words, digitalization is significant for almost all citizens, as it can impact practically all spheres of human life (e.g., social, political, cultural, economic). Web 1.0 and 2.0 have transformed the way governments operate (Macnamara et al., 2012). Digital governments have many different advantages compared to their non-digital counterparts. Governments around the world are using a variety of Web 2.0 technologies (such as open linked data, virtual words, mashups, podcasting, folksonomy, social networking platforms, RSS, wikis, and blogs) to manage information and knowledge sharing (Boughzala et al., 2014b). The major benefits of implementing digital governance are outlined below.

First of all, e-government projects are important for the development of transparent and open government, allowing key state institutions to connect with citizens (Hood & Margetts, 2007). For instance, social media posts allow politicians to engage directly with their supporters and the public. Interestingly, policymakers also connect with people who will be affected by the policies they make and can receive insights and advice from citizens about policies that people find oppressive (Flynn & Hartnett, 2018). Thus, one of the central benefits of social media in government is that it has transformed government interactions by

introducing dialogue, i.e., allowing for immediate feedback from the audience (Leone & Paoli, 2016). In Saudi Arabia, this is especially important, given the instability of the region. Quick communication can potentially lead to more innovative government practices and a more innovative communication model. This technology can develop a better citizen-government relationship, challenging some of the administrative modes of leadership (Haro-de-Rosario et al., 2018). As such, social media empowers people to challenge governments, fighting against social evils in the government through online social protests and directly addressing public officials caught violating democratic rights. Twitter is one of the platforms changing how governments interact with the public, introducing a shared model of communication involving many groups of people (Haro-de-Rosario et al., 2018). In this context, to promote increased voter turnout, governments use social media platforms to encourage more people to participate in elections. Web 2.0 presents opportunities for the transformation of governments around the world due to the ease in creation of online communities that can effect change on social media through hashtags and online trends. Web 2.0 not only promotes government-citizen engagement but also connects like-minded citizens together without them needing to meet in person (Rodríguez Bolívar, 2017). Overall, information technology can significantly improve the efficiency and credibility of government services and reduce the cost of those services (Abu-Shanab & Batineh, 2014). E-government services can also create a pleasant environment for the further development of transparency and anticorruption in government services. In addition, it improves the process of decision-making, thanks to the public availability of information. At the same time, the assumption that social media facilitates direct engagement between politicians, policymakers, and citizens may oversimplify the complexities of such interactions. A platform's algorithmic nature can create echo chambers, limiting exposure to diverse perspectives and potentially leading to the reinforcement of existing biases. Moreover, the immediacy of feedback touted

as a positive aspect may also result in impulsive decision-making rather than thoughtful policy formulation.

Second, digital governance offers the possibility to reach a wider audience quickly in different geographical locations (Chatfield et al., 2013). For instance, government agencies have used Twitter and other social media to notify people of disasters such as storms and hurricanes. It is a better tool than television since the government can receive instant feedback from citizens (Flynn & Hartnett, 2018). Moreover, e-government can provide different services to citizens and businesses 24 hours a day, seven days a week (Joseph, 2015). Thus, people can interact and receive necessary services at the most suitable time for them.

Third, digital governance promotes increased awareness and education among citizens. Web 1.0 technologies, for instance, operate as libraries for information such as legal documents, allowing citizens to understand their rights better by researching these archives to understand if the governments are operating within their parameters (Fulton, 2011). Such an advantage promotes increased accountability from government officials. Organizational hyperlink networks help create platforms for education and accessibility of information related to governments or organizations (Fu & Shumate, 2017). It is particularly important in the Saudi context, as citizens (similar to other countries) need an additional educational background to participate efficiently in different government initiatives. Bloggers can educate the masses by providing links to government resources, and educating them on their rights. Digital technologies have levelled the authority-follower relationship in classrooms, where students can learn from outside sources other than the teacher (Gouseti, 2013). Similarly, people no longer have to depend on politicians and political analysts to interpret constitutional rights and freedoms. Digital governance keeps citizens engaged and active. The

majority of private communication has moved online, and the citizens expect their governments to keep up with technological progress.

Fourth, digital governance can be a powerful tool for social, economic, and political influence (Chen & Ahn, 2017), as exemplified by the United Kingdom and the United States (Margetts, 2003). People are approaching a situation where those who control social media platforms would have a lot of power and impact on society. Web 1.0, Web 2.0, and e-governance technologies have allowed for increasing public trust in different mass media in economic, social, cultural, political, and administrative cases. E-governance can deal with the issues of public perception of administrative wastefulness and ineffectiveness, lack of transparency, and administrative corruption. Moreover, information technologies in general, and e-governance in particular, can offer beneficial tools to governments and assist them in improving public trust via policy participation and improvements to effectiveness and cost-efficiency (Moon, 2002a). This idea was supported by four case studies conducted by Moon (2002a), covering the organization of online policy forums in Pennsylvania and Seoul, e-filing IRS tax returns, eVA in Virginia, and the "OPEN" system in Seoul. Overall, the study demonstrated a positive impact from information technology on developing and maintaining public trust. Moon (2002a) claimed that governments should focus more on the reasons for the chronic decline of public trust and become more active in finding e-governance solutions to restore the trust of the general public. As the four abovementioned case studies demonstrated, Web 1.0 and Web 2.0 technologies provide a wonderful possibility for governments to improve citizens' satisfaction and public trust via improving policy participation, effectiveness, cost-efficiency, and procedural transparency. At the same time, Moon (2002b) stated that it was too early to understand the immediate impact of Web technologies on public perception of the government.

Fifth, digital services are much more efficient than paper-based services, making it possible to achieve more with less by optimizing processes (Thorne & Kouzmin, 2008). The scholarly evidence shows that "paper takes an exorbitant amount of time to organize, is bad for the environment and costs money…and then it usually gets thrown away or put into a filing cabinet where nobody will see it" (Hynes, 2018, p. 7). Thus, countries that move from paper to online forms can update documents far more quickly and efficiently (Hynes, 2018).

On the other hand, the environmental impact of digitalization is not without debate. While it may reduce paper consumption, the production and disposal of electronic devices contribute to electronic waste, posing environmental concerns (Mijwil et al., 2023). Additionally, the reliance on digital infrastructure raises cybersecurity issues, as evidenced by the increasing frequency of cyberattacks, potentially compromising sensitive information and undermining the perceived efficiency gains. Furthermore, the claim that online documents are updated more quickly can be contested, as the maintenance of digital systems requires constant monitoring and updates to address vulnerabilities and ensure accuracy. Rushed digital transitions may lead to errors, security lapses, and the unintentional perpetuation of outdated information.

Overall, after the careful analysis of numerous case studies from different countries, it is possible to distinguish the following main benefits of e-government: improved efficiency of government services; savings in cost and time; better communication between businesses, citizens, and government; 24/7 online access to services; transparency and less bureaucracy; and e-participation (Joseph, 2015).

One potential ideal for e-governance is the so-called "state in the smartphone" that should be implemented on four levels: the data about the country, transactions, communication with the state, and participation in state management (Strizhkova, 2019). The

President of Ukraine, Volodymyr Zelenskyy (2019), summed this idea up in the following way:

> It would be cool when you drive to work and not only get the news, and information about the weather forecast, but also control the draft laws submitted, can change them, see what people are being elected and how you can revoke them, what petitions are being drafted. This is why I dream about our country on a smartphone.

Overall, studies on the ways social media tools can realize e-governance have demonstrated that the vast majority of scholars have focused on evaluating the benefits of e-governance but have lacked a clear vision for how all these benefits work in synergy or an ideal model of e-government on the national, regional, and international levels, taking into account political, social, economic, and cultural factors. In addition, the majority of researchers have merely documented the past and present without looking into the future. The present study seeks not only to present the benefits of digital governance for Saudi Arabia but also to understand how they can be used to improve the comfort and quality of life of citizens on small and large scales. In contrast to other studies, this study offers a unique approach and model of the relations between the state and citizens by using social media to achieve maximum benefits and optimize related processes. In other words, the author has tried to present a role model for efficient Twitter use for digital governance.

The Internet holds considerable power as an instrumental tool for democratic organizations to serve their citizens to the best of their abilities (Stein, 2017). However, good digital governance requires proper management and organization. The future will tell whether today's opportunities were used to their full potential.

### 2.5 Challenges of Digital Government

An analysis of the scholarly literature has demonstrated that new Internet technologies and digital governance have brought not only a positive influence on the economic, political,

and social life of the country (efficient energy consumption, more efficient mobility, better health, improvement in the business performance) but also a negative effect (Lagendijk et al., 2018, p. 5). Thus, when governments decide to use social media platforms, there are countless challenges that they have to deal with (Rodríguez Bolívar, 2017). For instance, social media brought the possibility of creating and managing anarchy-driven communities that might pose a great danger to governments. This problem has even led authoritarian governments to censor social media platforms within their countries (Thorne & Kouzmin, 2008). Websites and social media can be used negatively in two main ways: to spread propaganda and to censor content published on social media (Stuttaford, 2018). Thus, even though these tools offer many opportunities to improve democracy, they can also be used to spread fake news and censorship and curtail freedom of expression.

Some countries acknowledge the danger of social platforms and decide not to use some of them. For instance, Twitter is inaccessible and officially banned in four countries: China, North Korea, Turkmenistan, and Iran. In some other countries (e.g., Egypt, India, Israel, Pakistan, Russia, South Korea, Turkey, and the UAE), all tweets or those of certain accounts are moderated according to the laws of the state (Che & Ip, 2017). This does not mean that people from the abovementioned countries do not use prohibited social networks. Many citizens use virtual private networks to participate in Internet discussions abroad in the same or different language. For example, according to statistics from 2015, around 35.5 million domestic Chinese users were active users of Twitter. It is believed that the majority of these people represented opposition groups, activists, and progressives.

In addition, it is important to mention the so-called Great Firewall of China, one of the most sophisticated Internet filtering systems in the world, which inspects HTTP traffic for keywords that are “unlawful” (Clayton et al., 2006). The government established this system to ban unacceptable content, such as information about historical events that the government

does not want to disclose or information about opposing political ideologies. A similar but far more severe situation can be observed in North Korea, which bans not only Twitter but also Facebook and YouTube, as well as a range of South Korean websites, in order to control access to outside data (Talmadge, 2016). Only a few North Koreans have access to the global Internet, and even this access is minimal and controlled. The country's authorities also try to prevent North Korean residents or foreigners from posting negative information about the state to the outside world. In these conditions, the citizens of North Korea can neither post nor view information on the Internet. Many social media websites are blocked unofficially to avoid condemnation from the international community. Similar to China, the attempt to access unauthorized websites leads can carry severe punishment; however, the type and nature of this punishment are not specified in the country's legislation (Talmadge, 2016). This example shows that digital governance through Twitter or any other social network is almost impossible in North Korea. Furthermore, although around two million people in North Korea use mobile phones, they cannot use the Internet on them. This feature is only available for a limited number of people (technicians, officials, or other professionals) under close supervision. It is interesting to draw a parallel between China, North Korea, and Saudi Arabia, as none of them are democratic countries. However, although Saudi Arabia is highly conservative, it has viewed and used the Internet and social networks as an opportunity for development and cooperation with citizens on the national level.

In this context, it is also interesting to analyse China's implementation of its social credit system, a digital database that provides each citizen with social credit depending on their social status and behaviour; according to this system, all people can be punished or rewarded according to their social score (Ma, 2018). It was predicted that by 2020, all citizens of China would be ranked on this system. This is an excellent example of an attempt to use digital governance for interaction with citizens. Of course, such a system has

proponents and opponents, but it can serve as a role model. Thanks to this system of digital governance, the country's authorities can manage and control a huge number of people, nearly 1.386 billion at the time of Ma's (2019) study. In particular, the authorities can ban people with bad social ratings from taking the train or plane, prohibit them from visiting the best schools or getting well-paid jobs, living in good hotels, or doing many other things (Ma, 2018). Even though the social credit system is an efficient method of interacting with and controlling people, especially in the long term, it cannot be used everywhere, and developed democratic countries are unlikely to borrow similar methods from China.

Another challenge to digital governance is that ICT requires significant investment in the development of IT infrastructure and software (applications, databases, information systems) and hardware (networks, servers, laptops). Abu-Shanab and Bataineh (2014) confirmed that "The financial challenge includes many obstacles such as limited financial spending on the ICT sector, high cost of the ICT, high cost of the training programs which are needed for staff skills, and the high cost of telecommunication services" (p. 210). Thus, efficient, well-developed e-government services are very expensive and require a lot of investment in development and maintenance. These "costs include infrastructure development, interoperability of the technologies, permanent availability and preservation, education and training of operating and using the technology, cost structures, and benchmarking" (Joseph, 2015, p. 31). Therefore, not all countries can afford to develop efficient e-government services.

Another significant challenge is concerns about cybercrime, security, trust, and privacy. It is difficult for countries to guarantee the safety of users' personal data. For example, Joseph (2015) stated that "Despite the efforts of government agencies to ensure the safety of citizens' personal data, e-governance websites are still liable to attack from hackers. Personal data can be exposed, and there is less trust in how the information is kept secure and

whose hands it lands on" (p.30). Therefore, people's privacy can be compromised, as a lot of confidential information can be shared by governments to personalize and improve the quality of the provided services. The fears about inadequate privacy and security, as well as fears about improper management of personal data, can constitute a significant threat to the development of e-governance, as citizens could be discouraged from using those services (Davies, 2015). In these conditions, many countries do not wish to develop e-government.

It is also important to mention a significant lack of equality in public access to the Internet (Joseph, 2015). Thus, digital governance presents a range of dangerous participatory problems (Davis, 2015). For instance, if the services are provided only digitally, it means that many people can potentially be excluded from participation, i.e., those who do not have or do not wish to use the digital services, such as people with disabilities, people with limited digital literacy, poor people, and people who live in rural communities with little or no Internet connection (Ragnedda et al., 2020). This problem is crucial for illiterate people and senior citizens, as without support from customer service managers, they would not be able to receive e-government services. Even though the amount of tech-savvy senior citizens grows each year, the problem persists. Figure 3 shows the percentage of U.S. adults of different ages who reported owning a smartphone, using social media or own a tablet computer from 2012 to 2021.

During this period, only 61% of Americans of senior age owned a smartphone, and only 45% used social media. However, the United States is one of the most developed countries in the world, while in the least developed countries, the situation is worse due to a lack of financial resources, technological development, and technological knowledge of the population.

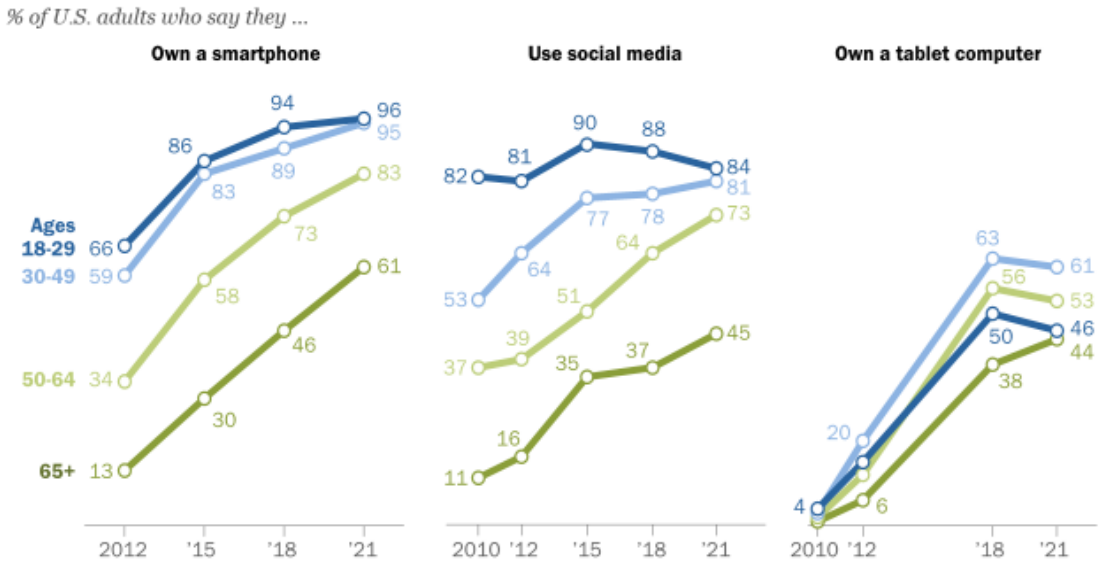



Figure 3. Percentage of U.S. citizens who owned a smartphone, used social media, or owned a tablet between 2012 and 2021

It is interesting to correlate this statistic with the situation in Saudi Arabia. According to Abusaaq (2015), this is less of an issue as the senior population in Saudi Arabia is not large; however, the amount of older people in Saudi Arabia is projected to increase drastically by 2050. While the majority of the contemporary senior population is not very progressive in using the Internet and social media, it is predicted that they will become more Internet savvy over time. For the above reasons, governments should maintain alternative methods of communication with the public, for example, telephone communication and face-to-face meetings (Davis, 2015). In addition, governments need to support the training of digital skills to ensure people's smooth and efficient participation. Another category of the population that would be partly discriminated against in terms of participation in e-government services is people with visual impairment (Al-Khalifa & Al-Salman, 2006). As the Web became more visually rich through movies, Java apps, plug-ins, forms, and tables, the barriers to accessibility for people with visual impairment grew. However, tools have been developed to make the Web more accessible to this population. Al-Khalifa and Al-Salman (2006), for example, studied the accessibility of digital governance in this group.

They developed a pilot accessibility test, according to which they tested the common and most known accessibility testing tools, such as TAW 3, Wave, Etre, Cynthia, and WebXACT. They concluded that Web 1.0 and 2.0 were not accessible enough for this population. It is thus necessary to implement numerous changes to make e-government more accessible.

In this regard, the Associate Professor of North Columbian University, Ragnedda (2018) stated the following:

> those who do not access the Internet, or do not use it "effectively", or are not able to transform the online experience into something concrete and tangible, lose noteworthy opportunities in the economic, political, cultural, personal, and social spheres. By contrast, those who access the Internet, have elaborated a high level of digital capital, and use the Internet in an "effective" and "productive" way, tend to broaden their opportunities, improving quality of their life and reinforce personal position in society, their wellbeing and their general quality of life.

This statement shows the complexity of the problem of the digital divide and its multi-dimensional correlation with the research topic. It is crucial to take into consideration these issues when discussing the challenges of digital government.

According to the OECD (2016), the pace of digitalization can pose another challenge, as many governments fail to find the proper pace for integrating new services so that people can adapt to them. Hynes (2018) claimed that "In a wildly changing technology landscape, if you're not looking ahead, you're already behind" (p. 4). Also, the digital government faces the risks associated with introducing changes in politically sensitive spheres. Among key barriers are coordination in light of geographic, administrative, and jurisdictional limitations; non-acceptance and negative attitudes among civil servants; limited financing to develop new services; and leadership failures. Finally, the top-down hierarchical structure of a government

can prevent the promotion of new electronic services and damage communication. The implementation of digital governance could thus depend on how people think about the collaboration between different organizational boundaries and about organizational reform.

According to Newman (2017), the real challenge of digital governance is to follow new trends and keep up with constant modernization, development, and progress. Another challenge is transparency, although blockchain technologies may have partly solved that problem. Atzori (2015) claimed that blockchains make it possible to cut out the third party in any interaction or transaction, increasing the transparency of cooperation between parties. It is also important to make e-government accessible, as exemplified by Balkan countries (Veljković et al., 2012). Younger people are typically more open to new technologies and ready to change their attitudes about Internet usage (Veljković et al., 2012). Thus, e-government should be developed according to people's current needs. E-government 2.0 would develop new open and transparent interactions with people, improve the quality and accessibility of electronic services, facilitate communication between the citizens and the government, and increase citizens' participation in governmental activities. Furthermore, "to keep up with the public and reach their target audience, governments around the world also need to go online and offer new ways for getting information" (Veljković et al., 2012, p. 14). Moreover, Facebook, RSS, Twitter, and YouTube services are effective tools for sharing information with the population (Veljković et al., 2012). In terms of sharing of platforms, governments should not act in isolation (Boughzala et al., 2014a). On the contrary, they are expected to share ICT services and platforms, and grid computing and cloud services could facilitate this.

Figure 4 illustrates the key digital transformation trends: improvement in mobility, bettering of data collection and analytics, automation, reaching high-quality security and protection, implementation of progressive digital government platforms, and development of

cities connected by the Internet of Things (Newman, 2017). The countries that manage to keep up with these trends and all the challenges associated with them are expected to be the most successful in this sphere.


Figure 4. Top six digital transformation trends in government (Newman, 2017)

The challenges of digital government are best understood through case studies. Hynes (2018) researched around 4,000 government agencies that decided to digitalize their services. The agencies were mainly analysed in the U.S., Canada, the U.K., and the European Union. In particular, the author analysed their communication strategies, web presence, and online services. Hynes was a representative of Granicus, a successful business offering digital solutions to help public authorities all over the world reach, inform, and engage with citizens to provide more advanced services and a better civic experience. As a result, Hynes's study offers theoretical as well as practical information about the problem. According to Hynes, the

main three challenges that digital government faces are the efficiency of the strategy for engaging citizens, the success and accessibility of paper-based processes, and the burden of legacy systems. Figure 5 shows the main challenges for government agencies implementing digital services.


Figure 5. Top challenges for government agencies implementing digital services (Hynes, 2018)

According to a survey by the Telecommunications and Digital Governments Regulatory Authority (2022), which examined 10,000 public agencies in the U.S. and Canada, the main challenges of digital governance were related to support and staffing, management of controversial themes, and creating engagement on each network (see Figure 6). These statistics demonstrate that the top challenges have changed over time and are likely to continue changing in the future.


Figure 6. Top challenges identified by social media managers

There are many challenges to digital governance implementation, especially for poor countries. However, the majority of the studies have failed to offer recommendations to solve the challenges they have examined. In addition, there is not enough data related to e-governance implementation and problems in the Middle East. Therefore, this study has focused on the problems faced by Saudi Arabia and other Middle East countries with e-governance and offers a range of useful recommendations to improve interaction between the state and citizens.

### 2.6 Digital Governance and Social Media in Arab Countries

Digital governance and social media in Arab countries have been the subject of numerous studies, with the popularity of social media growing in Arab countries every year. According to the Governance and Innovation Program of the Mohammed bin Rashid School of Government Statistical Data, there were more than 85 million social media users in the region (Mourtada & Alkhatib, 2014). However, social media are used not only for personal purposes by the individual but also by businesses and government institutions. Currently, the UAE is "at the forefront of Arab countries when it comes to the utilization of technologies such as social media in the provision of public services, whether for citizen engagement, innovation, or intergovernmental collaboration" (Mourtada & Alkhatib, 2014, p. 5). The government authorities of the country actively launch social media campaigns to motivate people to participate in government programs and share their ideas concerning the improvement of healthcare, education, and other issues in the UAE.

An example of the above is the positive experience of the first Twitter campaign "UAE Brainstorming Session" organized by Sheikh Mohammed bin Rashid al Maktoum (Mourtada & Alkhatib, 2014). This pioneering campaign was successful, and both the government and citizens saw the possibility of using the power of social media to develop effective communication between the two sides. In particular, the brainstorming session of

2013 gathered 2,700 tweets in Arabic and 41,000 tweets in English and brought around 81,000 new ideas that could improve the functioning of the government and the provision of public services (Nepal et al., 2015, p. 88). Now all 46 government entities of Dubai have their own accounts on social media, which are regularly updated (Nepal et al., 2015, p. 88). Knowing this, people actively engage with government entities through social media to find information and share feedback and questions (Mourtada & Alkhatib, 2014, p. 12). According to a survey by Mourtada and Alkhatib (2014) in 22 Arab countries in 2014, out of 3,654 UAE respondents, the majority (78%) visited government social media pages to get access to information on government services and entities, and only a small percentage (8%) visited them to provide feedback on government services (p. 21).

However, with fast-paced technological progress and rising computer literacy, the situation is quickly changing. More and more people not only search for information on government websites but also try to engage with public institutions through digital governance. The commitment to communication with the public through social media is exemplified by the Road and Transport Authority of Dubai (Nepal et al., 2015). The institution encourages the public to share their complaints through its Twitter account, helping it become more effective and responsive to the needs of the public. For instance, the spokesperson of the organization stated the following:

> Social media have changed the way we operate, and they are a very important tool for the RTA…We ensure that all of our employees know how to deal with social media, and this allows us to use them to their full potential…Managing the service is a real challenge, but for people, it is easier to tweet us than call a call centre, and we are confident that we now have a clear policy and procedure to deal with these requests and are ready to respond. (Nepal et al., 2015, p. 88)

Another government entity that actively uses social media and the tools of digital governance is the Dubai Police Force, which publishes surveys through Twitter and asks the public about ways of improving their services (Nepal et al., 2015, p. 89). The abovementioned institutions are wonderful role models for government organizations of different sizes and specializations. Further data on digital governance in the UAE come from a survey by the Dubai School of Government (Nepal et al., 2015, p. 89). It analysed the employees of 19 major government institutions in Dubai and their motivations for using social media platforms. The results of this survey are presented in Table 1, with the main uses of social media shown in Figure 7.

Table 1: Motivations for Using Social Media Accounts of Dubai Public Entities

| Item | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Improving transparency of knowledge, information, and decision-making | 41.9 | 32.6 | 11.6 | 0 | 0 |
| Enhancing collaboration and knowledge-sharing | 41.9 | 34.9 | 14.0 | 9.3 | 0 |
| Stimulating innovation in organization processes | 48.8 | 20.9 | 16.3 | 14.0 | 0 |
| Increasing efficiency of operations by connecting staff | 39.5 | 30.2 | 18.3 | 12 | 0 |
| Raising citizens' awareness / knowledge of government processes | 37.2 | 37.2 | 14.0 | 11.6 | 0 |
| Increasing citizens' trust in government | 32 | 35.4 | 18.6 | 14.0 | 0 |
| Engaging with citizens to inform and improve policy-making | 30.2 | 37.2 | 16.3 | 16.3 | 0 |
| Engaging with citizens to enhance service design and delivery | 34.9 | 37.2 | 14.0 | 14.0 | 0 |

Governmental employees largely agreed on the necessity to communicate with people using social media and acknowledged their benefits. Facebook, LinkedIn, and Twitter are the most popular online platforms in the UAE, with Facebook being the most popular platform among all UAE government webpages (Mourtada & Alkhatib, 2014). These social media

provide numerous development opportunities for the country and for greater cooperation between the state and its citizens, mainly as a means of efficient communication.

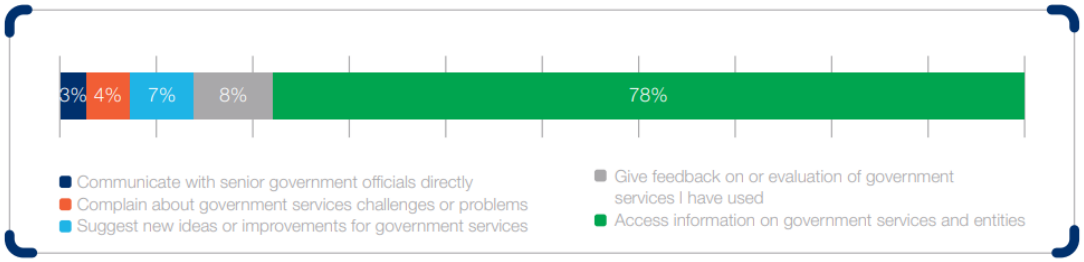



Figure 7. Main uses of government social media pages in the UAE

### 2.7 The Use of Twitter and Other Social Media for Digital Governance in Saudi Arabia

The meteoric growth of Twitter's userbase in Saudi Arabia has been a topic of interest as the platform continues to gain traction in the region. The data published in Twitter's ad planning tools reveal some intriguing insights into the platform's performance over two distinct timeframes. Between the start of 2022 and early 2023, Twitter's potential ad reach in Saudi Arabia witnessed a massive increase of 1.4 million users, reflecting a notable growth rate of 9.9% (Kemp, 2023). This surge can be attributed to several factors. First, the platform's efforts to expand its presence in the country through targeted marketing campaigns and partnerships might have played a pivotal role. Additionally, an increase in smartphone and Internet penetration in Saudi Arabia during this period could have contributed to a broader userbase as well. The growth rate during this timeframe might have also been influenced by specific events, viral campaigns, or trending topics that attracted more users to the platform. Twitter's consistent improvements in its interface, user experience, and the addition of new features might have also enticed more individuals to join the platform.

On the other hand, the data have also revealed a decrease of 200,000 users (-1.3%) that marketers could reach with ads on Twitter in Saudi Arabia between October 2022 and January 2023 (Kemp, 2023). Such a decline might be attributed to various reasons. Seasonal fluctuations, such as major holidays or local events during this period, could have influenced

user engagement, leading to a temporary dip in active users. Additionally, stiff competition from other social media platforms or alternative advertising channels might have diverted some marketers' attention away from Twitter during this timeframe.

Furthermore, changes in Twitter's advertising policies, algorithms, or targeting options could have impacted marketers' ability to reach their desired audience effectively, resulting in a slight decline in their interest in advertising on the platform. Thus, Twitter's growth in Saudi Arabia has shown promising signs with a notable increase in potential ad reach during early 2023 compared to the start of 2022 (Kemp, 2023). However, the platform has also experienced a minor setback in the form of a decline in users that marketers could reach with ads between October 2022 and January 2023. Careful analysis of these data points could provide valuable insights for Twitter's future strategies in Saudi Arabia, ensuring sustainable growth and continued engagement with users and advertisers alike.

Table 2 shows Global Media Insight (2022) statistics from June 2022 on the popularity of different social networks in Saudi Arabia.

Table 2: The Popularity of Different Social Networks in Saudi Arabia in 2022

| Social Network | Number of Users |
|---|---|
| Instagram | 27.4 million |
| Twitter | 25.23 million |
| TikTok | 22.32 million |
| Facebook | 22.25 million |
| LinkedIn | 8.6 million |

As shown in the table, Twitter is the second most popular social network in Saudi Arabia, and digital governance plays an important role in the economic and social life of the country, with a high demand for e-government portals (Yamin & Mattar, 2016). In addition, offering electronic transactions makes organizations more effective and helps them complete different public services securely and on time. Yamin and Mattar (2016) demonstrated the need to expand, develop, and improve different aspects of user satisfaction with e-governance, as the latter serves as an important platform for creating adequate and equal

opportunities for people, regardless of their gender, social background, or culture. According to Yamin and Mattar (2016), the benefits of e-government in Saudi Arabia can be summed up with four main points:

> 1. Acceleration of technological progress and its associated cognitive revolution; 2. Trends of globalization and interdependence of human societies; 3. Democratic shifts and their accompanying changes and popular expectations; 4. Responding and adaptation to the requirements of the surrounding environment. (p. 946)

In addition, e-governance helps increase transparency in various dealings, decrease the administrative costs of commercial transactions in the private sector and government, improve the means of access to information, and decrease the reliance on paperwork.

At the same time, there are certain problems related to the implementation of digital governance in Saudi Arabia. The first is the lack of promotion of its benefits. In other words, Saudi officials often do not try hard enough to encourage people to use digital governance. One Saudi citizen commented in relation to this, “I did not hear about any workshops or seminars about e-government in the society. I just read about it on the Internet websites” (Alshehri & Drew, 2010). Another stated, “I heard only about the reward competition in a local newsletter, and I did not know what is that competition” (Alshehri & Drew, 2010).

Other challenges are a shortage of financial resources, resistance to switching over to e-systems, lack of strategic plans, lack of partnerships and collaboration, lack of regulation and policy for e-usage, problems in management and leadership on site, culture differences, lack of training courses and qualified personnel, lack of security and privacy of information, lack of knowledge about e-government programs, and infrastructural weaknesses in the IT sphere (Alshehri & Drew, 2010). Alshehri and Drew (2010) conducted an online questionnaire of Saudi government employees concerning challenges with implementing e-governance. The main results are presented in Table 3.

Since this questionnaire was conducted, the data have become outdated to an extent, and much has been achieved, but much has also remained the same regarding these challenges. The more recent study by Altayar (2016) allows for a comparative analysis of the transformations that have taken place in the country. That study examined the usage of the most popular social networks (e.g., Twitter, Facebook, YouTube, Instagram) by government agencies in Saudi Arabia. The results are briefly presented in the tables below.

Table 3: The Key Challenges of E-Government Service Adoption (Alshehri & Drew, 2010)

| Rank | Challenges | Level of agreement from respondents |
|---|---|---|
| 1 | IT Infrastructural weakness | 62.8% |
| 2 | Lack of knowledge about the e-government program | 56.5% |
| 3 | Lack of security and privacy of information | 46.6% |
| 4 | Lack of qualified personnel and training courses | 44.7% |
| 5 | Culture differences | 33.8% |
| 6 | Leaders and management support | 32.3% |
| 7 | Lack of policy and regulation for e-usage | 31.3% |
| 8 | Lack of partnership and collaboration | 28.6% |
| 9 | Lack of strategic plans | 25.6% |
| 10 | Resistance to change to e-systems | 19.3% |
| 11 | Shortage of financial resources | 19% |

According to Table 4, Twitter, Facebook, and YouTube were the leading social media among governmental agencies in 2016. Their motivations for using these social media are presented in Table 5.

Table 4: Types of Social Media Used in Saudi Arabia (Altayar, 2016, p. 70)

| Social Media | *N*=108 | % |
|---|---|---|
| Twitter | 96 | 88.89% |
| Facebook | 74 | 68.52% |
| YouTube | 70 | 64.81% |
| Instagram | 30 | 27.78% |
| RSS | 27 | 25.00% |
| Google+ | 21 | 19.44% |
| LinkedIn | 20 | 18.52% |
| Other | 12 | 11.11% |
| Flickr | 6 | 5.56% |

Table 5: Motivations for Using Social Media in Saudi Arabia (Altayar, 2016, p. 70)

| Motivation | *N*=108 | % |
|---|---|---|
| Information dissemination | 103 | 95.31% |
| Improve communication with the public | 96 | 88.57% |
| Sharing information with the public | 69 | 63.89% |
| Collaboration between the agency and citizens | 60 | 55.56% |
| Facilitating access to services | 57 | 52.78% |
| Improving the quality of services | 44 | 40.74% |
| Enhancing transparency | 43 | 39.81% |
| Improve decision making | 22 | 20.37% |
| Reducing the cost of services | 5 | 4.63% |

Table 5 shows that the main reasons for using social media were information dissemination, improvement of communication with the public, and sharing information with the public. The main factors influencing the decision to adopt social media are presented in Table 6.

Table 6: Factors in Social Media Adoption in Saudi Arabia (Altayar, 2016, p. 71)

| Factors | *N*=108 | % |
|---|---|---|
| The use of social media has become widespread among the public and Internet users. | 95 | 87.96% |
| The use of social media has become necessary to interact with the public and involve them in designing and producing content and services. | 75 | 69.44% |
| Representing the agency on social media. | 71 | 65.74% |
| Instructions from top management. | 45 | 41.67% |
| Following the behaviour of other similar agencies who have used social media at local and international levels. | 33 | 30.56% |
| The effect of some peers (colleagues) who work in similar agencies and adopted social media. | 17 | 15.74% |

As shown in Table 6, the main factors influencing the decision to adopt social media were (1) social media had become widespread among the public and Internet users, (2) social media had become necessary to interact with the public and involve them in designing and producing content and services, and (3) it was necessary to represent the agency on social media. However, despite the recognition of the importance of digital governance in interaction, the majority of government institutions in Saudi Arabia and all over the world in 2019 were using it for broadcasting information. At the same time, the main factor

contributing to the use of social media was the public's awareness of their importance in Saudi Arabia (see Table 7).

Table 7: Enablers of Social Media Use in Saudi Arabia (Altayar, 2016, p. 71)

| Enablers contributing to the use of social media | *N*=108 | % |
|---|---|---|
| Awareness of the public about the importance of social media usage | 95 | 87.96% |
| Top management support | 58 | 53.70% |
| Skilful personnel | 56 | 51.85% |
| Collaboration with other units and departments in the agency | 32 | 29.63% |

The key challenges associated with social media were (1) a lack of dedicated resources such as budget and specialized staff to manage social media and (2) the absence of a policy or strategy governing the use of social media (see Table 8).

Table 8: Challenges with Using Social Media in Saudi Arabia (Altayar, 2016, p. 72)

| Challenges | *N*=108 | % |
|---|---|---|
| Lack of dedicated resources such as budget and specialized staff to manage social media | 63 | 58.33% |
| Absence of a policy or strategy that governs the use of social media | 56 | 51.85% |
| The limited collaboration provided by other units and departments in the agency | 31 | 28.70% |
| Providing content in more than one language (Arabic and English) | 22 | 20.37% |
| Information security | 15 | 13.89% |
| Lack of trust by citizens in the services provided via social media | 14 | 12.96% |
| Bureaucracy | 13 | 12.04% |
| Top officials in the agency are not convinced by the use of social media, and thus the lack of support required | 9 | 8.33% |

Because several years have passed since Altayar's (2016) study, the present study sought to address the lack of more recent scholarly discourse on this issue by providing more up-to-date information from 2019-2020. In particular, it investigated the challenges, contributing factors, and motivators associated with social media in Saudi Arabia during that timeframe.

One phenomenon of interest is that Saudi citizens help to block and filter "undesirable" material. For example, every user can send special blocking requests to websites with inappropriate content. Then, the members of the Communications and

Information Technology Commission (CITC) analyse the complaints to determine whether the public request is justified. For example, in 2015 alone, the CITC evaluated 732,504 blocking requests from citizens (Freedom House, 2018). The government also asks Saudi citizens to monitor social media pages for messages against the state, and Saudi authorities launched a special phone app to report traffic violations and theft. Many people actively support these measures on social media, as they feel they significantly contribute to the country's security.

The list of all banned websites is not available to the public, and anyone who wants to access a certain banned site is redirected to a page with the following message: "Access to the requested URL is not allowed!" (Freedom House, 2018). Furthermore, all Internet providers are obliged to block all sites from the banned list prepared by the CITC. If the provider does not limit access to the website, the provider is required to pay a large fine of up to 5 million Saudi Riyals (US$1.33 million) according to Article 38 of the Telecommunication Act.45 (Freedom House, 2018).

In early 2023, Twitter's own data provided a glimpse into the gender distribution of its ad audience in Saudi Arabia, indicating that 40% of the audience was female and 60% was male (Kemp, 2023). This 40% female share of the national audience indicated a positive trend in gender representation on the platform. It suggested that Twitter has been successful in attracting and retaining female users in Saudi Arabia. The increase in female users could be attributed to several factors. First, Twitter may have implemented targeted marketing campaigns that resonated with female users, addressing their interests, concerns, and preferences. For instance, if the platform focused on promoting content related to fashion, lifestyle, or women's empowerment, it would likely appeal to a broader female audience. Additionally, initiatives to create a safer and more inclusive online environment may have encouraged more women to join and actively engage with the platform.

However, it is essential to assess the data in the context of cultural and societal norms in Saudi Arabia. The 40% figure for female users could reflect a significant step forward, given that social media usage and public participation have been traditionally more prevalent among men in the country (Kemp, 2023). The increase in female users therefore signals a potential shift in societal attitudes and an acknowledgment of the importance of digital platforms in fostering connectivity and expression for all genders.

On the other hand, the 60% male share of Twitter's Saudi audience highlights the dominant presence of male users in that country. The higher percentage of male users might stem from various cultural and societal factors, including historically higher rates of Internet and social media adoption among men in the country (Kemp, 2023). Moreover, content on the platform may have been traditionally skewed towards male interests, resulting in a larger male user base.

To address the current gender imbalance on its platform, Twitter could implement strategies aimed at appealing to a more diverse audience. This strategy could include promoting content that caters to a broader range of interests and perspectives or collaborating with influential female voices to encourage greater female participation on the platform. Saudi public organizations should keep up with Twitter's targeting strategies and adapt them accordingly to promote inclusion in their own Twitter campaigns.

Overall, understanding the gender distribution in Twitter's ad audience in Saudi Arabia is essential for the platform to tailor its content, features, and advertising efforts effectively. By analysing the data and recognizing the underlying societal dynamics, Twitter can work towards creating a more inclusive and balanced community that reflects the diverse population of Saudi Arabia. At the same time, this understanding is likewise important for public organizations in Saudi Arabia to help them more effectively implement their digital governance initiatives and design and direct targeting campaigns for their audience.

Finally, it is important to mention digital activism, as "Saudis have increasingly taken to digital activism to express popular concerns and grievances over the last few years" (Freedom House, 2018). These online campaigns (usually on Twitter) often mobilize diverse groups of users. Saudis also actively use smartphones to record videos documenting corruption or improper behaviour of government officials. These videos can later be published on social media, especially Twitter. For example, in 2017, the Minister of Civil Service Khalid Al-Araj was fired for hiring his son illegally (a case of corruption), which was noticed by a Saudi citizen. At the same time, public criticism of the authorities is not typical for Saudi citizens; the above incident was a special case that reflected strong anger towards the nepotism of the minister. The case received close public attention, especially on Twitter, and the hashtag "#Trial of the minister of civil service" (in Arabic) quickly occupied the top positions in the country on Twitter. Twitter users reacted to the situation in the following ways, all taken from Arab News (2017):

"no more immunity for a minister… serving people is above all, or you'll be held accountable and tried. A beautiful step, goodbye to power and authority"

"You aren't a minister anymore, you can change your profile."

"Justice is the most powerful tool. It touches and satisfies everyone. No one crosses the lines and (violates) the rules of the government"

"Decrees like this will deter other corrupt ministers"

"no individual is above the law"

"Officials, scholars, and academics also lauded the royal decrees, saying they would have a positive impact on Saudi society"

"the decree restoring government employees' benefits will boost purchasing power, encourage investment and put inflation at a suitable rate, the decrees are proof

of the king's keenness to provide the means for a good life for all citizens, who are a strong pillar of the country's development"

"the decrees affirm the strength of the Kingdom's economy"

"The appointment of new, young names to senior government posts will contribute to the realization of Vision 2030"

Moreover, there are social media pages dedicated to documenting administrative and financial corruption, for example, the Twitter account "Enough Corruption" followed by 2,600 users (Freedom House, 2018). In addition, Freedom House (2018) stated that "Saudis have used social media to express support for the crown prince's corruption crackdown, which has been criticized by human rights groups for lacking transparency and due process."

As previously mentioned, Twitter is a popular platform among Saudi authorities. According to Alasem (2015), 93 out of 176 government websites had a Twitter account. However, by 2022, the situation had changed significantly. According to the Saudi National Portal (2022), Saudi Arabia had 243 government agencies, 186 of which had Twitter accounts. These are listed in Table 9.

Table 9: Saudi State Organizations with a Twitter Account (Saudi National Portal, 2022)

| | | | | | |
|---|---|---|---|---|---|
| 1 | E-government program Yesser | 63 | Princess Nora Bint Abdulrahman University | | King Saud bin Abdulaziz University for Health Sciences |
| 2 | University of Tabuk | 64 | Prince Saud Al-Faisal Institute for Diplomatic Studies | 126 | King Khalid University Hospital |
| 3 | University of Jeddah | 65 | Price Sattam Abdulaziz University | 127 | King Khalid University |
| 4 | University of Hail | 66 | Northern Borders University | 128 | King Khaled Eye Specialist Hospital |
| 5 | University of Bisha | 67 | Northern Borders Municipality | 129 | King Faisal University |
| 6 | Umm-Al-Qura University | 68 | National Guard Health Affairs | 130 | King Faisal Specialist Hospital and Research Center |
| 7 | The General Presidency of | 69 | National Cyber Security Authority | 131 | King Fahd University of Petroleum and Minerals |

| | | | | | |
|---|---|---|---|---|---|
| | Promotion of Virtue and Prevention of Vice | | | | |
| 8 | The General Presidency of Islamic Research and Ifta | 70 | National Center for E-learning | 132 | King Fahd Security College |
| 9 | The General Authority of Meteorology and Environmental Protection | 71 | National Center for Documents and Archives | 133 | King Fahd National Library |
| 10 | The Centennial Fund | 72 | National Center for Assessment | 134 | King Fahd Medical City |
| 11 | The Camel Club | 73 | National Anti-Corruption Commission | 135 | King Abdullah University of Science and Technology |
| 12 | Technical and Vocational Training Corporation | 74 | Najran University | 136 | King Abdullah Petroleum and Research Center |
| 13 | Takaful Foundation | 75 | Najran Municipality | 137 | King Abdullah City for Atomic and Renewable Energy |
| 14 | Taif University | 76 | Ministry of Transportation | 138 | King Abdulaziz University |
| 15 | Taif Municipality | 77 | Ministry of National Guard | 139 | King Abdulaziz City for Science and Technology |
| 16 | Taibah University | 78 | Ministry of Municipal and Rural Affairs | 140 | King Abdulaziz Center for National Dialogue |
| 17 | Tabuk Municipality | 79 | Ministry of Media | 141 | King Abdulaziz & His Companions Foundation for Giftedness and Creativity |
| 18 | Supreme Judicial Council | 80 | Ministry of Labor and Social Development | 142 | Jeddah Province |
| 19 | Special Security Forces | 81 | Ministry of Interior | 143 | Jeddah Municipality |
| 20 | Small and Medium Size Enterprises Authority | 82 | Ministry of Housing | 144 | Jeddah Chamber |
| 21 | Shura Council | 83 | Ministry of Health | 145 | Jazan University |
| 22 | Shaqra University | 84 | Ministry of Haj and Umra | 146 | Jazan Municipality |
| 23 | Saudi Wildlife Commission | 85 | Ministry of Foreign Affairs | 147 | Islamic University in Medinah |
| 24 | Saudi Standards Metrology and Quality Organization | 86 | Ministry of Finance | 148 | Institute of Public Administration |
| 25 | Saudi Red Crescent Authority | 87 | Ministry of Environment, Water and Agriculture | 149 | Industrial Clusters |
| 26 | Saudi Railways Organization | 88 | Ministry of Energy, Industry and Mineral Resources | 150 | General Authority of Civil Aviation |

| | | | | | |
|---|---|---|---|---|---|
| 27 | Saudi Press Agency | 89 | Ministry of Economy and Planning | 151 | General Authority for Statistics |
| 28 | Saudi Post | 90 | Ministry of Culture | 152 | General Authority for Culture |
| 29 | Saudi Ports Authority | 91 | Ministry of Communications and Information Technology | 153 | General Authority for Competition |
| 30 | Saudi Organization for Certified Public Accountants | 92 | Ministry of Commerce and Investment | 154 | General Auditing Bureau |
| 31 | Saudi Industrial Property Authority | 93 | Ministry of Civil Service | 155 | Fund Higher Education |
| 32 | Saudi Health Council | 94 | Ministry of Justice | 156 | Falcons Club |
| 33 | Saudi Grains Organization | 95 | Ministry of Education | 157 | Facilities Security Forces |
| 34 | Saudi Geological Survey | 96 | Ministerial Agency of Civil Affairs | 158 | Equestrian Club |
| 35 | Saudi Food and Drug Authority | 97 | Makkah Region Development Authority | 159 | Emirate of Tabouk Province |
| 36 | Saudi Export Development Authority | 98 | Majmaah University | 160 | Emirate of Riyadh Province |
| 37 | Saudi Electronic University | 99 | Madinah Municipality | 161 | Emirate of Northern Borders Province |
| 38 | Saudi Development Bank | 100 | King Saud University | 162 | Emirate of Najran Province |
| 39 | Saudi Customs Authority | 101 | King Saud Medical City | 163 | Emirate of Makkah Province |
| 40 | Saudi Commission for Tourism and National Heritage | 102 | Imam Mohammed bin Saud Islamic University | 164 | Emirate of Madinah Province |
| 41 | Saudi Commission for Health Specialties | 103 | Imam Abdulrahman bin Fasisal University | 165 | Emirate of Jazan Province |
| 42 | Saudi Broadcasting Corporation | 104 | Human Rights Commission | 166 | Emirate of Hael Province |
| 43 | Saudi Authority of Accredited Valuers | 105 | Human Resources Development Fund | 167 | Emirate of Eastern Province |
| 44 | Saudi Arabian Scouts Organization | 106 | Holy Makkah Municipality | 168 | Emirate of Aseer Province |
| 45 | Saudi Arabian Olympic Committee | 107 | High Commission for the Development of Arriyadh | 169 | Emirate of Al-Qasim Province |
| 46 | Saudi Arabian Monetary Authority | 108 | Hail Municipality | 170 | Emirate of Al-Jowf Province |
| 47 | Saudi Arabian General Investment Authority | 109 | General Sport Authority | 171 | Emirate of Al-Baaha Province |

| | | | | | |
|---|---|---|---|---|---|
| 48 | Saudi Arabian Airlines | 110 | General Real Estate Authority | 172 | Electricity & Co-generation Regulatory Authority |
| 49 | Saline Water Conversion Corporation | 111 | General Presidency of the Grand Mosque and the Prophet's Mosque | 173 | Education Evaluation Commission |
| 50 | Royal Court | 112 | General Organization for Social Insurance | 174 | Eastern Region Municipality |
| 51 | Royal Commission for Jubail and Yanbu - Yanbu | 113 | General Establishment for Irrigation | 175 | Council of Saudi Chambers |
| 52 | Royal Commission for Jubail and Yanbu - Jubail | 114 | General Directorate of Water in Qassim Region | 176 | Council of Cooperative Health Insurance |
| 53 | Royal Commission for Jubail and Yanbu - Headquarters | 115 | General Directorate of Water in Medina Region | 177 | Communications and Information Technology Commission |
| 54 | Royal Commission for Governorate of Al-Ula | 116 | General Directorate of Passports | 178 | Capital Market Authority |
| 55 | Riyadh Municipality | 117 | General Directorate of Narcotics Control | 179 | Board of Grievances |
| 56 | Real Estate Development Fund | 118 | General Directorate of Civil Defense | 180 | Assir Municipality |
| 57 | Qassim University | 119 | General Directorate of Border Guards | 181 | Almadinah Almunawarah Development Authority |
| 58 | Qassim Municipality | 120 | General Directorate of Water in Riyadh Region | 182 | Alahsa Municipality |
| 59 | Public Transport Authority | 121 | General Directorate for Prisons | 183 | Al-Jouf Municipality |
| 60 | Public Security Department | 122 | General Commission for the Guardianship of Trust Funds for Minors and their Counterparts | 184 | Al-Jouf University |
| 61 | Public Prosecution | 123 | General Commission for Audiovisual Media | 185 | Al-Baha Municipality |
| 62 | Public Pension Agency | 124 | General Authority of Zakat and Tax | 186 | Agricultural Development Fund |

Saudi state institutions that do not have a Twitter account are listed in Table 10.

Table 10: Saudi State Organizations Without a Twitter Account (Saudi National Portal, 2022)

| | | | | | |
|---|---|---|---|---|---|
| 1 | University of Hafr al-Batin | 20 | National System for Joint Training | 39 | King Fahd Glorious Quran Printing Complex |
| 2 | The National Program for Free Software and Open Soft | 21 | National Security Center | 40 | King Abdullah bin Abdulaziz Public Education Development Project |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Security Forces Hospital Program | 22 | National Information Center | 41 | King Abdullah bin Abdulaziz Foundation for Development Housing Dedicated to His Parents |
| 4 | Security Development and Planning Agency | 23 | National Development Fund | 42 | King Abdullah Air Defense College |
| 5 | Saudi Royal Guard Command | 24 | National Center for Public Agencies Performance Measurement | 43 | King Abdulaziz Military College |
| 6 | Saudi Industrial Development Fund | 25 | National Center for Digital Certification | 44 | King Abdulaziz Foundation for Research and Archives (Darah) |
| 7 | Saudi Fund for Development | 26 | Ministry of Islamic Affairs, Dawah, and Guidance | 45 | Jubail Royal Commission Hospital |
| 8 | Saudi Company for Exchanging Digital Information (Tabadul) | 27 | Ministry of Energy, Industry and Mineral Resources Deputy Ministry for Mineral Resources | 46 | Economical and Development Affairs Council |
| 9 | Royal Saudi Naval Forces Command | 28 | Ministry of Defense | 47 | Economic Cities Authority |
| 10 | Royal Saudi Land Forces | 29 | Military Industry Corporation | 48 | Custodian of the Two Holy Mosques King Salman bin Abdulaziz al Saud for the Prophets Hadith |
| 11 | Royal Saudi Air Forces | 30 | Land Forces Intelligence and Security Commission | 49 | Crown Prince Court |
| 12 | Royal Saudi Air Defense Forces | 31 | King Khalid Military Academy | 50 | Council of Ministers Court |
| 13 | Royal Protocol | 32 | King Faisal Air College | 51 | Control and Investigation Board |
| 14 | Royal Commission for Makkah City and Holy Sites | 33 | General Intelligence Presidency | 52 | Bureau of Experts at the Council of Ministers |
| 15 | Riyadh Military Hospital | 34 | General Entertainment Authority | 53 | Armed Forces Medical Services |
| 16 | Public Investment Fund | 35 | General Directorate of Water in Assir Region | 54 | Al-Amal Complex for Mental Health - Riyadh |
| 17 | Presidency of State Security | 36 | General Directorate of Investigation | 55 | Al-Amal Hospital in Jeddah |
| 18 | Political and Security Affairs Council | 37 | General Directorate for Military Survey (GDMS) | 56 | Administrative Investigations |
| 19 | Nayef Academy for National Security | 38 | General Commission for Survey | 57 | Saudi Fund for Development |

The present study demonstrates how the presence of government institutions on Twitter for digital governance has changed and the key reasons behind these changes on the social, economic, technological, cultural, and political levels. This research also explores the reasons behind the success of one government institution in Saudi Arabia and the failure of others to efficiently interact with citizens.

The first Saudi Twitter account was launched by the General Presidency of Two Holy Mosques on May 3, 2008 (Alasem, 2015). However, the majority of Twitter accounts were created in 2011 and 2012 (36 and 21 Twitter accounts, respectively) (Alasem, 2015). This significant increase in Twitter use can be explained by the beginning of the Arab Spring that started in the Middle East in 2010. The full statistics are presented in Table 11.

Table 11: The Growth of Twitter Accounts in Saudi Arabia (Alasem, 2015)

| Year | Number | % |
|---|---|---|
| 2008 | 2 | 2% |
| 2009 | 7 | 7% |
| 2010 | 19 | 20% |
| 2011 | 36 | 39% |
| 2012 | 21 | 23% |
| 2013 | 8 | 9% |
| Total | 93 | 100% |

Moreover, according to the data provided by GlobalWebIndex, Twitter played one of the most important roles in the Arab Spring and gained significant popularity among Saudis. Thus, Riyadh rapidly became "the 10th most active city globally in terms of tweets and statistics of 2012, showing that Saudis are the fastest-growing group on Twitter" (Alasem, 2015, p. 71). Saudi authorities recognized the importance of Twitter and selected it to deliver certain services to clients. They published 207,853 tweets in total; "89,838 (43%) were original, 7,333 (4%) retweets, and 110,682 (53%) replies, with an average of 2,235, 966, 79, and 1,190 respectively for the total number of original tweets, retweets, and replies" (Alasem, 2015, p. 70). The top five Saudi government Twitter accounts in terms of number of tweets and followers are presented in Table 12 (Alasem, 2015).

Table 12: Top Five Accounts According to Number of Tweets and Followers (Alasem, 2015)

| Top five accounts according to tweets | | | Top five accounts according to followers | | |
|---|---|---|---|---|---|
| Organization | Number of Tweets | % | Organization | Number of Tweets | % |
| National Center for Assessment in Higher Education | 62,441 | 30 | Ministry of Health | 278,025 | 12 |
| Emara of Makkah Region | 14,704 | 7 | National Center for Assessment in Higher Education | 244,637 | 11 |
| Saudi Airlines | 12,591 | 6 | Ministry of Commerce and Industry | 201,220 | 9 |
| Ministry of Health | 11,117 | 5.3 | Saudi Airlines | 144,867 | 6 |
| King Saud University | 9,492 | 4.7 | Ministry of Foreign Affairs | 122,533 | |
| Total | 110,345 | 53 | Total | 991,282 | 44 |

The most popular posts are announcements, agency or state news, useful links, and others (Alasem, 2015). On average, the length of the published tweets was approximately 83 characters. Moreover, these accounts were popular among Twitter users, as the analysed Twitter accounts had 2,226,985 followers. However, there was a significant gap between the top five Twitter accounts in different categories and other government Twitter accounts. These top five accounts had more than 44% of the total followers from the 93 accounts. In addition, the analysis demonstrated that "some Saudi authorities have a Twitter account for the authority itself and another for official speakers of the authority, which is usually a personal account" (Alasem, 2015, p. 72). For example, the official Saudi Ministry of Civil Services Twitter account was opened in 2013 (129 Tweets and 22,142 followers), while the official account of the ministry @A_khoneen was established in 2011 (6,145 tweets and 87,415 followers) (Alasem, 2015, p. 72). Thus, it is clear that Twitter can serve not only as an effective source of information but also as a network for effective communication between citizens and government agencies.

As these data suggest, communication on Twitter is well-developed, and both government agencies and Twitter users use this social network as a tool for effective communication. Table 13 presents the top five Twitter accounts in terms of original tweets,

retweets, replies, and hashtags (Alasem, 2015). In this regard, the following figures are noteworthy:

1. Emara of Makkah Region and King Saud University: the largest number of posts on Twitter (13,810 and 13,809 original tweets, respectively)
2. Saudi Commission for Tourism and Antiquities and King Abdulaziz City for Science & Technology (277 and 211 hashtags, respectively)
3. Saudi eGovernment National Portal and Emara of Makkah Region (931 and 870 retweets, respectively)
4. National Center for Assessment in Higher Education and Saudi Airlines (58,410 and 10,096 replies, respectively)

Table 13: Top Five Twitter Accounts in Terms of Original Tweets, Replies, Retweets, and Hashtags (Alasem, 2015)

| Organization | Original Tweets | % of total tweets | Organization | Retweets | % of total tweets |
|---|---|---|---|---|---|
| Emara of Makkah Region | 13,810 | 94% | Saudi eGovernment National Portal | 931 | 21% |
| King Saud University | 13,809 | 81% | Emara of Makkah Region | 870 | 6% |
| Ministry of Health | 4,846 | 44% | King Saud University for Health Sciences | 687 | 25% |
| King Abdulaziz University | 3,898 | 70% | King Abdulaziz University | 679 | 12% |
| Presidency of Meteorology and Environment | 3,728 | 99% | Jeddah Province Municipality | 589 | 10% |
| Organization | Replies | % of total tweets | Organization | Hashtags | |
| National Center for Assessment in Higher Education | 58,410 | 93% | Saudi Commission for Tourism & Antiquities | 277 | |
| Saudi Airlines | 10,096 | 80% | King Abdulaziz City for Science & Technology | 211 | |
| Saudi Credit and Savings Bank | 6,371 | 88% | Emara of Makkah Region | 186 | |
| Ministry of Health | 6,188 | 56% | High Commission for the Development of Arriyadh | 101 | |
| Ministry of Labor | 4,429 | 81% | Ministry of Health | 72 | |

Overall, there is no single leader in the Twitter environment. Saudi government agencies try to follow high-quality standards in their work and to use modern technologies effectively. In a very short time, Twitter became an effective channel of communication between Saudi authorities and the population that positively affected the development of government electronic services and their transparency.

However, data can become outdated quickly, and Alasem's (2015) findings do not correspond to the truth of today. Different state institutions could be more popular on Twitter today, and their methods of interaction could differ. This study is future-oriented, meaning the proposed analytics represent the latest economic, political, social, and cultural trends that should remain viable in the upcoming years. Contrary to other studies, this research presents the state of digital governance and Twitter usage in Saudi Arabia from 2019 to 2023.

This section has shown that the Gulf countries, including Saudi Arabia, still face numerous political, economic, social, religious, and cultural barriers to digitalizing government services and establishing more efficient cooperation between the state and citizens through Twitter and other social media.

### 2.8 Impact of Cultural Specifics on Digital Governance in Saudi Arabia

Cultural dimensions can have profound implications for the adoption and implementation of digital governance tools, particularly in the unique context of Saudi Arabia. Below, this context is examined from the perspective of Geert Hofstede's framework. Overall, Hofstede's model identifies six key dimensions of national cultures: power distance, individualism/collectivism, masculinity/femininity, uncertainty avoidance, long-term orientation, and indulgence (Buaziz, 2008), as explained in Table 14.

Table 14: Explanation of Hofstede Framework (Hofstede Insights, 2019)

| Dimension | Definition |
|---|---|
| Power Distance | Power distance refers to the extent to which less powerful members of a society accept and expect that power is distributed unequally. In cultures with high power distance, there is a greater acceptance of hierarchical order, and individuals may defer to authority without much questioning. |
| Individualism / Collectivism | Individualism pertains to societies where individuals are expected to take care of themselves and their immediate families, prioritizing personal goals over group goals. Collectivism, on the other hand, emphasizes tight-knit social frameworks, with individuals prioritizing the interests of their groups or communities over personal goals. |
| Masculinity / Femininity | Masculinity and femininity reflect the distribution of emotional roles between the genders. Masculine cultures value assertiveness, competitiveness, and achievement, while feminine cultures emphasize cooperation, modesty, and quality of life. A culture can lean toward one end or balance both aspects. |
| Uncertainty Avoidance | Uncertainty avoidance measures the extent to which a society feels uncomfortable with uncertainty and ambiguity. Cultures with high uncertainty avoidance tend to have strict rules, structured situations, and a low tolerance for ambiguity. Cultures with low uncertainty avoidance are more adaptable to change and tolerate ambiguity more readily. |
| Long-Term Orientation | Long-term orientation focuses on the degree to which a society values long-term commitments and perseverance, as opposed to short-term goals and quick results. Cultures with a long-term orientation prioritize virtues such as thrift, perseverance, and a sense of shame, while short-term oriented cultures emphasize personal steadiness and stability. |
| Indulgence | Indulgence refers to the extent to which a society allows for the gratification of basic and natural human drives related to enjoying life and having fun. Cultures with high indulgence tolerate a variety of opinions and behaviours, while cultures with low indulgence tend to regulate and control these aspects more strictly. |

This model reveals deep-seated cultural values impacting decision-making, communication, and collaboration in Saudi Arabia. In a country marked by unique socio-cultural dynamics, understanding power distance, individualism/collectivism, and uncertainty avoidance is crucial to tailor digital governance strategies to cultural norms, ensuring successful implementation and user acceptance (Alsheddi et al., 2020). Moreover, the Hofstede model provides a nuanced lens for seeing how culture influences leadership styles, stakeholder engagement, and the overall adoption of technological advancements, offering researchers a robust framework to navigate Saudi digital governance. Figure 8 presents a cultural analysis of Saudi Arabia according to this model.

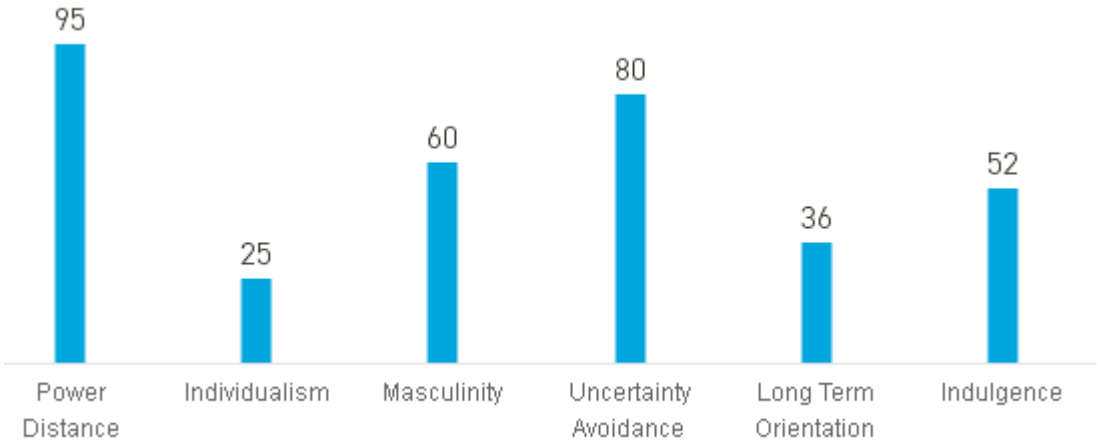



Figure 8. Analysis of Saudi Arabia according to the Hofstede model (Hofstede Insights, 2019)

Saudi Arabia exhibits high power distance, characterized by a strong respect for authority and hierarchical structures (Hofstede Insights, 2019). This can be both an advantage and a challenge for digital governance. On the one hand, a top-down approach can facilitate the rapid deployment of e-government initiatives. However, it can also lead to limited citizen participation and feedback, potentially hindering the long-term sustainability and effectiveness of digital programs.

Saudi society emphasizes collectivism, where individuals prioritize group interests over individual needs (Hofstede Insights, 2019). This can foster social cohesion and community support for digital governance initiatives. However, it can also lead to conformity and resistance to change, particularly if digital programs are perceived as threatening traditional values or social structures.

Saudi Arabia scores high on the masculinity dimension, emphasizing assertiveness, achievement, and competition (Hofstede Insights, 2019). This can create challenges for promoting gender inclusivity in digital governance. Limited access to technology and skills among women, coupled with gender stereotypes, can hinder their participation in online platforms and decision-making.

Saudi Arabia exhibits a moderate level of uncertainty avoidance, indicating a preference for stability and predictability (Hofstede Insights, 2019). This can lead to cautiousness in adopting new technologies, particularly if their benefits and risks are not clearly communicated. Addressing concerns about data privacy and security is crucial for building trust and encouraging citizen engagement in digital platforms.

Saudi Arabia's Vision 2030 plan highlights the importance of long-term planning and investment in technology. It provides a framework for digital governance initiatives aimed at diversifying the economy, enhancing public services, and fostering innovation. However, the success of these initiatives will depend on their alignment with cultural values and priorities, ensuring that digital transformation serves the needs of both present and future generations.

Islam plays a central role in shaping Saudi culture and legal frameworks. The influence of religious values and interpretations can impact the design and implementation of digital governance policies, particularly those related to online content, data privacy, and ethical considerations (Alsheddi, 2020). Understanding the interplay between religion and technology is crucial for ensuring that digital governance initiatives are culturally sensitive and respectful of local norms.

When designing effective and sustainable digital governance initiatives for Saudi Arabia, it is important to consider cultural factors including power distance, collectivism, masculinity, uncertainty avoidance, long-term orientation, and religion. By bridging the gap between technology and culture, Saudi Arabia can leverage the potential of digital governance to enhance public services, empower citizens, and work toward its ambitious goals for the future.

### 2.9 Saudi Public Agencies' Use of Twitter to Achieve Vision 2030 Goals

Recently, Twitter has started to be used by Saudi public agencies for the economic, political, social, and cultural development of the country in view of the Vision 2030 national

development plan. However, there have been competing opinions on the potential influence of social media on this plan, with some claiming it could threaten public support, and there are numerous local tensions on Twitter regarding economic, political, religious, and social values and Saudi Vision 2030 (Alkarni, 2018). In this way, Twitter mirrors a society that demonstrates different perceptions of the transformation of Saudi society on the national and regional levels. Alkarni (2018) conducted a case study of the tweets of Saudi public agencies to examine the social media discourse about the country's orientation to Vision 2030. This research was based on the theoretical framework founded on Ibn Khaldun and Durkheim's theories of social change, the social system theory of Luhman, and the strain theory of Merton. It sought to explore the religious, economic, political, and social tensions regarding Twitter users' interactions and Vision 2030. The results found that Saudi society was experiencing normative disorder due to the fast pace of changes related to Vision 2030 (Alkarni, 2018). Twitter is part of and often the source of these transformations. Saudi Arabia needs to learn how to transform the threats of Twitter as a social platform into opportunities. It is the key to the country's success both in the short term and the long term.

Saudi Arabia, being one of the most active states on social media in the Arab region, should take digitalization into account in its provision of public services and communication with the public (Westall & McDowall, 2016). The royal family has already started shaping online debates with carefully developed media campaigns. A well-known Saudi commentator and analyst stated that this represents "a new focus for the government as it reaches out to a young Saudi population that is more likely to use social media. That's the most effective way to capture their attention" (Westall & McDowall, 2016). The Crown Prince has decided to use hashtags and Twitter's short messages to build an efficient dialogue between the government and the public. Around 190,000 Twitter users in Saudi Arabia participated in the discussion about Vision 2030, which generated around 860,000 messages (Westall &

McDowall, 2016). Such indicators of citizens' participation are rather large. This level of participation means that even public agencies that do not have accounts on social media invest money and time into investigating what people state about them online. At the same time, it is important to mention that the majority of reactions and feedback to Vision 2030 on Twitter were rather positive and brought "expectations of progress" and "patriotic pride" (Westall & McDowall, 2016).

Overall, social media have been recognized as useful tools for public authorities to increase transparency and openness, to get a better understanding of public opinions, and to give citizens the opportunity to reflect their own points of view (Alasem, 2015). Also, it is important to mention that social media in general and Twitter in particular provide the possibility to constantly update content, which is especially important and relevant during special events, disasters, and emergencies. It is thus useful to investigate the implementation of Twitter by different public authorities in Saudi Arabia through network analysis of available quantitative information. In particular, Alasem (2015) examined 93 government authorities of Saudi Arabia via web-based analytical sources. However, according to the results, the Twitter use by Saudi government authorities was not mature enough, and there was a considerable difference between the performance of the abovementioned accounts, as only a few of them wrote more than half of all tweets. Alasem (2015) understood that interactive and natural accounts are more likely to have a larger number of followers.

Crown Prince Mohammed bin Salman recently signed a contract with Microsoft, which has agreed to train the country's public officials to meet Vision 2030 goals (Townsend, 2016). This agreement is supposed to improve the pace of digital changes in the kingdom. A representative of Microsoft commented that "Microsoft will come out with technology to translate Vision 2030 into a reality, with a focus on human capital and innovation, and we aspire to achieve it as early as possible" (Townsend, 2016). Educating public officials in this

way will mean they will also be able to use other digital technologies (like Twitter) to provide public services more efficiently.

Diwan (2016) analysed the correlation between digital progress, social networks, and Vision 2030. It demonstrated concrete steps Saudi Arabia had taken to reach its goals with several thought-provoking examples of transformation. For instance, in 2011, one Saudi blogger wrote that "the average age of the ministers governing the kingdom was 65, while the average age of the population was 19" (Diwan, 2016). However, already today, the situation is different and is supposed to change even more by 2030. In addition, the Crown Prince invited social media activists to the presentation of Vision 2030 and offered some of them the position to work on the "transition" team. The article also mentioned a range of difficult challenges that need to be overcome to reach these goals, concluding that "If Saudi Arabia's youthful population is given the space to contribute and the means to prosper, so will the kingdom" (Diwan, 2016). As this quote suggests, people and their educational and creative potential are the foundation of the country's success.

In the framework of Saudi Vision 2030, the Ministry of Communication and Information Technology launched several significant initiatives. They seek to increase the population's awareness and use of e-government services and to improve the state's utilization of online services. The digital transformation is a visible manifestation of the future direction of the development of online services in Saudi Arabia. The novel contribution of the present study is that it conducted a questionnaire asking citizens for their feedback on digital governance and digital transformation within Saudi Arabia. Such an insider view could help better comprehend the practical challenges and opportunities that the Saudi population is facing.

While analysing the process of digitalization of Saudi Arabia, it is important to pay attention to the specialists who implement it, as in many ways, the success of the whole

reform depends on the professionalism of people and their readiness to make innovative, risky, and confident decisions. The General Secretary of the National ICT Plan is Ali Bin Saleh Al-Soma, and his educational background (he graduated from California State University with a degree in Computer Science) and professional experience (leader of the ICT sector, the General Director of the Saudi e-government program "Yesser", and IT Director in the Royal Commission of Jubail) suggest he is capable of helping transform the digital sector on the national level (IDC, 2018).

The National Transformation Program (NTP) was developed to help fulfil Vision 2030 and should be regarded as a landmark initiative with profound socioeconomic influence. Its methods of monitoring, executing, governing, and planning have been unprecedented for the country. NTP is crucial for helping Saudi Arabia to fulfill Vision 2030 via cooperation between the private and public sectors. According to IDC (2018), the current state of digitalization is much better than a decade ago. For instance, PC penetration is above 80%, mobile penetration is around 167%, and Internet penetration is around 68% (IDC, 2018). In addition, according to the statistical data of the Ministry of Communication, there are 90 million YouTube views per day, 8 million people using Facebook, 7 million using WhatsApp, and 5 million active users on Twitter (IDC, 2018). Yesser (the national e-government program) offers around 2,500 e-services (IDC, 2018). Thanks to such developments, Saudi Arabia was placed 52nd on the UN e-Gov Index in 2018. In 2014, it occupied the 36th place, and in 2016, the 44th place according to the same index. This does not mean the situation in the country worsened; it only means that other countries in the world have been faster and more efficient in this sphere (United Nations, 2018). In this context, it is interesting to compare the place of Saudi Arabia with the other countries in the Gulf region (see Table 15). A plus sign (+) implies rank improvement, while a minus (-) sign implies a rank drop.

Saudi Arabia surpasses only Oman in terms of e-government development, while the UAE is far ahead, occupying 21st place, according to the same indicator (United Nations, 2018). At the same time, if Saudi Arabia manages to reach its 2030 Vision goals, it will likely surpass the other countries in terms of digitalization and occupy a leading position. Among the key goals that the country has set for the development of e-government are (1) to increase the ranking of the e-government survey index from the current position to the top five nations and (2) to evaluate the government procedures and structures, capabilities, responsibilities, and roles to have a more precise correlation between performance monitoring, delivery, and policy decisions (Saudi Vision 2030, 2019, p. 66). Reaching these goals would help decrease administrative and financial waste. The digitalization transformation has already started to take place in the petrochemical, gas and oil, and financial services industries.

Table 15: E-Government Development in Gulf Cooperation Council (United Nations, 2018, p. 168)

| Country | Level of Income | EGDI | 2018 Rank | 2016 Rank | Change in Rank* |
|---|---|---|---|---|---|
| United Arab Emirates | High | Very High | 21 | 29 | +8 |
| Bahrain | High | Very High | 26 | 24 | -2 |
| Kuwait | High | High | 41 | 40 | -1 |
| Qatar | High | High | 51 | 48 | -3 |
| Saudi Arabia | High | High | 52 | 44 | -8 |
| Oman | High | High | 63 | 66 | +3 |

In the future, the situation is likely to improve in terms of digital governance. In particular, it is hoped that by 2030, Saudi Arabia will be ranked among the top five countries in the world in terms of digital governance. The indicator of digital governance is calculated as a composite of three important measures: human capacity, telecommunication connectivity, and the provision of online services. Already in 2016, the International Federation of Telecommunication (IFT) gave Saudi Arabia a 70% performance ranking for the use of information technologies (Arab News, 2016). The organization stated that the

country is on the right track and mentioned its high competitiveness and positive outcomes, such as a decrease in corruption and an increase in transparency. In 2016, the leaders in this sphere were South Korea, Australia, Singapore, France, and the Netherlands (Arab News, 2016). It is possible that the Interior Ministry of Saudi Arabia could be seen as a good role model of technological innovation, mainly thanks to the implementation of the Abshir system (Arab News, 2016). Contrary to other studies, where the researchers made predictions of digital governance based on its present state and pace of development, this study is based on interviews with top people in Saudi Arabia who will shape the future of the country.

At the same time, there are still challenges to digitalization. For example, a significant problem is the limited digital content that can be developed locally and the lack of human capital. According to recent statistics, the demand for professionals will greatly increase (IDC, 2018). In these conditions, Saudis should be equipped with the proper qualifications and tools to decrease this huge gap and to develop the skills needed for the technologies of the next generation in order to meet the demands of the market. In addition, there is a necessity for unified governance to orient and synergize all efforts toward this goal. It is important to mention that NTP has the tools to address these challenges. In these conditions, this research does not only try to define the existing problems related to digital governance and its correlation with social networks but also offers a range of recommendations and concrete steps that can be taken to improve the situation. These recommendations are based on the analysis of interviews and questionnaires of the top Saudi government officials related to digital governance, and therefore they present a unique and useful perspective on the situation.

The term “twiplomacy” can be defined as the continuing utilization of social media (in this case, Twitter) by governments (Green, 2022, p. 1). In order to evaluate the rate of diplomacy development, scholars usually compare the size of the domestic population to the

amount of Twitter followers (OECD, 2015). Figure 9 shows some statistics on the most followed Arab leaders in 2020.


Figure 9. Most followed Arab leaders on Twitter (BCW Twiplomacy, 2020)

In this list of the most followed Arab leaders, King Salman occupies third place with 8.3 million followers and 12% of follower growth (BCW Twiplomacy, 2020). Moreover, he is considered one of the most effective twiplomacy leaders, since in 2020, he generated on average 23,573 retweets per tweet (being overcome only by former U.S. President Donald Trump (BCW Twiplomacy, 2020). According to the most recent statistics, the Saudi Foreign Ministry occupied second place among the most followed foreign ministries in 2022, reaching up to 3,584,659 followers, as shown in Figure 10 (Lufkens, 2022).


Figure 10. Most followed foreign ministries in 2022 (Lufkens, 2022)

Despite the growing amount of government Twitter accounts, the social media diplomacy of Saudi Arabia remains significantly under-researched. Only a few studies have analysed it in the global arena, and the local context of the Middle East has not been covered. Therefore, this study fills a gap in understanding twiplomacy in the Middle East in general and Saudi Arabia in particular, although this notion was only examined from an internal point of view in terms of interaction between public institutions and citizens; the external context was not taken into account.

## 2.10 Activism for Policy Change through Digital Governance via Twitter in Saudi Arabia

Digital governance has revolutionized the landscape of activism, providing individuals with an unprecedented public platform to express their concerns, engage with policymakers, and mobilize support for policy change. In Saudi Arabia, a nation with strict societal and political structures, Twitter has emerged as a vital tool for activists seeking to challenge the status quo and advocate for progressive reforms. This part of the literature review synthesizes existing research on activism for policy change through digital governance via Twitter in Saudi Arabia, shedding light on the strategies employed, successes achieved, and limitations encountered.

Activists in Saudi Arabia have employed various strategies to harness the power of Twitter to call for policy change. One prominent approach is hashtag activism, which involves the creation and dissemination of specific hashtags to raise awareness, mobilize public opinion, and facilitate collective action. Studies have shown that hashtags such as #Women2Drive have gained significant traction, leading to public debates, shaping public discourse, and influencing policy discussions (Khairur Rijal & Zahrotun Khoirina, 2019). Additionally, activists have used Twitter to document human rights abuses, share personal testimonies, and showcase grassroots initiatives, thereby amplifying their reach and garnering international attention (Khairur Rijal & Zahrotun Khoirina, 2019).

Popular hashtags serve as a catalyst for citizen engagement, enabling individuals to participate actively in public discourse (Johnson et al., 2019). Johnson et al. (2019) noted that hashtags create a sense of community among users, facilitating dialogue and fostering a shared purpose. Through hashtags, citizens can express their views, concerns, and aspirations, leading to increased public engagement in policy-related discussions. Hashtags play a vital role in mobilizing communities and initiating grassroots campaigns. By using hashtags,

activists can reach a wider audience and rally support for their cause. For example, the hashtag #SaudiUnemployment shed light on the issue of unemployment in Saudi Arabia, facilitating discussions and prompting policymakers to address the problem (Alzahrani & Alsulaimani, 2021). This case exemplifies how hashtags can effectively mobilize citizens and bring attention to pressing social issues.

Hashtags on Twitter play a crucial role in mobilizing public opinion and sparking conversations around critical issues (Lorentzen & Nolin, 2016). By condensing complex topics into concise and memorable phrases, hashtags create a sense of unity among users and facilitate the spread of information. For example, the hashtag #SaudiNationalDay has been widely used to celebrate Saudi Arabia's national identity, fostering a sense of patriotism and shared pride among users (Serrano, 2020). At the same time, the hashtag #MyHijabStory, which encouraged women to share personal stories about wearing the hijab, gained significant traction and created a sense of solidarity among participants (Almanssori, 2022). In this way, hashtags act as rallying points, bringing like-minded individuals together and providing a platform for collective advocacy and activism.

Hashtags serve as virtual gathering points, enabling individuals with shared interests and concerns to connect and form online communities (Summerville, 2018). For instance, the hashtag #SaudiArabiaTourism has been utilized to promote tourism initiatives and highlight the country's cultural heritage, fostering engagement and generating positive narratives about Saudi Arabia. Such online communities can be instrumental in advocating for social causes and policy reforms. Similarly, hashtags such as #RiyadhBookFair and #JeddahArtWeek have been used to mobilize support for cultural events, drawing attention to artistic expression in Saudi Arabia. By amplifying marginalized voices, hashtags contribute to a more inclusive public discourse and promote social justice (O'Byrne, 2019).

For the reasons outlined above, hashtags have the potential to shape policy discourse by bringing attention to specific issues and rallying public support (Dobrin, 2020). The hashtag #SaudiVision2030 has gained significant traction, for instance, in contributing to discussions about the country's ambitious economic and social reform agenda (BBC, 2016). This hashtag-driven discourse has facilitated a wider understanding and engagement with the goals and initiatives outlined in Vision 2030, thereby influencing policy priorities.

Hashtags empower citizens by amplifying their voices and enabling them to contribute to policy discussions (Washington & Marcus, 2022). For example, the hashtag #حقوق_المرأة_في_السعودية (women's rights in Saudi Arabia) has facilitated conversations about gender equality and women's empowerment, showcasing diverse perspectives and advocating for policy changes. At the same time, the hashtag #HearingVoices, which aimed to raise awareness about mental health issues in Saudi Arabia, has facilitated dialogue and reduced stigmas surrounding mental health.

Sharing success stories for digital governance through Twitter in Saudi Arabia is also instrumental in achieving positive policy changes or pursuing initiatives by demonstrating the feasibility of reform and inspiring others to continue advocating for change. Components of this process are explained below:

1. Inspiring confidence. Success stories shared on Twitter about digital governance initiatives in Saudi Arabia showcase tangible progress and positive outcomes. They provide evidence that reform is possible and highlight the potential benefits of embracing innovative policies. By presenting real-life examples of successful implementation, activists instil confidence in policymakers and the public that positive change is achievable.
2. Highlighting best practices. Success stories serve as a platform to showcase best practices in digital governance. Activists can highlight specific policies,

initiatives, or strategies that have proven effective in driving positive change. By sharing these best practices, they provide valuable insights and guidance to policymakers, encouraging them to adopt similar approaches and replicate successful outcomes.

3. Spreading awareness. Sharing success stories on Twitter helps spread awareness among the public and stakeholders about the impact of digital governance policies. It allows activists to highlight the positive effects these policies have had on various aspects of governance, such as transparency, efficiency, and citizen engagement. This awareness can generate support and demand for similar initiatives, putting pressure on policymakers to embrace reforms.
4. Encouraging collaboration. Success stories shared on Twitter can foster collaboration among different stakeholders, including government agencies, civil society organizations, and private entities. By showcasing the positive outcomes of collaboration, activists can inspire others to come together and work towards common goals in the realm of digital governance. This collaboration can lead to the development of joint initiatives, sharing of resources, and collective efforts to advocate for policy changes.

There is another way that Twitter can be used in digital governance by the public or organizations to lead to positive change and transformation within the country; activists can seek solidarity and support from the international community by sharing their messages with global audiences on Twitter. This can be effective for the following reasons:

1. Raising international awareness. Twitter enables activists to reach a global audience and raise awareness about policy issues in Saudi Arabia. By sharing messages, stories, and updates, they inform the international community about the specific challenges and opportunities for policy change in the country. This

increased awareness puts pressure on international stakeholders to engage with the issues and support advocacy efforts.

2. Building international networks. Twitter allows activists to connect with international human rights organizations, journalists, and activists who are focused on similar policy concerns. By sharing their messages, activists can foster relationships and collaborations, gaining valuable support, expertise, and resources from the international community.
3. Mobilizing international pressure. Activists can leverage Twitter to mobilize international pressure on Saudi authorities. By sharing their messages and stories, activists can encourage global audiences to express solidarity, condemn injustices, and demand policy reforms. This international pressure can have an impact on Saudi decision-makers, who may be sensitive to their country's reputation on the global stage.
4. Strengthening advocacy efforts. By sharing messages with global audiences, activists amplify their voices and increase the reach and impact of their advocacy efforts. Retweets, likes, and comments from international users help to spread their messages further, attracting attention and support from a diverse range of individuals and organizations. This increased visibility strengthens the overall advocacy campaign and increases the likelihood of policy change.

This part of the literature review underscored the vital role of Twitter in facilitating activism for policy change in Saudi Arabia. Activists have effectively utilized hashtags, shared success stories, sought solidarity to challenge societal norms, promoted their rights, and pushed for progressive reforms. The impact of digital activism on Twitter in Saudi Arabia has been substantial, leading to tangible policy changes and amplifying the voices of marginalized groups. However, challenges such as government surveillance, the presence of

trolls and bots, and the digital divide persist, highlighting the need for further research and the development of effective strategies to overcome these obstacles.

### 2.11 The Role of the Saudi Digital Governance Authority in Promoting Digital Governance Development Through Twitter

The digital age has ushered in a new era of governance, transforming how governments interact with their citizens and how public services are delivered. In Saudi Arabia, the Digital Governance Authority is spearheading the country's digital transformation and promoting e-governance initiatives. One of the most prominent platforms it uses for engaging with the public and driving digital governance development is Twitter. The list below explores the critical role played by the Digital Governance Authority in leveraging Twitter to enhance transparency, public participation, and service delivery, ultimately fostering a more inclusive and efficient government in Saudi Arabia:

1. Empowering transparent governance. The Digital Governance Authority serves as the primary entity responsible for implementing digital strategies and policies to enhance the transparency of government operations (Digital Government Authority, n.d.-a). Through Twitter, it disseminates real-time updates on policies, initiatives, and major developments, ensuring citizens stay informed about government activities. By leveraging this platform, the Digital Governance Authority fosters a culture of openness and accountability, allowing the public to scrutinize government actions and provide feedback. Twitter enables direct communication between government officials and citizens, breaking down traditional barriers and promoting a more accessible governance structure. Through the Digital Governance Authority's active presence on Twitter, citizens can express their concerns, report issues, and seek assistance, leading to a more responsive and transparent government that values citizen engagement.

2. Facilitating public participation. Digital governance thrives on public participation, as it allows citizens to actively contribute to the decision-making process (Digital Government Authority, n.d.-a). For this reason, the Digital Governance Authority utilizes Twitter as a dynamic platform to solicit feedback and ideas from the public on various policy matters. Through online surveys, polls, and public consultations, citizens can voice their opinions and contribute to shaping the country's policies and services. The interactive nature of Twitter allows the Digital Governance Authority to engage with a diverse audience, including youth and marginalized communities, who may have been traditionally underrepresented in governance processes. Harnessing the power of social media in this way enables a more inclusive approach to policymaking, ensuring that the voices of all citizens are heard and valued.
3. Enhancing service delivery. Efficient service delivery is a crucial aspect of effective governance (Digital Government Authority, n.d.-a). Through Twitter, the Digital Governance Authority not only communicates policies but also provides valuable information about public services, their availability, and any updates or improvements. This facilitates citizens' access to essential services, reducing bureaucratic hurdles and streamlining government operations. Moreover, Twitter acts as a feedback mechanism for citizens to share their experiences with public services. The Digital Governance Authority actively monitors and responds to queries and complaints, addressing issues promptly. This agile approach to customer service fosters a sense of trust in the government's ability to deliver on its promises, ultimately bolstering citizens' confidence in digital governance initiatives.

4. Promoting cybersecurity and digital literacy. As the guardian of digital governance, the Digital Governance Authority also plays a critical role in promoting cybersecurity and digital literacy among citizens (Digital Government Authority, n.d.-a). In this way, Twitter becomes a platform for disseminating information about online safety, data protection, and responsible digital practices. By educating citizens on potential risks and best practices, the Digital Governance Authority strengthens the overall digital resilience of the country, reducing the likelihood of cyber threats and fostering a safer online environment. The Digital Governance Authority also provides resources and tutorials on using digital platforms and services effectively. This empowers citizens to harness the full potential of digital tools, promoting digital inclusion and bridging the digital divide that may exist between various segments of the population.
5. Showcasing success stories. The Digital Governance Authority showcases success stories and case studies on Twitter, highlighting the tangible benefits of digital governance implementations (Digital Government Authority, n.d.-a). By sharing these stories, it inspires other government bodies and stakeholders to adopt innovative solutions and best practices.
6. Collaborations and partnerships. Twitter serves as a platform for the Digital Governance Authority to collaborate with private-sector entities, international organizations, and other governments (Digital Government Authority, n.d.-a). This fosters knowledge exchange, strengthens partnerships, and enables access to cutting-edge technologies and expertise to further enhance digital governance efforts.
7. Crisis management and emergency communication. During crises or emergencies, Twitter becomes an essential tool for disseminating timely information, safety

measures, and official updates (Digital Government Authority, n.d.-a). In this regard, the Digital Governance Authority plays a critical role in ensuring accurate and reliable information reaches citizens promptly.

8. Addressing misinformation. The Digital Governance Authority actively combats misinformation and disinformation related to digital governance through its Twitter account (Digital Government Authority, n.d.-a). By providing authoritative responses and clarifications, it helps maintain the integrity of digital governance efforts.

In conclusion, the Digital Governance Authority in Saudi Arabia plays a pivotal role in driving the country's digital transformation through its active engagement on Twitter. By leveraging this dynamic platform, it enhances transparency, encourages public participation, improves service delivery, and fosters digital literacy and cybersecurity awareness among citizens.

Together with other social networks and tools, Twitter has become an indispensable instrument for the Digital Governance Authority to bridge the gap between the government and its people, creating a more inclusive and efficient governance structure. Through this medium, Saudi Arabia takes significant strides towards becoming a model of digital governance, setting an example for other nations to follow in their pursuit of embracing the potential of the digital age. As technology continues to evolve, the Digital Governance Authority's commitment to leveraging platforms like Twitter will be instrumental in building a prosperous and digitally empowered Saudi Arabia.

### 2.12 Smart Digital Governance Strategy in Saudi Arabia

Saudi Arabia has embarked on a transformative journey towards digital governance, recognizing its potential to drive economic growth, improve public services, and foster transparency and efficiency. To steer this ambitious endeavour successfully, the government

has laid out a comprehensive smart digital governance strategy, founded on four key pillars. This section explains each of these pillars, namely beneficiary-centric government, smart public administration, a digitally capable ecosystem, and sustainable investments and operations, highlighting their significance and implications for promoting digital governance in the kingdom (see Figure 11).

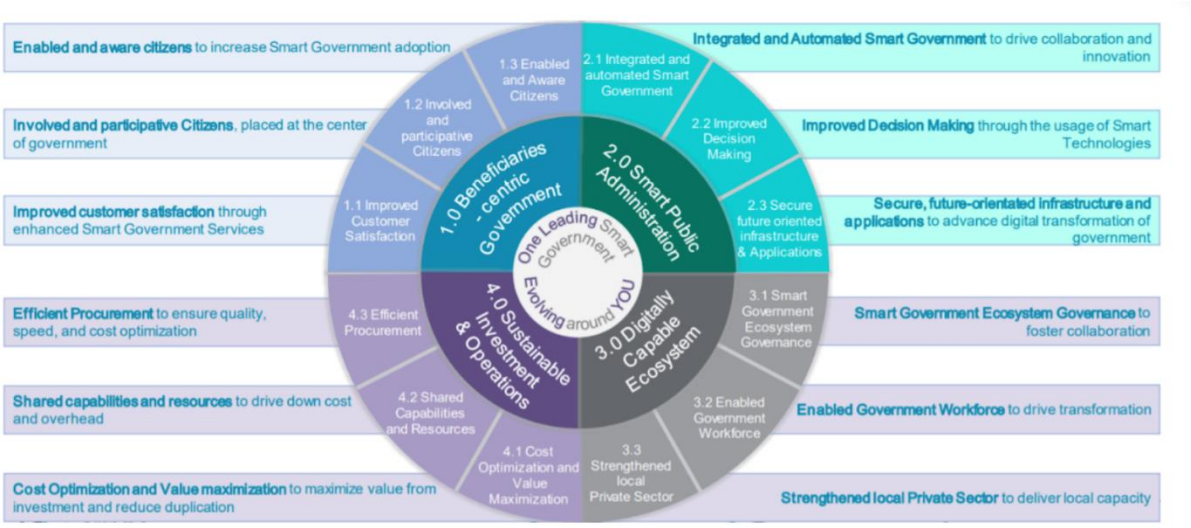



Figure 11. Pillars of Saudi digital governance (Digital Government Authority, n.d.-b)

It is important to explore these pillars to understand their potential impact on Saudi public organizations and their digital governance strategies through Twitter. First of all, at the heart of the smart digital governance strategy in Saudi Arabia lies a strong focus on being beneficiary-centric (Digital Government Authority, n.d.-b). This pillar emphasizes putting the needs and interests of citizens and residents at the core of governance initiatives. By adopting a user-centric approach, the government seeks to enhance the quality and accessibility of public services, ensuring that they cater to the specific requirements of the beneficiaries. One of the critical components of beneficiary-centric government is the use of citizen feedback and data analytics to inform policy decisions and service improvements. Through digital channels, such as online surveys and interactive platforms, the government collects valuable insights from the public to address their concerns more effectively. Moreover, leveraging big

data analytics makes it easier to identify trends and patterns in citizen preferences, enabling the government to anticipate and respond to emerging needs proactively. This pillar also emphasizes the importance of inclusivity, ensuring that all segments of society, including vulnerable groups, have equal access to digital services. By closing the digital divide and ensuring digital literacy and accessibility, the government aims to leave no one behind in its digital transformation.

The second pillar of the smart digital governance strategy in Saudi Arabia revolves around the concept of smart public administration (Digital Government Authority, n.d.-b). This entails the integration of advanced technologies, such as AI and the Internet of Things, to streamline government processes and enhance operational efficiency. By digitizing and automating administrative tasks, smart public administration reduces bureaucratic red tape and minimizes paperwork, leading to quicker service delivery and cost savings. Furthermore, the deployment of AI-powered chatbots and virtual assistants can offer round-the-clock support to citizens, responding to their queries and providing timely information. In addition to enhancing internal efficiencies, smart public administration focuses on fostering interdepartmental collaboration through digital platforms and data sharing. This cross-functional approach facilitates seamless service delivery and policy implementation, avoiding duplications and inefficiencies.

The third pillar of the smart digital governance strategy centres on creating a digitally capable ecosystem in Saudi Arabia (Digital Government Authority, n.d.-b). This involves nurturing a skilled workforce equipped with digital competencies and promoting a culture of innovation and entrepreneurship. To achieve this, the government has been investing in digital education and upskilling programs, ensuring that the workforce is well-equipped to leverage emerging technologies effectively. By providing specialized training in areas such as data analytics, cybersecurity, and AI, the government seeks to develop a talent pool capable

of driving digital initiatives across various sectors. Furthermore, this pillar focuses on supporting startups and small and medium-sized enterprises in the technology sector. By providing funding, mentorship, and access to markets, the government encourages the growth of innovative digital solutions, thereby fostering a vibrant digital ecosystem.

The final pillar of Saudi Arabia's smart digital governance strategy involves sustainable investments and operations (Digital Government Authority, n.d.-b). Digital transformation requires significant financial investments in infrastructure, technology, and human capital. However, the government is committed to ensuring that these investments are made wisely and sustainably, considering their long-term impact on economic growth and environmental sustainability. By adopting green technologies and energy-efficient practices, the government aims to reduce the carbon footprint of digital infrastructure and operations. Moreover, sustainable investments in digital initiatives are driven by a clear focus on long-term returns and measurable outcomes, ensuring that public funds are utilized judiciously and effectively.

The smart digital governance strategy in Saudi Arabia rests on the pillars of a beneficiary-centric government, smart public administration, digitally capable ecosystem, and sustainable investments and operations. By prioritizing the needs of citizens and residents, embracing advanced technologies, nurturing digital skills, and promoting sustainable practices, the government aims to drive a comprehensive digital transformation across all sectors (Digital Government Authority, n.d.-b). As the country continues its journey towards becoming a digitally advanced nation, these pillars serve as the foundation for a more transparent, efficient, and inclusive governance model, fostering a brighter future for Saudi Arabia and its people.

## 2.13 Impact of Covid-19 on Digital Governance in Saudi Arabia through Twitter

In this subsection of the dissertation, I am focusing on the role of Twitter as a communication tool for digital governance in Saudi Arabia. It highlights the measures taken by the Saudi government, the challenges encountered, and the resulting changes in the digital governance landscape.

The Saudi government recognized the importance of social media platforms, particularly Twitter, as a means to communicate effectively with citizens during the Covid-19 pandemic. With millions of active users in the country, Twitter became a crucial channel for disseminating official information, public health guidelines, and updates on the virus. Government agencies, including the Ministry of Health and the Saudi Center for Disease Prevention and Control, actively engaged on Twitter to provide real-time updates, answer citizens' queries, and combat misinformation.

The pandemic accelerated Saudi Arabia's digital transformation initiatives, leading to a more robust and efficient digital governance framework. The government implemented several digital services to facilitate remote access to essential services, such as healthcare consultations, online education, and e-commerce platforms. Thus, online platforms and applications with different public services witnessed rapid expansion to ensure continuity in times of social distancing and lockdowns. Social media platforms became primary sources of information for Saudi citizens and foreigners that lived in Saudi Arabia during the pandemic. Governments used social media to share updates, guidelines, and safety measures, reaching vast audiences in real-time. Twitter played a significant role in promoting these services, allowing citizens to stay informed and utilize digital platforms to meet their needs.

Twitter enabled an unprecedented level of citizen engagement and feedback during the pandemic. Moreover, it became a useful platform to gauge public sentiment and opinions about their policies. By monitoring trends and conversations, Saudi officials started to

evaluate public perceptions and adapt their strategies accordingly. This direct line of communication helped policymakers make more informed decisions in the face of an ever-changing pandemic landscape. Moreover, Twitter enabled governments to broadcast policy changes and guidelines swiftly, ensuring citizens were aware of the latest updates. From lockdown measures to vaccination campaigns, Twitter played a pivotal role in relaying essential information to Saudi citizens efficiently.

Saudi citizens utilized the platform to voice their concerns, seek assistance, and express their opinions on government policies. This real-time communication helped the government gauge public sentiment, identify emerging issues, and refine their policies accordingly. Additionally, citizens collaborated with each other through Twitter, forming support networks, sharing resources, and organizing community initiatives to support vulnerable populations.

Despite the positive impact, there were challenges associated with digital governance through Twitter during the Covid-19 pandemic in Saudi Arabia. The rapid spread of misinformation and rumours was a significant concern. To mitigate this, the government collaborated with Twitter and other social media platforms to identify and remove false information promptly. They also launched awareness campaigns to educate citizens about reliable sources of information and the consequences of spreading false information.

Furthermore, the digital divide posed a challenge, as not all citizens had access to the internet or were proficient in using social media platforms. The government worked to address this issue by expanding internet access and providing digital literacy programs to bridge the gap and ensure inclusivity.

The Covid-19 pandemic had a profound impact on digital governance in Saudi Arabia, with Twitter playing a crucial role in communication, service delivery, and citizen engagement. The government leveraged the platform to provide timely updates, combat

misinformation, and facilitate citizen-government interaction. Despite challenges, the pandemic accelerated digital transformation initiatives, leading to a more robust and efficient digital governance landscape. The lessons learned from this experience can inform future strategies for leveraging social media platforms in crisis situations, ultimately promoting effective governance and citizen empowerment.

### 2.14 Chapter Summary

According to the literature, the Internet and social networks have allowed people to become "active participants in creating, organizing, editing, combining, sharing, commenting, and rating Web content as well as forming a social network through interacting and linking to each other" (Chun et al., 2010, p. 2). In turn, these innovations have brought numerous challenges and opportunities to those using them. People have moved into a "communication era" that facilitates direct contact between people all over the world and improves the collaboration between government and citizens through digital governance. People have the chance to get services more easily, quickly, and comfortably, reducing inefficiencies and improving the overall functioning of government services. The examples of the United States, the United Kingdom, Japan, and other developed countries can easily be used as role models for the successful implementation of digital governance services. At the same time, the main challenges of digital governance are the decrease in privacy, increased surveillance, lack of transparency, problematic access for vulnerable parts of the population (e.g., senior citizens, people with disabilities), dependency of governmental security on Internet technologies, and risk management.

After a careful analysis of the experience of other countries, the author concluded that the U.S., the U.K., and many other developed countries are at the forefront of the implementation of digital governance and their experience is widely researched and discussed. At the same time, the experience of Middle East countries, including Saudi Arabia,

is significantly under-researched. Thus, this study presents information concerning the pace of development, key advancements, and innovations of Saudi digital governance through Twitter and compares it to other countries to understand Saudi Arabia's position in the global and regional arena. Although Saudi Arabia has achieved some success in the digitalization of services and using social networks (in particular Twitter), there are still many changes to be implemented and many areas for improvement. At the same time, the country has set a solid foundation for further development. The course of digitalization in Saudi Arabia is clear and understandable, but its success depends on the present behaviour of the country's authorities and the ability to stay the course.

# Chapter 3: Methodology

## 3.1 Research Design, Objectives, and Research Questions

This chapter presents the methodology of the study, including research design, setting, sampling, instruments, data collection, analysis techniques, and procedures to ensure the reliability and validity of the data. The choice of methodology was shaped by the objectives of the study. This study employed a mixed-method approach to explore the multifaceted nature of digital governance in Saudi Arabia. By integrating qualitative and quantitative methodologies, the study aims to provide a comprehensive understanding of the topic while leveraging the strengths of both paradigms.

Mixed-methods research has gained substantial recognition in recent years due to its ability to bridge the gap between qualitative and quantitative approaches, enabling researchers to address complex research questions more effectively (Johnson et al., 2014; Plano Clark et al., 2015). As such, this study leverages the strengths of both qualitative and quantitative approaches to achieve a more comprehensive analysis (Creswell & Creswell, 2018). The main benefits of this approach are outlined in Table 16.

The quantitative component of this research utilized questionnaires to gather numerical data from a representative sample of participants. The qualitative component employed semi-structured interviews to delve deeper into the experiences, perceptions, and motivations of participants regarding the topic. These findings were then integrated in a complementary manner (Creswell & Creswell, 2018). The two sets of data were analysed independently before being merged in a joint interpretation. By examining the results, this study aims to corroborate, enhance, and augment the findings obtained from each method, thereby enabling a comprehensive understanding of the research topic.

Overall, the methodology mirrors the purpose and objectives of the study. The goal of this study was to investigate Twitter use by Saudi government institutions and the main challenges involved. As such, the key objectives were as follows:

1. To analyse the Saudi experience of digital governance via Twitter.
2. To discover the use of Twitter by Saudi public agencies in relation to Vision 2030.
3. To develop recommendations to improve the interaction between Saudi public agencies and citizens, based on an evaluation of weaknesses and strengths.

Table 16: Benefits of Mixed-Method Research

| Benefits | Description |
|---|---|
| Comprehensive understanding | Mixed-method research provides a comprehensive understanding of the research topic by integrating qualitative and quantitative approaches. It allows researchers to explore the breadth and depth of the phenomenon under study, capturing both statistical relationships and in-depth insights into participants' experiences, perceptions, and motivations. |
| Triangulation of findings | By employing multiple methods, mixed-methods research enables researchers to triangulate findings. This process involves comparing and contrasting results from different data sources, which enhances the validity and reliability of the findings. Triangulation increases confidence in the conclusions drawn and provides a more robust basis for decision-making and theory development. |
| Complementary data collection | Qualitative and quantitative methods have distinct strengths in data collection. Mixed-methods research allows for the integration of these methods, leveraging their complementary nature. Qualitative methods offer rich and nuanced insights, while quantitative methods provide numerical data for further analysis. The combination of both approaches yields a more comprehensive and well-rounded dataset. |
| Increased validity and reliability | The integration of qualitative and quantitative methods enhances the validity and reliability of the study. The use of multiple methods allows for data triangulation, which strengthens the overall credibility of the findings. The complementary nature of qualitative and quantitative data also provides a more comprehensive understanding of the topic, reducing potential biases and limitations associated with single-method studies. |
| Contextual understanding | Mixed-methods research facilitates a deeper understanding of the topic within its specific context. Qualitative methods capture the contextual nuances, cultural influences, and individual experiences, providing rich insights into the phenomenon. This contextual understanding complements the generalizability and statistical analysis offered by quantitative methods, resulting in a more holistic interpretation of the findings. |

With these objectives in mind, the study sought to answer the following research questions:

1. What do the interviews and questionnaires of government officials reveal about the use of Twitter for interacting with citizens and the current evolution of digital governance in Saudi Arabia?
2. What do the interviews and questionnaires with employees of key Saudi public agencies reveal about satisfaction with the quality of digital governance in the country?
3. What are the challenges to using Twitter for digital governance in Saudi Arabia, and can the country overcome them through Vision 2030 or other available tools?
4. To what extent has the Saudi government achieved the principles of participation, transparency, and collaboration in utilizing Twitter for digital governance?
5. How can digital governance through Twitter improve the performance of public institutions, eliminate nepotism, and alleviate corruption in Saudi Arabia?
6. How has the Covid-19 pandemic impacted the development of digital governance through Twitter in Saudi Arabia?

### 3.2 Conceptual and Theoretical Frameworks

The theoretical framework of this study was based on grounded theory. Overall, grounded theory can be defined as "the process of building theory directly from the data rather than using the traditional scientific method of theory testing, which involves the application of a theoretical framework to a data set" (Manfield, 2014, p. 51). In other words, with its sociological origin, grounded theory stresses the development of comprehension through the processes of induction and discovery instead of the more classical quantitative process of research through deduction and hypothesis testing (Eliott & Lazenbatt, 2005). Even so, grounded theory has changed considerably since its first appearance (Timonen et al., 2018). The most popular approaches were developed by Glaser and Strauss in 1967 and Strauss and Corbin in 1990. The researcher carefully evaluated the differences between these

approaches, as outlined in Table 17 taken from Temple University Libraries (2019a), to determine which would best fit the context of the study.

Table 17: Two Schools of Grounded Theory (Temple University Libraries, 2019b)

| Glaser and Strauss (1967) Approach | Strauss and Corbin (1990) Approach |
|---|---|
| Begins with a general idea of where to start | Begins with a general idea of where to start |
| Utilizes different questions with a neutral context | Utilizes questions that are structured |
| Conceptual theory development | Description of conceptual situations |
| Theoretical sensitivity development (the ability to perceive relationships and variables) from the data immersion | Theoretical sensitivity development from tools and methods |
| The theory is regarded as grounded in the information | The observer interprets the theory |
| A basic social process should be identified | Basic social processes need not be identified |
| The scholar has the passive position and demonstrates disciplinary restraint | The scholar has an active position |
| The information reveals the theory | The information is structured to reveal the theory |
| The constant processes of coding and comparison of data allow patterns to emerge | Coding is determined by technique, leading to data micro-analysis word by word |
| Utilizes two phases of coding to develop notions that explain the phenomena: simple (breaking the information down into smaller parts and grouping them into similarities that begin to describe patterns in the information) and substantive (selective or open choice of a core category and connecting other categories to it to discover the patterns that emerge) | Utilizes three coding types: open (which consists of identifying, naming, grouping, and depicting the phenomena), axial (the process of codes relating to each other) and selective (selecting the main group and relating other groups to it) |
| Considered a “true” grounded theory | Considered as a type of qualitative data analysis that is associated with the grounded theory |

This study used the Glaser and Strauss approach because it better fit the goals of the study. In this study, the author had a passive position and demonstrated disciplinary restraint. In addition, the study used substantive coding, according to which there is a selection of a core category and a connection of other categories to it to discover the patterns that emerge. The Glaser and Strauss approach allows for a continuous process of coding and comparison of data, allowing patterns to emerge.

A key advantage of grounded theory is its ability to generate new theories and understandings about a research question (Mitchell, 2014). It encourages the researcher to identify research questions from participants' perspectives. In this case, digital governance in its different representations was researched from the perspectives of the employees of government institutions in Saudi Arabia and the general Saudi population. This theory provides more freedom to develop new concepts that explain various aspects of the data. In this case, grounded theory provided more freedom to examine the concepts of digital governance, such as dissemination of information, improvement of communication with the public, sharing information with the public, collaboration between an agency and citizens, facilitation of access to services, improvement of the quality of services, increasing transparency, improvement of decision-making, and reduction of service costs. Moreover, grounded theory is one of the most appropriate theories for studies based on qualitative datasets. Since this study used qualitative methods, grounded theory fit the context of the study. Furthermore, grounded theory is important in areas that evolve and develop quickly, such as information technology and sociology, or in the case of this study, information technology and digital governance.

Data collection and analysis in grounded theory is carried out simultaneously and includes the following steps (Mitchell, 2014). At the initial stage of the analysis, coding text and theorizing processes are performed. This means drawing the primary analytical concepts (codes) directly from the text of the interview or other data sources and dividing them into conceptual components. Throughout this stage, the researcher analysed the topics that were found in previous studies (for example, interviews and focus groups) to create new questions for the next stage of data collection. Next was the memoing and theorizing stage, in which the researcher wrote notes about each of the generated analytical concepts or categories. Writing notes is a middle step between coding and drafting the final work. Writing notes begins with

the selection of the first analytical concept and continues with analysing new data and building theories. This process requires a constant comparison and evaluation of the data as the researcher collects and analyses the data up to the moment a theory is formulated. The final stage involves integration, refinement, and writing up theories. As categories are formed from codes, they should be interconnected into one theoretical model built around one central category. In this process, important roles are performed by the constant comparative method and evaluation of negative cases that did not support the model. Mitchell (2014) stated that "creating a conditional matrix gives a visual picture of how the concepts are related to each other and represented in the data; this illustrates the [grounded theory] that emerges" (p. 3). In essence, the researcher creates a model that explains the phenomenon under investigation from the very beginning of data collection and checks its adequacy in the context of further data collection and analysis. Here, the researcher expects to come to conclusions on the development of digital governance based on the results of the secondary data analysis, interview, and questionnaire.

It is difficult to determine the ideal interview sample size in grounded theory, as this depends on multiple factors (e.g., the professionalism of the interviewees, the professionalism of the interviewer, the type and specifics of questions asked). To this end, Thomson (2011) analysed over 100 articles that used grounded theory and interviews, discovering that the average amount of interviews was 25 but with a range varying widely from 5 to 114. Grounded theory informed the design of the present study and its sample size. More details can be found in the sections on the interview and the sampling process for the questionnaire.

More succinctly, grounded theory can be defined as follows:

> [It is] a package of research methods that include the use of concurrent data collection and constant comparative analysis, theoretical sampling and memoing, all of which can create an awareness and an appreciation of the scientific merit required of

> grounded theory research and promote quality standards relating to research practices in grounded theory methodology. (Eliott & Lazenbath, 2005)

An analysis of the literature and the goals of the study showed that grounded theory would be an appropriate methodology that fits the context and requirements of this research. It helps develop a comprehension of social phenomena that is not pre-theoretically developed or formed with existing paradigms and theories (Engward, 2013). In the context of Twitter usage in Saudi Arabia, this means not imposing preconceived notions or theoretical frameworks on the data, i.e., approaching the study with a blank slate, making it easier to identify and understand the challenges faced by the government without predetermined biases. Twitter usage for digital governance in Saudi Arabia can be considered a theme that is not well explained or developed within the theoretical framework. Also, grounded theory can identify the contingent nature of practice and the situated nature of theoretical knowledge. This theory was relevant as it acknowledges the areas of contradiction and conflict and adapts readily to studies of different phenomena. In addition, grounded theory was appropriate since it readily adapts to changes and to the context of diverse situations. Grounded theory's adaptability is particularly beneficial in a study focused on digital governance within a specific societal context like Saudi Arabia. The methodology accommodates cultural, political, and technological nuances, allowing the challenges to be understood within the broader socio-political landscape. Its emphasis on theoretical sampling is particularly relevant when studying an evolving phenomenon like Twitter usage. Researchers can strategically select participants and gather data to fill gaps in understanding or to explore emerging themes. This ensures the study remains focused on the challenges that are most pertinent to the government's use of Twitter. Twitter is a dynamic platform, and its usage evolves rapidly. Grounded theory's concurrent data collection and analysis are particularly valuable in this context, making it possible to adopt the data collection methods to capture real-time

challenges, ensuring the study reflects the current state of Twitter use for digital governance in Saudi Arabia.

Finally, its usage corresponds to the grounded theory relevancy described by Milliken (2010) as "well suited for investigating social processes that have attracted little prior research attention, where the previous research is lacking in breadth and/or depth, or where a new point of view on familiar topics appears promising" (p. 549). In this case, the theme of digital governance in Saudi Arabia has attracted little prior research attention from the scholarly community. While it is possible to find some articles on Twitter use by the citizens of Saudi Arabia, there is practically no research on the different interactions between Saudi public agencies and Saudi citizens through Twitter.

Grounded theory served as a robust foundation for this study, guiding the research design and data analysis. Its flexibility, ability to generate new theories, and relevance to qualitative datasets made it a fitting approach for exploring digital governance in Saudi Arabia. The selected Glaser and Strauss approach, with its emphasis on constant coding, aligned seamlessly with the study's objectives, ensuring a comprehensive and insightful exploration of the research questions.

## 3.3 Interviews

### 3.3.1 Rationale for Using Interviews

An interview was selected by the author as the key research method of the study. In the scholarly community, "an interview is an extendable conversation between partners that aims at having an 'in-depth information' about a certain topic or subject, and through which a phenomenon could be interpreted in terms of the meanings interviewees bring to it" (Alshenqeeti, 2014). Figure 12 demonstrates the basic characteristics of structured, semi-structured, and unstructured interviews.

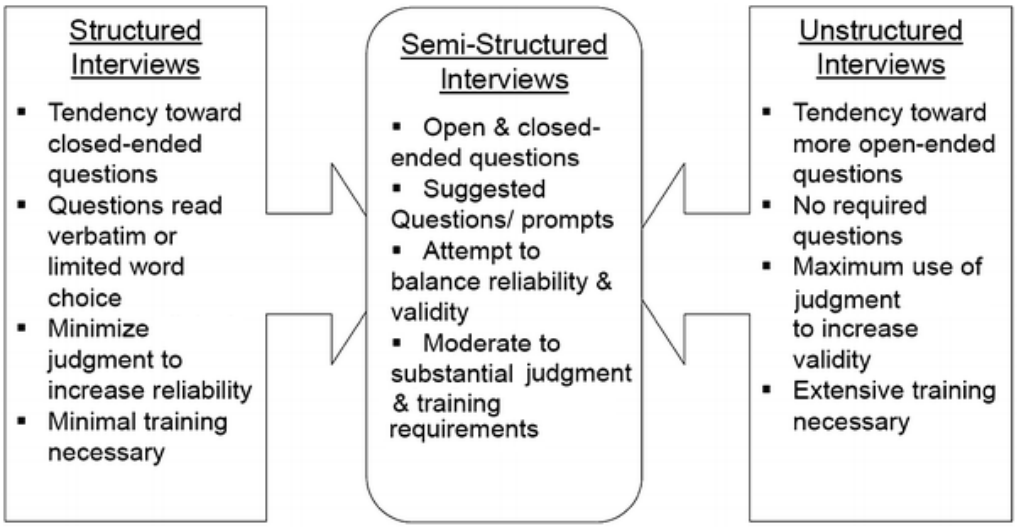



Figure 12. The basic characteristics of structured, semi-structured, and unstructured interviews (Young et al., 2016)

Structured interviews would not fit the context of the study, as they have a tendency towards close-ended questions and do not encourage openness and freedom of conversation (Young et al., 2016). At the same time, unstructured interviews were not appropriate, as the interviewer risks not getting the answers to all the research questions because the conversation may move in the wrong direction. Furthermore, Twitter use for digital governance is a very specific, complex, and multi-dimensional topic, meaning it was necessary to make extensive preparation and define a list of questions that had to be answered. Thus, for these reasons, semi-structured interviews best fit the context of the study, as they encompass both open-ended and close-ended questions, trying to balance validity and reliability.

Furthermore, the semi-structured interview is a highly flexible method that makes it possible to verify replies and obtain more detailed answers than a questionnaire with a standardized set of questions and answers. In this case, the interviews were conducted face to face, which enabled the researcher to ask follow-up questions where the interview response was unclear. Moreover, the author provided additional explanations (clarifications) if the

person requested them. It helped to minimize any confusion in the answers due to a wrong understanding of the questions. The author could also resolve delicate situations.

Still, in terms of time, cost, and energy, the interview method poses a great demand and has a range of limitations. The first relates to the danger of subjectivity, as the interviewed person presents information through their own lens and vision of the world (Young et al., 2017). The human is not a computer, but an emotional subject, shaped by surroundings and influenced by different factors. Therefore, it is necessary to be careful with the evaluation of people's personal opinions and points of view in relation to digital governance within the interviews and to try to support them with scholarly literature. In this study, the risk of subjectivity was minimized because the answers to the questions represented the reality of everyday work in a government agency, explaining employees' experiences with Twitter usage for digital governance. Thus, the interview should be regarded as high-quality professional feedback and commentary, not as a presentation of subjective opinion.

The second limitation is the status and position of the interviewees (Young et al., 2017). Often due to their professional activity, living conditions, or other reasons, they cannot disclose certain information, be truthful, or to present the information objectively. They may purposefully present the data in a more positive or more negative light than reality. Thus, when conducting the interview, it is necessary to always take into account the individual's professional, social, economic, and cultural status, as they can play a key role in understanding what the person states. In this study, it was not likely that the answers of the interviewees were impacted negatively by their position and status. The questions were not provocative and did not touch on controversial or taboo themes. Therefore, the answers were expected to be truthful.

The third limitation of the interview is the sample size, as it is often too small to get reliable data (Young et al., 2017). However, in this study, the sampling size corresponded to existing academic standards and was thus not a major limitation. Other disadvantages are the significant amount of data gathered, which can make analysis difficult; sensitivity, energy, and time needed to establish a high-quality relationship between the participant and interviewer; and problems finding interviewees when discussing sensitive and controversial issues (Young et al., 2017). The advantages and disadvantages of the semi-structured interview are summarized in Table 18.

Table 18: Pros and Cons of Semi-Structured Interviews (Young et al., 2017)

| Advantages | Disadvantages |
|---|---|
| Adaptable and flexible to the needs of the researcher | It can be costly in terms of personnel and time |
| The possibility of free and deep response | The researcher needs to be very proficient in the theme to ask high-quality questions |
| Ability to glimpse into the gestures and tone of the interviewed individual | Not practical with a large amount of interviewed people |
| The possibility to clarify, follow up and probe the information about questions | There is a potential for the inclusion of biases and personal impressions in the research topic |

The author took into account all of these limitations to ensure the reliability of the research. While each method has limitations, it is necessary to find the one that best fits the objectives of the study. In the case of this study, the advantages of interviews outweighed the disadvantages.

### 3.3.2 Interview Sampling

The interviewees were selected using judgmental and convenience sampling. The institutions were selected based on the ease and possibility of access and on the judgment of the researcher concerning who would be able to provide the most relevant data to achieve the objectives of the study.

People from different government sectors were interviewed about using Twitter for digital governance on the local, regional, and national levels. Interviewees worked in the following organizations:

1. Civil Aviation Authority
2. Northern Border University
3. Royal Commission for Jubail and Yanbu
4. Ministry of Human Resources and Social Development
5. Ministry of Education
6. Imam Muhammad Bin Saud Islamic University
7. Al Qassim University
8. King Saud University
9. Institute of Public Administration
10. Technical and Vocational Training Corporation
11. Ministry of Justice
12. Communications and Information Technology Commission
13. Ministry of Municipal, Rural Affairs, and Housing
14. Ministry of Commerce
15. Ministry of Sport
16. Ministry of Tourism
17. Ministry of Finance
18. Ministry of Energy
19. Ministry of Industry and Mineral Resources

Nevertheless, limitations inherent to judgment and convenience sampling, as well as potential related biases, were acknowledged and addressed through the following strategies.

First, I established clear selection criteria. Participants had to (1) work for a government organization in Saudi Arabia, (2) be responsible for social media communication with the public (through Twitter and other social media), (3) have at least one year of work experience in a position involving social media communication, and (4) agree to participate and provide full and truthful answers to the interview questions. Such an approach ensured that participants were relevant to the study's objectives and the influence of personal bias in selection was minimized.

Second, I ensured institutional diversity. While convenience sampling influenced the initial selection from readily accessible institutions, efforts were made to include individuals from various government sectors representing different spheres of influence. The selected organizations could be grouped into three main categories: the educational sphere, the social sphere, and the national wealth sphere. The educational sphere included Northern Border University, the Ministry of Human Resources and Social Development, the Ministry of Education, Imam Muhammad Bin Saud Islamic University, Al Qassim University, King Saud University, the Institute of Public Administration, and Technical and Vocational Training Corporation. The national wealth sphere was represented by the Ministry of Industry and Mineral Resources, Ministry of Energy, Ministry of Finance, and Civil Aviation Authority. The social sphere was represented by the Ministry of Municipal, Rural Affairs, and Housing; Ministry of Tourism; Ministry of Justice; Royal Commission for Jubail and Yanbu; and Ministry of Sport. Such a diverse representation helped to mitigate bias towards specific sectors and enriched the data with perspectives from different domains.

Third, I took into consideration the sample size. Overall, the sample size of 19 aligned with recommendations for qualitative research, balancing the need for rich data with in-depth analysis. Vasileiou et al. (2018) stated that the sample for qualitative research should be "large enough to allow the unfolding of a 'new and richly textured understanding' of the

phenomenon under study, but small enough so that the 'deep, case-oriented analysis' of qualitative data is not precluded" (p. 148). After completing the 19 interviews, the author ensured that this number would be enough, using the three steps recommended by Thomson (2011): "(a) no new or relevant data seem to emerge regarding a category, (b) the category is well developed in terms of its properties and dimensions demonstrating variation, and (c) the relationships among categories are well established and validated" (p. 47). If at least one aspect of the three-step approach is not fulfilled, a larger sample size is necessary, and more interviews should be done. However, 19 interviews appeared to be enough, according to Thompson's (2011) three-step approach.

This study acknowledges the limitations of judgmental and convenience sampling. By explicitly outlining the selection process, criteria, and potential biases, the study increased transparency and made it possible to critically evaluate the findings. All in all, the sampling procedure for interviews was realized according to existing scholarly standards, ensuring the credibility and trustworthiness of the study.

### 3.3.3 Design of the Interview

The process of preparing for interviews, conducting them, and presenting the findings is time-consuming. Therefore, the author organized his schedule efficiently to be able to conduct necessary interviews in the most efficient way. Thus, all interviews were conducted within around two months during the author's stay in Saudi Arabia during the Covid-19 pandemic. All interview questions were carefully selected to ensure they directly corresponded to the research questions, and the author selected interviewees carefully to be sure they were professionals who were well aware of the implementation of e-government services in their organization. Furthermore, the author understood the problem of personal bias and that the interviewees' answers could be impacted by the author's reaction to certain answers. Thus, the author trained himself to manage his emotions and improve self-control

skills. Moreover, before, during, and after the interviews, the author attempted to minimize the probability of biases about the respondents' race, social class, age, religious views, or physical appearance.

Before the arrangement of the interview, the author clearly explained the objectives of this research project to minimize possible fears or concerns among participants due to a lack of information. Furthermore, the author carefully followed the university code of conduct in terms of procedure, location, safety, and confidentiality. To avoid ethical issues during the interview, the following recommendations were applied. Before the interview, the author discussed all controversial issues to conduct the entire interview process without interruptions and significant delays. According to Dörnyei, a "good" interview has two main characteristics: "(a) it flows naturally, and (b) it is rich in detail. To attain this, it is, therefore, necessary for researchers to remember that they are there to 'listen', not just speak" (as cited in Alshenqeeti, 2014). Thus, the author interviewed participants in a calm manner without interruption, further discussion, or disputes. Moreover, arguments were avoided, even if the author did not support the interviewee's answers. The main purpose of these interviews was not to convince the person to do something and to share the author's opinion but to collect reliable data concerning the implementation and effectiveness (or ineffectiveness) of e-government services in Saudi Arabia.

In terms of location, the author provided several possible locations (public or private) to make the interview more comfortable for the interviewees. To ensure confidentiality, the author did not include the name or surname of interviewees in this study if they did not provide permission to do so. Furthermore, the author asked the interviewees' permission to record the interview (in written form and audio recordings) to make it easier to analyse and evaluate the interviews later.

In conducting the interviews, the author tried to use the following recommendations by Mathers et al. (2000):

1. All the open-ended responses should be written in full by the interviewer, without missing any information and details;
2. It is necessary not to provide the possible variants of answers to the interview participants so that they surely present their own opinion and are not influenced by somebody else's answers;
3. The interviewed person understands the motivation of the author to complete the interview and acknowledges the necessity to provide truthful, profound, logical, and meaningful answers;
4. It is necessary to only interview the people who fit the sampling criteria and not to take into account the people out of sampling requirements;
5. It is necessary to keep personal opinions to oneself, in order not to influence the interview participants with own points of view;
6. It is necessary to select the questions for the interview very carefully and to keep the order of the questions in the interview in a proper way. (p. 2)

Following these recommendations could help get more reliable results. The interviews also contained one important, open-ended question: "Do you have anything more to add?" Even though adding and asking this question could be time-consuming for the author, it could be valuable for capturing important information and interesting details that escaped the author's attention. It is impossible to cover everything with interview questions, but asking "Do you have anything more to add?" often facilitates a better understanding of the theme.

Therefore, all the questions were asked as worded for all respondents in order to avoid misinterpretation of the question and to place all of them in the same situation. If needed, the questions were repeated to the interviewee in case of a misunderstanding of the question or

upon their request. At the same time, all questions were asked in the same order as they were written initially (see Appendix A and Appendix B), as a certain question may not make sense if the questions before it were not answered. Moreover, to minimize any kind of bias, the interviewer was careful to be neutral before, during, and after the interview. Also, the author followed Berg's recommendations "that it is important for interviewers to maintain their interviewee's motivation by keeping boredom at bay. This can be done in various ways, for example, by keeping to a minimum demographic (e.g. age) and personal (e.g. income) questions" (as cited in Alshenqeeti, 2014). Also, to get high-quality results, each interview should have an introduction. In it, the author explains why the interview is conducted and how the research results will be analysed and used. Such an approach allows the participants to understand their role better and encourages them to take a more active role in answering the questions, as they can see that their answers contribute to a better understanding of a theme and could help find a solution to a problem. The interview in this study thus contained an introduction that was created to help participants understand why they were giving the interview and how they could help improve digital governance in Saudi Arabia. The author believed the participants had the power to influence the situation with their own answers and encouraged them to participate and answer the questions carefully and attentively.

Through the first question (How would you describe the implementation of digital governance in the public institutions in Saudi Arabia and what are the main ways of this interaction?), the researcher sought to examine the general situation and trend concerning the development of digital governance in the government institutions of Saudi Arabia. This would help compare the country with the situation in a particular government organization.

The second question (According to your opinion, what is the place of the Kingdom of Saudi Arabia in the regional and global arena in terms of the usage of digital governance in general and usage of Twitter for interaction with citizens in particular?) continued the theme

of the first. It helped the researcher compare the situation in Saudi Arabia with other countries and understand the place of Saudi Arabia in a global context. Evaluative statements are always relative, meaning that to understand the state of development in one country, it is necessary to compare it to other countries. For instance, it could be interesting to compare digital governance in Saudi Arabia with the United States or some European countries. To do this, the researcher would contrast the information from the literature review with the chapter that presents the results of the study.

Through Question 3 (Can you describe the evolution of digital governance implementation in the public institution where you work? In which social networks is your company the most active in terms of digital governance?), the researcher sought to comprehend the evolution of digital governance from the past to the present and its potential future. By analysing the situation from a historical perspective, it is possible to see the progress and pace of this progress. Asking about the social networks the organization used might help comprehend people's motivations to use one social network over another. It also gave the possibility to comprehend the advantages and disadvantages of social networks for the purposes of digital governance.

Question 4 (What are the plans of your public institution concerning the usage and development of Twitter for digital governance in the future? Does your company try to reach Vision 2030 goals?) was both general and concrete. It sought to comprehend why and how a public institution used Twitter. The question facilitated an understanding of the logic and motivation behind using Twitter and whether it was part of the social media strategy and the Vision 2030 goals for the country. It also helped understand the satisfaction of the organization with using Twitter and make predictions concerning the future.

Question 5 (How does your company encourage people to engage with your public institutions digitally through social media in general and Twitter in particular?) and Question

6 (How does Twitter help your institution to interact with the citizens of Saudi Arabia. Is this interaction efficient?) sought to discover the details and concrete tools that the institution used to interact with citizens. The analysis chapter evaluates the logic, motivation, and efficiency of such decisions.

Question 7 (Can you state the advantages of using Twitter for digital governance compared to the other social networks, based on your past experience?) sought to get more information on why people used Twitter, what they liked the most about it, and the benefits of Saudi government organizations using it. At the same time, Question 8 (What are the potential challenges and problems related to the usage and implementation of digital governance technologies through Twitter and other social networks in Saudi Arabia? Which cultural, social, and religious factors can prevent Saudi Arabia from implementing successful digital governance practices?) sought to understand the drawbacks of Twitter that could explain why it was not used. The researcher acknowledges that the problem might not lie in the social media network itself but in some cultural, social, or religious factors, which is why this question mentioned them.

Question 9 (Which countries are the role models for you in terms of digital governance and its implementation [please focus on digital governance through Twitter]? Can the digital governance experiences of other countries be borrowed and adapted in Saudi Arabia?) sought to assess whether the country was paving its own way in the domain of digital governance or borrowed from the experience of other countries. Question 10 (How do you think digital governance will develop in the future in the Kingdom of Saudi Arabia and all over the world?) was rather general but important for understanding people's opinions about digital governance and its future in Saudi Arabia. Finally, Question 11 (Do you have something more to add in relation to the proposed theme?) allowed participants to add any

information they wanted that was not mentioned in the previous questions but was still important.

After conducting the interviews, all participants got a “thank you” letter, in which the researcher promised to send the final version of the study to them so that they could incorporate its recommendations into their practices and improve the quality of their services. Overall, the interview process was carefully planned. A detailed analysis of interviews with 19 people from public organizations gave a clear understanding of the strengths and weaknesses of the implementation of e-government services in Saudi Arabia. This interview was designed to gather the maximum possible necessary information to achieve the goals of the study and answer the research questions.

### 3.3.4 Interview Data Analysis

The interview data were carefully analysed to reach an unbiased, high-quality, and independent synthesis of information. A comparative analysis was applied, making it possible to compare and contrast the responses of interviewees. Such an analysis also helps understand which opinions are more or less prevalent. At the same time, a correlation analysis helped understand the underlying reasons behind people’s responses and their actions. A multi-disciplinary perspective was applied, meaning that the perspective of different disciplines (e.g., economics, politics, sociology, culturology, religious studies, computer sciences, psychology) would be taken into account and thereby arrive at deeper, more objective conclusions.

The interview procedure is described below. The author selected the pool of possible government representatives that could be interviewed (as discussed in the previous subsection). Only people related to digital governance and social media use by government institutions were contacted. Their contact information was found through open online and offline sources. All signed an informed consent form, according to which the information

they provided in the course of the interview could only be used for scientific purposes. The interviews were held through Zoom or in person, depending on the decision of the interviewee. Some of the interviews were conducted in Arabic, which the author translated into English.

During the interpretation phase of the raw data, the author re-read (or re-listened to) his notes and records multiple times to become familiar with the data. After reaching a clear understanding of the data, the author started his analysis of every answer, i.e., what the interviewee answered for the first question, second question, and so on. Pondering these questions, the author interpreted what the participants thought about the topic. The author tried to avoid imposing his will or preconceived views on the data and instead allowed it to speak for itself.

## 3.4 Questionnaires

### 3.4.1 Rationale for Using Questionnaires

A questionnaire is a research tool consisting of a set of well-planned questions with the goal of gathering necessary data from respondents. Its aim is the development of profound comprehension of a problem, issue, or theme from the perspective of the individual. The choice of a questionnaire was shaped by its benefits and correspondence to the research goals. A questionnaire made it possible to make generalizations concerning the quality and popularity of the wide set of digital governance services in Saudi Arabia and concerning the performance of different institutions.

The main benefits of the questionnaire that motivated the author to use it are listed below. First of all, a questionnaire is more affordable, as it requires only efficient self-administration, an Internet connection, and time. At the same time, it does not require significant investments and the purchase of costly digital tools. Furthermore, the

questionnaires used were relatively small in size and scope; thus, it was not necessary to hire professionals to assist with data collection and analysis. Therefore, a self-administered qualitative survey was deemed a cost-efficient way to quickly and effectively collect and analyse a massive amount of information from 120 people in a relatively short period of time.

Second, the questionnaire is very practical, as it allows for targeting different groups in various ways and analysing information efficiently and rationally (Barua, 2012). Thanks to Internet technologies, there are no geographical limits between researchers, and people can be accessed more quickly. In addition, they provide an opportunity to choose the questions and their format (multiple-choice or open-ended), offering a way to gather large amounts of information on practically any subject. Therefore, online questionnaires are one of the most effective methods to gather information when the sample population lives over a large territory. In this case, questionnaires allowed the researcher to contact many people who could not otherwise be reached due to quarantine measures caused by the spread of Covid-19, distance, limited time, or transportation costs. At the same time, a questionnaire lets a single researcher cover a large group of people in a limited time.

The third important benefit of a questionnaire is the easy analysis and visualization of data. The results are easily convertible to charts, tables, and figures of different kinds. Similarly, they can undergo quantitative analysis by traditional tools (such as Microsoft Excel). Thanks to the clear visualization of data, the entire results can be presented in an understandable format to a broad audience with different professional backgrounds.

Finally, a questionnaire (especially an online questionnaire) allows people to maintain their privacy and puts less pressure on participants, as it does not require an immediate response. The participants can answer the questions at any suitable time, while an in-person interview usually requires a specific time for the interviewer and interviewee to meet. Moreover, as the questionnaire offers greater anonymity, participants are more confident they

will not be identified by anybody after providing a particular answer or personal opinion. Previous studies have illustrated that online anonymity encourages survey participants to be more willing to respond to socially threatening questions when they are asked to respond to them online, compared to face-to-face surveys and interviews (Murdoch et al., 2014). Thus, participants will feel more comfortable and provide more honest answers. Even though the questionnaire on digital governance in Saudi Arabia was not a risky or dangerous subject, people are still expected to respond more eagerly and truthfully when they know that their privacy and security are respected and carefully maintained. Overall, the questionnaire served as a useful supplement to interviews by gathering more general and representative results from government institutions; theoretical, and abstract knowledge on the perceptions of Twitter usage; and direct, practical feedback.

Of course, there are also disadvantages to a questionnaire, including fatigue, accessibility issues for people with visual impairment, unconscientious responses, lack of personalization, hidden agendas, analysis issues, lack of nuance, interpretation issues, skipped questions, and dishonest answers (Debois, 2019). One of the most significant disadvantages is a low response rate, which can harm the reliability of the results. Well-designed questionnaires have high response rates, so the content and sequence of questions were carefully selected to ensure the logic and quality of this instrument. Although questionnaires represent an easy way to collect information, a lot of time can be required to design the questions and analyse the results (StatPac, 2017). Another drawback is that qualitative questionnaires provide little flexibility to respondents. Thus, the respondents might not find the necessary answer that is appropriate to their real thoughts. It is also almost impossible to collect more insightful information, as the questionnaire creator does not directly communicate with respondents, and there is a risk that a respondent will ignore certain questions, leaving the questionnaire incomplete. In this study, these flaws were

avoided or overcome. After spending significant time designing the questionnaire, the author ensured that the results were valid and reliable. In addition, the introduction to the questionnaire was designed to discipline the respondents and encourage them to give careful, attentive answers.

Another risk is that a questionnaire will be answered by another person. For example, there are known cases when "business questionnaires get handed to other employees for completion. Housewives sometimes respond for their husbands. Kids respond as a prank" (StatPac, 2017). Therefore, for a wide variety of reasons, the respondent may not be the same person who received the questionnaire. Finally, some questionnaires may not be suitable for some respondents. For example, written questionnaires will not work with poorly educated people, as they may have problems reading, or the questions might be too complex due to poor design and ambiguous language. In this case, the respondent may misunderstand the question and provide the wrong answer. At the same time, there is no possibility to clarify the answers, as all the questionnaires are anonymous.

In light of these pitfalls, the author tried to reduce the chances of misunderstanding by carefully drafting the questions and piloting the questionnaire to ensure clarity. In addition, all the respondents had the author's contact details and could contact him if needed. These disadvantages of a qualitative questionnaire did not prevent the author from obtaining high-quality data, as the author carefully considered all of them and tried to minimize their impact on the reliability of the research.

This study's questionnaire on Twitter use for digital governance in Saudi Arabia was inspired by the Burgerpeiling (Citizen Survey), which measured the experiences of citizens on four themes: living environment (including safety), municipal services, the relationship between citizens and local government, and well-being and care (Gremmen, 2016). The Burgerpeiling was drawn from multiple sources that included general questions about the

municipalities and specific questions about public services and demographic data (Stultjens et al., 2008). Its questions were based on widely used questionnaires and previous research on the experiences of citizens. At the same time, even though the Burgerpeiling is an efficient method to evaluate the satisfaction of people with digital governance services, it did not fit the Twitter context of this research. In other words, due to its general nature, it can be used more for analysis of the correlation between social media, digital governance, and people in general but not for finding the correlation between people, digital governance, and Twitter (or any other social media) in particular. Therefore, the author used his own questionnaire that would fit the context and objectives of this study, for the reasons outlined in Table 19.

Table 19: Rationale for Using a New Questionnaire

| Differences | New Questionnaire | Burgerpeiling |
|---|---|---|
| Specificity | Tailored to digital interaction between public organizations and citizens through social media in Saudi Arabia, directly addressing the research topic. | Broader focus on citizen satisfaction with public services, not specific to digital interaction or Saudi Arabia. |
| Target audience | Targets public organizations in Saudi Arabia, providing insights into their practices and perspectives on digital engagement. | Targets citizens, offering general feedback on service delivery, not necessarily related to digital channels. |
| Data depth | Captures detailed information on various aspects of digital interaction, including preferred platforms, content types, challenges, and future plans. | Collects broader satisfaction ratings on diverse services, providing limited insights into specific digital interaction practices. |
| Academic relevance | Aligns with current trends in e-governance research, focusing on citizen participation and social media's role in government-citizen communication. | More generic data on citizen satisfaction might not directly contribute to the specific field of digital governance research. |
| Dissertation potential | Offers rich data for analysis, enabling exploration of complex relationships between variables, testing hypotheses, and contributing original knowledge to the field. | Data might be less suited for in-depth analysis and might not directly address the research questions about digital governance in Saudi Arabia. |
| Additional considerations | Structure facilitates quantitative and qualitative analysis, while the Burgerpeiling might be more suitable for descriptive statistics. | Adapting the Burgerpeiling to this context might require significant adjustments, while the new questionnaire is readily applicable. |

### 3.4.2 Questionnaire Sampling

The author designed and conducted two questionnaires. The first qualitative questionnaire was designed for people who worked in the public government sector. It included 12 questions on the usage of Twitter and other social networks for public digital governance. The second qualitative questionnaire asked Saudi citizens to evaluate their awareness of and satisfaction with the use of different e-government services in Saudi Arabia. A total of 434 people participated in the second questionnaire. The questions in each questionnaire differed from those in the interviews in terms of the types of questions asked and how they were analysed.

The sample of government employees was selected using judgmental or purposive sampling. This type of sampling is based on the judgment of the researcher concerning who would be able to provide the most relevant data to achieve the objectives of the study. The sample of regular Saudi citizens was selected using convenience sampling, meaning people who were readily accessible. Convenience sampling can be defined as "a statistical method of drawing representative data by selecting people because of the ease of their volunteering or selecting units because of their availability or easy access" (Business Dictionary, 2019).

As previously mentioned, the main advantage of this technique is the availability and speed of obtaining results. The main disadvantage is the risk that it does not represent the population as a whole. However, the author took this aspect into account and tried to maintain a socially balanced sample, realized according to academic requirements for such work. In particular, a balanced sample of regular citizens of different ages, genders, education levels, and social backgrounds was surveyed. With citizens, the author employed broad demographic analysis to avoid misleading results and better understand the social and psychological aspects of digital governance. The author tried to choose the "average" person from the population from an economic, social, or demographic perspective.

To ensure the validity and reliability of the results, the author piloted the questionnaire with 10 people: five average citizens and five working in the following government institutions: the e-government program Yesser, the Ministry of Human Resources and Social Development, the Ministry of Economy and Planning, the Ministry of Foreign Affairs, and the Ministry of Education. The pilot sample of regular citizens comprised three men (aged 18-45) and two women (aged 18-45). Piloting in this way tested the functioning and efficiency of the questionnaire.

After the pilot questionnaire, the author used the final version of the questionnaire on a sample of 19 people from the following institutions:

1. Civil Aviation Authority
2. Northern Border University
3. Royal Commission for Jubail and Yanbu
4. Ministry of Human Resources and Social Development
5. Ministry of Education
6. Imam Muhammad Bin Saud Islamic University
7. Al Qassim University
8. King Saud University
9. Institute of Public Administration
10. Technical and Vocational Training Corporation
11. Ministry of Justice
12. Communications and Information Technology Commission
13. Ministry of Municipal, Rural Affairs and Housing
14. Ministry of Commerce
15. Ministry of Sport
16. Ministry of Tourism

17. Ministry of Finance

18. Ministry of Energy

19. Ministry of Industry and Mineral Resources

The researcher acknowledges the overrepresentation of government employees in the citizen survey and the range of biases associated with it. For example, it was understood that the results would portray sector-specific views, since government employees might have a different perspective on digital governance compared to citizens in other sectors. They may be more familiar with its workings and potentially more supportive of government initiatives. This could create an optimistic skew in the survey results, masking potential concerns or criticisms held by the broader population.

The lack of diversity in opinion is also acknowledged. Overreliance on one sector limits the variety of perspectives captured. Citizens from different professional backgrounds and socioeconomic positions bring unique experiences and needs to the table. Excluding these voices weakens the generalizability of the survey findings, potentially overlooking concerns relevant to broader sectors of society.

Finally, missed gaps and blind spots are acknowledged as well. Focusing on government employees might lead to overlooking issues experienced by citizens who interact with digital services less frequently or face specific hurdles due to their background or lack of familiarity. This creates a blind spot in the research, leaving valuable insights unaddressed.

Steps were taken to mitigate bias in the data and inform future studies. To this end, I have acknowledged the limitations, being transparent about the overrepresentation of government employees and explicitly discussing its potential impact on the results in the analysis and reporting. I also triangulated with other sources, combining insights from the survey with data from the literature review. By acknowledging the bias and interpreting the results with caution, I can still extract valuable insights from the available data while making

informed decisions about how to improve digital governance initiatives for a broader range of citizens.

Another survey was answered by 434 regular Saudi citizens, and a final sample was obtained after employing a combination of judgmental and convenience sampling. While these methods offer practical advantages, they carry the potential for selection bias, which I sought to address through the following strategies.

First, I made a stratified sampling by gender and age. The sample was stratified by gender into two equal groups (217 male, 217 female), ensuring equal representation of both. Further, each gender group was divided into five age categories (adjusted slightly for women):

Male: 18–28, 29–39, 40–50, 51–61, 62–72

Female: 18–27, 28–37, 38–47, 48–57, 58–67

This stratification aimed to achieve a balanced representation across different age groups, with approximately 43 participants in each category.

Second, I excluded extreme age groups. Individuals younger than 18 or older than 67 were excluded as their opinions were deemed less statistically significant. People usually begin to take part in digital governance from the age of legal adulthood (18) as declared by law. Thus, children and teenagers were irrelevant in this study. At the same time, according to Figure 13, citizens over 65 constituted only a small percentage of the Saudi population (around 3%), reducing the statistical significance of their inclusion. In addition, the majority of digital government services are oriented toward working-age people rather than retirees, which is why people over 67 were omitted. However, this approach potentially introduces age bias, as the views of younger and older generations might differ. Future studies could explore broader age representation for a more comprehensive understanding.

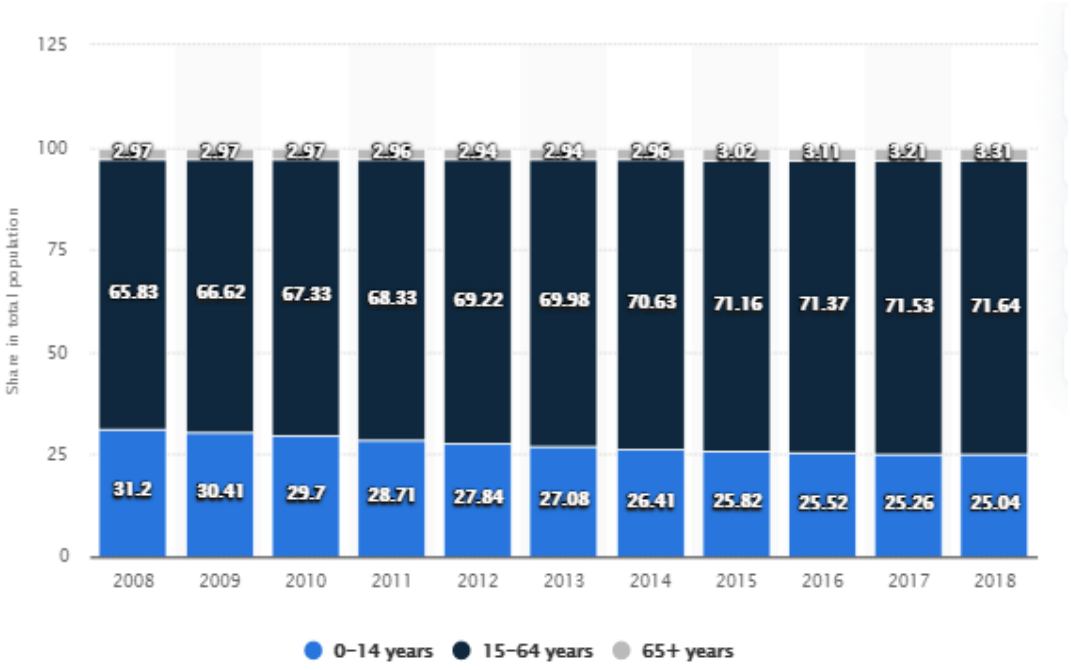



Figure 13. The age structure of Saudi Arabia from 2008 to 2018 (Statista, 2020)

Third, I ensured occupational balance. To prevent bias resulting from overrepresentation of specific professions, no more than five participants from the same profession were allowed, thereby increasing the reliability of the final results.

Fourth, I made concrete geographical limitations. The questionnaire was distributed only in Riyadh, the capital city. While acknowledging that urban and rural populations might have differing perspectives, I prioritized urban dwellers, who often act as early adopters of digital initiatives. Future research could address rural communities to capture a more diverse geographical perspective.

Overall, I acknowledge the inherent limitations of judgmental and convenience sampling, but the sampling process adhered to standard requirements and best practices for this type of study. By employing these strategies, I attempted to mitigate selection bias and achieve a sample that, while not without limitations, offers valuable insights into the perceptions and experiences of Saudi citizens regarding digital governance.

### 3.4.3 Questionnaire Design

The author decided to conduct two different qualitative questionnaires to get a broader understanding of the research questions. It was important to collect data from both sides (i.e., the side that provides online services and the side that uses them) to have a comprehensive view and be able to analyse the research questions from both sides. These data gave an overview of the development of e-government services in Saudi Arabia and made it possible to offer recommendations for further development. Using two questionnaires also helped identify the most popular social media for e-government.

To ensure high quality, the author tried to avoid a set of common errors and to follow the academic recommendations described below (B2B International, 2019, p. 135). First of all, it is necessary to make sure that the questions are formulated without bias and that they do not guide the respondents to a certain answer. Ideally, the questionnaires are constantly refined and edited until the meaning is perceived logically and clearly. Second, the questions should be formulated in the simplest possible way. In other words, the questions should be simple and short to ensure that the respondent is not confused and that the question is not misunderstood. Third, the questions should be less general and more specific. Adding the time period or exact location or territory can help to get more precise answers, which is very important for the analysis of the results. Fourth is to avoid shorthand words, jargon, initials, and acronyms, as it may lead to misunderstanding from participants and therefore to faulty or imprecise results. Similarly, it is necessary to avoid uncommon or sophisticated words that are not part of the commonly used language. Words such as “frequently” or “usually” are general in meaning and require additional explanation because participants may interpret them differently. Fifth is to avoid questions built around negatives, as they are believed to be more difficult to comprehend. For instance, it is better to say “Do you ever?” rather than “Do you never?” Sixth is to avoid hypothetical questions, as they ask the person what they would

do in imaginary situations. Imaginary situations are usually not likely to happen and people often provide imaginary answers that could be far away from their actions in reality. Seventh is to desensitize the questions by using response bands, for instance, avoiding questions that ask people about their exact age or companies about their turnover. Eighth, the questionnaire should be organized in a way that the responses do not overlap to ensure precise results. Finally, whenever possible, the researcher should incorporate the answer "other" in the results because the answer might not really coincide with the values proposed by the author.

Apart from avoiding these common errors, the researcher followed the following methodological guidelines and recommendations:

1. The questionnaire needs to have clear objectives that correspond to the research plan and the research questions, ensuring that all the necessary points are covered.
2. The researcher should have a clear comprehension of how the questionnaire is carried out and what are the main tools to complete it. The methods of completing the questionnaire may even provide different results, as the telephone questionnaire and Internet questionnaire have different limitations and different benefits. In addition, the self-completed questionnaires should be very explicit and precise to ensure quality results (B2B International, 2019, p. 134).
3. Each questionnaire should have an introduction. Some scholars consider the introduction an unnecessary formality that can be avoided, however, in reality, it is a crucial part of every questionnaire, as it gives the possibility to communicate to the respondents the purpose of the research and to understand better why they complete it and how the author deals with the issues of privacy and confidentiality. Finally, the introduction gives the possibility to engage with the person and to ensure that he/she would fill out the questionnaire in a careful, attentive, and respectful manner (B2B International, 2019, p. 134).

4. The questionnaire should be formatted in a way to make them easy and clear to read. It should also be easy for the respondents to navigate between the questions. The font and the size of the font should be large enough to ensure comfortable reading and comprehension.
5. The questions should be shaped in a respondent-friendly manner (should not take too much time from the respondent and should not be very lengthy), as otherwise, the precision of the results would significantly decrease.
6. The researcher should think about all the possible (the most common) answers to the questions and ensure that they all are properly formulated. The absence of some answer(s) may lead to obtaining faulty results and faulty perception of some themes or issues. If it is impossible to predict all the answers, the researcher should incorporate the option of "an open answer" (B2B International, 2019, p. 134).
7. The order of questions in a questionnaire should be logical and concise. Whenever necessary, the questions can be grouped.
8. Before the actual completion of the questionnaire, it is necessary to think about how the data will be analysed, synthesized, and processed and whether it allows reaching the goal(s) of the study (B2B International, 2019, p. 134).

Therefore, it is important to conduct a qualitative questionnaire in a step-by-step process to get the most accurate results. Figure 14 presents seven steps that were performed in the present study. First, it was carefully evaluated and analysed. The author selected what information to gather and what questions would be asked. Overall, only questions that would contribute to the research objectives were included. Second, the author specified an appropriate data-gathering method. Of the three most popular ways to gather data with a questionnaire (face-to-face interviews, voice-to-voice interviews, and online questionnaires),

the author chose online questionnaires. Despite having the lowest return rates, this instrument is the most flexible and least expensive. To get 100 responses, however, such an instrument needs to be delivered to 400-1,000 respondents (McNabb, 2002). The third step was to clarify the entire procedure that would be used to analyse and interpret the data. To make the data simpler to enter for further analysis and to avoid possible errors, a questionnaire was precoded (all the questions and possible answers received their classification number and/or letter). During the fourth step, the author selected the question types and their structure. It was decided to use closed-ended questions, as participants would be more likely to answer such questions, and it is easier to code and statistically analyse the answers of a large number of people. During the next step, the best wording for each question was selected based on the recommendations provided above. During Step 6, all questions were organized in a logical order so as not to unintentionally influence or bias answers to questions that would occur later in the questionnaire. Finally, the questionnaires were pretested, and small errors were revised.

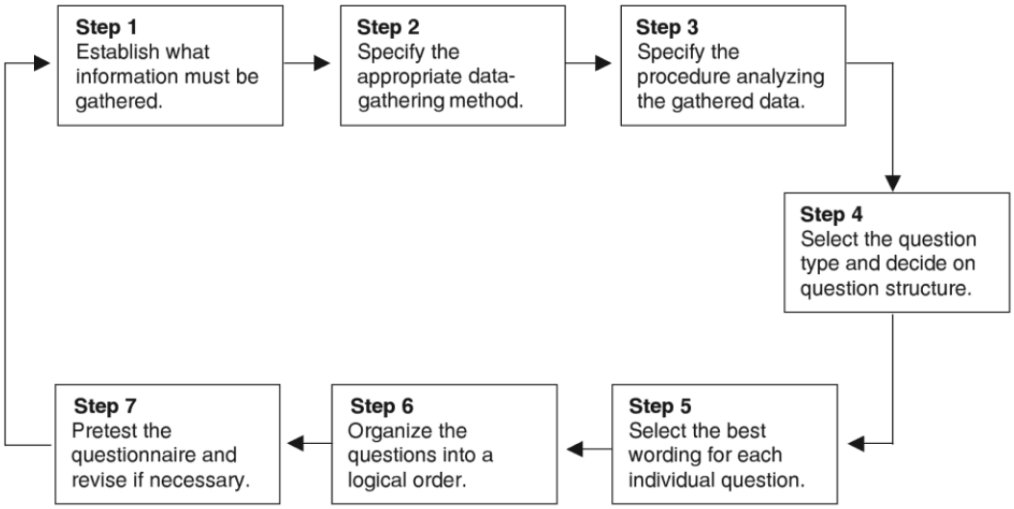



Figure 14. The questionnaire construction procedure (McNabb, 2002)

The final versions of the questionnaires are in Appendix B and Appendix C. The first two questions for public employees asked about the general quality of digital governance in

Saudi Arabia and a certain public institution. This should be noted because the development of digital governance differs between institutions across the country. The third question targeted public officials' attitudes about the importance of digital governance in a contemporary setting. Similarly, the fourth question evaluated the desire of a given public institution to enlarge its presence on popular social networks and deepen the use of digital governance in the future. The fifth question assessed the use of formal guidelines for digital government services in social media across the country. Question 6 evaluated participants' attitudes toward digital governance services in social media and more traditional governance methods. It was important to know the main benefits of each method according to the perspective of people who worked in a public institution on a daily basis. Question 7 asked which social media (Twitter, Instagram, Facebook, and YouTube) were the most appropriate and useful for different digital governance services. Question 8 evaluated the quality of certain manifestations of digital governance in the respondents' public institutions. It was important to know which digital governance manifestations were the most valuable from the perspective of public officials. Questions 9 and 10 focused on Twitter, while Question 11 asked whether public institutions measured and took into account citizens' feedback to their posts, since public feedback is crucial to improving digital governance. Finally, the last two questions identified the number of people currently working on developing digital governance in a government institution and the main challenges they faced in this regard.

The first questionnaire collected data concerning the use and functioning of digital government services in Saudi Arabia from the perspective of ordinary Saudi public employees. The second questionnaire gathered information from ordinary Saudi citizens concerning the use and functioning of digital governance services. Thus, different viewpoints were accounted for (from public employees and citizens who use digital governance services). The questionnaires covered all questions necessary to get a clear understanding of

the research questions and to make the necessary recommendations for digital governance services.

WhatsApp acted as a valuable tool for collecting data. This widely used platform boasts high penetration rates within Saudi Arabia, particularly amongst smartphone users, ensuring a wide reach for public officials and citizens (Statista, 2022b). Furthermore, WhatsApp's familiarity and user-friendly interface likely enhanced participant comfort and engagement, potentially leading to a higher response rate compared to traditional methods. To target specific demographics, I thus shared the questionnaires through various WhatsApp groups. This included specialized local groups relevant to the research area, as well as groups I was already a member of, such as those connected to colleagues, students, and even relatives. This multifaceted approach proved successful, yielding a strong participant pool of over 400 people across the two questionnaires. The platform's ability to share questionnaires and collect responses directly within the app streamlined the data collection process, offering a time- and resource-efficient approach to gathering data.

To increase generalizability, purposive sampling was employed to recruit participants with a diverse range of demographic characteristics and viewpoints. This ensured that the sample encompassed individuals of varying genders, age groups, and ideological perspectives. Incorporating this heterogeneity into the sample mitigated the potential for bias and made the results more likely to reflect the experiences and opinions of a broader population segment.

### 3.4.4 Questionnaire Data Analysis

The content of the questionnaire was carefully examined to reach an unbiased, high-quality, and independent synthesis of information. Comparative analysis made it possible to compare and contrast the responses of interviewees and understand which opinions were more prevalent. A correlation analysis helped understand the underlying reasons behind

people's responses and actions. While conducting and evaluating the questionnaire, in addition to typical academic standards for this type of research, the author tried to conform to the following quality standards:

> good questionnaires impose low response burden and remain both respondent and interviewer-friendly. They ask relevant questions and permit data to be collected efficiently and with a minimum number of errors while facilitating the coding and capture of data and minimizing the amount of editing and imputation that is required. (Eurostat, 2017, p. 3)

### 3.4.5 Piloting the Questionnaire

As with the interview, piloting the questionnaire revealed that some questions needed modification since their terminology confused respondents. The term "digital governance" was deleted and replaced with alternative common language formulations since that term could suggest a variety of different notions. The other reformulations removed ambiguity and ensured the results would be credible and trustworthy. In the questionnaire for public employees, Questions 1-10, 12, and 13 were slightly modified, while Question 11 was left unchanged. In the questionnaire for regular citizens, Questions 14-17 were changed, while Questions 1-13 and 18 were not. Question 14 (Please specify the level of importance for you in e-government services by crossing the appropriate box) was complemented with additional possible responses and with slight modifications: "Readiness of the public organizations to interact digitally", "Readiness of the public organizations to interact through social networks", and "Readiness of the public organizations to interact through Twitter". These answers were related directly to the objectives of the research and provided meaningful information. The answer "government openness" was deleted since it confused some respondents, who did not understand what it meant exactly, and was replaced by the answers mentioned above.

### 3.5 Back-Translation

Back-translation is an additional validation step conducted to check the correctness of a translation and is recommended particularly for cross-cultural studies, interviews, questionnaires, scientific materials, and similar areas (Choi et al., 2012). First, the completed translation is translated back into its original language; then, the new translation is compared with the previous one to check if the new translation is sufficiently similar to the source, find potential issues in the translation that could negatively impact its quality, and inform the user about any parts of the translated document that should be revised (Protranslate, 2019). Usually, back-translation should be completed by an independent, experienced translator.

This technique was employed in the present study. During data collection, the author used the Arabic version of the interviews and questionnaires with participants. As all the participants lived in Saudi Arabia and Arabic was their native language, it was important to give them an opportunity to provide answers in Arabic to avoid misunderstandings. Thus, the author translated the questionnaire and interview questions and answers from Arabic into English and then sent those translations to an independent Arabic-English translator, who evaluated and approved their accuracy.

### 3.6 Trustworthiness of the Research

It is important to ensure the trustworthiness of research data. Positivists often question the trustworthiness of qualitative research since their notions of reliability and validity cannot be addressed in the same way as in a quantitative study; to ensure accurate findings in the study, the author used four main criteria: confirmability, dependability, transferability, and credibility, which are described below (Alkarni, 2018).

According to Moon et al. (2016), “credibility refers to the degree to which the research represents the actual meanings of the research participants or the ‘truth value’.” Here, credibility is achieved through the adoption of well-established research methods (in

this case, an interview and questionnaire). In addition, the qualifications of the author, including his careful examination of previous studies and familiarity with Saudi society (as a Saudi citizen) should be taken into account as adding to the study's credibility. The evaluation of the results was realized interdependently. A more profound understanding of the theme of digital governance in Saudi Arabia through Twitter can only be reached by combining the results of both primary and secondary data analysis. Thus, the author combined the results of the primary data analysis (the interviews and questionnaires) with a secondary data analysis (the literature review) to produce results with higher quality and validity. The combination of primary and secondary sources makes it possible to trace the theme from the past to the present and compare it accordingly. Currently, the secondary data only allows an analysis of past digital governance through Twitter in Saudi Arabia, while the information about the present lacks primary sources.

Transferability is about showing that the research results can be applied to a wider population (Moon et al., 2016). In this case, the analysis of digital governance in several public institutions in Saudi Arabia could be representative of the general situation in the country. However, the study cannot be replicated in other societies with similar cultural or social characteristics (i.e., other countries in the Middle East), since the development and spread of digital governance in the region differs widely.

Dependability involves the study design and description of what was planned on one hand and the study's implementation and how it was executed on the other (Moon et al., 2016). According to Moon et al. (2016), "Dependability refers to the consistency and reliability of the research findings and the degree to which research procedures are documented, allowing someone outside the research to follow, audit, and critique the research process" (p. 17). The university supervisors of the author of this study, as well as independent researchers, regularly read, reviewed, and evaluated the text and provided feedback. All

remarks on weaknesses in the text were thoroughly addressed to ensure the text corresponded to the highest academic standards.

Confirmability deals with issues of objectivity and involves demonstrating that the results are connected to the conclusions in a way that can be followed and, as a process, replicated (Moon et al., 2016, p. 17). To this end, the researcher should do the following:

> to report on the steps taken both to manage and reflect on the effects of their philosophical or experiential preferences and, where necessary, i.e. according to the ontological and epistemological position of the research, to ensure the results are based on the experiences and preferences of the research participants (subjects, respondents) rather than those of the researcher. (p. 17)

The author's familiarity with Saudi society (as a citizen) was a strong advantage since he was aware of the economic, political, cultural, and historical issues within the country. Still, being a native citizen could also be perceived as a weakness since the opinion of the author may be biased concerning certain issues. In these conditions, the author tried to be fully neutral when collecting and examining the data, separating his perceptions and opinions from the data. In summary, the issues of confirmability, dependability, transferability, and credibility were thoroughly addressed in this study. Therefore, it can be considered a trustworthy and high-quality source of information.

### 3.7 Ethical Considerations of the Research

Generally, research ethics "provides guidelines for the responsible conduct of research. In addition, it educates and monitors scientists conducting research to ensure a high ethical standard" (Run Run Shaw Library, 2020). As such, the author followed all ethical standards and requirements for this type of study. All university requirements concerning ethical issues were satisfied, including filling out the necessary forms and getting the required

permissions. In particular, the author signed the Ethical Guidelines Approval form and followed its requirements for this study.

Before completing the interviews or filling out the questionnaires, all participants signed an informed consent form. The privacy and confidentiality of each participant was respected, and any private or confidential information was not disclosed to third parties. Generally, there are three main elements of confidentiality in research: public confidentiality, social network confidentiality, and breach of privacy (Cacciattolo, 2015). Public confidentiality is mainly defined as not mentioning the participants in the research or any of its presentation materials. Social network confidentiality is not providing information to the family members or any other people that may be known by the participant. Finally, a breach of privacy is when a group of household members reveals personal data about the other person. Privacy requirements also include the need for a safe and private location where the study is conducted. All the abovementioned conditions were carefully satisfied.

Participation in the interviews and questionnaires was entirely voluntary, and any form of forced participation was avoided. The researcher avoided inappropriate language when formulating the questionnaire and interview questions. He expressed tolerance of the ideas and thoughts expressed by the participants, attempting to sound impartial during the interview. The answers of the respondents were not altered in any way, preserving their privacy and anonymity. All interviewees were professionals with a high degree of expertise and were only asked about their expertise and professional experiences. In addition, all questions were provided to participants in advance to ensure they had enough time to think well about their answers and would not miss important information. Also, the participants had the option not to answer or skip any questions. The data regarding interviews and questionnaires have been kept in a password-protected file and computer. All recordings will be deleted in two years, and transcripts will be kept for the potential of future historical

comparative analysis. In addition, the author will seek to maintain the no-harm principle while ensuring a commitment to the principles of academic integrity and the quality of the research.

The writer also attempted to make sure there was no deception by getting misleading information from participants about the project. The conscious omission of certain information is also regarded as deception, as it may mean that the respondent does not provide truthful, important, and honest answers for some reason. Thanks to introductory statements in the interview and questionnaire, the respondents were expected to understand the importance of providing truthful answers for the validity and reliability of the study. Regarding the secondary data, there was no original data, so the author was careful in selecting articles according to their accuracy, adequacy, timeframe, purpose, and other relevant characteristics.

### 3.8 Problems Encountered During the Course of the Research

Conducting this research presented several challenges that had to be overcome to achieve the study objectives. The study sought to explore the operations of various Saudi public organizations, shedding light on their inner workings, policies, and overall organizational dynamics in terms of digital governance through Twitter. Although the research held tremendous potential for contributing to the existing body of knowledge, numerous impediments arose, slowing the speed of progress and impacting the research outcomes.

The initial challenge encountered was gaining access to Saudi public organizations in order to conduct interviews. A fundamental aspect of this research involved eliciting insights directly from the representatives of these institutions. However, upon contacting many Saudi public organizations, I encountered a consistent pattern of refusal. Many of these organizations were apprehensive about divulging certain information, fearing potential

repercussions for revealing sensitive data. This phenomenon highlights the prevalent culture of secrecy and caution that characterizes certain aspects of the Saudi public sector.

Compounding the access issue, some representatives of public organizations agreed to meet for interviews initially, but as the appointed time neared, ignored the scheduled meetings and failed to attend the interviews. This unreliable behaviour not only disrupted the research schedule but also wasted valuable time and effort. Such occurrences underscore the need for better coordination and communication between researchers and potential interviewees, as well as a greater sense of commitment from the interviewees themselves.

Another factor that significantly impacted my ability to conduct interviews was gender norms in Saudi Arabia. The presence of female representatives within some of the Saudi public institutions introduced a unique challenge for the male researcher. Due to the customs and cultural norms of Saudi society, some female representatives were uncomfortable meeting the researcher. This cultural barrier created an additional layer of complexity, rendering certain institutions inaccessible to the researcher, thus limiting the breadth and diversity of the data sources.

Even among representatives who did not face cultural constraints, some remained elusive and unresponsive to the researcher's attempts to contact them. Despite persistent efforts, certain individuals within Saudi public organizations did not answer calls or messages, effectively impeding the research process. Such unresponsiveness might have resulted from various factors, including heavy workloads, organizational protocols, or individual disinterest in participating in research. Nonetheless, the unavailability of these key stakeholders negatively impacted the speed of my progress and my approach.

In light of these obstacles, I adopted a categorization approach to navigate the complexities encountered during the research process. By classifying the Saudi public organizations based on their level of cooperation, I aimed to better understand the factors

influencing their engagement and willingness to participate in the study. This approach allowed me to identify patterns, trends, and potential reasons behind varying degrees of cooperation, shedding light on potential areas for improvement within the Saudi public sector.

In conclusion, conducting research in Saudi Arabia's public sector presents numerous challenges. Issues related to access, unresponsiveness, cultural norms, and organizational reticence can hinder the progress and outcomes of a study. As such, the experiences of the researcher in this study provide valuable insights for future researchers embarking on similar endeavours. By acknowledging and understanding these challenges, researchers can better prepare themselves to navigate the intricacies of conducting research in complex and culturally diverse settings, ultimately contributing to the advancement of knowledge and the improvement of the research process as a whole.

### 3.9 Impact of Covid-19 on the Research Methodology

In March 2020, the Covid-19 pandemic greatly interfered with the education process in the U.K. All universities were closed, with no clear information about when they would have the opportunity to open their doors again. Thus, the researcher was forced to take all work home and coordinate with the supervisor online. For this reason, it was not possible for the researcher to meet his supervisor in person to discuss all questions and resolve problems individually. Instead, all meetings were held online, which helped avoid certain mistakes and continue the work on schedule. The quarantine measures also prevented the researcher from active face-to-face communication with colleagues and participation in conferences and other academic activities. However, the researcher tried to compensate through active online communication and discussions in the academic community, as well as intensive learning.

Overall, Covid-19 significantly impacted this study. The researcher was forced to make changes to the data collection process to minimize face-to-face contact and increase the

level of online communication with the supervisor and participants. In the beginning, the researcher had planned to conduct face-to-face interviews, but due to Covid-19, a lot of interviews were conducted through videoconferencing platforms (for instance, Zoom). Face-to-face contact with many public specialists and citizens became impossible to ensure their health, safety, and security. Online communication is different from face-to-face communication but became the only safe method to collect data from government employees.

According to Saloniki et al. (2019), if face-to-face and online surveys and interviews are conducted correctly and carefully and the relevant sampling approach is applied, they might lead to fairly similar results. Similarly, Rowen et al. (2014) contrasted online surveys and face-to-face interviews, finding that choosing one over the other did not really influence responses, regardless of socio-demographic characteristics. Even so, online and face-to-face surveys have unique advantages and disadvantages that can have an impact on data quality, even if the questions are identical (Saloniki et al., 2019). These differences are further discussed below.

In terms of advantages, face-to-face interviews and questionnaires are synchronized in time and space and provide the possibility of seeing body language other nonverbal social signs (Szolmoki & Hoffman, 2013). These characteristics make this method better than alternatives (for instance, videoconferencing, telephone, or email interviews). At the same time, face-to-face interviews and questionnaires could run into problems with representativeness and coverage, time pressure, high cost per respondent, and geographical limitations. Face-to-face interviews and questionnaires can also have a negative interviewer effect since the respondents might feel shy, ashamed, or not wish to provide a truthful response to sensitive questions in the presence of the interviewer (Newman et al., 2002). In contrast, they might provide more truthful responses to online interviews and surveys realized through email or platforms that do not require video or teleconferencing.

On the other hand, online interviews and questionnaires suffer from a lack of representativeness of the entire population since there is a gender, education, and age distortion between Internet and non-Internet users (Szolmoki & Hoffman, 2013). Online surveys can only reach people who wish to register and respond (Tran & Luong, 2020). However, young males are more likely to register and respond to them. In addition, online studies usually attract more point-of-view and knowledgeable samples compared to face-to-face surveys. In addition, online respondents are often more active on a political level and are earlier users of digital technology. For these reasons, online questionnaires require additional attention given to sampling.

For example, Saarijarvi and Bratt (2021) stated that online surveys are not synchronized in terms of space; however, this depends on how one defines space. Even though cyberspace can be depicted more as a virtual than a real place, cyberspace communication has its benefits over real-world communication. Online surveys are also adaptable, flexible, and interactive and can be conducted more quickly, at a lower cost, and with higher comfort in response. On the other hand, online surveys are gradually evolving, and generalizations about them depend on the mode of administration. For instance, online surveys can be realized in written form or conducted through a range of videoconferencing applications (e.g., Zoom, Skype, WhatsApp).

If interviews and questionnaires are conducted online, this generally should not impact the credibility of the results (Saarijarvi & Bratt, 2021). On the contrary, using videoconferencing to communicate with respondents can add to the validity of the results. An online interview done through videoconferencing does not have problems with geographical representativeness since the potential sample for such interviews is greatly expanded, as people from different regions and places can participate more safely, with no change in time or cost. Moreover, with videoconferencing, one can partially or completely observe the

interviewee to see their facial impressions, body language, and non-verbal signs and thereby assess their feelings and emotions.

One limitation is that an online video interview is dependent on a good-quality microphone, camera, and Internet connection (Saarijarvi & Bratt, 2021). Another is that some people do not feel comfortable with this technology. However, that was not the case with this study since the researcher and participants had access to the required technology and felt comfortable with it. In videoconferencing, it can be difficult to ensure confidentiality since in the course of the interview, an uninvited person might be present but not visible in the room and thereby influence responses, especially when addressing sensitive issues (Saarijarvi & Bratt, 2021). This study did not cover highly sensitive topics, but some questions asked participants to give a personal opinion on the performance of the organization where they worked, which could be considered a sensitive topic. Still, the respondents were asked before the interview to ensure a confidential and safe environment for communication. Thus, the choice of qualitative interviews via videoconferencing appeared to be a trustworthy and valid alternative to face-to-face interviews since they would promote equality and inclusion from a distance. Thus, while Covid-19 influenced the methodology and the reliability, credibility, and validity of the methods and results, the researcher resolved all major obstacles to collect a sufficient amount of reliable and representative data from the Saudi respondents.

Although the situation with Covid-19 has gradually changed, it has become evident that a lot of changes will remain in place for the foreseeable future, even when the pandemic is over. First of all, many public institutions closed their doors and moved to online communication and interaction, trying to optimize services and make them safer, smoother, and more efficient. For example, Saudi government agencies were closed or significantly limited their work with citizens. Thus, the use of e-government services and social media, especially Twitter, played a vital role during the pandemic. Even after Saudi public

institutions reopened face-to-face services, they are expected to continue to post on social media more actively to interact with citizens and provide important information. Seeing the increase in demand for digital services, Saudi government institutions have been forced to respond by offering a wider range of digital services and more opportunities for digital interaction.

Second, a lot of Saudi citizens started to use digital services more frequently, as access to offline services was significantly limited. More Saudi people became computer literate and saw the comfort of Internet services instead of having to go somewhere. Instead of using transport, waiting in a queue, and talking to an employee at a government agency, a Saudi citizen could place a request and obtain an answer while sitting at home at the computer. This change is expected to partially remain in place since people who discovered the comfort of Internet communication will likely continue to use it. Still, some citizens (mainly the ones who did not embrace Internet services) will continue to visit Saudi public agencies in person, seeking face-to-face over online interaction.

Third, Covid-19 has transformed people's perception of security. Thus, even with vaccines, people are still concerned about their health and the health of relatives, friends, and colleagues. This change is expected to remain in place as long as the virus is present since security is a basic human need. In these conditions, the digitalization of services proposed by Saudi public agencies is especially relevant.

All in all, it is difficult to state for sure which changes will remain in place and which will disappear since the world is extremely complex, globalized, multi-dimensional, and interdependent. Still, the abovementioned assumptions are likely to remain true, based on the current situation.

### 3.10 Positionality of the Researcher

My research on digital governance in Saudi public institutions has been interwoven with my professional background as an employee of the Institute of Public Administration (IPA). This dual role, researcher and public servant, has offered both invaluable access and unexpected challenges, shaping my understanding of the world of e-government in a rapidly evolving society.

On the one hand, being embedded within the IPA granted me unparalleled access to research participants. My colleagues and superiors, familiar with my academic pursuits, readily facilitated introductions to key figures in various government agencies. Doors that might have remained firmly shut to an external researcher swung open, allowing me to conduct in-depth interviews with decision-makers, IT specialists, and frontline personnel directly shaping digital governance initiatives. This insider knowledge allowed me to navigate bureaucratic hurdles more easily, gaining insights into internal discussions, policy documents, and even unpublished pilot projects rarely accessible to the wider public.

This privileged access translated into richer data, capturing the nuances of policy implementation, challenges faced by government agencies, and citizen perspectives often overlooked in official reports. Witnessing firsthand the daily struggles and triumphs of those at the forefront of digital transformation provided a depth of understanding beyond mere statistics, painting a more complete picture of the complex realities of digital governance in Saudi Arabia.

However, this insider position also presented distinct challenges. The inherent tension between my roles as researcher and public servant demanded constant vigilance against bias and critical self-reflection. The temptation to present a good result, to overcome shortcomings, or to answer critical questions was significant. My commitment to academic integrity demanded a conscious effort to maintain distance, to ask critical questions that

might not be popular within my own institution, and to challenge assumptions ingrained in the system.

My close relationships with participants could further blur the lines between objectivity and subjectivity. Building trust and rapport while maintaining critical distance required a delicate balancing act. The genuine warmth and hospitality I encountered often made it difficult to ask probing questions that might cast doubt or expose weaknesses.

Furthermore, the very access granted by my insider status could limit the scope of my research. The information shared with me, while valuable, might not represent the full spectrum of experiences and perspectives. My contacts, by their very nature, belonged to a specific stratum of the public sector, potentially overlooking the experiences of marginalized groups or those critical of the established order. This inherent bias demanded conscious effort to diversify my research pool, actively seeking out alternative voices and perspectives that could challenge the dominant narratives.

Ultimately, navigating this labyrinth of access and challenges required a constant awareness of my dual role. It meant embracing the unique advantages of my position—the insider knowledge, open doors, and rich data—while acknowledging the potential pitfalls of bias, self-censorship, and limited perspectives. Through critical reflection, active diversification of participants, and a commitment to rigorous academic standards, I strived to maintain my objectivity throughout this process.

Looking back, my journey has been one of constant learning and adaptation. The challenges have been as invaluable as the privileges, forcing me to hone my critical-thinking skills, develop creative research methods, and navigate the web of relationships in the public sector. My perspective as researcher and public servant allowed me to reach a more nuanced and grounded understanding of digital governance in Saudi Arabia, a field undergoing rapid transformation.

By leveraging my insider knowledge while maintaining critical distance, I bridged the gap between academic research and practical implementation, contributing to the development of inclusive digital governance initiatives that serve the needs of the Saudi people.

### 3.11 Chapter Summary

This chapter provided a comprehensive explanation of the methodology employed in this study. The chapter first delineated the objectives that propelled the study forward, guiding the selection of methods to contribute valuable insights to the existing body of knowledge. Likewise, the research questions were formulated to address the core issues under investigation.

Qualitative and quantitative methods, with their focus on exploring and understanding complex phenomena in depth, were deemed particularly suitable for this study. In light of the research objectives, interviews were considered essential for eliciting rich and nuanced data from participants, allowing for an in-depth exploration of their perspectives, experiences, and perceptions. Additionally, questionnaires were deemed valuable for acquiring a broader perspective from a larger sample, thereby complementing the insights gleaned from the interviews and offering a comprehensive view of the research topic.

The decision to employ a combination of purposeful and convenience sampling was made after careful consideration of the research scope and access to potential participants. Purposeful sampling allowed me to target specific participants who possessed in-depth knowledge, insight, expertise, and experience directly relevant to the study. In contrast, convenience sampling provided practicality in reaching a broader audience, facilitating the collection of data from a diverse group of participants with varying backgrounds and perspectives.

With the methodology established, the chapter explained the data collection and analysis procedures. Rigorous data collection techniques were employed to ensure the acquisition of high-quality and relevant data. For the interviews, semi-structured interview guides were crafted that would enable the researcher to explore key themes while maintaining the flexibility to delve into unanticipated aspects that emerged during the interviews. On the other hand, the questionnaires were carefully designed to encompass the research questions comprehensively and ensure the systematic gathering of data from a larger sample.

The qualitative interview data underwent a thorough examination to identify patterns and themes. A systematic and iterative analysis process allowed for the extraction of meaningful interpretations from the qualitative data, ensuring the generation of insightful findings that aligned with the research objectives.

# Chapter 4: Presentation and Discussion of the Results

## 4.1 Pilot Results

### 4.1.1 Pilot Interview Results

The pilot interviews yielded useful results. The first question asked how interviewees would rate the overall quality of interaction between Saudi public institutions and Saudi citizens. The interviewees stated that Saudi Arabia was a progressive and advanced technological nation and that the country's public institutions were easily accessible to its citizens. However, it is necessary to remember that this field has only started to gain prominence and development, as noted by one interviewee: "People are learning and discovering the usage of the new technologies, while the organizations are also learning to use them wisely and efficiently." Thus, the country needs time so that everyone feels comfortable with the technology.

Question 2 asked how the public organizations of the interviewees interacted with the public through social networks. The interviewees stated that they used social networks to communicate the message of their organization to the citizens of Saudi Arabia and to interact with them. They added that social networks had gained special importance during the pandemic when all the events, activities, and possibilities requiring physical presence became largely impossible due to quarantine restrictions and containment measures. The representative of the Ministry of Municipal, Rural Affairs, and Housing mentioned that Twitter was the most popular and important social network for communication with Saudi citizens and residents. It helped maintain a high level of interaction with people during and outside of official working hours. The representative of the Ministry of Sport stated that "Social networks became a useful and effective tool that contributes greatly to the functioning of our organization and its marketing among the general public." Interestingly,

the representative of the Ministry of Tourism claimed that they mainly targeted foreigners through social media to promote and develop the tourist potential of Saudi Arabia and share news related to tourism.

Question 3 asked interviewees how they would describe the interaction between their organization and the public through Twitter. They stated that, overall, they evaluated the interaction of their organization with the public as good. The one from the Ministry of Sport stated, “We are attentive to the people, and we are trying to make the communication as clear and comfortable as possible.” The one from the Ministry of Tourism said they were very active on Twitter and had more than 602,400 followers, which he considered a significant achievement. Still, these institutions naturally have many opportunities for growth and improvement.

In Question 4, the interviewees were asked about the advantages and disadvantages of using Twitter for interaction with the public compared to other social networks. They stated that Twitter had many advantages, the main being “the huge audience potential, high popularity of this social network in Saudi Arabia, and the possibility of promoting organizational identity” according to the one from the Ministry of Sport. The one from the Ministry of Tourism stated that Twitter had a well-developed system of hashtags that helped get an audience interested in a topic or location. These advantages greatly helped these organizations in their everyday work. Talking about disadvantages, they mentioned that the postings made through Twitter were often too short to be more well-structured and informative. Also, the representative from the Ministry of Commerce stressed that people's irritation and was very visible in Twitter messages. People often replied in a loud, harsh, and sharp tone that was not appropriate in official communication.

For Question 5, the interviewees were asked about their organization’s plans concerning the use and development of Twitter for interacting with the Saudi public. The

interviewees stated that their organizations constantly strove to improve and develop, attempting to better the performance and make interaction with the organizations clear and effective. Still, the interviewee from the Ministry of Sport stated that at the moment, they were not searching for optimization opportunities, although trends and technologies were changing quickly, so in the future, it would be necessary to respond to new challenges with new approaches.

For Question 6, the interviewees were asked how their organization encouraged the community to engage with it through Twitter. The interviewee from the Ministry of Sport stated that they were using the classical models to increase community engagement through Twitter. Sometimes, they added hashtags to conversations to make the communication relevant for those involved, included visual elements because people liked and more actively responded to images and videos, developed themed content, and used other tools to encourage engagement. The interviewee from the Ministry of Tourism stated that they encouraged the community to use all social media pages. Still, they shared some exclusive news on Twitter to encourage people to join the official page.

Question 7 asked interviewees how Twitter helped their organizations interact with Saudi citizens. They claimed that the key goal of the Twitter account was quick information dissemination since it targets a large number of people and allows spreading news for free. While advertising platforms charge a lot of money, Twitter is free of charge, so organizations naturally value this platform for the opportunities it provides.

Question 8 asked about the potential challenges the organization faced when using Twitter to interact with the public. The interviewee from the Ministry of Sport stated that the main potential challenges in this regard were bureaucracy and financing:

> Now, we get enough financing and the procedure of dealing with Twitter is quite clear. However, as the presence of our institution grows and transforms within Twitter

> and within other social networks, it will be necessary to increase the amount of personnel and to transform our vision and tools. These changes would also require additional financing.

The one from the Ministry of Tourism stated that they needed additional finances for effective maintenance and regular contribution. Also, among the main challenges in the use of Twitter is its frequent and sudden updates, according to the interviewee from the Ministry of Commerce. It takes a lot of time to learn new designs and features. Another challenge is the large amount of spam, as noted by the representative from the Ministry of Commerce:

> When we post a tweet on the ministry's account, we find that the first seven to ten responses are advertisements, suspicious product marketing, and other responses that are sending the wrong message and have nothing to do with the topic of the tweet.

As a result, users have to spend more time to find messages and questions from real people.

Question 9 asked which factors might prevent interviewees' organizations from implementing digital governance practices successfully. The interviewee from the Ministry of Sport mentioned that global, regional, or national financial crises and economic problems might influence the state's budget, which could consequently impact their institution. Another destabilizing factor could be military insecurity issues. The Middle East is a volatile region, and history shows that conflicts within it are common. At the same time, the interviewee from the Ministry of Tourism stated that they were highly satisfied with the progress that had been achieved and did not see any problems that might prevent the Ministry of Tourism from further implementing digital practices. Overall, the interviewees appeared to be optimists, thinking Saudi Arabia was a strong country that would endure any problems and hardships.

Question 10 asked interviewees what countries served as exemplary models of digital governance and whether their organization was planning to learn from any of these

experiences. The interviewee from the Ministry of Sport stated that the examples of Denmark and South Korea served as role models for them in terms of digital governance. The organization was trying to follow all the latest trends while adapting them to the context of the country. In the future, they were planning to research and implement the best practices. The interviewee from the Ministry of Tourism stated that they did not have a role model, but if needed, they communicated with colleagues from other countries to share experiences and increase the effectiveness of social media use.

Question 11 asked interviewees how the Covid-19 pandemic had affected their organizations' interaction with the public through Twitter. They stated that with the onset of the pandemic, the habits of people changed considerably, as people started to use the Internet, its platforms, and networks more actively. Therefore, the pandemic contributed to an increase in interaction between people and government organizations on Twitter. At the same time, the interviewee from the Ministry of Tourism stated that the pandemic was a major challenge for the entire tourism sphere. There was a significant decrease in the number of tourists that visited Saudi Arabia, and a lot of events were cancelled and moving online. The organization started to implement e-governance services before the pandemic, however, so they were ready to work online during the quarantine measures. Also, they started to communicate via Twitter more actively as people started to search for new ways of communicating with government agencies. The representative from the Ministry of Municipal, Rural Affairs, and Housing noted that the use of Twitter was beneficial during Covid-19 since, being a digital platform, Twitter provided the safest and fastest way to communicate with people.

Question 12 asked the interviewees how citizens' suggestions and complaints received through Twitter were addressed in their organizations. The one from the Ministry of Sport said they did not use Twitter to address complaints and suggestions regarding the work of the Ministry of Sport. However, they did monitor their official page to learn the opinions

of people about the ministry. The interviewee from the Ministry of Tourism said that all complaints and suggestions made online had the same level of priority as offline suggestions and complaints. Thus, they tried to respond to all of them.

Question 13 asked the interviewees how many days their organizations took to respond to citizens. The one from the Ministry of Sport said that they usually responded the same day or the next day at the latest. Similarly, the one from the Ministry of Tourism said they tried to respond during the day.

Question 14 asked the interviewees about the presence of a strategy for using Twitter in their organizations. They said they followed the state policy that aimed to increase the provision of e-governance services to Saudi citizens.

Question 15 asked the interviewees about the availability of training and courses for people who managed the official Twitter accounts of their organizations. The interviewees said they did not have specially developed training and development projects for those people, but they emphasized the importance of such training for more effectively managing Twitter accounts.

Finally, Question 16 provided an opportunity for interviewees to add anything else they wanted to say about the topic. The interviewee from the Ministry of Tourism asked the researcher to follow their official Twitter account, while the interviewee from the Ministry of Sport decided not to add anything additional to his interview.

### 4.1.2 Pilot Questionnaire Results

A pilot questionnaire was conducted with seven participants of different ages, genders, occupations, and education levels to evaluate its effectiveness. The purpose of this pilot study was to gather feedback and make improvements to the questionnaire before administering it on a larger scale.

All respondents in the pilot study were aware of the availability of e-government services in Saudi Arabia and were actively using them on a daily, weekly, or monthly basis. The respondents expressed a high level of trust in using these services and were generally satisfied with the services' level of development in the country. This positive sentiment could be attributed to the convenience and time-saving benefits of e-government services, as they minimize the need for physical visits to governmental institutions and enable almost 24/7 interaction.

In terms of usage patterns, the respondents primarily utilized the general public e-government services without a specific focus on any particular area. The key factors identified by the respondents as important in e-government services were ease of use, digital security, and privacy of communication with public institutions. These factors contribute to the overall user experience and play a crucial role in building trust and confidence in the system.

Interestingly, respondents unanimously agreed that Twitter was the most appropriate and useful social network for interacting with public institutions. This finding highlights the popularity and effectiveness of Twitter as a communication platform for government services, indicating its potential as a valuable tool for engaging with citizens and addressing their concerns.

The pilot questionnaire results provided valuable insights into respondents' awareness of digital services and willingness to utilize them to resolve various issues. The feedback from respondents enabled the researcher to make necessary changes to the questionnaire to improve its clarity and comprehensibility. For example, based on their recommendations, Question 10 was revised to include additional answer options, such as "somewhat", "rather yes than no", and "rather no than yes". This modification allowed for more nuanced responses and enhanced the accuracy of the data collected.

Furthermore, respondents identified several minor mistakes or questions that were poorly understood, prompting the researcher to make necessary corrections to the final version of the questionnaire. Addressing these issues ensured that the questionnaire was optimized to gather reliable and relevant data for the subsequent phases of the study.

Overall, the pilot questionnaire proved to be a valuable tool in assessing the participants' perspectives on e-government services. The feedback helped refine and improve the questionnaire, ensuring its efficacy for the broader survey population. The findings thus contributed to the ongoing efforts to enhance e-government services and cater to the needs and expectations of citizens in Saudi Arabia.

## 4.2 Interview Results

### 4.2.1 The Use of Social Media by Organizations to Communicate with Citizens

In recent years, the use of social media for communication between public institutions and citizens has shifted from a luxury to a necessity around the world. In Saudi Arabia, the digitalization of public services started in 2012-2013, becoming a significant milestone for state institutions, according to a representative from the Communications and Information Technology Commission. Government communication platforms have evolved into new platforms for people to communicate and have their voices heard. These have influenced the way the government handles and reflects on these issues in one way or another. Social media have become a positive contribution that keeps public institutions in a state of development and requires them to interact with citizens more efficiently and regularly. Some state institutions have special media monitoring systems that follow hashtags and track what people are saying about an organization. For instance, an interviewee noted that the Communications and Information Technology Commission uses such technology. The main idea behind it is to track what people are saying (in their posts) about the organization and to

understand the possible problems and flaws as well as positive performance achievements. However, people rarely mention positive interactions with public institutions and are far more likely to mention negative experiences. Thus, it is difficult to form an objective understanding of the performance of these institutions.

Today, state institutions are obliged to closely follow trends and people's preferences and opinions to ensure they provide high-quality services and satisfy existing demand and requirements in terms of interaction. Social media are also changing, and it is necessary to keep up with their evolution.

Public organizations in Saudi Arabia use different social networks to communicate with their audience. The most popular are Twitter, Facebook, LinkedIn, and YouTube. For instance, a participant said the Institute of Public Administration uses all of the abovementioned networks to communicate with its audience and get an understanding of their reactions and views. Certain organizations use different social networks for different purposes, for instance, Twitter for general news, LinkedIn for more professional news, and YouTube for explainer videos. In this way, social networks complement each other, covering different target audiences and providing different types of services.

The example of King Saud University demonstrates that certain large hierarchical educational institutions have a lot of accounts on different social networks, according to a participant from the Institute of Public Administration. For example, the university has its official social media page, as well as independent social media pages for its departments. The official page of the university is usually handled by the Public Relations and Media Department, which often has its own official spokesperson. The main information published on the social media pages consists of university events and news, as well as official events that represent the institution. Naturally, some departments within the university are more active than others on these social networks. Altogether, they help shape the image and

reputation of the university for its audience. The mistake or failure of one department would thus be a mistake or failure for the whole university. Therefore, it is crucial to train specialists on all accounts of the institution to create a unified positive public perception.

Continuing to discuss the use of Twitter by Saudi public institutions, it should be mentioned that many prioritize Twitter over other social networks. For example, a representative of the Civil Aviation Authority stated the following:

> We in authority, as well as many other government agencies, are very focused on our work and interactions with the public on Twitter alone, ignoring many other social media platforms. For example, the Facebook platform, as well as Instagram, has a large audience; however, government agencies only use these platforms once they open an account and publish information or news; they receive many inquiries from the external audience, but these parties do not interact with them as they do with the Twitter platform.

Such a comment demonstrates the attitude of employees of public institutions about different social networks, showing their preferences and priorities.

Many Saudi public institutions have done extensive research before beginning their own social media strategy to ensure that proper approaches and targeting are chosen. They understand that if a social media strategy is not wise, it will not bring the desired positive effect. For instance, a representative of the Saudi Ministry of Justice said their organization provides 120 electronic services. If all of them are extensively explained through social media, people will actively and efficiently use them, making the interaction between public institutions and citizens simpler, more effective, and more productive.

### 4.2.2 The Use of Twitter by Saudi Public Organizations and Their Role Models

Saudi public institutions actively use Twitter to interact with their citizens in many different ways. For instance, according to one participant, the Institute of Public

Administration, similar to many other organizations, uses a Twitter account both for public and direct interaction with its audience. The main requirement for the content of social media posts is not to violate the rules related to faith, state, or rulers and to take into account the publishing standards and policies of the kingdom, according to a representative of King Saud University.

Through tweets, public organizations wish to anticipate the response of the target audience, according to a representative of King Saud University. Every time the content is designed and published, it reflects the compilation of all the questions and inquiries that people are required to respond to, which they present in a straightforward and attractive format. Sometimes the reaction to tweets is positive and sometimes negative, but organizations attempt to take both into account.

Some organizations have automated responses on Twitter by using artificial intelligence tools. They understand that it is impossible to respond to all clients on time, but many people pose the same or very similar questions over and over, according to a representative of the Technical and Vocational Training Corporation. Automating certain standard requests thus saves the working time of specialists, providing timely and detailed feedback to customers and allowing the normal functioning of the organization to continue.

A participant noted that the Ministry of Justice uses Twitter to simplify the delivery of its services to people by incorporating appealing artistic expressions that impress people and creatively convey the message using a variety of formats, including images, videos, motion graphics, infographics, and other interactive tools. The organization has developed distinctive content with a design that appeals to the ministry's service recipients. The ministry believes that Twitter is the most popular social media platform among citizens and government agencies in Saudi Arabia.

According to an interviewee, the Communications and Information Technology Commission, with more than 46 million customers, uses a special customer service account called “We are with you”. Every day, it receives around 2,000-3,000 inquiries, which is a significant amount, and the average response time is less than 20 minutes, which is very good. The commission uses Twitter to receive complaints from customers and refer them to the appropriate authority, which contacts the customer later on. According to the participant, Twitter lets them achieve more complete communication:

> A government agency can now claim to have a call centre, a phone number, a complaints centre, and a website. This is fantastic, but the agency’s service will be incomplete if it does not have a Twitter platform where people can send their complaints and suggestions. According to numerous community testimonials, an agency’s Twitter account is required.

The commission also uses Twitter to encourage people to visit its app and view its services on its website. They consider Twitter to be a tool for communicating with beneficiaries and raising awareness among customers.

In addition, a representative from the Communications and Information Technology Commission stated that “any Saudi Arabian government entity without a Twitter account is doomed… If a media outlet does not publish news that I post on our Twitter account on its Twitter platform, I infer that it was not published by my colleagues.” Twitter allows sharing of information about services that are interesting to citizens. Moreover, the representative stated that the community does not read traditional media or the press for information; it uses Twitter as a source of information or to access one of its services:

> Today, Twitter is used to disseminate a lot of the information and services we provide. When news is shared on Twitter, it quickly spreads and reaches a large

> number of people. Many media issues, whether governmental or not, do not gain traction unless Twitter is used as the primary platform.

Overall, it is good that government agencies try to keep pace with progress.

Some public institutions follow the examples of other countries, while other public institutions consider themselves self-sufficient. For instance, according to participants, the Institute of Public Administration, King Saud University, and the Civil Aviation Authority consider Saudi Arabia the best in the region and that other countries should follow their example. For instance, a representative of the Civil Aviation Authority stated that "After reviewing the accounts, we found that our culture is superior to the accounts of parties in the Gulf States and the Arab world." In contrast, one from the Technical and Vocational Training Corporation considered the United Arab Emirates a role model since the institution has benefited and learned from their experience in terms of publishing and dealing with beneficiaries:

> We are trying to learn from their stories in terms of "humanizing" them, or being more human in our responses and interactions. We want to communicate with them in a pleasant and relaxed manner. We would like to make our account a little more interactive than it currently is. We make an effort to acknowledge and engage with our fans.

According to one participant, the Ministry of Justice does not have a single role model to follow but rather learns and takes lessons from several countries, such as the United Kingdom, the United States, and Sweden. Such an approach considerably helps develop their social media policy, publishing style, and culture.

A participant from the Communications and Information Technology Commission stated that they constantly compare themselves with the British telecom regulator and the U.S. Federal Communications Commission. For instance, the Communications and

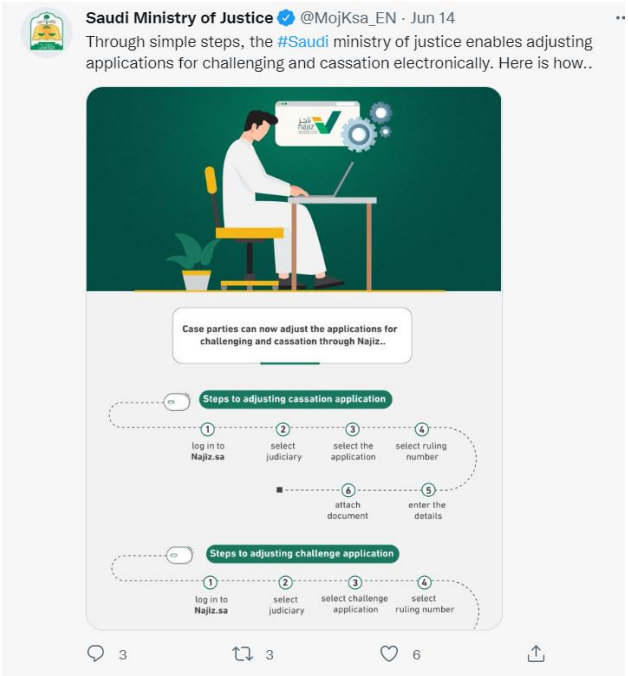
Information Technology Commission examines in detail how a telecom service provider in the United Kingdom offers, organizes, and supervises a new service for customers and how the customers can benefit from it in a variety of ways. Similarly, the organization tries to follow the regulatory, instructional, and official tone of voice of the U.S. Federal Communications Commission. These institutions serve as a model they try to emulate and replicate whenever possible.

Participants from the Ministry of Human Resources and Social Development stated that Saudi Arabia is the best in the Gulf region, but it is always possible to learn from others. For instance, the organization believes that the German company BMW, the British NHS, and the heavy equipment company Caterpillar are global examples that have taken advantage of Twitter well and are models at the European level of interaction with people through Twitter.

Continuing to discuss role models for using Twitter, it is necessary to provide the official view of the Saudi Ministry of Education, which—according to a participant—states that each country has its own culture and style of using Twitter. Therefore, according to this logic, each country has its own context, which cannot be effectively copied because the specifics of other countries are different. Examples of ways Saudi organizations have used Twitter are given in Table 20.

Table 20: Effective Ways for Public Institutions to Use Twitter in Saudi Arabia

| | The ways to use Twitter | les |
|---|---|---|
| 1 | Sharing Information with the public (e.g., news, new policies, new regulations, news about the organization, schedule, ways to | Saudi Ministry of Education<br>@tc_mohe Jan 22<br>#Ministry_of_Education announces the return of elementary and kindergarten students to in-person learning amid a safe and prepared educational environment, starting tomorrow, Sunday. https://moe.gov.sa/en/mediacenter/MOEnews/Pages/st-b-1443-09.aspx |

| | | |
|---|---|---|
| | get necessary services) |  |
| 2 | Communication with citizens | Saudi Ministry of Justice<br>@MojKsa_EN Jun 14<br>Through simple steps, the #Saudi ministry of justice enables adjusting applications for challenging and cassation electronically. Here is how…<br>  |
| 3 | Sharing posts and articles developed by the organization administration | Saudi Ministry of Justice<br>@MojKsa_EN Jun 29<br>Family support is one of the top priorities of the #Saudi judiciary when dealing with divorce cases. The alimony fund by Saudi MoJ plays an important role in supporting families financially during a divorce to ensure stability. |

| | | |
|---|---|---|
| | |  |
| 4 | Sharing official information that is not directly related to the organization's services but may be valuable to followers (e.g., information about official meetings, messages from the government, sharing King Salman's speeches) | Saudi Ministry of Education Retweeted<br>KSA Mission UNESCO<br>@KSAForUNESCO Jun 29<br>Happening today: the<br>@TransformingEdu<br>pre-summit convenes 140 of the world's education ministers, including #SaudiArabia's H.E. Dr. Hamad M.H. Al Sheikh, through #UNESCO's leading role in the crucial #SDG4 efforts towards quality #education for all.<br>  <br>Or<br>سلمان بن عبدالعزيز<br>@KingSalman Jul 9<br>المملكة العربية السعودية حساب حكومي رسمي<br>نحمد الله سبحانه أن رأينا حجاج بيته، من مختلف دول العالم، يؤدون مناسكهم بكل يسر وسهولة.<br>وإننا ونحن نفخر بشرف خدمة الحجاج ؛ نهنئ جميع المسلمين بعيد الأضحى المبارك، سائلين المولى أن يجعل هذا العيد، عيد خير وسلام على العالم أجمع.<br>وكل عام وأنتم بخير.<br>  |

| | | |
|---|---|---|
| 5 | To share information from conferences, meetings, international forums, etc. | Saudi Ministry of Education<br>@tc_mohe May 28<br>In the Kingdom's statement to the International Education Forum 2022, H.E. the Minister of Education, reiterates the ambitious goals of the Saudi Vision 2030, which contributes to preparing a future generation of skilled and knowledgeable young people.<br>  |
| 6 | To share greetings and wishes for Saudi Arabia holidays (e.g., Eid Al Fitr, Eid Al Fitr, Foundation Day) | "Saudi Ministry of Justice<br>@MojKsa_EN Jul 9<br>Wishing all a blessed and happy Eid"<br>  |

### 4.2.3 Advantages and Disadvantages of Using Twitter According to Saudi Public Organizations

Overall, Twitter has proved to offer numerous advantages for Saudi public organizations (see Table 21). The first and one of the most important is the size of Twitter's audience. Twitter has a large number of users, which is considerably greater than similar platforms (participant from the Institute of Public Administration). Besides, Twitter allows

organizations to get a better understanding of their audience in general and their cultures and needs in particular (participant from the Ministry of Justice).

Table 21: Advantages and Disadvantages of Twitter for Saudi Public Organizations

| # | Advantages of Twitter | Disadvantages of Twitter |
|---|---|---|
| 1 | Possibility of reaching a wide audience | Post maintenance |
| 2 | Free of cost | Spam and fake accounts |
| 3 | Information is available 24/7 | Character limitation |
| 4 | Easy to use and to post messages | Requires a special person to manage the account |
| 5 | Easy to provide feedback and post updates | Not possible to upload videos directly to Twitter |
| 6 | Communication with followers | No message broadcast |
| 7 | Possibility of conducting polls | Not easy to popularize an account to get new followers |
| 8 | Help followers to know about all the posted information in a fast and comfortable way | Lack of transparency |
| 9 | No need to email, phone, or write SMS to inform citizens about certain changes, events, etc. | Official Twitter accounts can be suspended without prior notice |
| 10 | Popular in Saudi Arabia | It is difficult to communicate with Twitter support services |
| 11 | Twitter helps recognize and detect a problem before it becomes critical to citizens | It can be difficult to find a customer who sends certain complaints via Twitter, as the agency may receive a large amount of them during the day |
| 12 | | Twitter does not have the option to provide automated responses to customers without human intervention |
| 13 | | Twitter is a foreign social network, so Saudi organizations are dependent on foreign servers and political factors |
| 14 | | It is difficult to moderate the account, and there are a lot of messages that can be unrelated to the initial post |
| 15 | | It is not possible to edit a post after it has been published |

This social network can help to identify the target audience in terms of geographical region, gender, age, the time when people are online, and many other characteristics (participant from the Ministry of Justice). In other words, Twitter allows communication with people from all walks of life, including teenagers, government officials, and others

(participants from King Saud University). According to a participant from the Ministry of Justice, Twitter has greater potential than Snapchat or YouTube in terms of understanding the organization's audience.

The second benefit of Twitter is that it offers a lot of interaction, which allows getting public opinion. According to a participant from the Technical and Vocational Training Corporation, Twitter offers a very efficient means of getting in touch with customers and learning about their perspectives on specific issues. For example, the organization learned about how its trainees and students had felt about the delayed disbursement of rewards. According to another participant, the Communications and Information Technology Commission uses Twitter to survey customers' opinions, receive their feedback on the systems and services they provide, and educate its audience and service recipients about their rights and responsibilities, as well as the benefits that they might obtain thanks to interaction. Another kind of interaction through Twitter is that it can encourage people to take a certain action. For instance, a participant from the Royal Commission for Jubail and Yanbu stated that Twitter "has drawn a significant number of residents to apply for and attend our programs and activities, as well as our online training courses. As a result, we've discovered that our audience, who follows and collaborates with us, hails from all over the kingdom, not just Jubail Industrial."

The third benefit of Twitter is its simplicity of use and speed for disseminating data and interacting with the audience (participant from the Institute of Public Administration). Twitter's content is basic and brief, which is advantageous because people often dislike receiving long messages and videos (participants from King Saud University).

The fourth benefit of Twitter is speed. According to a participant from King Saud University, Twitter is fast and allows people and organizations to communicate promptly. Posing an official request to the institution through traditional tools requires spending a lot of

time for a visit, leaving the request, and waiting for a response, while with Twitter, everything goes much faster. For example, in the course of the interview, the representative from the Ministry of Education stated, “at 5 a.m., we tweeted about the school suspension, which received over a million views.” In other words, the reaction is immediate, so they can quickly see and trace the feedback.

The fifth benefit of Twitter is that it helps with keeping track of everything customers want or send the organization feedback on (participant from King Saud University). In other words, it assists people in determining the scope of the problem and the length of time it has been going on. Twitter has helped to recognize and detect a problem before it becomes a crisis, allowing the institution to respond quickly, openly, and honestly.

At the same time, the disadvantage of using Twitter is that the organization has working hours, while the customers respond to tweets 24/7 (participant from the Institute of Public Administration). To keep up with such a pace, it is necessary either to implement artificial intelligence for responses or to have specialists who can reply to tweets whenever they appear. At the same time, the representative from Al Qassim University also noticed problems related to time. In particular, he stated that Twitter has its own set of rules, which are governed by two parties, one of whom is the audience. This means that, while Twitter allows organizations to tweet anytime they want, they must assess when doing so is in the public interest: “To create our news and tweets at peak times, we must choose an acceptable time for our audience to discover the necessary interaction from them on Twitter, such as at ten o’clock at night.” A participant from King Saud University also mentioned this problem, as well as the race to be the first to publish news “for fear of the news spreading via WhatsApp.”

The second disadvantage of Twitter is the negative responses, which are often very disappointing (participant from King Saud University). Organizations do not often deserve

negative treatment or negative comments. A customer believes they are always right, even when they are not. People might post untruthful information or negative comments due to misunderstanding certain issues rather than the bad performance of the institution. Many factors could influence the situation, and public institutions are often not the ones to blame for negative things that take place. However, all these negative posts become public, negatively influencing the reputation of the organization. According to one participant, the Ministry of Commerce noticed a harsh and sharp tone of Twitter comments. They compared the approach and method of response between Instagram and Twitter and found striking differences. With the same inquiry or information on both sites, people's irritation was much more visible on Twitter than on Instagram. In comparison to Twitter, Instagram responses were considerably kinder and nicer. In addition, it is important to state that Twitter is not an appropriate platform for receiving and resolving complaints (participant from the Communications and Information Technology Commission). It is rather a platform for raising awareness (for monitoring and identifying what customers want) than a solution-oriented tool (participant from Communication and Information Technology Commission).

The third drawback of Twitter is the difficulty of editing a tweet after it has been published. Unlike on Facebook, where it is possible to edit and delete content, whether it is an image or something else, on Twitter, it is only possible to completely delete a tweet (participant from Ministry of Education). In addition, all the interaction with the tweet that occurred as a result of retweeting, liking, and so forth will be lost.

The fourth drawback of Twitter is irrelevant comments to Twitter posts of public organizations. Advertisements, inappropriate responses, and offensive responses may be the first reaction to the tweet, spoiling the content and purpose of the tweet or news and diverting attention from its intended purpose and affecting the rest of the responses (participant from Ministry of Education). The representative from Al Qassim University also mentioned the

issue of irrelevant comments and reactions under tweets. He also stated that “This is one of Twitter's biggest flaws; having the ability to filter and re-order those responses would have been really helpful.” The representative from Imam Muhammad Bin Saud Islamic University provided another example of this drawback:

> If the news are published, for example, about the Saudi National Day, you will find that the majority of the responses are about other topics unrelated to the event, such as inquiries about the time of the monthly stipend and other distant responses away from the topic of the news.

Of course, this relegates the tweet to a different direction from the one for which it was sent. The institution even occasionally wishes to disable the response feature, particularly when it concerns state security or leadership or when it concerns the extremism of a certain viewpoint, but they do not have the authority to do so. The lack of governance in terms of replies to tweets of public institutions was also mentioned by a participant from the Ministry of Human Resources and Social Development. The organization calls the accounts that distribute irrelevant information “electronic flies”, since they are disrupting their work and wasting their valuable time. They try to combat this so that they do not detract employees and other people from the organization’s message and news.

The fifth disadvantage of Twitter for Saudi public institutions is that it is a foreign social network, so Saudi organizations are dependent on foreign servers and subject to outside political factors. In this context, the representative from Al Qassim University stated that the time had come for the Ministry of Information or the relevant e-government authority to launch a digital platform for Saudi citizens instead of using the American social media platform. Good role models this person cited for such an approach were China and South Korea. Such statements were made because the representatives of the public institution “are concerned that the university’s five-year effort in using Twitter will be lost as a result of

Twitter's closure or the occurrence of any political problem, for example, that affects our Twitter cancellation, resulting in the loss of a significant amount of content created over the years" (participant from Al Qassim University). In other words, some institutions believe that having their own Saudi platform, which could be used by both government agencies and citizens, would be a good solution to this problem.

The sixth disadvantage of Twitter is that it does not give users control over customer service issues (participant from the Ministry of Human Resources and Social Development). When it comes to software that helps the organization provide services and have strong interactions with customers, it can be difficult to find a customer who sends certain complaints via Twitter. In other words, with such a large number of responses, Saudi public institutions find it extremely difficult to search for and locate customers. So far, no Twitter service for government agencies has been made available to assist government organizations in providing professional service to their customers. In contrast, platforms such as Facebook, LinkedIn, and WhatsApp have developed excellent services for automated responses to customers without human intervention, such as WhatsApp Business. The fact that other social networks have better alternatives is a huge drawback for Twitter.

The seventh disadvantage is the inability of Twitter to communicate with customers who are government agencies (participants from the Ministry of Human Resources and Social Development). Their usage policy is unclear, lacks transparency, and it is difficult to communicate with them. In relation to this, a participant stated that before the Covid-19 pandemic, all the accounts of the Ministry of Human Resources and Social Development were suspended without prior notice, and when they contacted Twitter, no reply was received. Later on, it appeared that the situation took place because Twitter changed its policies regarding "data" without informing them. This had a significant impact on the Ministry of Human Resources and Social Development and its interactions with customers

via Twitter. Based on such examples, Twitter can be ineffective for government agencies, carrying a lot of reputational losses, since this social network is not always a reliable business partner.

### 4.2.4 The Influence of Covid-19 on Saudi Organizations' Interaction on Twitter

Overall, Covid-19 has posed a great challenge for public organizations in Saudi Arabia. However, many institutions managed to find some benefits to it. For instance, the representative from the Institute of Public Administration stated the following:

> Corona was a crisis, but it was a boom to social media platforms. It increased interaction and people's use of social media platforms during the quarantine period. The number of followers on the IPA's [Institute of Public Administration] Twitter doubled, indicating that people were interested in hearing about remote training and the latest in training. We greatly benefited from the Corona pandemic.

A similar point of view was expressed by participants from other institutions. For instance, a participant from the Technical and Vocational Training Corporation stated that during a pandemic, the number of followers and amount of interaction increased. With the flow of time, the content grew in terms of size and quality, proposing different types of information for different categories of the population. A similar opinion was reflected by a participant from the Ministry of Education:

> In fact, the Corona pandemic benefited us first because it provided us with a wealth of experience and cut a 5-year effort in half, resulting in a high level of interaction with our audience in interacting with the content we provide and in the level of responses, which increased many times over what it was prior to the pandemic.

Covid-19 taught public Saudi institutions to work remotely and provide many services online, digitally educating citizens and offering them high-quality services in a comfortable way (participant from the Ministry of Justice). The same opinion was reflected by the

representative from the Civil Aviation Authority, who stated that the amount of content they provided had grown: “We are under a lot of pressure on Twitter because we get a lot of questions from travelers, and our Twitter accounts’ followers have risen from 70% to 80%.” The Covid-19 pandemic has had a significant impact on the way people interact with social media platforms, including Twitter. In Saudi Arabia, the following factors have contributed to an increase in interactions between Saudi public institutions and citizens on Twitter. First of all, the number of new Twitter users has increased. The Covid-19 pandemic and strict quarantine restrictions led to an increase in the number of people using social media platforms, including Twitter. This was due to the fact that people were spending more time at home and using social media to stay connected with friends and family, as well as to get information about the pandemic.

Second, as public institutions were forced to provide their services remotely, they developed new online services and training programs. This led to an increase in the use of Twitter by public institutions to communicate with citizens and provide them with information about these services.

Third, the pandemic led to an increase in digital awareness. Since people were forced to use digital tools more often, they became more familiar with how to use those tools. This led to an increase in the number of citizens who used Twitter to interact with public institutions.

Fourth, the increase in the number of Twitter users and digital awareness led to an increase in the number of messages from citizens on Twitter. These messages included questions, complaints, and suggestions for public institutions.

Fifth, in response to the increase in interactions with citizens on Twitter, public institutions have increased the amount of content they publish on Twitter. This content

includes information about their services, updates on the pandemic, and responses to citizen messages.

Overall, the Covid-19 pandemic has had a significant impact on the way Saudi public institutions interact with citizens on Twitter. This impact is likely to continue in the future, as social media platforms become increasingly important for communication and engagement between governments and citizens.

At the same time, a participant from the Communication and Information Technology Commission stated that the main challenge of the Covid-19 pandemic was to continue to provide services without disrupting the functioning of the institution while satisfying the demands, requests, and inquiries of customers. Twitter helped significantly to overcome that challenge. In fact, the communication networks in Saudi Arabia were three times higher than the global average since the beginning of the pandemic. Still, the networks were in normal working order and functioned without disruptions.

### 4.2.5 Factors That Might Prevent Organizations from Using Twitter to Communicate with Saudi Citizens

Representatives from Saudi public institutions acknowledged certain challenges might prevent them from using Twitter to communicate with their audience. In this context, the first important factor is hacking and the associated data leakage and unreliability (participant from the Institute of Public Administration). Similar problems have happened with Facebook (Meta); therefore, other large social networks (including Twitter) might become the target of future hacking attacks. The second significant challenge are technical concerns that develop within the institutions or through Twitter (participants from King Saud University and the Ministry of Justice). The third problematic factor is using a platform that does not belong to Saudi Arabia. A vast amount of content (news, photos, archives) is stored on this platform, so a lot of public organizations have become dependent on it (participant from the Technical and

Vocational Training Corporation). In this context, the participant from the Technical and Vocational Training Corporation stated the following:

> Twitter is owned by an American corporation, which has the authority to close any government accounts that are affected by this action. The organization has previously shut down several Twitter accounts, whether they belonged to officials or government agencies. We should, in my opinion, have our platform where we can publish our content without fear of it being removed or our account being closed.

This statement demonstrates the potential risks associated with posting on Twitter.

The fourth important factor is the scarcity of specialists to deal with social media in general and Twitter in particular (participant from the Technical and Vocational Training Corporation). It is necessary to provide these specialists with special knowledge and training so they can do their work well. In this context, the representative from Al Qassim University stated that the institution lacked the appropriate competencies to administer each of its accounts. It has approximately 50 Twitter accounts, which is a significant quantity. This necessitates the management of an experienced, knowledgeable, and trained crew: “To post and maintain Twitter, fifty qualified staff will be required. In the media and technological professions, the majority of people are average. We’ve run into a snag since not everyone in charge of accounts is tech-savvy.” Similarly, the representative from the Ministry of Human Resources and Social Development (2021) mentioned the necessity of a large amount of personnel to deal with social media issues. However, the institution found another alternative: automatization of reply procedures. Currently, the organization is working on the development of a chatbot based on artificial intelligence algorithms that would provide automatic responses to people. The quality of such interaction is supposed to be high thanks to the advanced learning mechanism of the chatbot to reply to standardized questions. Despite being costly, such an approach is expected to save a lot of time and financial resources in the

long term, significantly improving the quality of interaction between the organization and people. Still, the representative from the Ministry of Human Resources and Social Development stated that the accuracy of bots is extremely high in English but needs significant improvements and additional work in Arabic, Urdu, and Chinese.

The fifth factor that might prevent a Saudi public organization from using Twitter is the appearance of another alternative platform that could become more efficient and useful. For instance, a participant from the Royal Commission for Jubail and Yanbu stated that Twitter may be replaced by another platform if the alternative would be better.

At the same time, some organizations think that nothing can prevent them from using Twitter, and the Civil Aviation Authority is a good example of this. In particular, the representative of this organization pointed out that "We do not think there are any factors that affect the way we use Twitter to interact with citizens." Such a response shows that organizations highly value this social network, regardless of the problems that might be associated with it.

### 4.2.6 Government Handling of Citizen Suggestions and Complaints via Twitter

The public institutions in Saudi Arabia actively handle the suggestions and complaints of citizens through Twitter. Different organizations reply at different speeds. For instance, in the Institute of Public Administration, the response time depends on how quickly different departments process the information and transfer it, although all responses are examined on a daily basis (participant from the Institute of Public Administration). The same approach is used by King Saud University. It has numerous departments, and each of them has its own specialization and duties. Thus, the speed of the answer depends on the complexity of the request and the need for the involvement of specialists from different departments (participant from King Saud University). The same approach is taken by the Ministry of Education. When they receive a complaint or suggestion, they send it to the Beneficiary

Center, which then passes it on to the appropriate authority or department. In most cases, a response and a final solution to the complaint are received within 72 hours (participant from the Ministry of Education). They stated that there is no clear decision or policy on response time, but it usually takes one to three days. The response is provided through a Communication Center on the Twitter platform (participant from the Ministry of Education). Every issue or suggestion for a solution is obligatorily addressed and is never disregarded. They have a responsibility to interact with citizens, and they are held accountable if they do not. According to one participant, Al Qassim University has a similar approach. When the institution receives a large number of messages from its audience, they categorize and transmit them to the Beneficiary Care Center, with the exception of some circumstances, when they direct them to the university administration due to their close relationship with each other. There are some situations that require immediate action, such as crises, in which case they take the initiative to address them directly rather than referring them to the Beneficiary Care Center. So that the issue does not become a public relations issue or a large social media problem, the institution reacts to any topic connected to the nature of the topic. As a result, a team was formed from the General Department of Media and Communication and the Beneficiary Care Center to monitor anything on Twitter and communicate with it based on its nature, importance, and time. Al Qassim University has what seems to be a bank where they monitor a significant number of recommendations and observations that they receive on Twitter, and it is a task that has an impact on the university's performance, the quality of its work, and its development.

A participant noted that the Technical and Vocational Training Corporation has a different approach. They prefer not to respond to the complaints and to remain silent since they consider that, in this way, people are often trying to manipulate the information or show it in a different light. Still, the organization discusses each issue before responding, which

allows for making informed and rational decisions even in complex situations. In this context, the participant stated, “Even His Excellency the Governor’s account is flooded with poor responses, which we ignore, particularly if they are irrelevant and useless to our audience. We are ignoring such people because they are virtual and they use a pseudonym, so our institution has no idea who this individual is.” However, the organizations rarely use the option of disabling the response, since usually everyone is welcome to respond to organizations’ tweets and news. The organizations are overall against blocking comments and replies, which is considered a useful feature that allows seeing what people are saying on Twitter.

Some organizations use a different approach. For instance, a participant noted that at the end of each month, the Ministry of Justice creates an integrated report detailing the most pressing problems, suggestions, and complaints received from citizens through the ministry’s accounts to resolve and improve its services. This information is also used to identify and address flaws. Responding to people’s questions, complaints, and suggestions is usually done in a timely manner, especially if the issue is solvable.

Many organizations handle complaints not through Twitter but through other tools (websites or call centres) since, for them, they function faster, and the customers can resolve their problems in a more efficient way. For instance, the representative from the Communications and Information Technology Commission stated the following:

> During the Corona pandemic, for example, we resolved major issues through a call centre rather than Twitter. It is better to resolve the pressing issues through the call centre because it is quicker. We do not encourage people to use Twitter to file complaints because we know it is not the best or fastest way to resolve customer issues.

This example demonstrates how Twitter is used by different organizations for different purposes.

Some organizations use artificial intelligence to deal with suggestions and complaints. For instance, such an approach was used, according to a participant, by the Communications and Information Technology Commission. This institution prepares weekly and monthly reports based on the analysis of suggestions and complaints by artificial intelligence and the work of the specialized department to have useful feedback concerning the functioning of the organization:

> What makes this report unique is that we link it to the previous report and mention in it that the problem raised in the previous report resulted in 80% negative impressions, whereas in this report, it was reduced to 60%. We interpret this to mean that the Commission's actions are appropriate. We intend to keep strengthening them until the percentage falls and we can measure it.

However, talking about suggestions and complaints, what matters most is the ability to avoid problems. A participant from the Ministry of Municipal and Rural Affairs said that to get the best experience for beneficiaries and ensure their satisfaction, it is necessary to know how to avoid unfavourable impressions and how to handle them on a continuous and timely basis. In this perspective, it is easier to prevent problems than to deal with numerous unfavourable consequences caused by them.

### 4.2.7 Training for Those in Charge of an Organization's Twitter Account

The training and development of specialists who are in charge of Twitter accounts are crucial for providing high-quality services. Still, different organizations have different possibilities and approaches to dealing with this issue. For instance, in the Institute of Public Administration, all the personnel who work in this domain are highly qualified and have doctorates in media and communication, and employees pass special training courses

(participant from the Institute of Public Administration). The organization acknowledges that to keep up with technological advancements, it is necessary to invest in training and development. Many organizations lack such courses, and more of them are required.

Saudi public organizations are not always responsible for managing Twitter accounts. They often hire professional companies that manage the official account and all the content within it. With such an approach, training and development of the personnel is not their responsibility but the responsibility of the external organizations they hire. Even so, many public organizations are responsible for creating content and training personnel. For instance, a participant noted that at King Saud University, both employees and students create content; this approach is considered successful since it provides a lot of positive responses from the audience. It is also worth mentioning that even when content is created and published by personnel and students, it goes through the special identity department, which moderates the whole process: "Of course, we do not allow any design to be published without the university's identity, and we do so through a dedicated identity department that ensures the publication of consistent materials and designs throughout all of the university's accounts." The members of this department visit the professional training regularly to successfully manage the content in an up-to-date and consistent manner.

According to another participant, the Technical and Vocational Training Corporation recently established its own training program that teaches employees about social media strategy, content writing, and how to publish and digitize content. Similarly, a participant noted that the Ministry of Justice organizes training quarterly, which means every three months, they hold a training session. One of the most important courses for the Ministry of Justice was Mobile Journalism, which focused on how to create unique content for social media, specifically Twitter, due to its importance and volume of demand when compared to other social media. In such courses, the personnel develop a wide range of skills, such as

editing, photography, journalistic writing, handling crises, cybersecurity, and other legal matters.

Similarly, a participant described how the Communication and Information Technology Commission pays careful attention to the training of personnel. At the beginning of the year, training requirements are established, and the training needs of employees are assessed. The number of training courses that employees should take before the end of the year is then determined. This has greatly aided the organization in better managing its Twitter accounts. For example, in November 2021, the social media team of the institution enrolled in a course titled Social Media Administrator, within which the personnel learned how to manage Twitter and other social networks more efficiently.

According to another participant, the Saudi Ministry of Education, instead of providing training to existing personnel regarding social media, has decided to restructure the ministry personnel and appoint qualified individuals to deal with social media platforms, particularly Twitter. The Ministry of Education has released a comprehensive system for governing the use of digital media and a guide for managing social media accounts. One of the most distinctive features of this system is that it establishes policies in line with those of both the Saudi government and the Ministry of Education. It also has a set of standardized coding for all Twitter accounts owned by the Ministry of Education's followers. For example, the Department of Education Riyadh education Twitter account has MOE, which is the Ministry of Education's symbol, and after it RYH, which means Riyadh, and the same thing in Jeddah and the rest of the kingdom's regions. One of the features of the guide is that all of the Twitter accounts associated with the Ministry of Education's logos have the same look and feel. It also covers publishing controls and prohibitions, images and content, and even music, all of which are unified and consistent. The approach of the Ministry of Education

demonstrates the seriousness of its strategy since it makes the personnel accountable for the quality of the work they perform according to certain standards.

The Ministry of Human Resources and Social Development also provides training to their employees, according to one of the participants. In particular, they organize two kinds of training. The first is soft skills training, which is provided to the customer service representatives who manage the ministry's Twitter accounts. The purpose of these courses is to learn how to respond to customers, deal with tweets, and use the right words. They ask what time they respond to customers and how they respond to customers. Such training is provided since some customers are extremely irritable. As a result, they teach their employees how to absorb the customer's emotion and turn it into a good opportunity to communicate with the customer, allowing them to easily solve the problem. Technical training is the second type, and it is divided into two parts. The first part is concerned with content creation in terms of message formulation and design. This is done through the Corporate Communication Department. The second part is about services, which refers to how well employees understand and respond to the ministry's services and how they plan to address the technical issues that customers have with these services.

### 4.2.8 Challenges Organizations May Face When Interacting with the Public via Twitter

When interacting with the public through Twitter, Saudi organizations might face a range of challenges. The first potential challenge is that the institutions are afraid that their account will be hacked or misused. For instance, the representative from the Institute of Public Administration stated the following:

> We are also having issues with the account management system. Perhaps the IPA's [Institute of Public Administration] Twitter account will be accessed through an individual's account, and the person in charge of the account will respond to the

audience through his account. Perhaps the person uses the IPA's account and mistakenly believes he is using his own account, resulting in an erroneous tweet. Such a situation might influence the interaction between the public institution and the audience; however, proper governance can help to confront, control, and mitigate these issues.

The second major challenge is the lack of expertise of the people responsible for account management (inability to create educational and creative content, the lack of a promotional budget for publications, the lack of appropriate capabilities for visual productions such as video and animated graphics, and the lack of a mechanism to support accounts and posts, as well as problems with the creation of the integrated plans for media publishing).

The third important problem is that it is difficult to share valuable and meaningful information in a short form, according to the representative from the Ministry of Justice. In this context, the representative stated, "The challenge is that when we want to share a full report or breaking news on Twitter, we have trouble summarizing the report in a professional and concise manner that communicates the message clearly and understandably to the people."

The fourth challenging issue is that employees sometimes link a public institution's official account to their personal data, which is a mistake. For instance, the representative of the Civil Aviation Authority (2021) stated, "One of the technical issues that we recently encountered was when one of the female employees at an airport who manages the airport's Twitter account resigned. Unfortunately, she was carrying the password for the airport's Twitter account." The scope of the problem with linking accounts to personal data was so huge that the government communication department even issued regulations prohibiting

linking official government accounts to the personal data of employees who manage Twitter accounts. Still, the problem continues to happen from time to time.

### 4.2.9 Future Strategies for Twitter Use by Saudi Public Organizations

Different public organizations have different future strategies and plans for Twitter use. For instance, the Institute of Public Administration has prepared a specialized social media governance document, whose main goals are to create a systematic framework for media publishing, define roles and responsibilities, create frameworks for using social media at the institutional and individual levels, and govern communication procedures and practices (participant from the Institute of Public Administration). Their future strategy deals with message positioning, crisis management, and the usage of social networks (especially Twitter) during a crisis.

King Saud University's main strategy and goal for the future is to deal with unofficial accounts that are not affiliated with the university yet disseminate information about it; in this context, the representative from King Saud University stated the following:

> One of the most notable features of that plan is the cancellation of numerous college and department accounts since we discovered that some departments have as many as four or five Twitter accounts. This is unreasonable. Each college and department will have only one account, and we'll organize the method for reaching this.

While dealing with unofficial accounts, the organization seeks to also improve the quality of created and published content across all department and college Twitter accounts.

The Technical and Vocational Training Corporation reportedly has a different approach. The institution does not have a written strategy in place for Twitter; instead, they rely on their collective experience and mutual consultation. For example, if the institution receives a large number of negative responses, it must issue a press release or statement and post it on its account. For example, if a large number of responses criticize their colleges or

any other issue, they clarify this via a Twitter post and show them what they have done. This is how the institution responds to such criticism.

Similarly, the participant from the Ministry of Justice stated that their ministry and other government agencies require a clear methodology and strategy to handle and work with Twitter to post and influence the public. Without a strategy, work becomes chaotic and ineffective. Therefore, the institution sets forth a tactical and strategic action plan, and now they have a strong presence on Twitter thanks to this strategy. On Twitter, the organization has a publishing policy, which includes mechanisms and publishing standards (a stylebook). These standards cover everything from the quality of the content they publish to the services they provide, as well as the operational plans they apply when using Twitter. The Ministry of Justice needs to publish high-quality judicial and legal content on Twitter in the future since it can be a great tool for spreading their messages and educating their service recipients. They will not be able to effectively communicate their messages and deal with feedback received from citizens unless they have a clear methodology and plan for dealing with Twitter and other social media.

## 4.3 Questionnaire Results

### 4.3.1 Questionnaire Results for Saudi Citizens Regarding Organizations' Twitter Use

In total, 434 regular Saudis responded to all questions in the questionnaire. Most of these participants were between 30 and 59 years old (236 and 121 people, respectively). This was because people of this age are the most active part of society compared to retired people or adolescents. Also, there was some gender imbalance, as more men were involved in the study (292 male respondents vs. 142 female respondents). This could be explained by the fact that men play a more dominant role in the Arab world. Thus, they could be expected to be

more active users of different e-services provided by the Saudi government. The age of respondents is presented in Figure 15 and gender is shown in Figure 16.

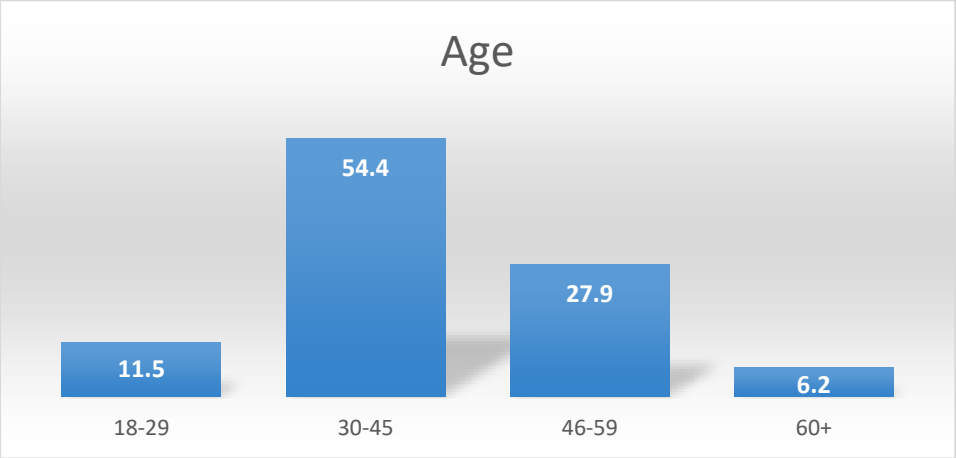



Figure 15. Age of the respondents

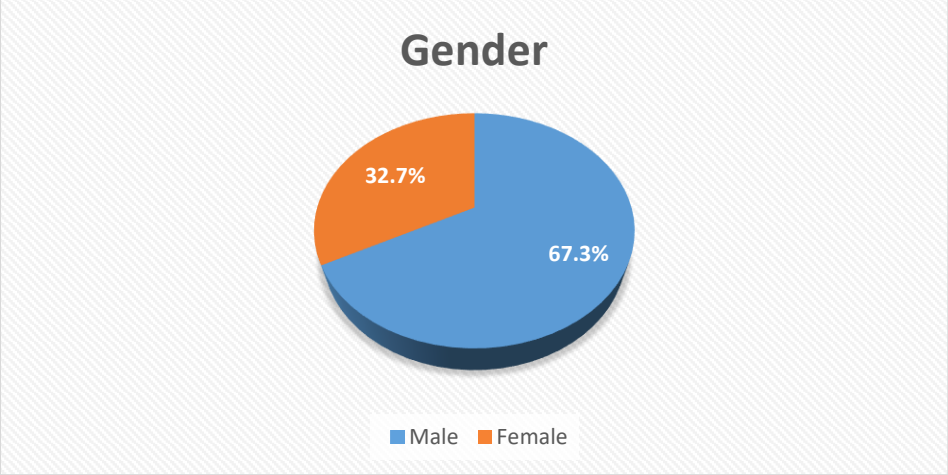



Figure 16. Gender of the respondents

More than 90% of participants were from urban areas in Saudi Arabia. This was not surprising as urbanization is a growing trend in the country, with the majority of the population residing in cities. The rapid urbanization in Saudi Arabia has been fuelled by factors such as job opportunities, and access to better education, and healthcare facilities. Geographic distribution is given in Figure 17.

It is important to note that there are significant disparities between rural and urban areas in terms of access to modern technologies, governmental services, and online services. People living in rural areas often face challenges, such as poor Internet connectivity, limited

access to technology, and limited availability of public services. This digital divide has been recognized as a major challenge in Saudi Arabia, with the government working towards bridging the gap between urban and rural areas by investing in digital infrastructure and implementing policies to promote digital inclusion.

Therefore, the fact that the majority of the questionnaire participants came from urban areas highlights the need for continued efforts to address the digital divide and ensure that all citizens have equal access to modern technologies and online services. This will not only promote digital inclusion but also improve the overall quality of life for all citizens.

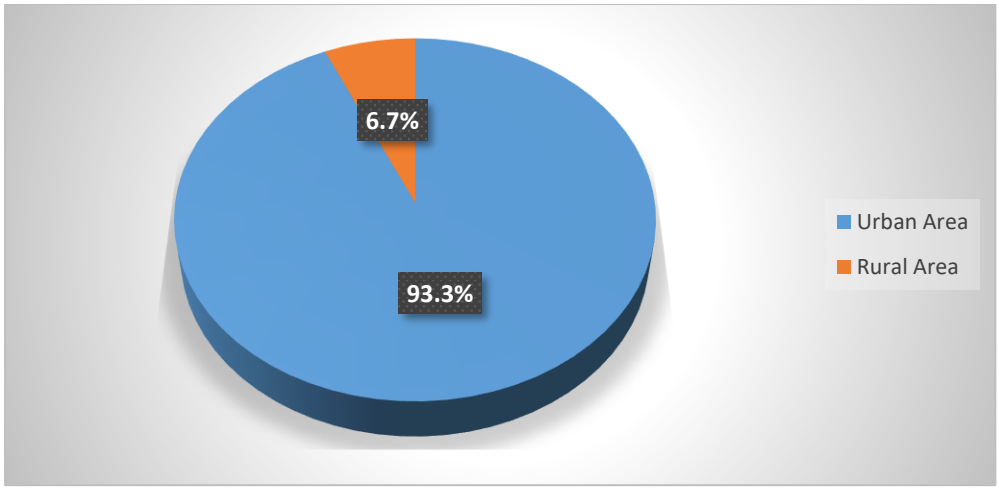



Figure 17. Where the respondents lived

In terms of employment, the largest portion of respondents was employed in the government sector, while the second place was the private sector (339 people in total). Thus, the questionnaire presents results from both the people who provide government services and the people who receive them. Respondent occupation is illustrated in Figure 18.

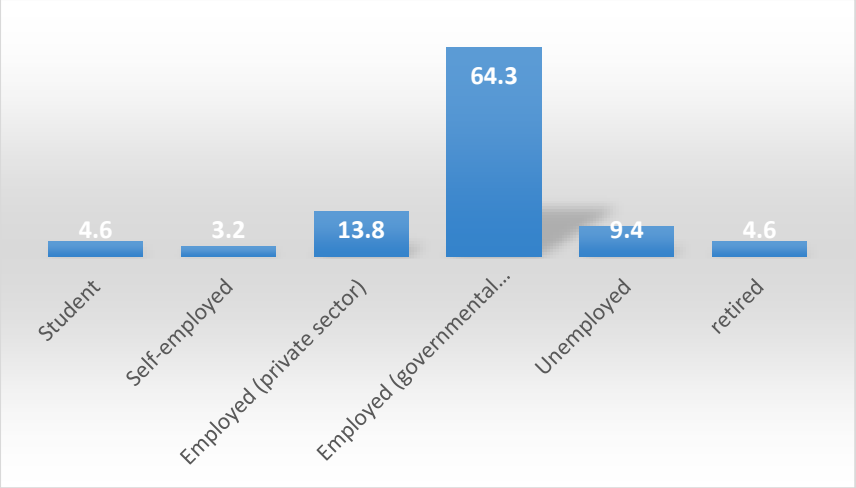



Figure 18. Occupation of the respondents

An essential factor of any study is the reliability of the data collected. In this case, the results could be considered credible since a significant portion (more than 80%) of the respondents had a high level of education, which helped ensure the data collected were accurate and reliable. Respondent education level is illustrated in Figure 19.

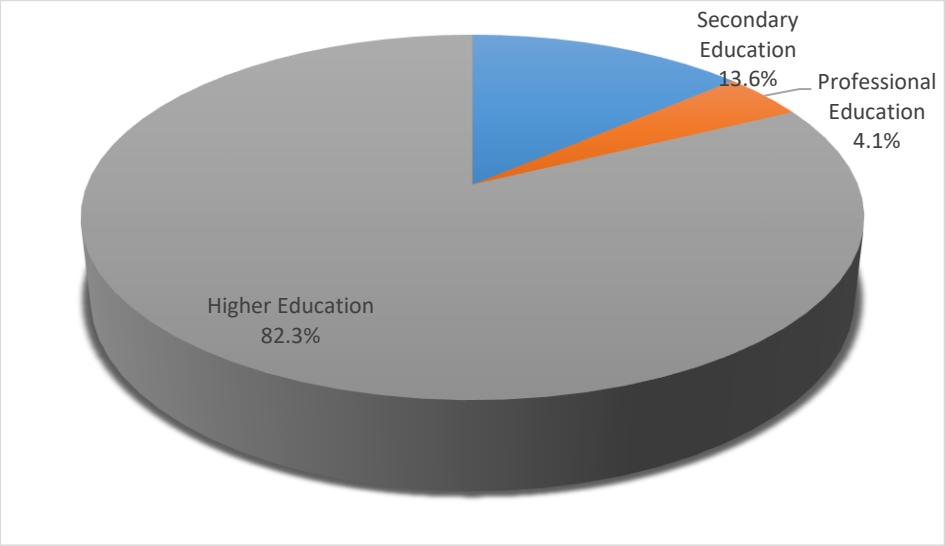



Figure 19. Educational level of respondents

Moreover, it is noteworthy that all respondents had at least secondary or professional education, indicating that they had a basic level of knowledge and skills. This factor is important as it ensured that the respondents could understand the questions and provide adequate answers.

Having respondents with higher education levels also adds value to the study. Respondents with higher education tend to be more informed about current issues and trends, providing a more insightful and nuanced perspective on the topic at hand. Additionally, respondents with higher education levels tend to have better critical thinking skills and the ability to analyse complex situations, which can lead to more informed and thoughtful responses. Therefore, having highly educated respondents was a significant strength of this study, adding credibility and reliability to the data collected.

Regarding respondents' awareness of online governmental services, more than 95% of them stated that they knew about these services. Thus, the next answers of the respondents could be regarded as relevant and reliable to the research questions (see Figure 20).

Moreover, most of the respondents actively used e-services provided by the Saudi government on a daily (38.2%), weekly (29%), or monthly (26.5%) basis (see Figure 21). This strengthened the reliability of the results since it suggested that respondents were familiar with current trends and technology used in the provision of governmental services. Also, it indicated that the respondents were the primary recipients of these services and could give feedback on service quality, accessibility, and efficiency.

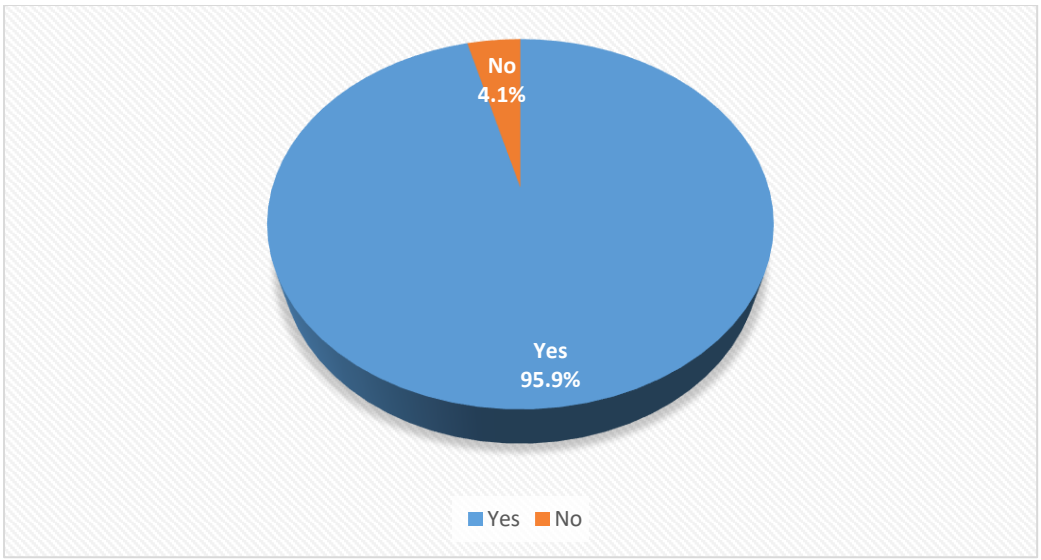



Figure 20. Answers to "Are you aware of the e-government services in the KSA?"

The frequency of use was also an essential factor that enhanced the reliability of the study. Those who use e-services actively on a daily, weekly, or monthly basis could be expected to have a better understanding of the strengths and weaknesses of those services. In turn, they are more likely to provide insightful and practical feedback on how the services can be improved to meet the needs of users.

Overall, the respondents' active use of e-services and their frequency of use indicated that they had a good understanding of the e-services provided by the Saudi government. Therefore, the results of the questionnaire could be considered reliable and representative of the opinions and experiences of the general public in Saudi Arabia.

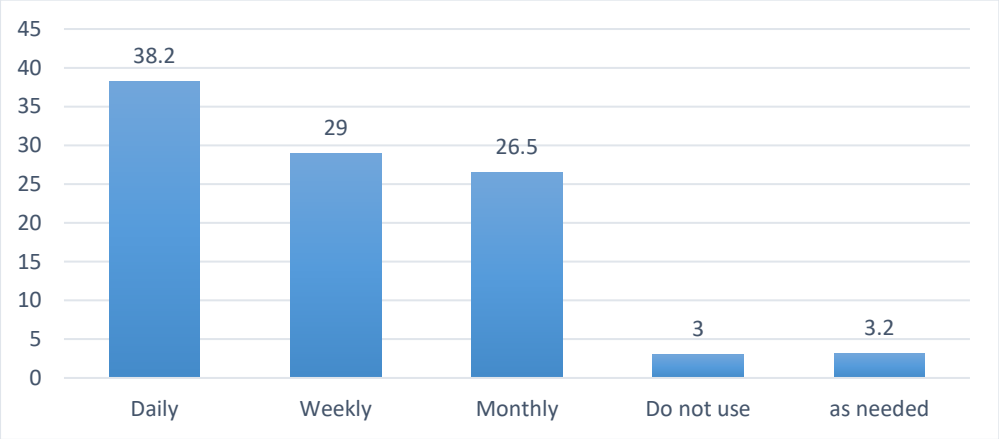



Figure 21. Answers to "How frequently do you use e-government services?"

The respondents' high level of awareness and active use of e-services in Saudi Arabia is an encouraging sign for the government's efforts to digitize its public services. With 239 respondents stating that they checked information about the needed governmental service on the Internet and 168 people saying that it depended on the type of service, it was clear that there has been a major shift towards accessing government services through online channels (see Figure 22).

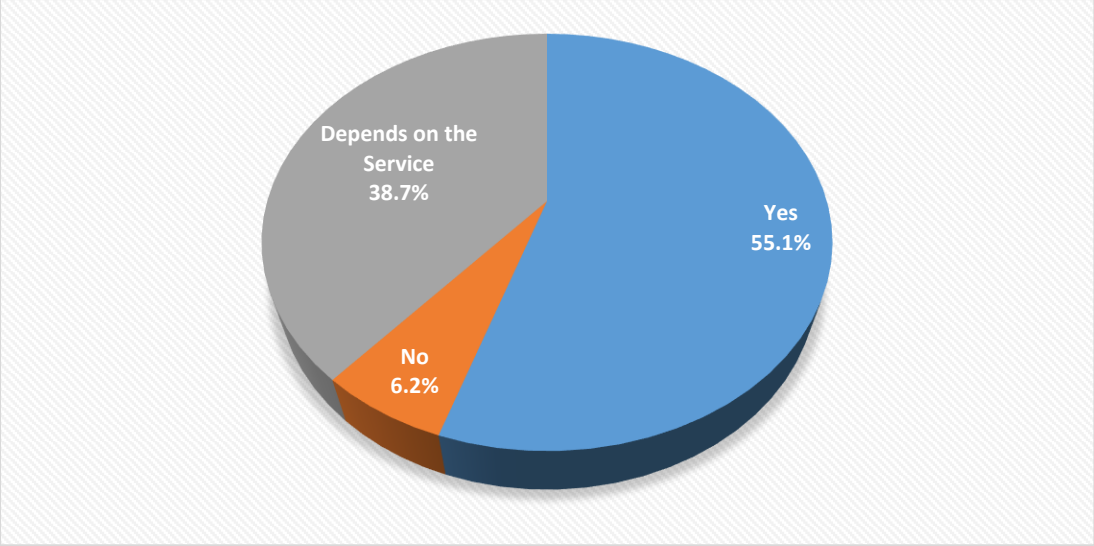



Figure 22. Answers to “Before obtaining any official government service, do you check information about it on the Internet?”

This trend could be attributed to the convenience and accessibility of e-services, which allow citizens to access government services and information from anywhere at any time. It also reduces the need for physical visits to government offices, saving time and effort. Moreover, the increased use of e-services can result in cost savings for both the government and citizens.

The respondents’ positive attitude towards e-services also indicated that the Saudi government’s efforts to improve the quality and accessibility of e-services have been successful. The government has been investing in modernizing its IT infrastructure, promoting digital literacy, and increasing the availability of e-services across the country. These efforts have helped overcome the traditional barriers that have prevented the widespread adoption of e-services in the past, such as limited access to the Internet and a lack of digital literacy among citizens.

Overall, the high level of awareness and active use of e-services by the respondents is a positive sign for the future of e-government in Saudi Arabia. As technology continues to

evolve, the government can build on its successes to create even more convenient and accessible e-services for its citizens.

Moreover, according to the results, government services in Saudi Arabia had garnered a high level of trust among Saudi citizens. In this regard, 278 of the respondents graded their trust at 5, while 94 put 4. These were the highest points on the scale of trust in e-government services in Saudi Arabia (see Figure 23).

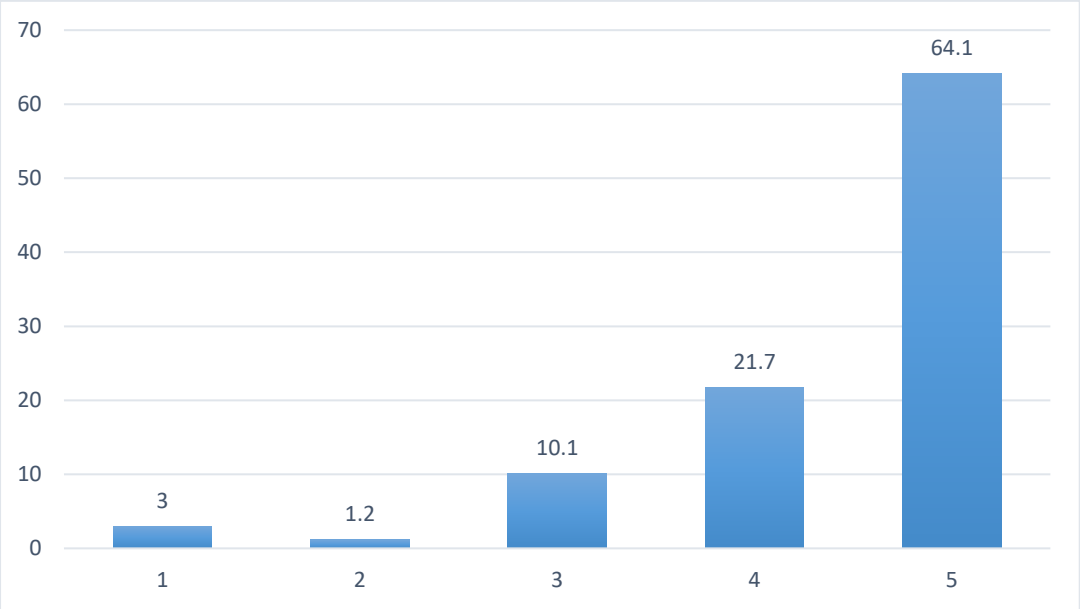



Figure 23. Answers to “Please rate your trust to e-government services in the KSA on a scale from 0 to 5”

The respondents appeared highly satisfied with the level of development of e-government services in Saudi Arabia (see Figure 24). More than 70% of respondents gave the highest possible marks (5 or 4) to e-government services. Out of all respondents, 257 gave the highest mark of 5, while 104 gave the second-highest mark of 4. This shows that the Saudi government has made significant progress in developing and providing e-services to its citizens. The high satisfaction level of respondents also reflected the effectiveness and efficiency of e-government services in Saudi Arabia. It is worth noting that e-government services have become increasingly important in Saudi Arabia, especially in light of the

ongoing Covid-19 pandemic, where many people were encouraged to use e-services instead of physically visiting government offices. The positive evaluation of e-government services in Saudi Arabia by the respondents is thus an important indicator of the success of the government's efforts to provide convenient and accessible services to its citizens.

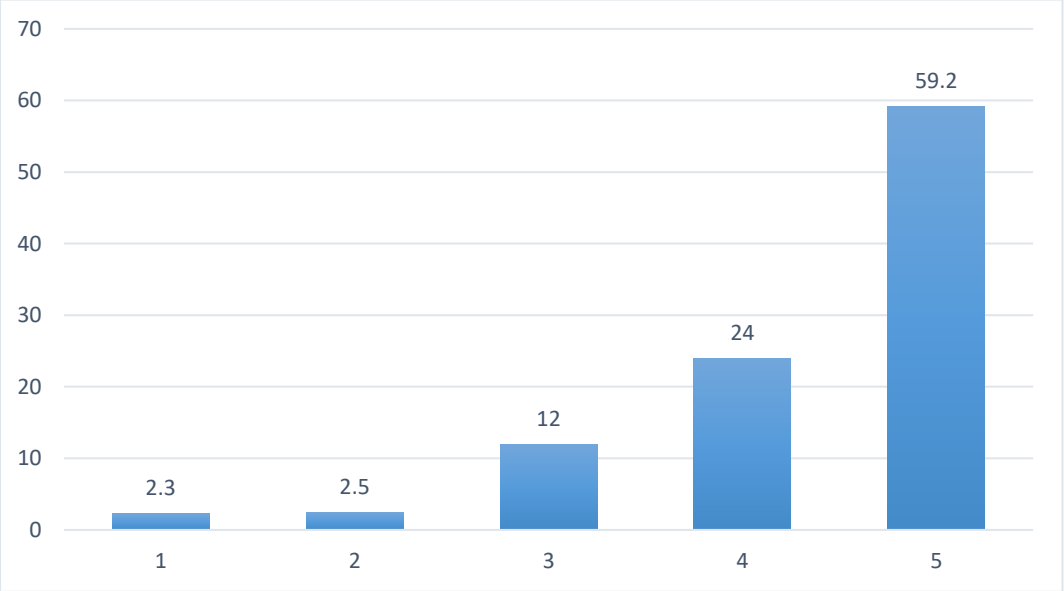



Figure 24. Answers to "Please rate your satisfaction with the level of development of e-government services in the KSA on a scale from 0 to 5"

The questionnaire indicated that e-government services have played a significant role in reducing the need to visit government institutions in Saudi Arabia (see Figure 25). A total of 429 respondents, representing a significant portion of the total, mentioned that the availability of different e-government services had helped them minimize their visits to government institutions. This highlights the convenience and efficiency of e-government services, which allow citizens to access necessary services from the comfort of their homes or offices.

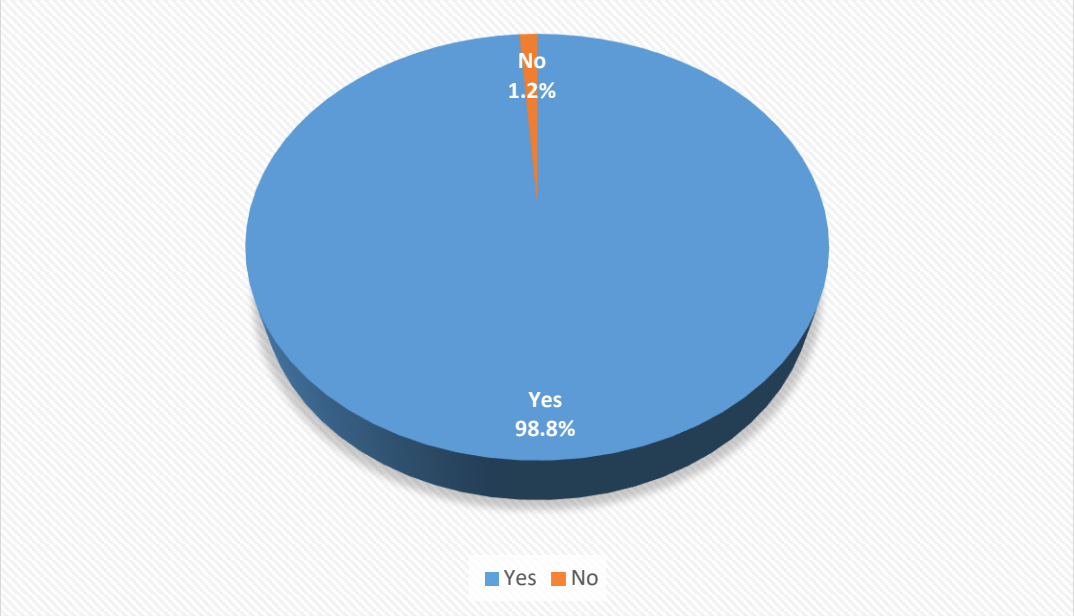



Figure 25. Answers to “Do e-government services help you to minimize visits to governmental institutions?”

This finding is particularly relevant in the context of the Covid-19 pandemic, which has highlighted the importance of digital transformation in the provision of public services. By minimizing in-person interactions, e-government services not only provide convenience but also contribute to limiting the spread of the virus. Therefore, it is crucial to continue investing in the development and improvement of e-government services in Saudi Arabia, which will ultimately enhance citizens’ satisfaction with the quality of public services and improve the overall efficiency of government operations.

The most popular e-government services that were used the most frequently among respondents were general public services (225 responses), education (74), health (59), and open government data (53), as shown in Figure 26. On the other hand, e-government services that were used less frequently by respondents were housing and community amenities (2), public order and safety (3), economic development and taxation (3), and transport (2).

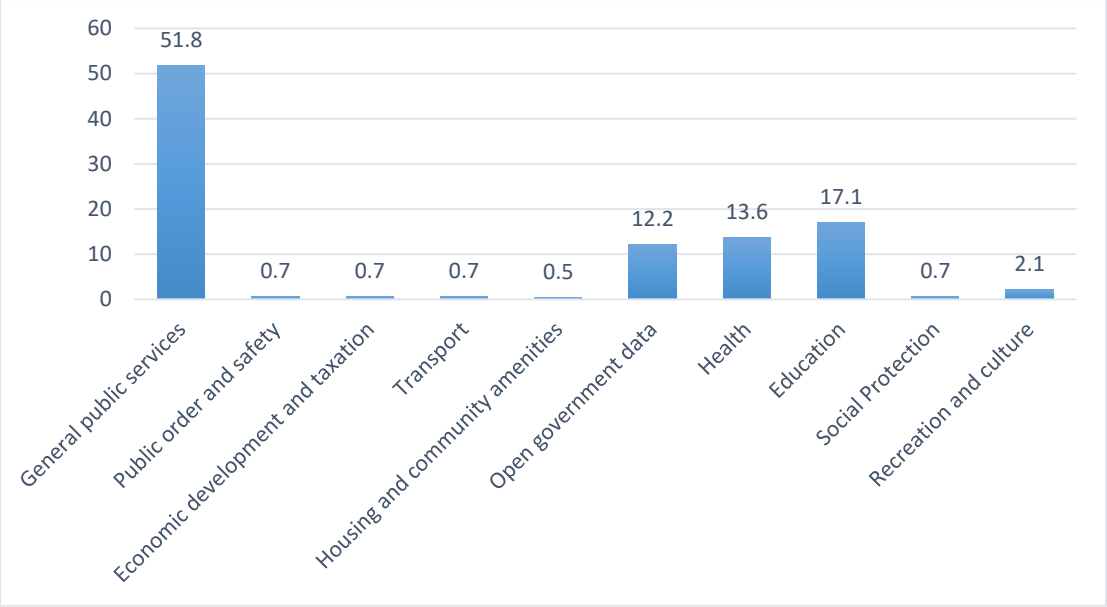



Figure 26. Answers to “For which service do you use e-government services the most frequently?”

Regarding the most important factor in e-government services, 170 of respondents chose the 24/7 availability of services, allowing them to access services at the most suitable time for them (even at night or on weekends). In addition, 110 respondents chose fast service delivery, likely because it is significantly faster to get a service online than waiting for the opportunity to get the service offline. Next, 132 respondents mentioned the possibility of receiving the necessary service from home or work as an advantage of e-services. This feature is beneficial as people can greatly reduce the time needed to get a service, and they do not need to use their free time to go to a physical location (see Figure 27).

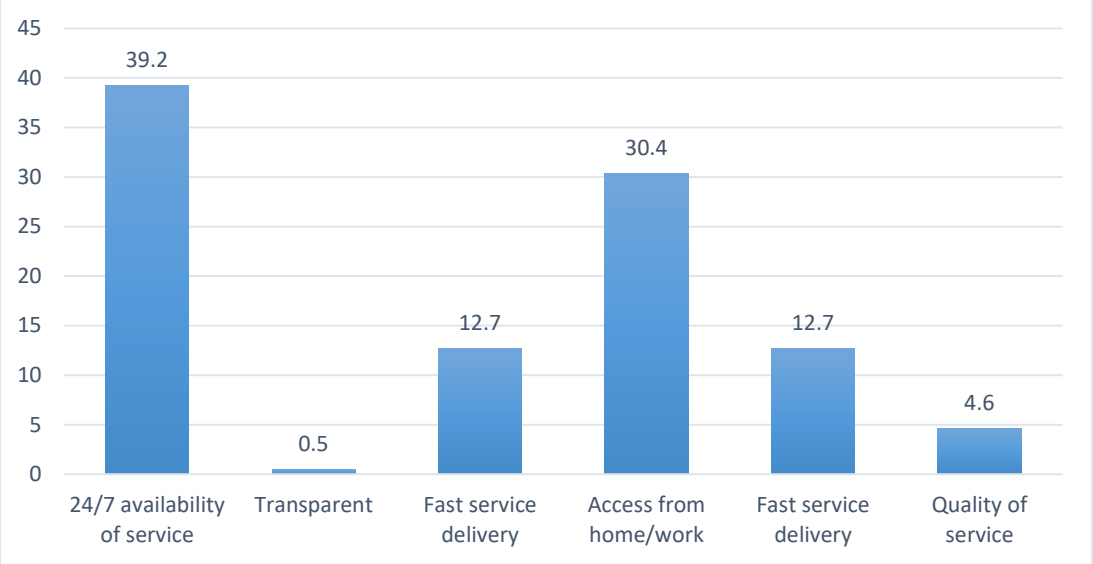



Figure 27. Answers to "What is the most important factor for you in e-government services?"

Considerable attention in the questionnaire was devoted to the evaluation of the perceived importance of certain e-government services (see Table 22).

Table 22: The Level of Importance of E-Government Services

| Item | | Low | Medium | High | *M* | *SD* | Rank |
|---|---|---|---|---|---|---|---|
| Digital security and privacy protection | f | 9 | 106 | 319 | 2.71 | 0.5 | 1 |
| | % | 2.1 | 24.4 | 73.5 | | | |
| Readiness of public organizations to interact digitally | f | 27 | 168 | 239 | 2.49 | 0.61 | 6 |
| | % | 6.2 | 38.7 | 55.1 | | | |
| Readiness of public organizations to interact through the social networks | f | 38 | 166 | 230 | 2.44 | 0.65 | 8 |
| | % | 8.8 | 38.2 | 53.0 | | | |
| Readiness of public organizations to interact through Twitter | f | 49 | 170 | 215 | 2.38 | 0.68 | 10 |
| | % | 11.3 | 39.2 | 49.5 | | | |
| Engagement of the citizens | f | 41 | 189 | 204 | 2.38 | 0.65 | 9 |
| | % | 9.4 | 43.5 | 47.0 | | | |
| Increasing the number of digitally available governmental services for citizens | f | 12 | 138 | 284 | 2.63 | 0.54 | 3 |
| | % | 2.8 | 31.8 | 65.4 | | | |
| Increasing the number of digitally available governmental services for businesses | f | 25 | 160 | 249 | 2.52 | 0.6 | 5 |
| | % | 5.8 | 36.9 | 57.4 | | | |
| Digital competencies and professional skills of public officers | f | 27 | 186 | 221 | 2.45 | 0.61 | 7 |
| | % | 6.2 | 42.9 | 50.9 | | | |
| Ease of Use | f | 10 | 113 | 311 | 2.69 | 0.51 | 2 |
| | % | 2.3 | 26.0 | 71.7 | | | |
| Design | f | 17 | 163 | 254 | 2.55 | 0.57 | 4 |
| | % | 3.9 | 37.6 | 58.5 | | | |
| Mean | 2.52 | | | | | | |

Table 22 presents an analysis of the perceived importance of various aspects related to e-government services, as reported by respondents. The items in the table include digital security and privacy protection, the readiness of public organizations to interact digitally, readiness to interact through social networks and Twitter, engagement of citizens, increasing the number of digitally available governmental services for citizens and businesses, digital competencies and professional skills of public officers, ease of use, and design. The data are presented in terms of the number of responses falling into low, medium, and high categories, along with mean (*M*), standard deviation (*SD*), and ranking information.

Digital security and privacy protection emerged as the top priority, with 73.5% of respondents ranking it as highly important. This finding emphasized the critical role of securing sensitive information in e-government services. Ease of use was the second most important factor, with 71.7% of respondents recognizing its significance. This suggested the need for user-friendly interfaces in e-government services to enhance accessibility and usability. Increasing digitally available governmental services for citizens and businesses were considered highly important, showing the importance of expanding digital service offerings for various stakeholders. Regarding design, 58.5% of respondents assigned it high importance, indicating that the visual appeal and user interface of e-government services are significant factors in user satisfaction. Readiness to interact digitally, through social networks, and Twitter exhibited moderate importance, with 55.1%, 53.0%, and 49.5%, respectively, of respondents ranking them highly. This indicated a need for public organizations to enhance their digital communication capabilities. The digital competencies and professional skills of public officers were considered moderately important, suggesting room for improvement in the skillset of public officers who manage e-government initiatives.

While the engagement of citizens was seen as moderately important, it remained a crucial aspect for the success of e-government services. This showed the need for strategies to involve citizens actively in digital governance.

The overall mean of 2.52 indicated a moderate to high level of importance assigned to the listed aspects of e-government services. The standard deviations suggested relatively consistent perceptions among respondents. The ranking of items based on mean scores placed digital security and privacy protection as the highest priority, followed by ease of use, increasing digitally available services, design, readiness of public organizations, digital competencies of public officers, and citizen engagement. This analysis provides valuable insights for policymakers and administrators to prioritize and enhance e-government services.

Regarding the quality of e-services in Saudi Arabia, the respondents underlined the following. Ninety-six respondents chose excellent, 196 respondents answered very good, and 80 people chose good. At the same time, 58 respondents mentioned the quality was fair but needs improvement, and only four respondents chose poor quality. Thus, based on these results, the quality of e-government services in Saudi Arabia would appear to be at a very high level, and people are satisfied with their quality (see Figure 28).

Twitter was considered the most popular, useful, and most appropriate social media platform to interact with public institutions, according to the respondents' answers (see Figure 29). The largest portion of the respondents (388 people) chose Twitter, while YouTube took second place, and Instagram was third (18 and 12 votes, respectively).

The popularity of Twitter in Saudi Arabia can be attributed to its ability to provide real-time updates and engage in direct and public conversations with citizens. Moreover, Twitter's concise format makes it a suitable platform for disseminating news and information. This is particularly relevant in a country like Saudi Arabia, where the government regularly issues new policies and regulations that impact citizens' daily lives.

Additionally, Twitter's ease of use and accessibility via mobile phones make it a convenient platform for citizens to interact with public institutions.

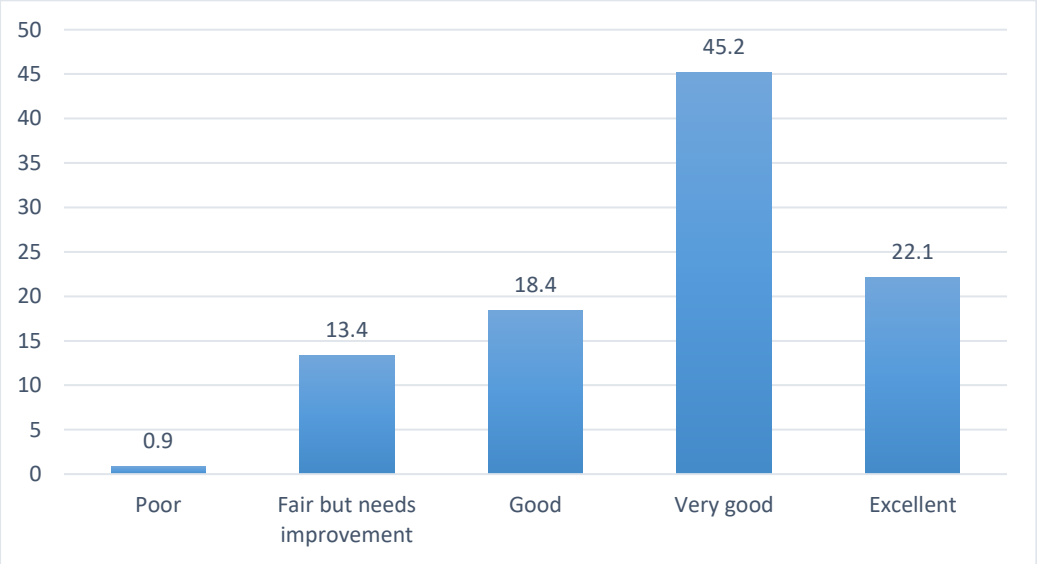



Figure 28. Answers to "According to your opinion and experience, what is the quality of e-government adoption in Saudi Arabia?"

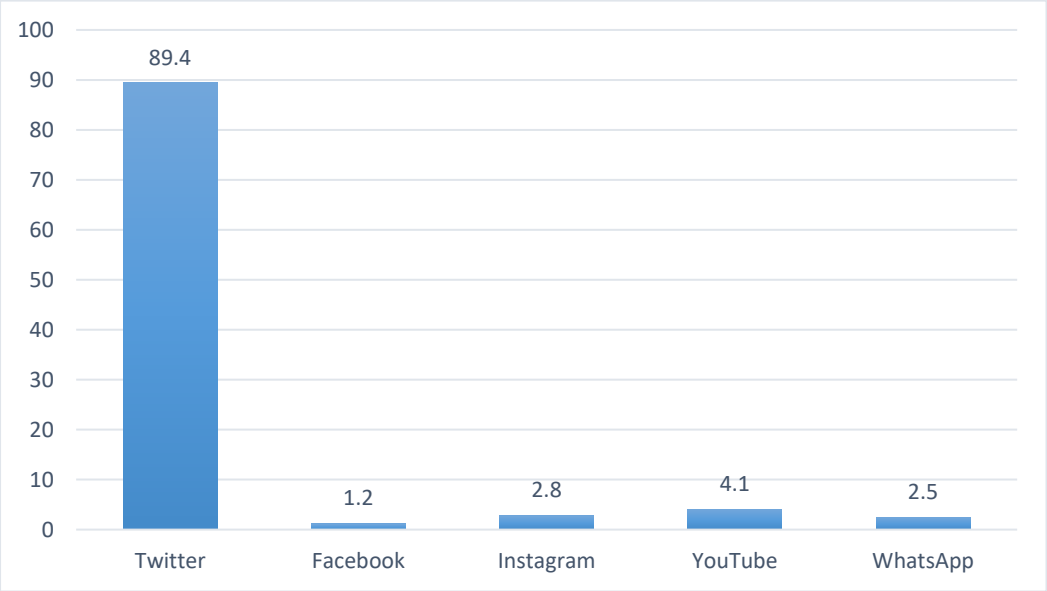



Figure 29. Answers to "Which social network do you consider as the most appropriate and useful to interact with public institutions?"

On the other hand, YouTube and Instagram are also gaining popularity as platforms for government communication and outreach. YouTube allows for the sharing of longer and more detailed videos, which can be useful for providing in-depth explanations of policies or

showcasing government initiatives. Instagram's visual nature makes it ideal for sharing images and videos, providing a glimpse into the work and activities of government agencies.

Overall, the results of the questionnaire indicate that social media is a crucial tool for communication between citizens and public institutions in Saudi Arabia, and there is a strong desire to expand the use of social media platforms in the future.

Regarding the quality of the service provided on Twitter by Saudi public organizations, the highest ranks were for information dissemination, facilitating access to services, improving the quality of services, sharing information with the public, and reducing the cost of services (see Figure 30).

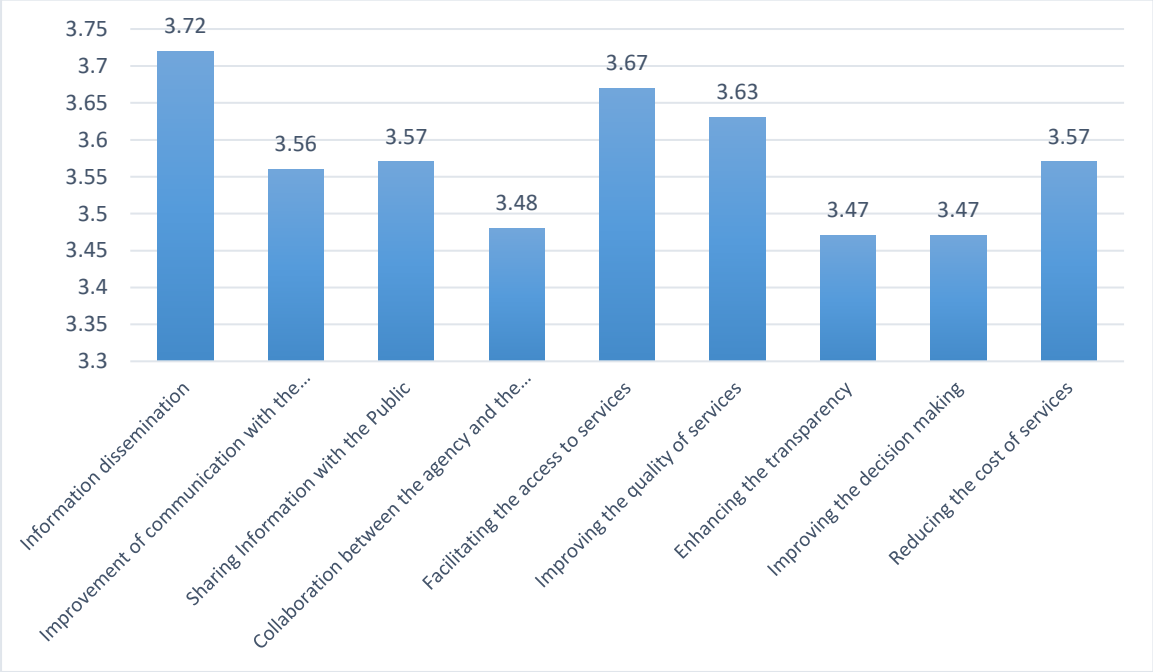



Figure 30. Answers to "Evaluate the quality of the service provided on Twitter by Saudi state organizations in relation to the following aspects on the scale from 1 to 5"

Finally, regarding the recommended improvements that Saudi state organizations should implement to increase the attractiveness of e-services on Twitter, the questionnaire produced the following results: improvement of communication with the public (253 responses), enhancing transparency (199), sharing information with the public (196),

collaboration between the agency and citizens (195), and reducing the cost of services (177) (see Figure 31).

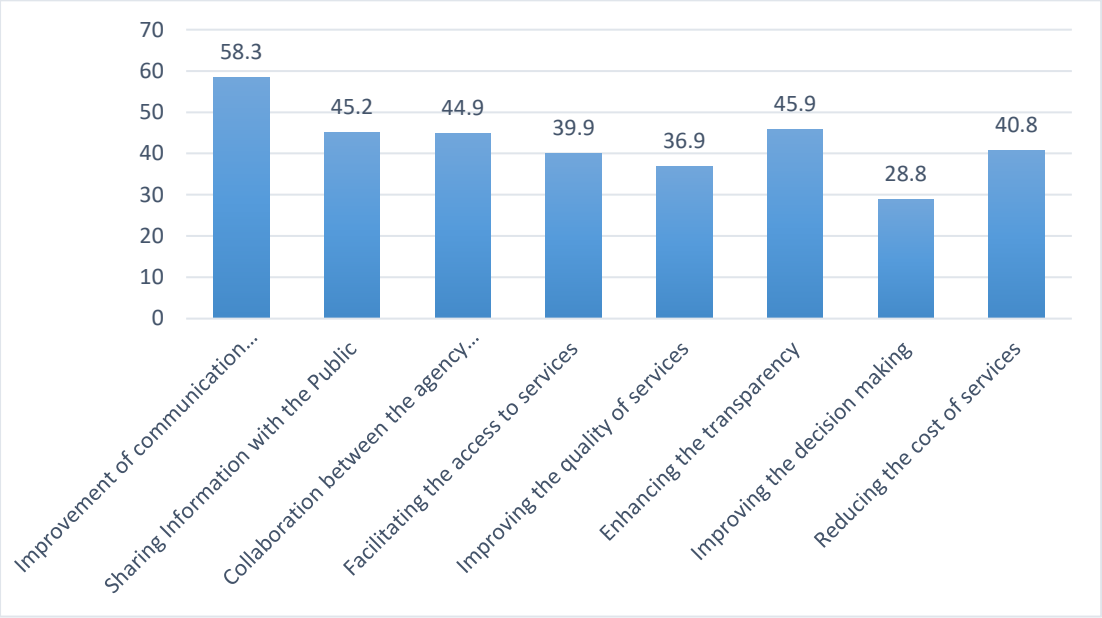



Figure 31. Answers to "Please indicate which services of the Saudi state organizations you think require improvement on Twitter"

### 4.3.2 Questionnaire Results Regarding Organizations' Use of Twitter

The study results indicate that the quality of interaction between public organizations and citizens through social networks in Saudi Arabia is generally satisfactory (see Figure 32). Most of the respondents gave high marks, with four respondents giving a rating of 5 points and eight respondents giving a rating of 4. This suggests that public officials in Saudi Arabia are generally satisfied with the quality of interaction with citizens through social networks.

However, it is worth noting that five respondents marked the quality of interaction at only 3, indicating there are still areas for improvement. These weaknesses need to be identified and addressed to improve the quality of interaction with citizens. Addressing these issues would help public organizations provide better services to citizens, increase their trust in government institutions, and enhance overall public satisfaction with public services.

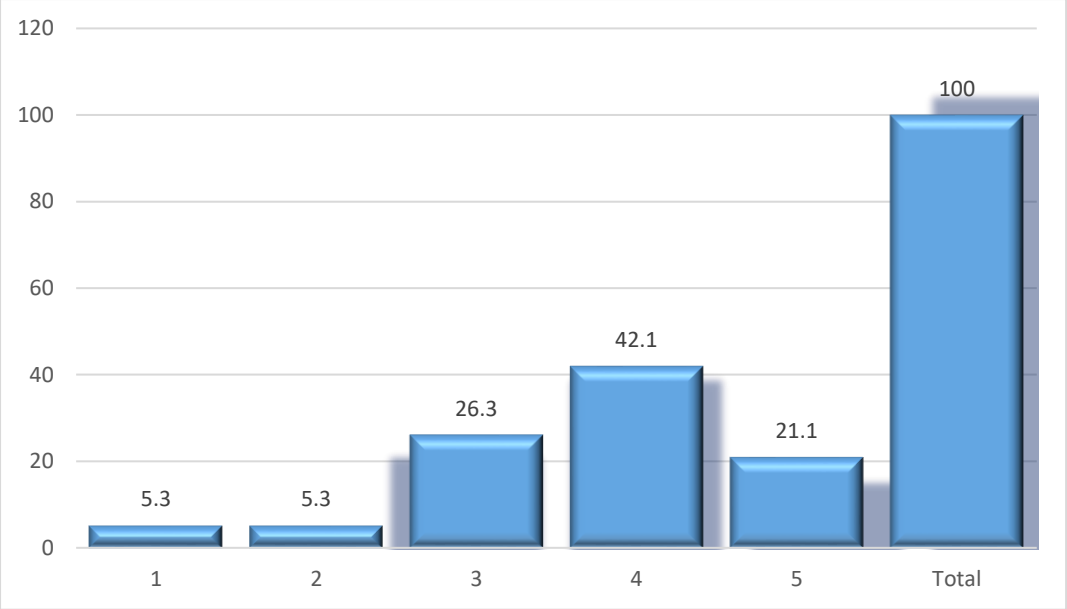



Figure 32. Answers to “What is the quality of interaction between public organizations and the citizens through the social networks in the Kingdom of Saudi Arabia?”

In terms of the general quality of interaction with citizens through social networks, the results suggested quality was generally high (see Figure 33). Five respondents gave the highest rating, seven gave a rating of 4, and only one respondent gave a rating of 2. This indicated that social networks are an effective platform for public agencies to interact with citizens and meet their needs and expectations.

The positive evaluation of the quality of interaction through social networks underscores the importance of these networks as a communication channel between public agencies and citizens. It highlights the need for public agencies to continue to leverage social networks to improve their communication and engagement with citizens and to provide better public services.

In conclusion, while the quality of interaction between public organizations and citizens through social networks in Saudi Arabia was considered generally satisfactory, there is still room for improvement. Addressing the identified weaknesses could enhance the quality of interaction and ensure that public services meet the needs and expectations of

citizens. This finding shows the importance of social networks as a communication tool and highlights the need for public agencies to continue to leverage them to improve their services and engagement.

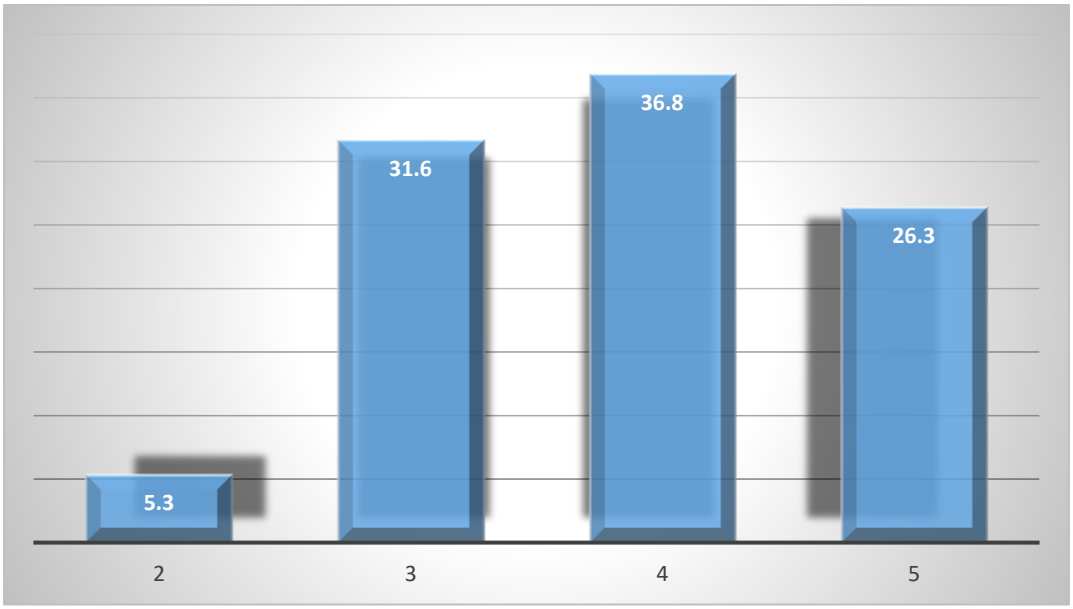



Figure 33. Answers to “Evaluate the general quality of interaction with the citizens via social networks by your institution with a scale from 1 to 5”

The findings revealed a positive tendency towards the expansion of Saudi public agencies’ presence in social networks in the near future (see Figure 34). Out of 19 respondents, 18 noted that the public organizations where they worked wanted to be more active on social networks. This finding likewise highlights the growing recognition of the importance of social networks as a tool for effective communication and engagement with citizens.

Expanding the presence of public agencies on social networks is essential for enhancing communication and engagement with citizens. Social networks provide a platform for public agencies to share information about their services, respond to citizens’ queries and concerns, and receive feedback on their services in real time. This could lead to greater public trust and satisfaction with the quality of public services in Saudi Arabia.

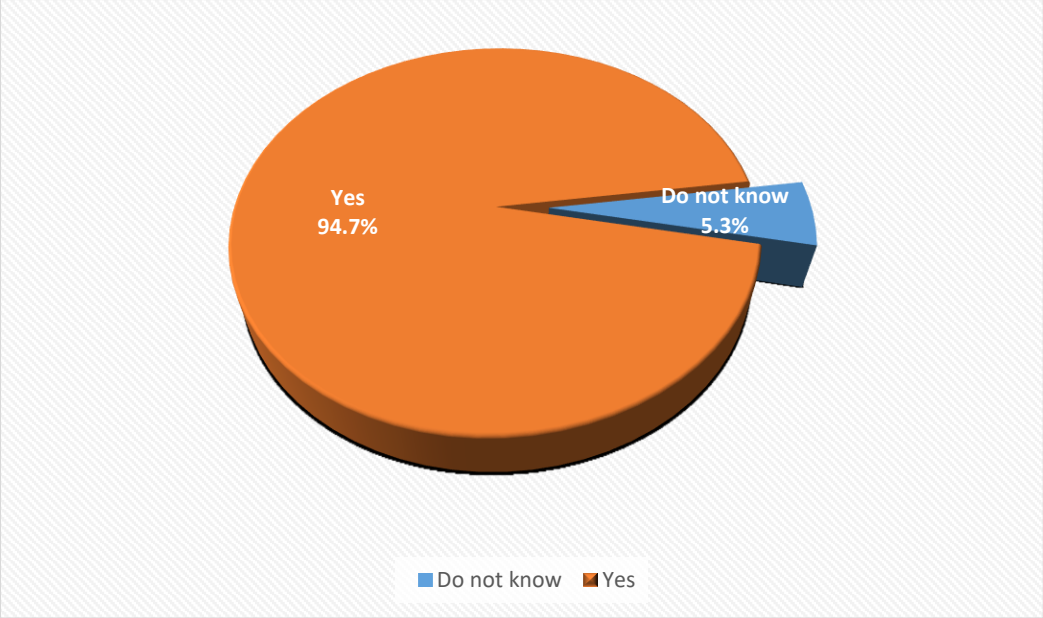



Figure 34. Answers to “Does your public organization plan to be more active in social networks in the future?”

Moreover, social networks are an effective tool for increasing citizens’ awareness of public services and their benefits. Public agencies can use social networks to educate citizens on their services, promote their initiatives and campaigns, and raise awareness about important public issues. This could contribute to improving citizens’ quality of life and overall well-being.

In conclusion, the findings underscore the importance of expanding the presence of Saudi public agencies on social networks. This could enhance communication and engagement with citizens, increase their awareness of public services, and improve their satisfaction with the quality of public services.

The evaluation of digital interaction on social networks by Saudi public agencies is crucial to improving communication and engagement with citizens. The findings revealed that the top three benefits of digital interaction with citizens were improved communication with the public, saving time, and increased service quality (see Figure 35).

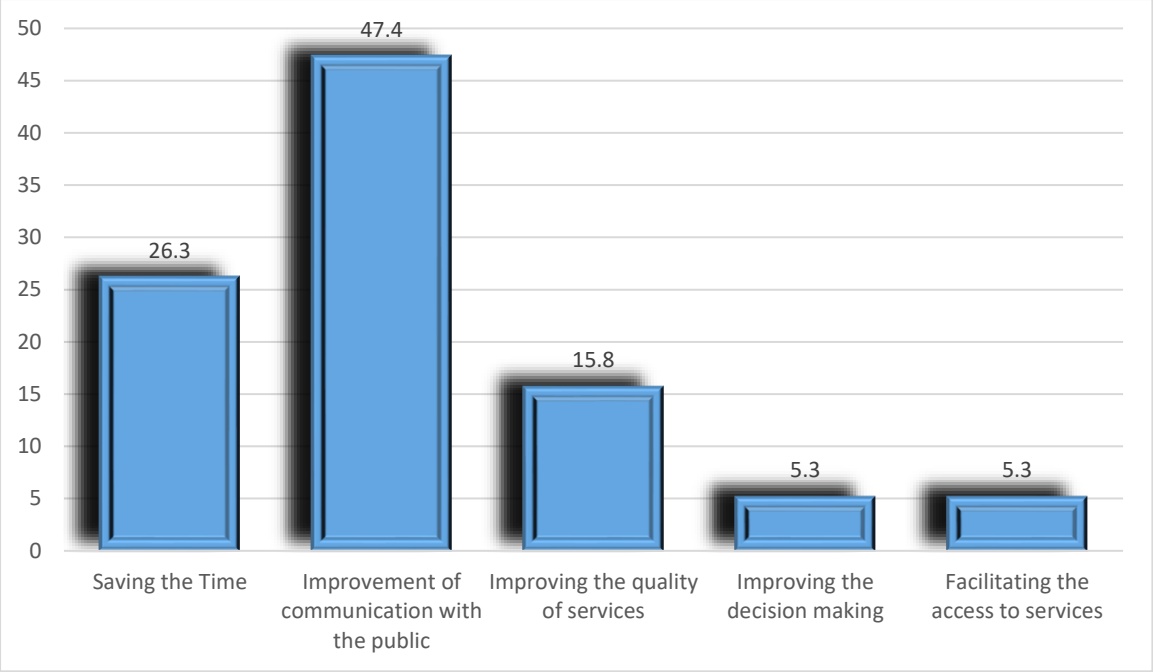



Figure 35. Digital interaction through social networks

The highest number of respondents (nine individuals) selected the improvement of communication with the public as the most significant benefit of digital interaction in social networks. Digital interaction enables public agencies to interact with citizens, address their concerns, and receive feedback on their services in real time, which can lead to greater public trust and satisfaction.

Saving time emerged as the second most important benefit of digital interaction in social networks, with five people selecting it. Digital interaction eliminates the need for citizens to physically visit public institutions, saving time and resources for both the agency and citizens.

Improvement of the quality of services was chosen by three people as the most important benefit of digital interaction on social networks. Digital interaction enables public agencies to receive feedback on their services, identify areas for improvement, and respond to citizens' needs promptly, which can improve the quality of services and citizen satisfaction.

Overall, these findings revealed how digital interaction on social networks could help Saudi public organizations improve communication with the public, save time, and increase

the quality of their services. Public agencies can leverage digital interaction to enhance their communication and engagement with citizens, which can lead to greater public trust and satisfaction with their services.

In addition to evaluating the use of social media by Saudi public agencies, this study also examined traditional methods of interaction between public agencies and citizens (see Figure 36). The findings revealed that collaboration between the agency and citizens was the most preferred method of interaction, with 10 respondents selecting it. This underscored the importance of collaboration between public agencies and citizens in promoting transparency, accountability, and citizen participation in public affairs.

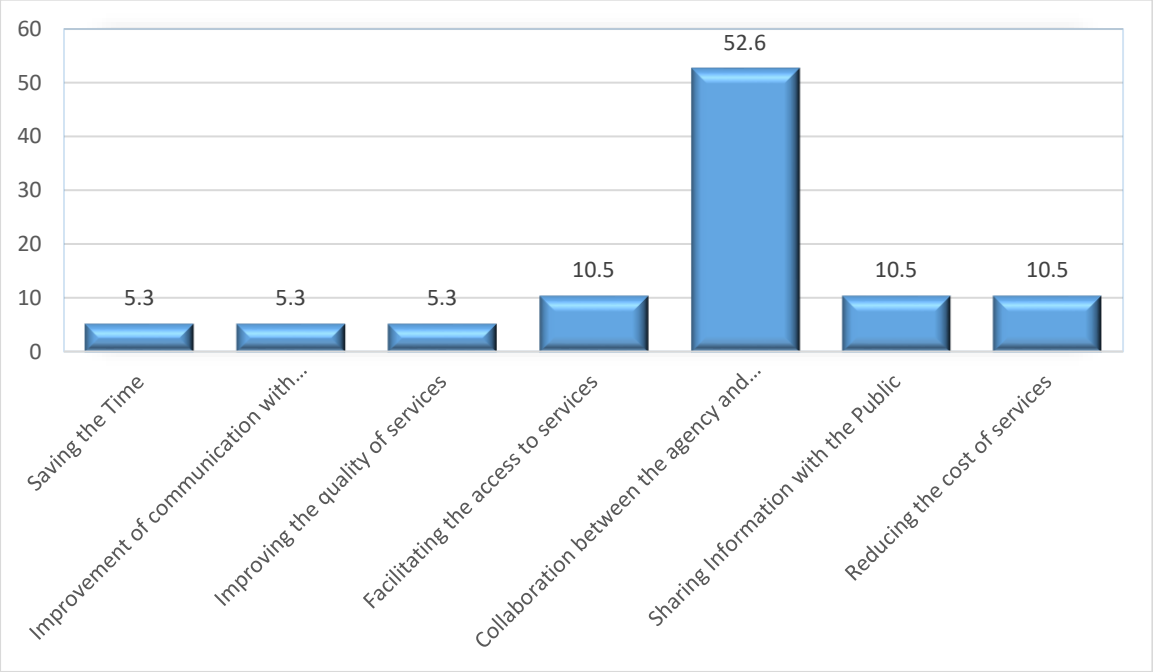



Figure 36. Traditional methods of interaction

Facilitating access to services, sharing information with the public, and reducing the cost of services were chosen by two respondents each as their preferred method of interaction. Facilitating access to services through traditional methods can improve the efficiency and effectiveness of public agencies' service delivery and enhance citizen satisfaction. Sharing information with the public can increase transparency and promote

citizen participation in public affairs, while reducing the cost of services can improve accessibility and affordability for citizens.

These results suggested that public agencies in Saudi Arabia should adopt a multi-channel approach to interact with citizens. While social media platforms such as Twitter, Facebook, and Instagram are highly effective tools for disseminating information and improving communication with the public, traditional methods of interaction, such as collaboration between the agency and citizens, should also be leveraged. By adopting a multi-channel approach, public agencies can enhance their communication and engagement with citizens, which can lead to greater public trust and satisfaction with their services.

The study revealed that the top three functions of Twitter by Saudi public agencies were considered to be information dissemination, improvement of communication with the public, and sharing information with the public (see Figure 37).

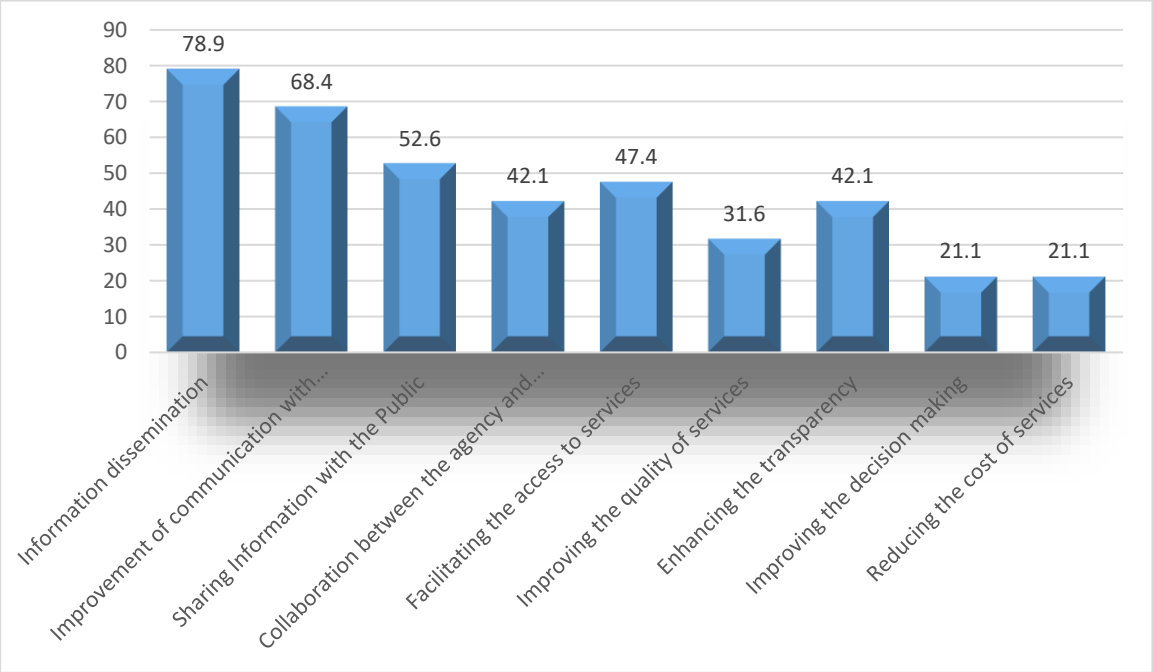



Figure 37. Questionnaire evaluation of Twitter use by Saudi public agencies

Information dissemination was identified as the most significant function of Twitter by Saudi public agencies, with 78.9% of respondents highlighting its importance. Twitter is a highly effective tool for public agencies to disseminate information and keep citizens

informed about their services, policies, and public announcements. It provides a quick and efficient way to share information, eliminating the need for people to go to public institutions.

Improvement of communication with the public emerged as the second most important function of Twitter by Saudi public agencies, with 68.4% of respondents selecting it. Twitter serves as an efficient tool to improve communication between public agencies and citizens. It enables public agencies to interact with the public, address their concerns, and receive feedback on their services.

Sharing information with the public was identified as the third most important function of Twitter by Saudi public agencies, with 52.6% of respondents selecting it. Sharing information with the public through Twitter enables public agencies to provide citizens with useful and important information about their services and other relevant topics.

Overall, these findings showcased the importance of Twitter as a means for Saudi public agencies to disseminate information, improve communication with the public, and share information with the public. Public agencies can leverage Twitter's features to enhance their communication and engagement with citizens, which could lead to greater public trust and satisfaction with their services.

Moving on, the top three functions of Facebook by Saudi public agencies were information dissemination, sharing information with the public, and improving communication with the public (see Figure 38).

Information dissemination was identified as the most significant function of Facebook by Saudi public agencies, with 63.2% of participants highlighting its importance. This finding underscores the critical role of Facebook in enabling public agencies to disseminate information and keep citizens informed about their services, policies, and public announcements.

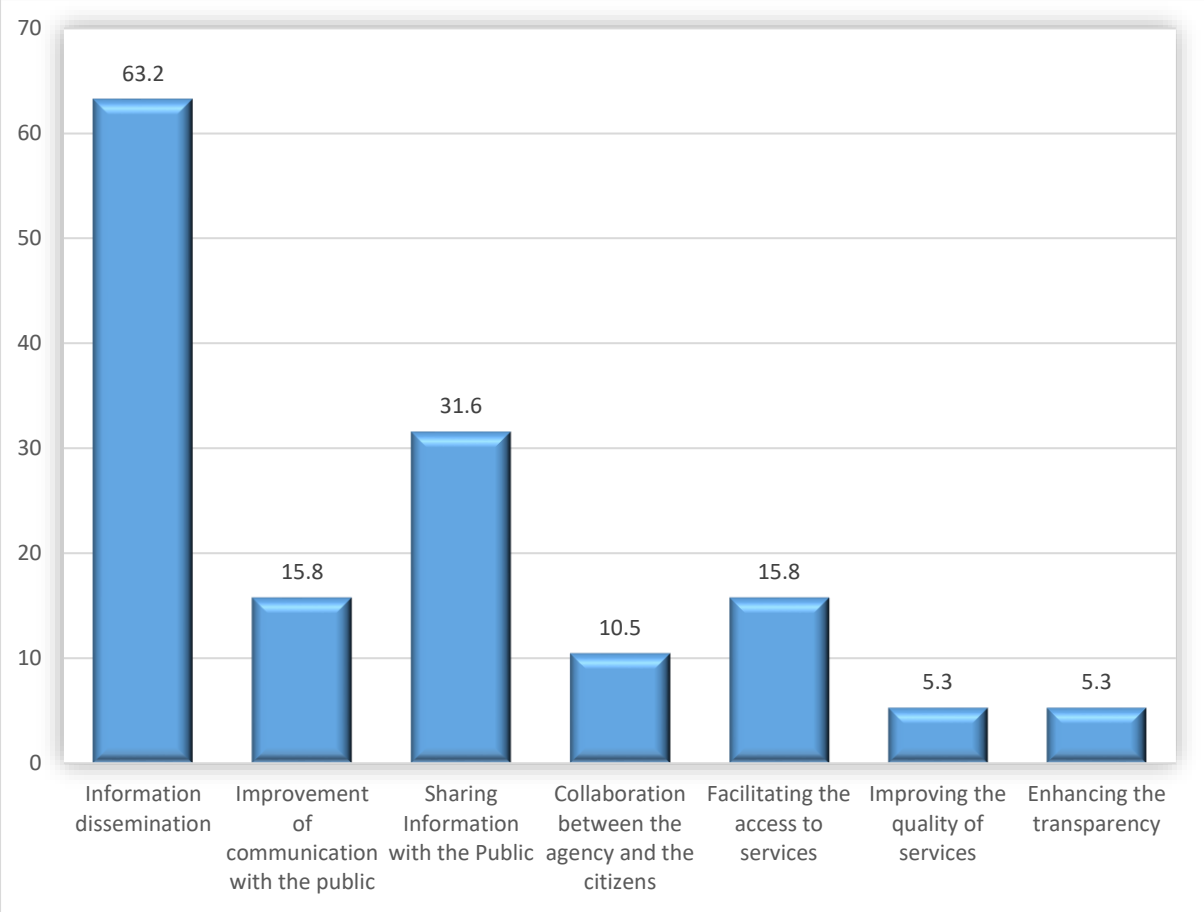



Figure 38. Questionnaire evaluation of Facebook use by Saudi public agencies

Sharing information with the public ranked second, with 31.6% of participants identifying it as a key function of Facebook for Saudi public agencies. Sharing information with the public enables public agencies to enhance their transparency and accountability, which can help build trust and confidence in their services.

The improvement of communication with the public emerged as the third most important function of Facebook by Saudi public agencies, with 15.8% of participants highlighting its significance. Effective communication is vital for public agencies to build a strong relationship with citizens and to address their concerns and feedback on their services.

Lastly, facilitating access to services was supported by 15.8% of respondents. Facilitating access to services through Facebook can improve the efficiency and effectiveness of public agencies' service delivery and enhance citizen satisfaction.

These findings showed the importance of Facebook as a means for Saudi public agencies to disseminate information, share information with the public, improve communication with the public, and facilitate access to services. Public agencies can leverage Facebook's features to improve their communication and engagement with citizens, which could lead to greater public trust and satisfaction with their services.

The evaluation of Instagram usage by respondents was consistent with their evaluation of Twitter and Facebook (see Figure 39). The top three uses of Instagram by Saudi public agencies, as identified by the respondents, were information dissemination, improving communication with the public, and sharing information with the public.

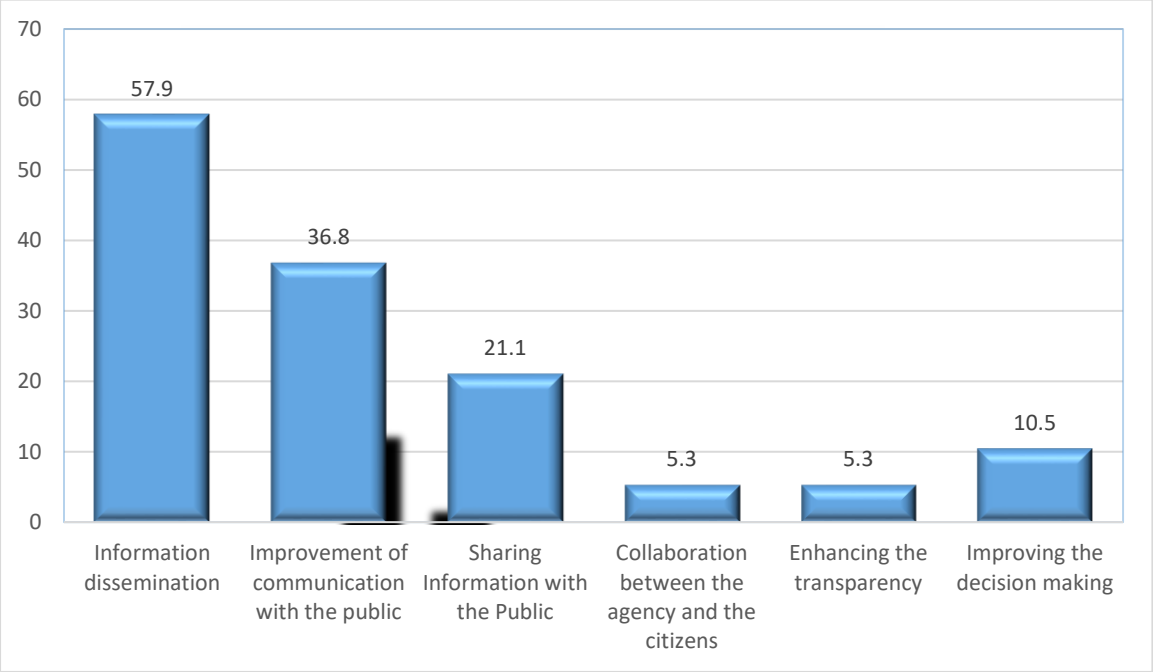



Figure 39. Questionnaire evaluation of Instagram use by Saudi public agencies

Information dissemination emerged as the most significant use of Instagram by Saudi public agencies, with 57.9% of respondents identifying it as a key function. The dissemination of information is critical for public agencies to provide citizens with relevant and timely information. It enables agencies to keep citizens informed about their services and communicate important developments, emergencies, and public announcements.

Improvement of communication with the public ranked second, with 36.8% of respondents indicating this is a key function of Instagram for Saudi public agencies. Effective communication is essential for building trust and credibility with the public. Through Instagram, public agencies can interact with the public, address their concerns, and receive feedback on their services.

Finally, sharing information with the public was identified as the third most important use of Instagram by Saudi public agencies, according to 21.1% of respondents. Sharing information with the public is essential for building transparency and accountability between public agencies and the public. By using Instagram to share information, public agencies can enhance their transparency, which can help build trust and confidence in their services.

Overall, these findings highlighted the importance of Instagram for Saudi public agencies as a means of disseminating information, improving communication with the public, and sharing information with the public.

The respondents' evaluation of YouTube usage by Saudi public agencies revealed interesting insights into how public institutions are leveraging this social media platform (see Figure 40). The top three services ranked by respondents were information dissemination, improving communication with the public, and sharing information with the public.

Information dissemination was ranked first, indicating that public institutions are effectively using YouTube to disseminate information to citizens. This includes providing videos on government policies, initiatives, and services. By using YouTube, public institutions can reach a broader audience and make information more accessible.

Improving communication with the public was ranked second, suggesting that public institutions are making efforts to engage with citizens through this platform. This includes responding to queries, providing support, and facilitating dialogue with citizens. This is an

essential service, as it enables citizens to interact with their governments and voice their opinions.

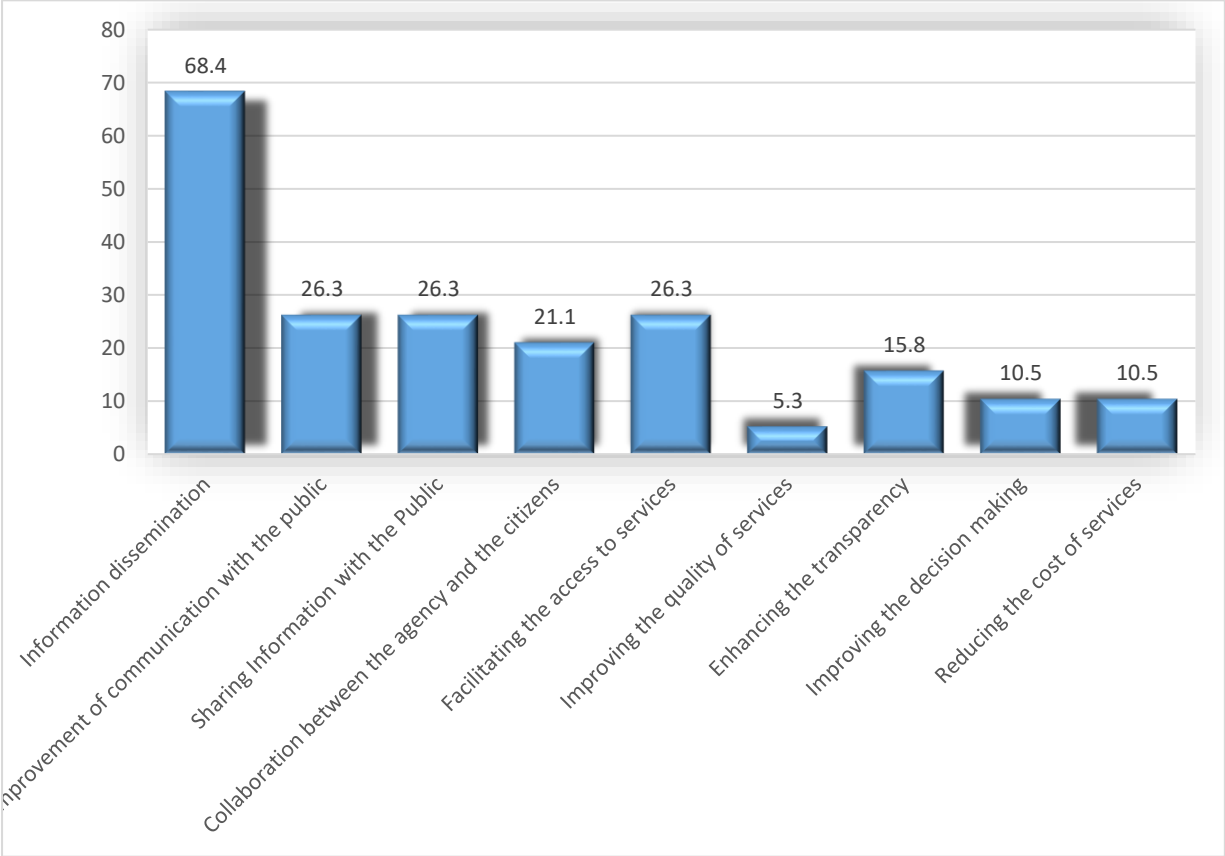



Figure 40. Questionnaire evaluation of YouTube use by Saudi public agencies

Sharing information with the public and facilitating access to services were also ranked second, indicating that public institutions are recognizing the importance of transparency and accessibility. By sharing more information with citizens through YouTube, public institutions can build trust and foster engagement.

Collaboration between the agency and citizens was ranked third, indicating that public institutions are seeking to engage citizens in the policymaking process. By leveraging YouTube, public institutions can facilitate dialogue and cooperation between government and citizens.

Overall, these results suggested that Saudi public agencies are effectively using YouTube to disseminate information and engage with citizens. The platform offers public

institutions an opportunity to reach a broader audience, build trust, and foster greater engagement with citizens.

Figure 41 presents the respondents' ranking of various manifestations of their organization's digital interaction quality (where 1 is the minimum and 5 is the maximum). It is interesting to analyse these responses in light of the previously discussed most popular actions in social media. The top five rankings are information dissemination, sharing information with the public, enhancing transparency, improvement of communication with the public, and reducing the cost of services.

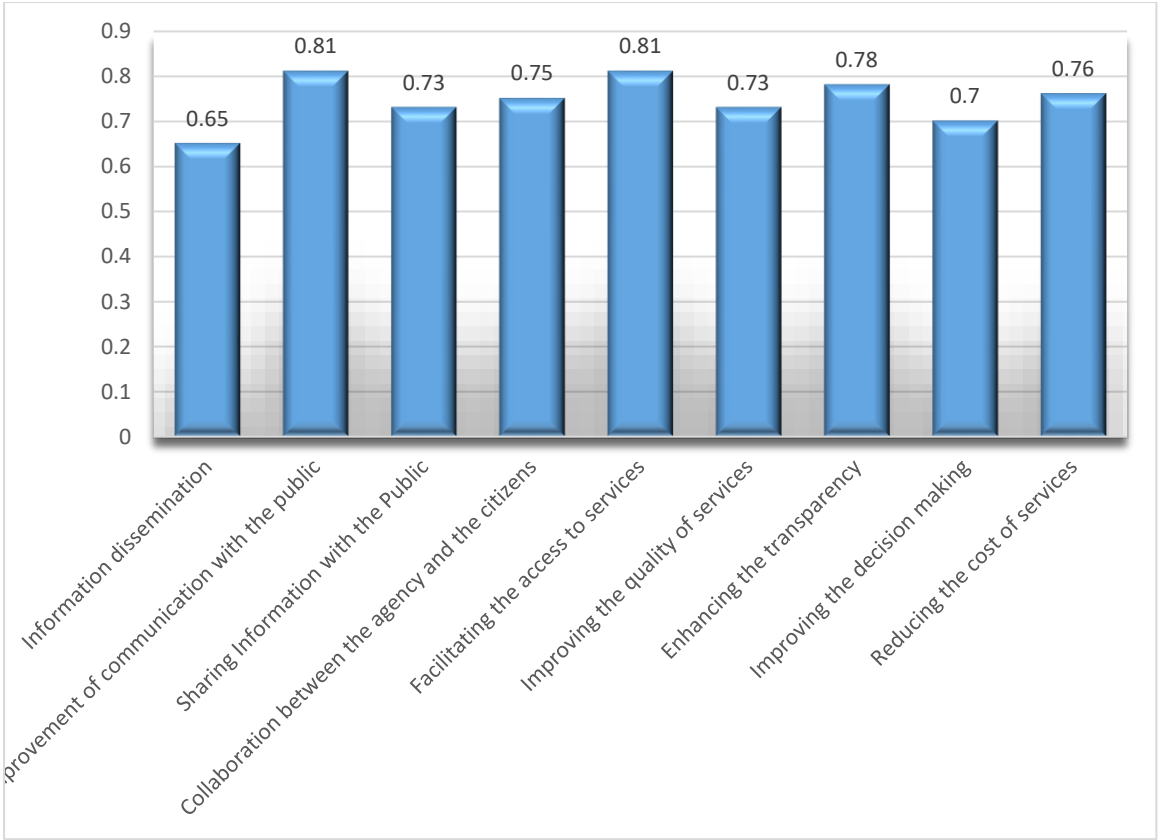



Figure 41. Questionnaire evaluation of the quality of manifestations of digital interaction in an organization on a scale of 1 to 5

Information dissemination was ranked first, which suggested that public institutions are effectively using social media platforms to disseminate information to citizens. This is an essential service, as it enables citizens to stay informed and engaged with their government.

Sharing information with the public was ranked second, indicating that public institutions are recognizing the importance of transparency and are making efforts to share more information with citizens through digital channels.

Enhancing transparency was ranked third, indicating that citizens value transparency in government activities and are seeking more open and accessible government practices. This is an essential aspect of democratic governance, and social media platforms can play a critical role in achieving transparency.

Improving communication with the public was ranked fourth, indicating that public institutions are making efforts to engage with citizens through social media. This includes responding to queries, providing support, and facilitating dialogue with citizens.

Reducing the cost of services was ranked fifth, which suggested that citizens are concerned with the efficiency and effectiveness of government services. Social media platforms can play a critical role in reducing the cost of services by providing citizens with more accessible and efficient channels for accessing government services.

Overall, these results suggested that the most popular services in social media have a high level of quality, as they were placed in the top positions. This is a positive development, as it indicates that public institutions are recognizing the importance of digital interaction and are taking steps to improve the quality of their services through social media.

Figure 42 gives insight into the quality of digital interaction through Twitter. Respondents were asked to rank the different aspects of digital interaction in order of their perceived quality (where 1 is the minimum and 5 is the maximum). The top three positions were information dissemination, sharing information with the public, and improving communication with the public.

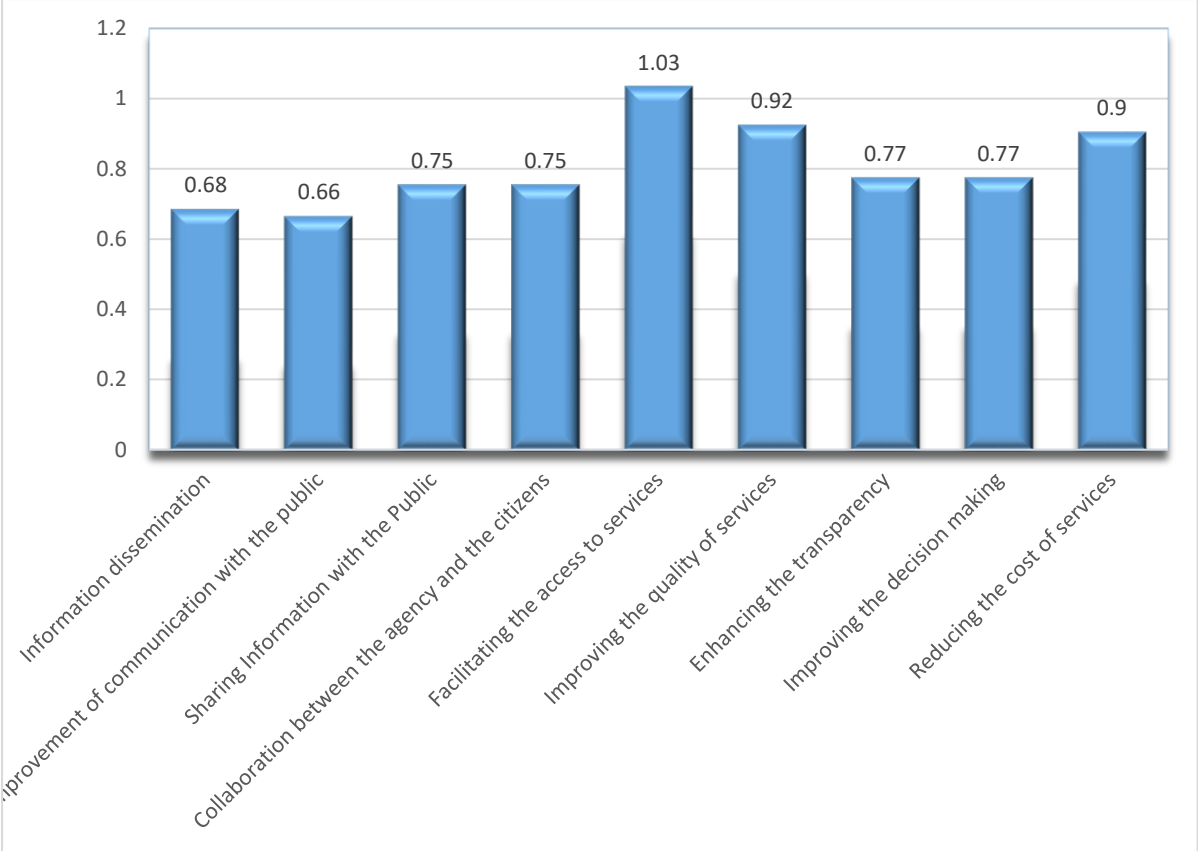



Figure 42. Questionnaire evaluation of the quality of manifestations of digital interaction through Twitter in an organization on a scale of 1 to 5

The high ranking of information dissemination suggested that public institutions are doing a good job providing citizens with the information they need through Twitter. This is an important aspect of digital interaction as it enables citizens to stay informed and engaged with their government.

Sharing information with the public was also highly ranked, indicating that public institutions are recognizing the importance of transparency and are making efforts to share more information with citizens through digital channels.

The high rank of improving communication with the public suggested that public institutions are taking steps to better engage with citizens through Twitter. This includes responding to queries, providing support, and facilitating dialogue with citizens.

Overall, the top three positions in Figure 42 suggested that public institutions are prioritizing the most popular and necessary services on Twitter. This is important as it ensures that public institutions are meeting the needs of citizens and providing them with the information and services they need to participate in government.

In conclusion, these data offer valuable insights into respondents' evaluation of the quality of digital interaction through Twitter. The findings suggested that public institutions are doing a good job providing citizens with information, sharing information with the public, and improving communication with citizens through Twitter.

Figure 43 provides insight into public institutions' short-term plans for digital interaction through Twitter.

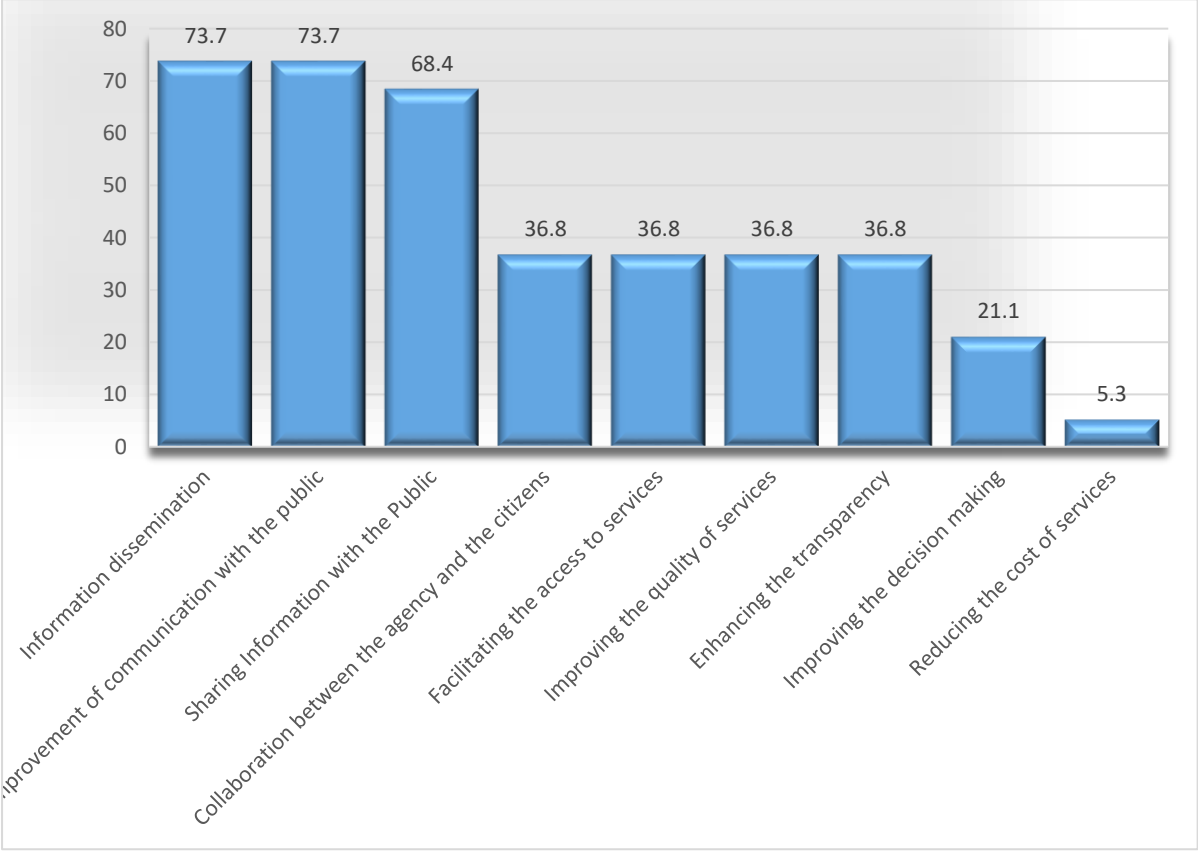



Figure 43. Aspect of Twitter interaction an organization plans to expand in the short term

The respondents were asked to select the aspects of digital interaction that their organization was planning to expand in the near term. The most commonly selected were

improving the quality of the most popular services, communicating with the public, and sharing information with the public. The first aspect, improving the quality of the most popular services, was selected by 73.7% of respondents. This suggested that public institutions recognize the importance of providing high-quality services to citizens and are taking steps to improve them through digital channels.

The second, improving communication with the public, was also selected by 73.7% of respondents. This indicated that public institutions are looking to leverage the power of digital communication to better engage with citizens and provide them with more information and support.

Finally, sharing information with the public was selected by 68.4% of respondents as an area for short-term expansion of digital interaction. This implied that public institutions are recognizing the importance of transparency and taking steps to improve it by sharing more information with citizens through digital channels.

In conclusion, Figure 43 provides valuable insights into the short-term plans of public institutions for digital interaction through Twitter. The findings indicated that public institutions are recognizing the importance of improving the quality of their services, communicating with citizens, and sharing information with the public. By taking steps to expand their digital presence in these areas, public institutions can better engage with citizens and provide them with the information and services they need to participate in public decision-making.

In addition to monitoring citizens' feedback on social media posts, respondents were asked about their organizations' long-term plans for digital interaction through Twitter (see Figure 44). The results indicated that there are several aspects in which public organizations plan to expand their digital interaction in the long term. The most commonly selected was enhancing transparency, chosen by 68.4% of respondents. This suggested that public

institutions recognize the importance of transparency in their operations and are taking steps to improve it through digital channels.

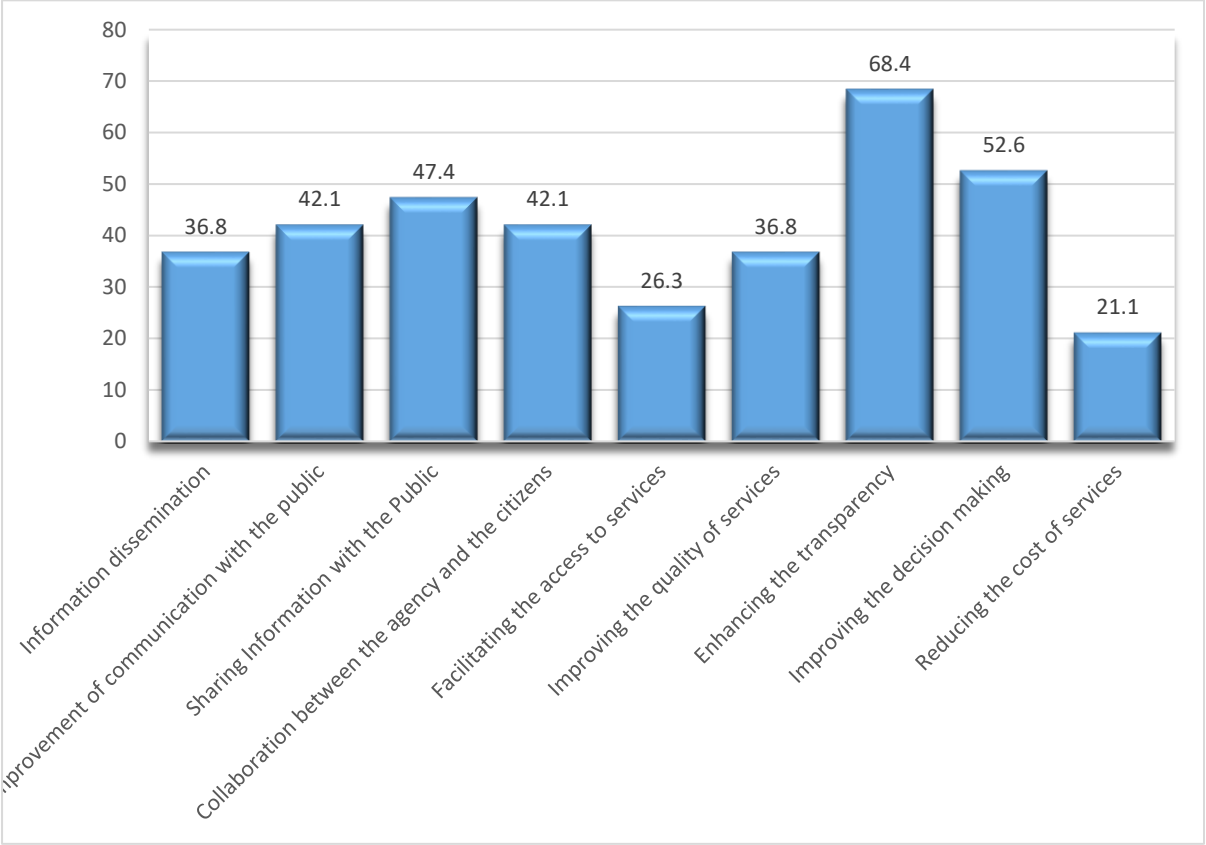



Figure 44. Aspect of Twitter interaction an organization plans to expand in the long term

The second most selected aspect was improving decision-making, chosen by 52.6% of respondents. This implied that public organizations are looking to leverage the power of digital interaction to gather feedback and insights from citizens to inform their decision-making processes.

Finally, sharing information with the public was chosen by 47.4% of respondents as an area for long-term expansion of digital interaction. This indicated that public institutions are recognizing the importance of communicating with citizens through digital channels and are looking to expand their reach in this regard.

Taken together, these findings suggested that public institutions are increasingly recognizing the value of digital interaction with citizens. It is likely that they will seek to

expand their online presence and provide more digital services to citizens in the coming years. This will enable them to enhance transparency, improve decision-making, and provide more information to the public. As a result, citizens will have more opportunities to engage with their government and participate in public decision-making.

Figure 45 illustrates the significance of citizens' feedback on posts made by public institutions on social media platforms. The majority of respondents (78.9%) actively monitored and analysed the feedback received from citizens on their social media posts. This indicated that public agencies are not only aware of the importance of receiving feedback from average citizens but are also willing to utilize this information to improve their services.

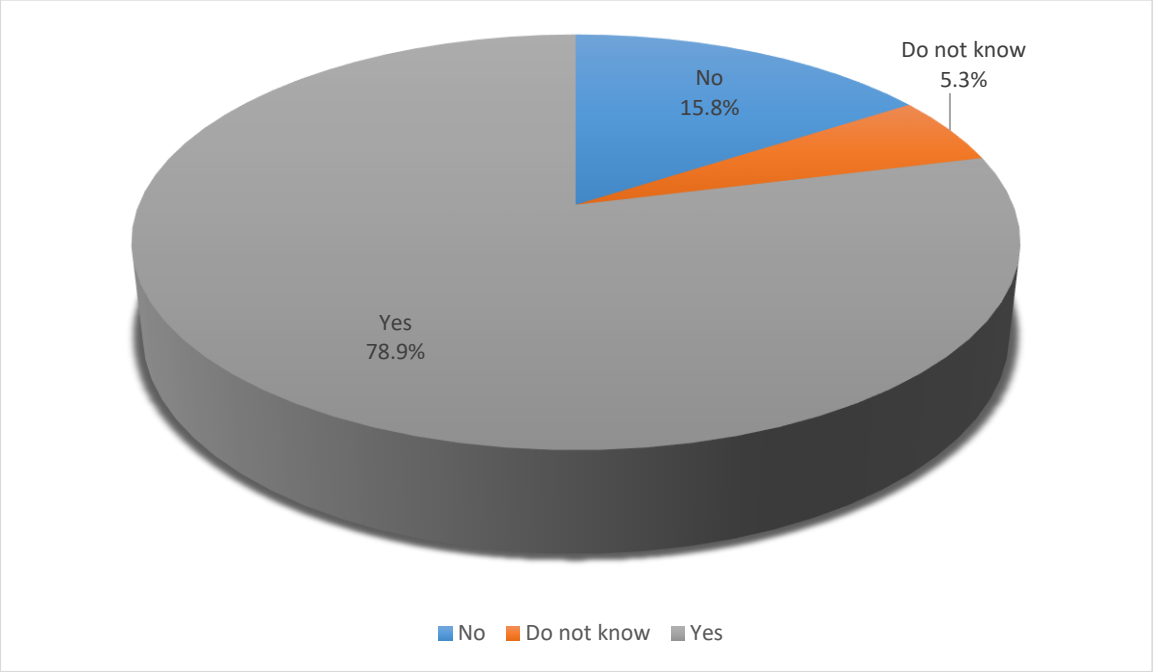



Figure 45. Answers to "Do you monitor and analyse the citizens' feedback on the posts of your public institution?"

The willingness of public institutions to listen to citizens' feedback is crucial in promoting transparency and accountability in government. By engaging in dialogue with citizens, public agencies can gain a better understanding of the concerns and needs of citizens. This in turn enables them to make informed decisions and take appropriate actions to address any problems that may arise.

Moreover, using citizens' feedback demonstrates a commitment to providing quality services and improving the overall user experience. By taking the time to listen to citizens' opinions and suggestions, public agencies can identify areas for improvement and implement changes accordingly.

In conclusion, Figure 45 serves as evidence of the importance of citizens' feedback on social media posts made by public institutions. The active monitoring and analysis of citizens' feedback by public agencies signifies their willingness to listen and improve their services, which can lead to better transparency, accountability, and user experiences.

Figure 46 provides insights into how often public organizations respond to citizens, and the results were highly encouraging. According to the data, the majority of respondents (73.7%) claimed their organization responded on a daily basis, implying that citizens can expect timely feedback on their queries and concerns. Additionally, four respondents mentioned providing responses every hour, indicating a high level of commitment to prompt communication and excellent customer service. This is highly commendable as it ensures that clients do not have to waste their time waiting for feedback or answers and can receive the necessary information in the most efficient manner possible. Effective communication is crucial in any organization, as it helps build trust and establish a positive relationship with customers. Timely and prompt communication is especially important in the digital age, when people expect instant responses. The high percentage of respondents who responded on a daily basis, and the commitment of some to provide responses every hour, showed that these organizations recognize the importance of effective communication and are taking the necessary steps to provide the best possible service.

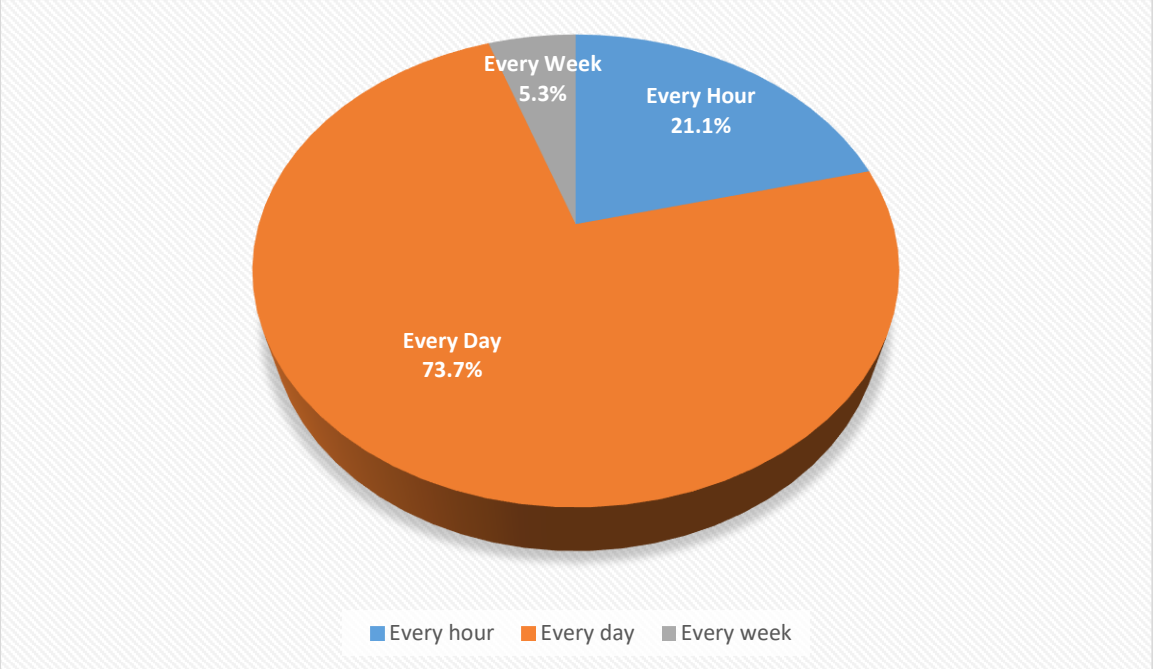



Figure 46. Answers to “How often do you provide the response to citizens?”

Overall, the data presented in Figure 46 indicated that these organizations are committed to providing excellent customer service by responding promptly and efficiently to people’s needs. This is a positive trend that should be emulated by other organizations, as it could lead to increased customer satisfaction and loyalty.

Figure 47 displays the outcomes of a question that sought to identify who was accountable for social media interaction, largely showing a positive trend. Most of the respondents reported that their public institutions had established communication and media departments with less than five people (42.1%) or more than five people. This indicated that these departments are specially designed to handle communication on social networks and coordinate effective communication and collaboration between citizens and public organizations.

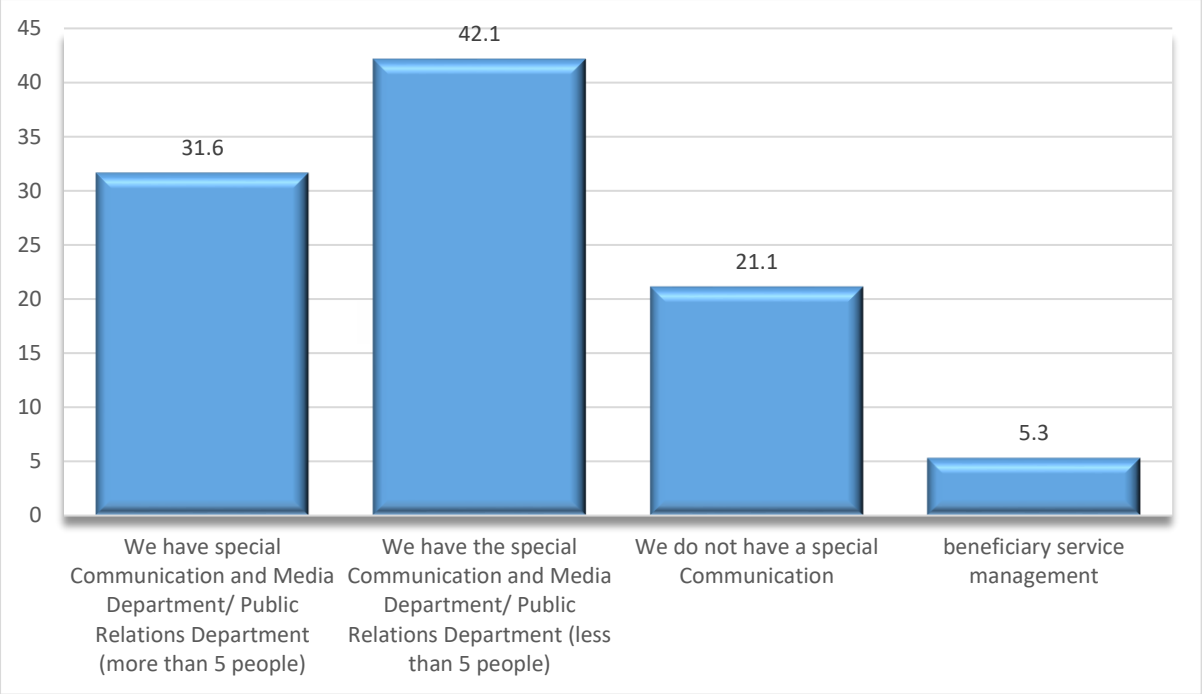



Figure 47. Answers to "Who is accountable for social media interaction in your organization?"

This development demonstrates the Saudi government's commitment to staying in touch with its citizens. The establishment of these specialized departments is a step in the right direction, considering the critical role that social media platforms play in today's world. The ability to communicate and engage with the public effectively can help institutions build trust and foster positive relationships with their audiences. Furthermore, having dedicated personnel with expertise in social media management can help public institutions create and implement effective communication strategies that align with their goals. Overall, the results showed that Saudi public institutions have recognized the importance of social media and are taking the necessary steps to ensure effective communication and collaboration with the public. This is a positive development that should be encouraged and emulated by other countries and organizations worldwide.

The questionnaire also asked about key challenges that public institutions in Saudi Arabia face with digital interaction (see Figure 48). The most common challenge, cited by

89.5% of respondents, was a lack of skilled personnel. This suggested that there is a shortage of individuals with the necessary skills to develop and manage digital interactions in public institutions. This is a significant challenge, as skilled personnel are essential for the successful implementation of digital initiatives. Another challenge cited by 57.9% of respondents was a lack of funding. This is not surprising, as digital initiatives often require significant investment to be successful. Without adequate funding, it may be challenging for public institutions to develop and implement effective digital interactions. Finally, 10.5% of respondents cited a lack of knowledge about e-governance programs as a key challenge. This suggested that there may be a need for more education and training programs to help public institutions understand the potential benefits of e-governance and how to implement it effectively.

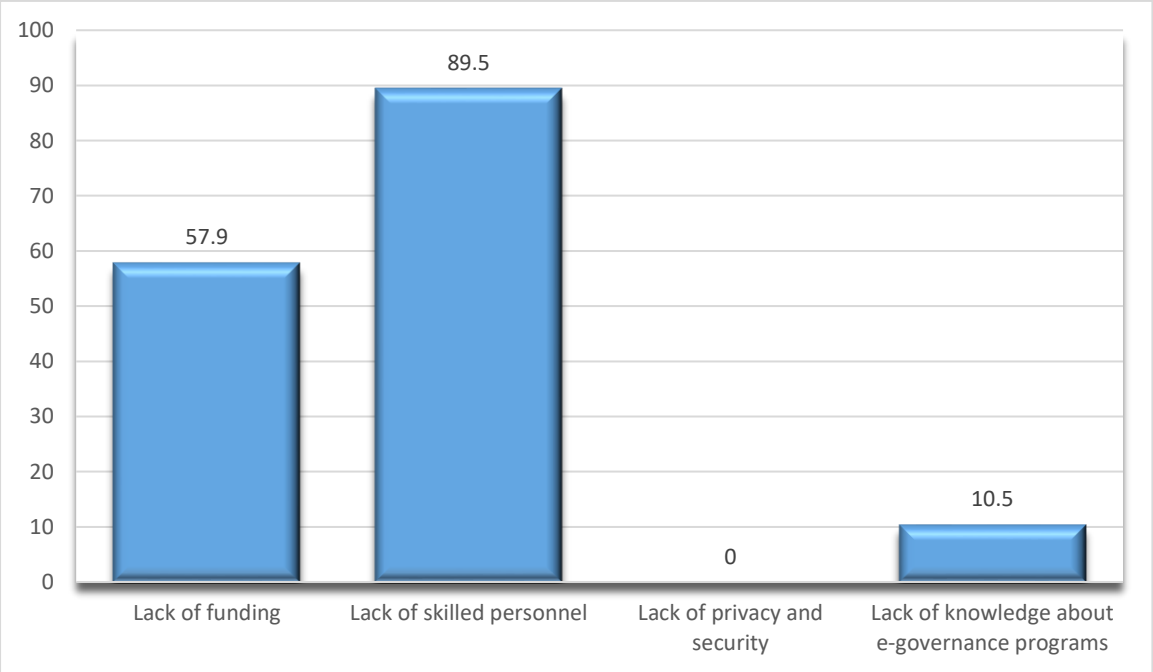



Figure 48. Answers to “What is the key challenge for the development of digital interaction in your public institution?”

By understanding these key challenges, public institutions in Saudi Arabia can take steps to address them and develop more effective digital interactions. For example, they may need to invest in training and development programs to build the necessary skills within their

workforce. They may also need to explore new funding sources or re-allocate existing resources to support digital initiatives. Overall, by addressing these challenges, public institutions can develop more effective digital interactions that better serve the public and support their overall mission.

When it comes to the type of content that individuals use in their tweets, the questionnaire results revealed that the majority of respondents, about 63.2%, typically used text (see Figure 49).

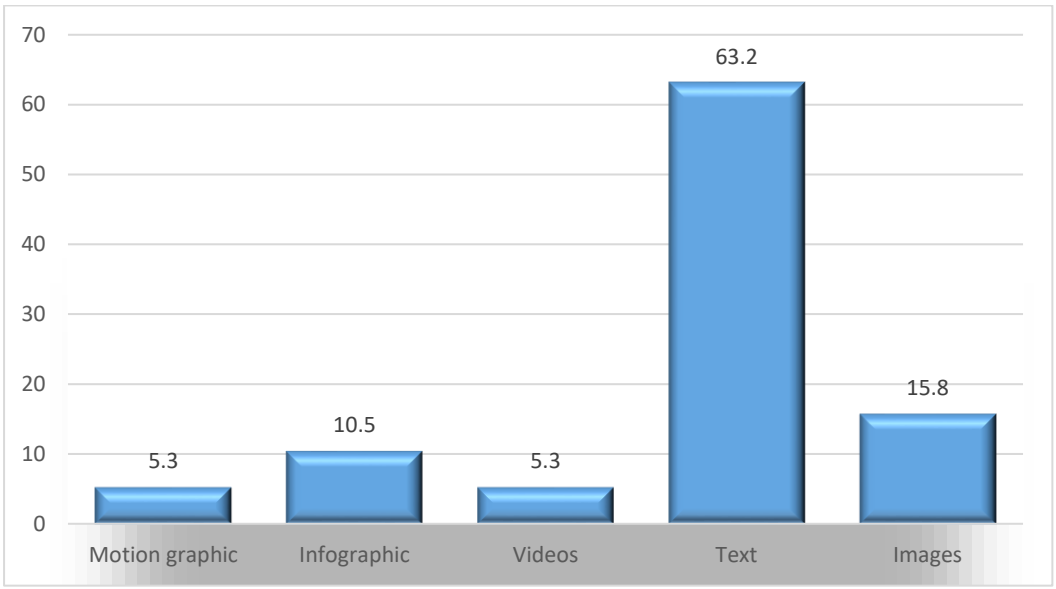



Figure 49. Type of content a participant normally uses in their tweets

This was not surprising as Twitter is a text-based platform that limits the number of characters per tweet to 280. Therefore, it makes sense that the primary content used on Twitter is text. The results also indicated that 15.8% of respondents used images in their tweets. This is a relatively small percentage but still highlights the importance of visual content on social media. Images can catch the attention of users as they scroll through their feeds and can make a tweet more engaging and memorable. Finally, 10.5% of respondents reported using infographics in their tweets. Infographics are an excellent way to share complex information in a visually appealing way. They can simplify data and make it easier

to understand, which is particularly useful for individuals or organizations that need to communicate complex information in a concise and clear manner.

Overall, the types of content that individuals reported using in their tweets reflected the nature of Twitter as a text-based platform. However, the presence of images and infographics in tweets highlights the importance of visual content as well. By using a mix of text, images, and infographics, individuals can create engaging and memorable tweets that effectively communicate their message.

Figure 50 shows the results for the question asking participants whether their organization had a clear policy governing the use of Twitter.

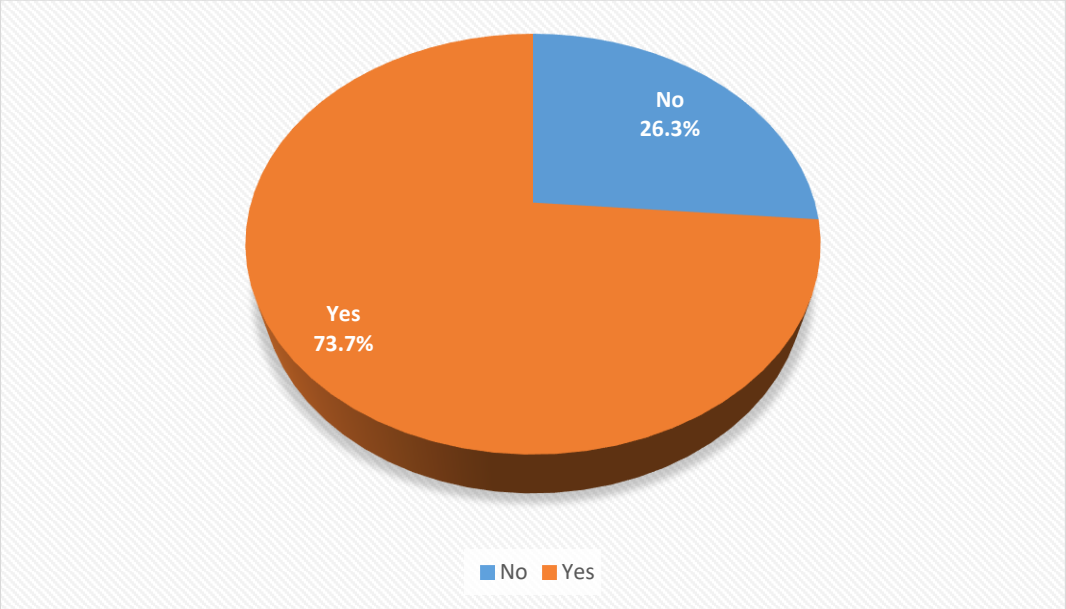



Figure 50. Answers to “Do you have any clear policy that governs the management of Twitter?”

A majority (73.7%) confirmed the existence of such a policy in their respective institutions. Having a well-established policy and strategy for the management of social media such as Twitter is crucial for public institutions in Saudi Arabia. With the increasing use of online services and social media, it is essential to have clear guidelines in place to ensure that the resources available are used effectively. This will enable public institutions to

maximize the benefits of online services and enhance their effectiveness in both the short and long term. A clear policy for the management of Twitter can provide guidelines ensuring that information shared is accurate and reliable. It can also provide guidance on how to deal with potential risks such as cybersecurity threats, misinformation, and other issues that may arise when using social media. Additionally, having a clear policy can help public institutions ensure that their messages are consistent and aligned with their overall objectives. This can build trust with their audience and ensure their messages are received positively.

In conclusion, these results indicated that public institutions in Saudi Arabia tend to have a clear policy for managing Twitter. This is a positive development as it provides a framework for the effective use of online services and social media. With clear guidelines in place, public institutions can ensure that their messages are accurate, reliable, and aligned with their objectives, which can build trust and enhance the effectiveness of their services now and in the future.

### 4.4 Disagreements and Controversies in the Results

Participants unanimously acknowledged Twitter's role in shaping digital governance strategies for Saudi public organizations. Despite potential variance in their specific strategies and motivations, participants were aligned on the fundamental importance of the platform. This suggested a shared understanding of the goals of digital governance, emphasizing Twitter as a crucial channel for communication and engagement between public institutions and the Saudi populace. However, a closer examination revealed that the strategies and motivations for using Twitter in digital governance may diverge among participants. Different public organizations may adopt distinct approaches, influenced by their unique objectives, target audiences, and the nature of their services. This diversity in strategies highlights the complexity of implementing effective digital governance practices tailored to the specific needs of various organizations.

The findings highlighted the need to consider local context when formulating digital governance strategies for Saudi Arabia. Despite potential divergences in approaches, the study identified a consistent pattern of shared values and priorities among Saudis concerning e-governance and social media use. This aligned with the broader discourse on the role of social media in promoting transparency, citizen engagement, and government responsiveness in Saudi Arabia.

Furthermore, there was a significant alignment between the experiences and perspectives of Saudi citizens in the study and as documented by other scholars. That alignment not only validates the robustness of this study but also contributes to a broader understanding of the challenges and opportunities associated with digital governance in Saudi Arabia.

It is crucial to delve into specific examples and case studies that exemplify the variations in digital governance strategies adopted by different public organizations in Saudi Arabia. By examining these cases, the study can offer practical insights into the factors influencing different approaches and shed light on best practices that may be replicated or adapted for optimal outcomes.

Additionally, exploring the perspectives of government officials, social media managers, and the general public separately provides a nuanced understanding of the motivations driving digital governance initiatives through Twitter. By combining these diverse viewpoints, the study can present a more comprehensive picture of the challenges and opportunities in Saudi digital governance.

At the same time, understanding the positive views expressed by participants requires a contextual examination of their employment or social backgrounds. Positive views can be interpreted in several ways, depending on the experiences and perspectives of the individuals involved.

Regarding employment background, positive views from government officials or social media managers might indicate a recognition of the effectiveness of digital governance strategies. They may view Twitter as a valuable tool for enhancing communication with the public, promoting transparency, and gathering feedback. Their positive perspective could be linked to the successful implementation of social media initiatives that align with organizational goals. At the same time, the positive views from the general public may signify satisfaction with the accessibility of government information, responsiveness to concerns, and the overall engagement facilitated through Twitter. For citizens, positive perceptions could be linked to a sense of being heard and acknowledged by public institutions, fostering a positive relationship with the government.

Regarding social background, the positive views of younger and tech-savvy individuals may reflect an appreciation for modernization efforts and the adoption of digital platforms for governance. Such participants may see Twitter as a convenient and familiar channel for interaction with government entities, signalling a positive alignment with their digital lifestyles. The positive views of individuals with conservative or traditional backgrounds may indicate a recognition of the platform's utility while still adhering to cultural values. Their positive stance could suggest that digital governance initiatives are perceived as aligning with traditional norms, thereby avoiding potential conflicts between modernity and tradition.

Understanding these positive views in the context of employment or social background is crucial for deciphering the motivations and implications behind them. It allows for a nuanced analysis of how different groups perceive and engage with digital governance through Twitter, providing insights into the effectiveness of these initiatives across diverse segments of the population.

It is important to note that positive views can be multifaceted and may be influenced by factors such as the effectiveness of communication strategies, perceived transparency, responsiveness to public concerns, and the alignment of digital initiatives with cultural or societal values.

This study found a consensus among participants on the crucial role of Twitter in Saudi digital governance and variations in their strategies and motivations. The shared values and priorities among Saudis underscored the potential for a unified approach to digital governance. By examining these dynamics in the context of existing research and case studies, this study contributes valuable insights to the discourse on the challenges and opportunities of digital governance in Saudi Arabia.

### 4.5 Correlation between the Primary and Secondary Data

This section explores how the study contributes to existing knowledge and correlates with previous academic work on digital governance, social media use, and Twitter's role in Saudi governance. In doing so, it highlights the aspects that distinguish this research from previous scholarly endeavours.

This study contributes to the general domain of digital governance by offering a comprehensive analysis of its intricacies and development. It delves into the underlying principles, mechanisms, and frameworks that govern this evolving field. By critically engaging with relevant literature and employing rigorous research methods, the study seeks to deepen the understanding of digital governance, thereby strengthening the foundation for future research in this area.

This study differentiates itself from existing literature (e.g., Abu-Shanab & Bataineh, 2014; Attard et al., 2015; Boughzala et al., 2014; Chun et al., 2010; Davies, 2015; Feroz Khan, 2014; Heath, 2019; Osimo, 2010) by going beyond a general overview. It employed a specific case study (Twitter use in Saudi Arabia) to illuminate the practical application of

digital governance principles and challenges. This focused approach provides valuable insights into the real-world complexities of governing in the digital age.

Drawing on a rich corpus of literature and empirical data, this study examined the transformative potential of digital governance. It explored how digital governance could enhance administrative efficiency, promote transparency and accountability, encourage citizen engagement, facilitate e-service delivery, and foster innovation. By elucidating the tangible benefits associated with digital governance, the study augments the existing body of knowledge (e.g., Chen & Ahn, 2017; Flynn & Hartnett, 2018; Haro-de-Rosario et al., 2018; Hynes, 2018; Lagendijk et al., 2018; Macnamara et al., 2012; Rodríguez Bolívar, 2017). It has gone beyond listing the benefits of digital governance, using the case of Twitter in Saudi Arabia to demonstrate how these benefits can be actualized in a specific context. By analysing the successes and challenges encountered, the study offers practical recommendations for policymakers and practitioners seeking to leverage digital governance.

Employing a robust analytical framework and informed by a comprehensive review of contemporary literature, this research offers a nuanced understanding of the challenges associated with digital governance, which have been researched by many prominent scholars (e.g., Abusaaq, 2015; Atzori, 2015; Hynes, 2018; Lagendijk et al., 2018; Ma, 2018; Stuttaford, 2018; Talmadge, 2016). It stimulates further scholarly inquiry and underscores the urgent need for effective strategies to navigate this dynamic landscape. The study differentiates itself by focusing on the challenges encountered in Saudi Arabia's Twitter use. It explores issues such as content moderation, citizen participation, and digital literacy, providing valuable insights for other countries grappling with similar challenges in their own governance structures.

More broadly, this study contributes to the current understanding of social media use for digital governance in Arab countries (Mourtada & Alkhatib, 2014; Nepal et al., 2015). By

examining different platforms and trends in the region, it offers novel perspectives on the opportunities and limitations of social media for governance in the Arab world. This research stands out by offering an in-depth analysis of a single platform within a specific Arab country. This focused approach allows for a more granular understanding of the nuances and complexities of social media use in that context.

This study enriches the discourse on the use of Twitter for digital governance in Saudi Arabia (Alasem, 2015; Altayar, 2016; Yamin & Mattar, 2016). By concentrating on Twitter, the study sheds light on the unique patterns of usage, challenges encountered, and opportunities presented within Saudi governance. It goes beyond simply documenting Twitter use in Saudi Arabia, as it delves into the strategic application of Twitter in alignment with Vision 2030, the country's ambitious development roadmap. By analysing how Twitter is leveraged to enhance communication, engagement, and transparency, the study offers valuable insights for other governments seeking to utilize social media to achieve their national development goals. This study builds on existing research on the use of Twitter by Saudi public agencies to achieve Vision 2030 (Alkarni, 2018; Diwan, 2016; Westall & McDowall, 2016). It uncovers innovative approaches adopted by these agencies to foster dialogue, disseminate information, and promote citizen participation through Twitter. This study stands out by offering a more critical examination of Twitter use within the context of Vision 2030. It explores the challenges encountered in leveraging Twitter for such a large-scale national transformation plan. By analysing these challenges, the research offers valuable recommendations for overcoming obstacles and maximizing the impact of social media for national development goals.

This study makes a significant contribution to existing knowledge in several key areas:

- It deepens the understanding of digital governance by providing a detailed analysis of its principles, mechanisms, and challenges within the specific context of Twitter use in Saudi Arabia.
- It enriches the discourse on the benefits of digital governance by showcasing how Twitter can enhance administrative efficiency, transparency, citizen engagement, and innovation in the Saudi government.
- It sheds light on the unique challenges of digital governance in the Arab world by exploring the complexities of social media use for government communication and citizen participation in Saudi Arabia.
- It offers valuable insights for policymakers and practitioners seeking to leverage Twitter to achieve national development goals by drawing on the case study of Vision 2030 in Saudi Arabia.

The findings contribute to the ongoing conversation about digital governance in the Arab world and provide practical recommendations for navigating the challenges and opportunities associated with social media use for government communication and citizen engagement.

# Chapter 5: Conclusion

## 5.1 General Conclusions

This study investigated the use of Twitter by Saudi government organizations, including potential benefits and challenges. Within this wider goal, it achieved the following objectives:

1. Conducting a case study of the Saudi experience with digital governance via Twitter.
2. Investigating the use of Twitter by Saudi public agencies to achieve Vision 2030.
3. Developing recommendations to improve digital governance in Saudi Arabia based on local data and informed by the wider literature.

The following sections answer each of the research questions based on the data presented in the preceding chapters.

### 5.1.1 Research Question 1

Research Question 1 asked, “What do the interviews and questionnaires of government officials reveal about the use of Twitter for interacting with citizens and the current evolution of digital governance in Saudi Arabia?” According to the interviews and questionnaires of government officials, Twitter has emerged as one of the most popular social media platforms used by the Saudi government to interact with its citizens. It has become an essential tool for digital governance that allows officials to disseminate information, receive feedback, and engage with citizens. The interviews and questionnaires revealed that government officials have been using Twitter to announce new policies, respond to inquiries, and receive feedback from the public. Participants believed that Twitter has enhanced the transparency of government operations and improved the quality of public services.

The officials also acknowledged that the evolution of digital governance in Saudi Arabia is still in its early stages, and there is a lot of room for improvement. One of the main challenges facing the government is the limited technical expertise and digital literacy among some of its employees. The interviews and questionnaires showed that some government officials are not familiar with the technicalities of social media platforms, namely Twitter, and therefore may not be able to utilize them effectively.

Another challenge of using Twitter for digital governance is the need to overcome language barriers. While Arabic is the official language of Saudi Arabia, many citizens also speak other languages, such as English. The government must ensure that its communication through Twitter is accessible and understandable to all citizens, regardless of their language skills.

In addition, the interviews and questionnaires indicated that the Saudi government is facing challenges related to the collection and analysis of data generated through Twitter. The data collected through Twitter is vast and diverse, making it difficult to analyse and extract meaningful insights from it. The government must therefore invest in data analytics tools and technologies to effectively analyse and interpret the data generated through Twitter and other social media platforms.

Based on the interviews and questionnaires, the Saudi government is aware of the importance of providing awareness campaigns to citizens about the use of social media platforms, including Twitter, for digital governance. The government should provide educational resources to its citizens to help them understand the potential benefits and limitations of using social media for communication with the government.

In conclusion, the interviews and questionnaires involving government officials provide valuable insights into the use of Twitter for interacting with citizens and the evolution of digital governance in Saudi Arabia. While Twitter has emerged as a popular tool

for digital governance, the Saudi government faces several challenges related to technical expertise, language barriers, data collection and analysis, and awareness campaigns. To overcome these challenges, the government must invest in the necessary infrastructure and provide education and training resources to its employees and citizens. By doing so, the government can further improve the quality of public services and communication with its citizens.

### 5.1.2 Research Question 2

Research Question 2 asked, "What do the interviews and questionnaires with employees of key Saudi public agencies reveal about satisfaction with the quality of digital governance in the country?" To ensure the quality of digital governance services provided by public agencies, it is crucial to evaluate users' level of satisfaction. The interviews and questionnaires suggested that the citizens of Saudi Arabia are generally satisfied with the quality of digital governance services provided by public agencies. They reportedly appreciated the efforts made by the government to improve the quality of digital governance services, most found the services to be easy to use, and they appreciated the transparency and accountability of the government.

However, there are still areas that need improvement. The citizens found the response time to be slow and felt that the government needed to improve the level of interaction with citizens. Some citizens felt that their requests were not given proper attention, and there was a lack of coordination between different departments of the government.

The interviews revealed that employees of public agencies were aware of areas that need improvement. For instance, they acknowledged the need to improve the response time and level of interaction with citizens. The employees also identified the need to improve coordination between different departments of government.

The interview and questionnaire results highlight the importance of continuous evaluation and improvement of digital governance services. It is essential to listen to the feedback of citizens and address their concerns. It is also important to identify areas that need improvement and work towards enhancing the quality of services provided.

In conclusion, the interviews and questionnaires with employees of key Saudi public agencies suggested that Saudi citizens are generally satisfied with the quality of digital governance services provided by public agencies. However, there is a need to improve response time, interaction with citizens, and coordination between government departments. These results highlighted the importance of continuous evaluation and improvement of digital governance services to ensure the satisfaction of citizens and enhance the quality of services provided.

### 5.1.3 Research Question 3

Research Question 3 asked, "What are the challenges to using Twitter for digital governance in Saudi Arabia, and can the country overcome them through Vision 2030 or other available tools?" There are several obstacles the country needs to overcome, especially given the ambitious goals set by Vision 2030. One of the biggest challenges of using Twitter for digital governance in Saudi Arabia is the digital divide. Despite the rapid growth of Internet use across the country, there remain disparities in access to technology, particularly in rural areas. This digital divide creates challenges in ensuring that all citizens can access digital government services through Twitter and other platforms.

Another significant obstacle is the language barrier, since many people do not understand Arabic. It prevents non-Arabic speakers from engaging with government initiatives and policies on Twitter. Twitter is one of the most popular social media platforms in the country, with millions of users, but many people are unable to access the information shared on the platform due to language limitations. This creates a communication gap

between the government and the population, making it difficult for citizens to participate in public discourse and provide feedback. Furthermore, the language barrier poses a significant challenge for non-Arabic speaking expatriates, who make up a sizeable portion of the country's population. They may face difficulties accessing essential services, such as healthcare, education, and legal assistance because information is often only available in Arabic. This creates a sense of exclusion and can lead to misunderstandings and conflicts.

Moreover, cultural norms and beliefs in Saudi Arabia can also pose challenges to the use of Twitter for digital governance. There is a conservative culture in the country that can inhibit citizens' engagement with the government on social media platforms like Twitter. Additionally, there may be resistance from certain groups who view the use of Twitter as a threat to traditional forms of governance.

In addition to these challenges, the Saudi government must deal with the issue of disinformation on Twitter. False information on social media can have significant consequences, such as the spread of misinformation related to Covid-19. The government must therefore take measures to combat this issue by ensuring that information disseminated through Twitter is accurate, reliable, and trustworthy.

Saudi Arabia has taken significant steps to overcome these obstacles to using Twitter for digital governance. The Vision 2030 plan, which aims to transform Saudi Arabia into a digital society, has prioritized the development of digital government services, including the use of Twitter for digital governance. With the help of Vision 2030, the country can continue to improve its digital infrastructure, ensure that all citizens have access to digital government services, and combat disinformation.

Vision 2030 aims for the country to develop in the proper direction in terms of digital governance. These objectives include the development of a unified government services platform, a national centre for data and artificial intelligence, and e-governance systems in

various sectors. The plan has also targeted the adoption of emerging technologies, such as the Internet of Things, cloud computing, and big data analytics. To that end, it seeks to develop digital skills in the Saudi workforce and encourage entrepreneurship in the technology sector. The government has also partnered with leading technology companies, both domestic and international, to develop innovative solutions and provide training and support to Saudi businesses and individuals.

In conclusion, Vision 2030 is driving a transformation in Saudi Arabia's digital landscape, and the promotion of digital governance is a key component of this effort. Through strategic initiatives and partnerships, the country is establishing itself as a leader in digital transformation and positioning itself for long-term success in the global economy.

### 5.1.4 Research Question 4

Research Question 4 asked, "To what extent has the Saudi government achieved the principles of participation, transparency, and collaboration in utilizing Twitter for digital governance?" In recent years, the Saudi government has been investing heavily in digital transformation, including the use of social media platforms such as Twitter for digital governance. The government has established various social media accounts for its ministries, agencies, and officials, and Twitter has become a critical tool for engaging with citizens and providing public services.

Regarding the principles of participation, transparency, and collaboration, the Saudi government has made significant strides in utilizing Twitter for digital governance. With over 7 million active Twitter users in Saudi Arabia, Twitter has become an important tool for engaging with citizens and soliciting feedback on government policies and services. In particular, the government has used Twitter to provide real-time updates on government initiatives and projects, including the progress of the ambitious Vision 2030 plan, which aims to diversify the country's economy and reduce its dependence on oil.

Moreover, Twitter has been used as a platform to facilitate participation and collaboration between citizens and government officials. For example, in 2018, the Saudi Ministry of Interior launched the My Safe Society campaign on Twitter to encourage citizens to report suspicious activities and crimes in their neighbourhoods in an effort to enhance public safety and security.

In terms of transparency, the Saudi government has made efforts to provide citizens with access to information related to government policies and services through Twitter. The government has established official accounts for various ministries, agencies, and officials, which provide updates on government activities and initiatives. Additionally, the government has launched interactive platforms, such as the Ask the Ministry feature, which allows citizens to ask questions and receive answers from government officials on various issues.

However, there are still areas where the government can improve its use of Twitter for digital governance. One of the main challenges is how to handle responses and feedback from citizens on Twitter. While the government has made efforts to solicit feedback through Twitter, it has struggled at times to respond to the sheer volume of messages and inquiries received.

To address this issue, the Saudi government has adopted various strategies, including the use of chatbots and automated response systems, to improve its response rate and ensure that citizens receive timely and accurate responses to their inquiries. However, there is still room for improvement in engaging with citizens and addressing their concerns and feedback.

Furthermore, the Saudi government could do more to raise awareness among citizens about its use of Twitter for digital governance. While Twitter has become a popular platform for engaging with citizens in Saudi Arabia, not all citizens are aware of the government's official accounts and initiatives on the platform. The government could invest more resources

in promoting its social media accounts and initiatives to ensure that citizens are aware of the services and information available to them through Twitter.

In conclusion, the Saudi government has made significant progress in utilizing Twitter for digital governance, particularly in terms of participation, transparency, and collaboration. However, there are still challenges to be addressed, such as increasing the ability to handle responses and feedback from citizens and raising awareness among citizens about the government's use of Twitter for digital governance. By addressing these challenges, the government can refine its use of Twitter as a tool for engaging with citizens and providing public services.

### 5.1.5 Research Question 5

Research Question 5 asked, "How can digital governance through Twitter improve the performance of public institutions, eliminate nepotism, and alleviate corruption in Saudi Arabia?" One of the greatest benefits of analysing digital governance through Twitter is that it helps public institutions improve public services. Twitter is a platform where citizens can voice their concerns, share feedback, and provide suggestions to public institutions. Through the analysis of Twitter interactions, public institutions can identify the most pressing concerns and issues and prioritize their actions accordingly. For instance, if citizens are complaining about poor road infrastructure, the public institution can allocate more resources to address this issue. In this way, Twitter analysis can improve public services by ensuring that public institutions are aware of citizens' needs and are taking appropriate measures to address them.

Moreover, Twitter analysis can help improve the performance of public institutions. By analysing Twitter interactions, public institutions can evaluate their digital governance strategies and identify areas for improvement. For example, if the public institution is not responding to citizens' queries in a timely manner, it can improve its response time by hiring

more staff or adopting automation tools. Similarly, if citizens are not engaging with the public institution on Twitter, the institution can modify its communication strategy to resonate more with its target audience.

Engaging with citizens through Twitter can help agencies optimize the performance of the administrative and government apparatus by saving time and money. The digitalization of government services provides a cost-effective way to communicate with citizens and provide them with necessary information in real time. It also enables government agencies to reduce bureaucratic procedures and minimize the need for face-to-face interactions, which in turn saves time and resources.

Furthermore, Twitter has been proven to be an effective tool to receive feedback from citizens about government services. Government agencies can use this feedback to identify areas for improvement and enhance the quality of services. The use of Twitter also fosters a sense of transparency and accountability, as citizens can more easily monitor government activities and hold government agencies accountable for their actions.

In addition, Twitter analysis can help reduce nepotism in public institutions. Nepotism is the practice of favouring relatives or friends in the workplace, which can lead to unfairness and inefficiency. Through Twitter analysis, public institutions can ensure that they are treating all citizens equally and are not favouring any particular group. For example, if a public institution is receiving a large number of complaints about a given service, it can investigate the issue and take corrective actions. By addressing the issue, the institution can demonstrate that it is committed to providing equal treatment to all citizens.

Finally, Twitter analysis can help alleviate corruption, i.e., the misuse of public office for personal gain, which can lead to the misallocation of public resources and the erosion of public trust. Twitter analysis can help detect and prevent corruption by identifying unusual patterns of behaviour or transactions. For example, if a public official is receiving a large

number of gifts from a vendor, this can indicate a conflict of interest. By detecting and preventing corrupt practices, public institutions can restore public trust and ensure that public resources are used for the benefit of all citizens.

In conclusion, analysing digital governance through Twitter can help improve public services, enhance the performance of public institutions, reduce nepotism, and alleviate corruption. By analysing Twitter interactions, public institutions can identify citizens' needs and concerns, optimize their digital governance strategies, ensure equal treatment of all citizens, and detect and prevent corrupt practices. However, it is important to note that Twitter analysis is not a panacea and should be used in conjunction with other governance tools and strategies to ensure the best outcomes for citizens.

### 5.1.6 Research Question 6

Research Question 6 asked, "How has the Covid-19 pandemic impacted the development of digital governance through Twitter in Saudi Arabia?" The Covid-19 pandemic has had an enormous impact on various sectors and aspects of Saudi society. One of the biggest is the acceleration of the country's digital transformation, including digital governance.

The country witnessed a massive increase in the number of digital government services and transactions during the pandemic. One of the main tools facilitating digital governance during this time was Twitter. Twitter has played a critical role in disseminating information, engaging citizens, and collecting feedback on government services and policies. The Saudi government has used Twitter extensively to communicate with citizens during the pandemic, providing updates on Covid-19 cases, precautionary measures, and vaccination campaigns.

In addition, Twitter has facilitated citizen engagement in digital governance in Saudi Arabia during the pandemic. Citizens have used Twitter to express their opinions and

feedback on government services and policies, including Covid-19 measures. For example, citizens used Twitter to express their opinions on the lockdown and curfew measures and to suggest alternative solutions.

While the pandemic has accelerated the adoption of digital technologies, it has also exposed the digital divide among different segments of society, including the elderly, low-income individuals, and those living in rural areas. Therefore, relying solely on Twitter as a tool for digital governance may exclude some segments of society from participating in decision-making processes. Another challenge is the reliability of information on Twitter. While Twitter has been used to disseminate accurate information on Covid-19 in Saudi Arabia, it has also been used to spread misinformation. Therefore, it is crucial to ensure the accuracy and credibility of information shared on Twitter to avoid confusion and panic. While Twitter is a useful tool for digital governance, it should be complemented by other digital technologies and methods to ensure inclusivity, accuracy, and credibility.

The Covid-19 pandemic has been a significant catalyst for the adoption of digital governance in Saudi Arabia. During this time, Twitter has played a critical role in facilitating communication and information-sharing between the government and citizens. The platform has helped build trust and transparency and monitor compliance with Covid-19 guidelines. The pandemic has highlighted the importance of digital technologies in governance and accelerated the adoption of remote work, virtual meetings, and online services. Going forward, the government is likely to continue to leverage such technology to increase efficiency.

### 5.2 Contemporary Context of the Research: New Conditions to Take into Account

Elon Musk’s purchase of Twitter in 2022 and the emergence of the social network Threads as a direct competitor to Twitter in 2023 could have significant implications for research on the use of Twitter by Saudi public agencies for the purpose of digital governance.

A discussion of these contextual factors below is thus intended to provide a more comprehensive understanding of the evolving social media landscape and its implications for government communication strategies going forward.

First, Elon Musk's purchase of Twitter adds a layer of complexity to the research as it brings new dynamics and potential transformations to the platform. Musk's leadership style, technological innovation, and public persona have the potential to shape Twitter's strategic direction, user experience, and overall impact. Investigating the consequences of this ownership change would provide insights into the future trajectory of Twitter as a platform for public agencies in Saudi Arabia and its implications for digital governance practices.

Second, the emergence of Threads introduces a new dimension to the digital governance landscape, particularly in terms of conversational engagement and content organization. Public agencies in Saudi Arabia, as well as other governments worldwide, utilize Twitter as a platform to disseminate information, engage with citizens, and foster transparency. Understanding the features and functionalities of Threads as it continues to evolve could allow researchers to explore potential alternatives or additions to Twitter for enhancing conversational interactions and improving information flow in the context of digital governance.

Examining these contextual factors helped me to identify challenges, risks, and opportunities associated with the continued use of Twitter by public agencies in Saudi Arabia. The emergence of Threads as a potential competitor to Twitter, for example, could lead to a fragmentation of user engagement in the country, affecting the reach and effectiveness of communication efforts by public agencies. Consequently, understanding the competitive landscape and potential shifts in user behaviour could inform public agencies in Saudi Arabia about the need to adapt their digital governance strategies and explore alternative platforms or features to engage with citizens more effectively.

Furthermore, considering the implications of Elon Musk's ownership of Twitter could offer insights into potential changes in the platform's policies, algorithms, and governance. This understanding is vital for public agencies in Saudi Arabia as they need to anticipate and adapt to any shifts in the platform's dynamics that may affect their digital governance initiatives. Additionally, it is crucial to consider the ethical and privacy implications of Musk's ownership, especially in the context of government data and citizen engagement.

For the above reasons, including the emergence of Threads and Elon Musk's purchase of Twitter is essential for a more comprehensive understanding of the findings on Saudi public agencies' use of Twitter for digital governance. By examining these contextual factors, researchers can gain insights into alternative platforms, potential shifts in user behaviour, and challenges, risks, and opportunities for digital governance practices. In addition, understanding the implications of these developments could help public agencies in Saudi Arabia navigate the evolving social media landscape more effectively and refine their strategies for engaging with citizens and promoting transparent governance.

### 5.2.1 The Impact of Elon Musk's Purchase of Twitter

The 2022 acquisition of Twitter by Elon Musk has triggered a wide-ranging discourse on the future trajectory of this influential social networking platform. With a history of disruptive entrepreneurship and a reputation for visionary thinking, Musk's involvement in Twitter has prompted numerous inquiries into its potential future (Leloup et al., 2022).

The use of Twitter for digital governance in Saudi Arabia is dependent on the organizational leadership and approach Musk selects for Twitter's development. Under these conditions, it is critically important to analyse Musk's purchase of this social network and the potential impact it could have. The following points should thus be taken into consideration:

1. Elon Musk's visionary leadership. Elon Musk has established himself as a visionary leader through ventures in diverse industries, including electric vehicles

(Tesla), space exploration (SpaceX), and renewable energy (SolarCity) (Redding, 2021). Musk's leadership style is characterized by setting ambitious goals, rallying teams around a shared vision, and fostering innovation (Miller, 2022). This visionary leadership approach has the potential to shape the destiny of Twitter by fostering an environment that stimulates the exploration of novel ideas, expanding the platform's capabilities, and reimagining its purpose in the ever-evolving social media landscape.

2. Technological innovation and disruption. Musk's inclination towards disruptive technologies resonates with Twitter's capacity for social transformation. Through his ownership, Musk could leverage his expertise and resources to propel Twitter into uncharted territories, potentially revolutionizing the way users engage with the platform. For instance, Musk's involvement could pave the way for the integration of cutting-edge technologies such as artificial intelligence, blockchain, and augmented reality, thereby enhancing the user experience, refining content curation, and addressing challenges such as misinformation and toxic behaviour (Redding, 2021).
3. The power of Musk's public persona. The influence of Musk's public persona and active engagement on social media platforms should not be underestimated. As one of the most prominent figures on Twitter, Musk's ownership of the platform raises concerns about potential conflicts of interest and its impact on objectivity and neutrality (Egan, 2022). While his involvement may attract a new demographic and increase Twitter's visibility, it is essential to consider the potential risks associated with a platform dominated by a single influential voice. The controversial nature of some of Musk's public statements could fuel polarized discussions and tarnish the platform's reputation. Additionally, regulatory

scrutiny, privacy concerns, and issues related to user data protection may intensify due to Musk's ownership of multiple companies that handle vast amounts of personal information. These challenges necessitate a comprehensive and responsible approach to ensure the platform's long-term sustainability and maintain user trust.

4. Transformative potential and future landscape. Despite the aforementioned risks, Musk's ownership of Twitter holds transformative potential. By capitalizing on his expertise and resources, Musk could guide the platform towards unprecedented heights, attracting fresh talent, promoting entrepreneurial endeavours, and fostering collaborations. This could facilitate the emergence of innovative features, an improved user experience, and novel monetization strategies, ultimately redefining Twitter's role in the digital ecosystem and shaping the future of social media as a whole.

Elon Musk's acquisition of Twitter has significant implications for the platform's future. His visionary style of leadership, dedication to technological innovation, and influential public persona have the capacity to shape Twitter's strategic direction, user experience, and broader societal impact. Nevertheless, it is crucial to strike a balance between the potential benefits and associated risks of the platform's change in ownership in order to ensure responsible governance, data protection, and transparency. Ultimately, Musk's ownership offers a unique opportunity for Twitter to reinvent itself, contribute to the evolving social media landscape, and adapt to the changing needs and expectations of its global user base. By capitalizing on Musk's leadership approach and leveraging his resources, Twitter has the potential to redefine its role and remain a relevant and influential platform.

### 5.2.2 The Implications of Threads for Twitter's Development and Use

The disruptive, dynamic nature of the social media landscape has led to the emergence of various platforms aiming to redefine the way users connect and engage online. One such platform is Threads, a novel social network that emphasizes threaded conversations (Kominers & Wu, 2023). This section explores the potential dangers posed by Threads to the development and use of Twitter, focusing on the competitive landscape and the challenges it presents. By analysing the features and functionalities of Threads, as well as the potential impact on Twitter's user base and strategic direction, this section sheds light on the risks associated with the introduction of this new social network for Twitter in general and for its use by Saudi public agencies in particular:

1. Increased competition. The appearance of Threads introduces intensified competition for Twitter. With its threaded conversation structure and emphasis on in-depth discussions, Threads appeals to users seeking a more focused and immersive conversational experience (Kominers & Wu, 2023). This heightened competition poses a risk to Twitter's user base, as Twitter users may be drawn to Threads for its unique features and potentially migrate away from Twitter entirely, affecting user engagement and overall platform growth.
2. Fragmentation of user base. The emergence of Threads as a distinct platform for threaded conversations could lead to a fragmentation of Twitter's user base. Users seeking extensive discussions and a more organized conversation experience may shift their focus to Threads, resulting in a decline in engagement on Twitter. This fragmentation may hinder Twitter's ability to maintain a cohesive and vibrant community, impacting its strategic development and potentially diminishing its influence in the social media landscape.

3. Potential loss of unique selling proposition. The brevity and real-time nature of Twitter's messages have been key elements of its appeal, differentiating it from other social media platforms. However, Threads' threaded conversation feature poses a challenge to Twitter's unique selling proposition (Waterson, 2023). As users increasingly seek more comprehensive and nuanced conversations, Twitter may face difficulties in retaining its position as the go-to platform for rapid information sharing and succinct updates. This loss of distinctiveness may lead to a decline in user interest and a subsequent negative impact on Twitter's growth and relevance.
4. Threat to user engagement. Threads' emphasis on threaded conversations and extensive discussions may divert users' attention away from Twitter's traditional engagement model. Twitter's strength lies in its ability to facilitate quick interactions and real-time conversations. However, if users find Threads more appealing for engaging in more profound and detailed conversations, Twitter may experience a decline in user engagement levels. This reduced engagement could negatively impact the overall vibrancy and dynamism of the Twitter community.
5. Implications for innovation and development. The rise of Threads as a competitor to Twitter may have implications for the innovation and development of both platforms (Pastis, 2023). While competition can foster innovation, it could also lead to a drain of resources and talent from Twitter as it seeks to counter the appeal of Threads. This diversion of attention and resources to maintain competitiveness could hinder Twitter's ability to innovate and adapt to evolving user needs, potentially impeding its long-term development and growth.
6. User experience and interface challenges. Threads' threaded conversation structure offers users a more structured and organized experience compared to

Twitter's fast-paced and chronological timeline (Pastis, 2023). Users may find Threads' interface more intuitive and conducive to in-depth conversations, potentially leading to a preference for Threads over Twitter. This challenge puts pressure on Twitter to enhance its own conversation features, improve its user experience, and explore new ways to keep users engaged and satisfied.

To mitigate the dangers posed by Threads, Twitter needs to proactively address its competitive challenges. This may involve enhancing its own conversation features, introducing new functionalities, and continually improving user experience. Additionally, Twitter should focus on fostering a strong and vibrant community, emphasizing its unique strengths, and effectively communicating its value proposition to users to maintain their loyalty and engagement.

To conclude, the emergence of Threads presents significant dangers to Twitter's development and use. Increased competition, fragmentation of the user base, challenges to its unique selling proposition, and threats to user engagement pose risks to Twitter's strategic direction and long-term growth. To minimize these dangers, Twitter must carefully consider innovative approaches, improve user experience, and proactively address the evolving needs of its user base. By navigating these challenges effectively, Twitter can maintain its position as a prominent social media platform and continue to shape the online communication landscape.

### 5.3 Recommendations for Saudi Public Agencies in Terms of Twitter Usage

Based on the secondary data analysis, as well as the examination of interviews and questionnaires within this research, the following set of recommendations for Saudi public institutions was developed.

Saudi public institutions should prioritize the adoption of artificial intelligence (AI) tools to improve the quality of digital governance services. AI can automate administrative

processes, analyse data, and provide more personalized and efficient services to citizens. For example, AI-powered chatbots can provide instant responses to citizens' queries, enhancing the efficiency of digital communication. Furthermore, AI can be used to analyse citizens' feedback and preferences, enabling public institutions to tailor their services to citizens' needs. Therefore, public institutions should invest in the development and integration of AI tools to enhance the quality of digital governance services and improve citizen satisfaction.

Saudi public institutions should allocate more financial resources to the education and professional development of their personnel to improve their efficiency and minimize problems related to citizen interaction. By investing in education and training, public institutions can equip their personnel with the necessary skills and knowledge to navigate the digital sphere and provide high-quality services. Additionally, education can increase employee awareness of citizens' needs and concerns, fostering a culture of empathy and responsiveness. Consequently, public institutions should develop comprehensive training programs that cover the use of new technologies, digital communication, and citizen-centred service delivery to enhance the quality of interaction between personnel and citizens.

Saudi public institutions should prioritize developing a comprehensive strategy for using social media, particularly Twitter, for digital governance purposes. A well-planned and transparent strategy can enhance the effectiveness of digital communication, increase citizen engagement, and improve the perception of public institutions. By working on a well-structured plan, public institutions can ensure that their social media activities are aligned with their goals and that they are consistent with the values and interests of citizens. Moreover, a well-planned social media strategy can help public institutions navigate the challenges and risks associated with social media, such as misinformation and public backlash. Therefore, public institutions should seek to develop a comprehensive social media

strategy that encompasses all aspects of digital governance, including communication, citizen engagement, and service delivery.

Saudi public institutions should pay attention to past mistakes and problems within their organization and take steps to ensure that they are not repeated in the future. By learning from past mistakes, public institutions can improve their performance, increase citizen trust, and enhance their overall effectiveness. Furthermore, understanding the root causes of past problems can help public institutions identify and address systemic issues that may have contributed to these problems. This in turn can lead to more efficient service delivery, increased citizen satisfaction, and better governance outcomes. Therefore, public institutions should prioritize analysing past mistakes and problems, developing corrective action plans, and implementing measures to prevent similar issues from arising in the future.

Saudi public institutions should examine the possible future challenges of digital governance to be prepared for them and avoid unexpected disruptions. The rapidly changing technological landscape presents many challenges to digital governance, including cybersecurity threats, data privacy concerns, and evolving citizen expectations. By examining these challenges and anticipating future developments, public institutions can develop proactive measures to mitigate risks, enhance resilience, and adapt to changing circumstances. Moreover, being prepared for future challenges can help public institutions seize new opportunities, such as leveraging emerging technologies to enhance service delivery and citizen engagement. Therefore, public institutions should prioritize developing a forward-looking approach to digital governance that is informed by a thorough analysis of possible future challenges and opportunities.

Saudi public institutions should seek to share relevant and valuable content on Twitter as a means of winning the trust of their audience and serving as a valid source of information. By sharing high-quality content, public institutions can demonstrate their expertise, authority,

and commitment to providing accurate information to citizens. Moreover, sharing carefully checked, reliable, and updated information can help prevent the spread of misinformation and improve the overall quality of public discourse on Twitter. Therefore, public institutions should develop a content strategy that prioritizes providing relevant and valuable information to their audience, while ensuring that the information shared is accurate, reliable, and up-to-date. This can be achieved through regular audits of content, fact-checking, and collaboration with relevant stakeholders to ensure the accuracy and relevance of the information provided.

Saudi public institutions should engage with their audience on Twitter to foster a sense of community and improve the quality of their services. Engagement can take various forms, including answering questions, creating opinion polls, and asking for feedback from followers. By doing so, public institutions can increase the level of interaction with their audience, which can provide valuable insights and feedback that can be used to improve the quality of services. Moreover, engaging with followers can help build a sense of belonging and create a community of supporters who are more likely to trust the institution and advocate for its services. Therefore, public institutions should engage with their audience on Twitter through regular communication and interaction, including asking for feedback, answering questions, and creating opportunities for dialogue and an exchange of ideas.

Saudi public institutions should prioritize improving the security and protection of personal data on Twitter to build trust and confidence among their followers. It is important to assure followers that their requests and messages will not be available to a wider audience and that their personal information will be protected from unauthorized access. To achieve this, public institutions should develop and implement robust data protection policies and practices, including encryption, secure authentication protocols, and regular security audits. Additionally, public institutions should educate their personnel on the importance of data protection and security measures to prevent human error or negligence that may compromise

data security. By prioritizing the protection of personal data, public institutions can build trust and confidence among their followers, which can enhance the overall quality of interactions on Twitter and improve the institution's reputation.

To enhance the quality of digital governance services provided on Twitter, Saudi public institutions should focus on improving coordination between departments and sub-units. Effective coordination can help resolve requests more efficiently and improve communication between various stakeholders, such as social media managers, government officials, and experts. To achieve this, public institutions should establish clear protocols and guidelines for communication and information sharing between departments and sub-units. They should also invest in training and tools that can facilitate collaboration and coordination. Additionally, they should regularly evaluate their coordination strategies and adjust them as needed to ensure they are meeting the needs of their followers and stakeholders. By prioritizing coordination, Saudi public institutions can improve the quality of their digital governance services, streamline their operations, and enhance the overall experience for their followers.

These recommendations could be used to help Saudi public agencies improve their performance and provide better digital governance services to citizens, thereby improving people's lives and increasing their satisfaction with the government.

### 5.4 Prospects for Future Research

This paper argues that the research on Twitter usage by governmental institutions of Saudi Arabia and the main challenges related to it can be further expanded in several directions. Digital technology is undergoing rapid developments, and the coming years could revolutionize the digital sphere, transforming the interaction between Saudi public institutions and the general population. Thus, this research might be expanded in terms of new technologies and technological solutions, since they might change the approach to digital

governance and the ways in which the interaction between public institutions and citizens is realized. For example, artificial intelligence could be used to analyse and monitor social media platforms, helping governmental institutions identify citizens' needs and expectations. AI-powered chatbots could also be developed that provide instant responses to citizens' queries, enhancing the efficiency of digital communication.

This line of research could be expanded in terms of methodology as well, with future studies using other methods. For instance, quantitative tools could be utilized to measure the quantity and quality of interaction between citizens and public agencies in Saudi Arabia. Social network analysis could be applied to analyse the structure and dynamics of Twitter conversations between governmental institutions and citizens, identifying the most influential users and the topics that generate the most engagement.

### 5.5 Value and Importance of the Results

This empirical research offers valuable academic and practical contributions. From an academic point of view, it expands the existing body of knowledge surrounding social media use in governance, particularly within the context of a nation navigating socio-political conservatism and digital disruption. It identifies key theoretical frameworks and sheds light on crucial themes like state-citizen communication, public discourse analysis, and the impact of digital tools on power dynamics. From a practical perspective, the research provides actionable insights and recommendations for the Saudi government to harness the potential of Twitter for more effective digital governance. It highlights the importance of citizen engagement, digital literacy programs, open data initiatives, and constructive dialogue in bridging the gap between government and society.

Three key areas the study contributes to are outlined below. The first is state-citizen communication. Within this area, the study examined the following aspects:

1. Shifting Power Dynamics: Twitter offers a less controlled space for communication, potentially empowering citizens to voice concerns and challenge traditional hierarchies. This research analysed how Twitter can reshape state-citizen power dynamics in the Saudi context.
2. Public Discourse Comprehension: Analysing Twitter discussions surrounding government policies and actions revealed valuable information about public sentiment and priorities. This data can inform more responsive and effective governance strategies.
3. Areas for Improvement Comprehension: The study pinpointed specific challenges faced by the government in engaging with and responding to citizens on Twitter. This can aid in developing better communication strategies and improving the overall effectiveness of digital governance initiatives.

The second area of contribution relates to navigating digital disruption and conservatism. Within it, the study examined the following aspects:

1. Understanding Resistance to Change: The research analysed how conservative social norms impact online behaviour and discourse, offering insights into the resistance to digital disruption experienced by some governments, including that of Saudi Arabia.
2. Promoting Dialogue and Collaboration: The study explored how Twitter can be used to bridge the divide between government and conservative segments of society, paving the way for constructive dialogue and collaborative efforts toward social progress while keeping existing cultural values.
3. Technology as a Catalyst for Change: Despite resistance, the research demonstrated how digital tools like Twitter can act as catalysts for social change.

Analysing instances where Twitter facilitated critical discussions or highlighted grievances showcased its potential to push for progress.

The third contribution is fostering digital literacy and awareness. Within it, the study examined the following aspects:

1. Addressing the Digital Divide: The study emphasized the need for improved digital literacy and awareness within government and society to address the challenges and opportunities presented by platforms like Twitter. This can promote more effective communication and collaboration in the digital sphere.
2. Building Trust and Inclusivity: By fostering digital literacy and awareness, the research encourages greater citizen participation in digital governance processes, leading to a more inclusive and trust-based relationship between the government and the public.
3. Enhancing Transparency and Accountability: The study highlighted how improved digital literacy empowers citizens to hold the government accountable by monitoring its activities and performance on Twitter, ultimately leading to a more transparent and responsive governance system.

This study presents a comprehensive analysis of the opportunities and challenges associated with using Twitter for digital governance in the Saudi context. By providing valuable data, insights, and recommendations, it contributes to a deeper understanding of the complex interplay between social media, citizen engagement, government transparency, and social conservatism in the digital age. It paves the way for the development of more effective, inclusive, and responsive governance models in Saudi Arabia and beyond, leading to more citizen-centric approaches.

## References


Abdulkareem, A. K., Abdulkareem, Z. J., Ishola, A. A., & Akindele, I. T. (2022). Does e-government impact e-participation? The influence of trust in e-government. *International Review of Public Administration*, *27*(2), 91–110. https://doi.org/10.1080/12294659.2022.2071540

Abusaaq, H. (2015). *Population aging in Saudi Arabia*. Saudi Arabian Monetary Agency.

Abu-Shanab, E., & Bataineh, L. (2014). Challenges facing e-government projects: How to avoid failure? *International Journal of Emerging Sciences*, *4*(4), 207–217.

Alasem, A. (2015). E-government on Twitter: The use of Twitter by the Saudi authorities. *Electronic Journal of e-Government*, *13*(1), 67–73. www.ejeg.com/issue/download.html?idArticle=394

Alboaouh, K., & Mahoney, J. (2017). Religious and political authority in the Kingdom of Saudi Arabia: Challenges and prospects. *MANAS Journal of Social Studies*, *6*(2).

Aljabre, A. A. (2013). Social networking, social movements, and Saudi Arabia: A literature review. *ARPN Journal of Science and Technology*, *3*(2), 161–168.

Alkarni, S. A. (2018). *Twitter response to Vision 2030: A case study on current perceptions of normative disorder within Saudi social media* [Doctoral dissertation, University of Ottawa]. https://ruor.uottawa.ca/bitstream/10393/38041/1/Alkarni_Saad_2018_Thesis%20.pdf

Al-Khalifa, H., & Al-Salman, A. (2006). *From Web 1.0 to Web 2.0 and beyond: Is the web becoming more accessible for people with visual impairments?* https://www.researchgate.net/profile/Hend-Al-Khalifa/publication/221238003_From_Web_10_to_Web_20_and_Beyond_Is_the_Web_Becoming_More_Accessible_for_People_with_Visual_Impairments/links/541dbe1f0cf241a65a18995c

/From-Web-10-to-Web-20-and-Beyond-Is-the-Web-Becoming-More-Accessible-for-People-with-Visual-Impairments.pdf

Almanssori, S. (2022). Public pedagogy of hijabi girlhood: A listening guide analysis of #MyHijabStory vlogs. *Girlhood Studies: An Interdisciplinary Journal.*

Alsheddi, A. (2020). *The impact of socio-cultural and religious values on the adoption of technological innovation: A case study of Saudi Arabia* [Doctoral dissertation, University of Canberra]. https://researchsystem.canberra.edu.au/ws/portalfiles/portal/44951664/Alsheddi_thesis.pdf

Alsheddi, A., Sharma, D., & Talukder, M. (2020). Impact of users' socio-cultural and religious orientation on government resource planning (GRP) systems usage in Saudi Arabia. *IEEE Access, 8*, 122722–122735. https://doi.org/10.1109/access.2020.3006866

Alshehri, M., & Drew, S. (2010). Challenges of e-government services adoption in Saudi Arabia from an e-ready citizen perspective. *International Journal of Industrial and Manufacturing Engineering, 4*(6), 1086–1092. https://waset.org/publications/5629/challenges-of-e-government-services-adoption-in-saudi-arabia-from-an-e-ready-citizen-perspective

Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. *English Linguistics Research, 3*(1). https://doi:10.5430/elr.v3n1p39

Altayar, M. (2016). Investigating the use of Web 2.0 technologies and their presence in Saudi government agencies' websites. *International Journal of Technology Diffusion, 7*(2), 63-80. https://www.igi-global.com/gateway/article/159128

Arab News. (2016). Top five ranking for Saudi e-government by 2030. *Arab News*. http://www.arabnews.com/news/top-5-ranking-saudi-e-government-2030

Arab News. (2017). Saudis celebrate removal of minister who exploited position to employ son. *Arab News.* http://www.arabnews.com/node/1089361/saudi-arabia.

Attard, J., Orlandi, F., Scerri, S., & Auer, S. (2015). A systematic review of open government data initiatives. *Government Information Quarterly*. https://www.researchgate.net/profile/Judie_Attard/publication/281349915_A_Systematic_Review_of_Open_Government_Data_Initiatives/links/55e575de08aec74dbe7327ef/A-Systematic-Review-of-Open-Government-Data-Initiatives.pdf

B2B International. (2019). *Chapter 8: An introduction to questionnaire design*. https://www.b2binternational.com/files/08-market-research-ch8.pdf

Barua, M. (2012). E-governance adoption in government organization of India. *International Journal of Managing Public Sector Information and Communication Technologies*, *3*(1).

Basamh, S., & Qudaih, H. (2014). Government implementation in the Kingdom of Saudi Arabia: An exploratory study on current practices, obstacles & challenges. *International Journal of Humanities and Social Science*, *4*(2). https://pdfs.semanticscholar.org/9491/5aeb253f21a5890928f4660e44b1c87a2074.pdf

BBC. (2016, April 25). Saudi twitter users debate post-oil future. *BBC News.* https://www.bbc.com/news/world-middle-east-36134436

BCW Twiplomacy. (2020). *Twiplomacy report*. https://www.twiplomacy.com/twiplomacy-study-2020

Boughzala, I., Jannsen, M., & Assar, S. (2014a). *Case studies in e-government 2.0*. Springer.

Boughzala, I., Jannsen, M., & Assar, S. (2014b). *E-government 2.0: Back to reality, a 2.0 application to vet*. Springer.

Buaziz, F. (2008). *Public administration presence on the Web: A cultural explanation*. https://www.researchgate.net/profile/Fatma-Bouaziz-2/publication/

228915594_Public_Administration_Presence_on_the_Web_a_Cultural_Explanation/links/5b935ad64585153a53062043/Public-Administration-Presence-on-the-Web-a-Cultural-Explanation.pdf

Business Dictionary. (2019). *Convenience sampling.* http://www.businessdictionary.com/definition/convenience-sampling.html

Cacciattolo, M. (2015). Ethical considerations in research. In M. Vicars, S. Steinberg, T. McKenna, & Cacciattolo (Eds.), *The Praxis of English Language Teaching and Learning (PELT)*. SensePublishers.

Cambridge Dictionary. (n.d.). Cybersecurity. In *Cambridge Dictionary*. Retrieved April 19, 2024, from https://dictionary.cambridge.org/dictionary/english/cybersecurity

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal*, *15*(1), 5–25. https://doi.org/10.1111/j.1365-2575.2005.00183.x

Chatfield, A. T., Scholl, H. J., & Brajawidagda, U. (2013). Tsunami early warnings via Twitter in government: Net-savvy citizens' co-production of time-critical public information services. *Government Information Quarterly*, *30*(4), 377–386.

Che, X., & Ip, B. (2017). *Social networks in China*. Chandos Publishing.

Chen, Y., & Ahn, M. (2017). *Routledge handbook on information technology in government*. Routledge Handbooks.

Choi, J., Kushner, K. E., Mill, J., & Lai, D. W. (2012). Understanding the language, the culture, and the experience: Translation in cross-cultural research. *International Journal of Qualitative Methods*, *11*(5), 652–665.

Chun, S. A., Shulman, S., Sandoval, R., & Hovy, E. (2010). Government 2.0: Making connections between citizens, data and government. *Information Polity*, *15*(1–2), 1–9. https://doi.org/10.3233/ip-2010-0205

Clayton, R., Murdoch, S., & Watson, R. (2006). *Ignoring the Great FireWall of China*. Springer.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications.

Davies, R. (2015). E-government: Using technology to improve public services and democratic participation. *European Parliamentary Research Service.* http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/565890/EPRS_IDA(2015)565890_EN.pdf

Debois, S. (2019). Ten advantages and disadvantages of questionnaires. *Survey Any Place*. https://surveyanyplace.com/questionnaire-pros-and-cons/

Digital Government Authority. (n.d.-a). https://dga.gov.sa/en

Digital Government Authority. (n.d.-b). *Smart government strategy*. https://www.my.gov.sa/wps/portal/snp/aboutksa/smartstrategy/?lang=en

Diwan, K. (2016). Youth appeal of Saudi Vision 2030. *The Arab Gulf States Institute in Washington*. https://agsiw.org/youth-appeal-of-saudi-vision-2030/

Dobrin, D. (2020). The hashtag in Digital Activism: A Cultural Revolution. *Journal of Cultural Analysis and Social Change, 5*(1), 03. https://doi.org/10.20897/jcasc/8298

Egan, M. (2022, December 19). Elizabeth Warren calls out Elon Musk for "unavoidable" conflicts of interest caused by Twitter takeover. *CBS News*. https://www.cbsnews.com/boston/news/elizabeth-warren-elon-musk-twitter-tesla-conflict-of-interest/

Eliott, N., & Lazenbatt, A. (2005). How to recognise a "quality" grounded theory research study. *Australian Journal of Advanced Nursing, 22*(3), 48–52.

Eliott, N., & Lazenbatt, A. (2005). How to recognize a "quality" grounded theory research study. *The Australian Journal of Advanced Nursing: A Quarterly Publication of the*

*Royal Australian Nursing Federation*, *22*(3), 48–52. https://www.researchgate.net/publication/7278729_How_to_recognise_a_quality_grounded_theory_research_study

Engward, H. (2013). Understanding grounded theory. *Nursing Standard*, *28*(7), 37–41. https://doi.org/10.7748/ns2013.10.28.7.37.e7806

Eurostat. (2017). *Qualitative methodologies for questionnaire assessment.* https://circabc.europa.eu/sd/a/7f617c55-1b01-41a5-96a4-966394f28b32/Methodological%20document%20-%20qualitative%20methods%20for%20pretesting.pdf

Feroz Khan, G. (2014). *Social media-based government explained: Utilization model, implementation scenarios, and relationships in case studies in e-government 2.0: Changing citizen relationships*. Springer.

Flynn, K., & Hartnett, C. (2018). Cutting through the fog: Government information, librarians, and the forty-fifth presidency. *References & Users Services Quarterly*, *57*(3).

Fountain, J. (2014). Digital government. In W. Bainbridge & M. Roco (Eds.), *Handbook of science and technology convergence* (pp. 781–793). Springer.

Freedom House. (2018). *Saudi Arabia: Internet freedom score*. https://freedomhouse.org/report/freedom-net/2018/saudi-arabia

Fu, J. S., & Shumate, M. (2017). News media, social media, and hyperlink networks: An examination of integrated media effects. *Information Society*, *33*(2), 53–63.

Fulton, C. (2011). Web accessibility, libraries, and the law. *Information Technology & Libraries*, *30*(1), 34–43.

Global Media Insight. (2022). *Saudi Arabia social media statistics*. https://www.globalmediainsight.com/blog/saudi-arabia-social-media-statistics/

Gouseti, A. (2013). “Old wine in even newer bottles”: The uneasy relationship between Web 2.0 technologies and European school collaboration. *European Journal of Education*, *48*(4), 570–585.

Green, J. (2022). The rise of twiplomacy and the making of customary international law on social media. *Chinese Journal of International Law*, *21*(1). https://doi.org/10.1093/chinesejil/jmac007

Gremmen, M. (2016). *Burgerpeiling waarstaatjgemeente.nl. Richtlijnen voor afname van de modelvragenlijst burgeronderzoek*. Kwaliteits Instituut Nederlandse Gemeenten.

Grönlund, Å., & Horan, T. A. (2004). Introducing e-gov: History, definitions, and issues. *Communications of the Association for Information Systems*, *15*(39). https://doi.org/10.17705/1cais.01539

Haro-de-Rosario, A., Saez Martin, A., & Caba Perez, M. (2018). Using social media to enhance citizen engagement with local government: Twitter or Facebook? *New Media and Society*, *20*(1), 29–49. https://doi.org/10.1177/1461444816645652

Heath, N. (2019). How Estonia became an e-government powerhouse. *Tech Republic*. https://www.techrepublic.com/article/how-estonia-became-an-e-government-powerhouse/

Hofstede Insights. (2019). *Saudi Arabia*. https://www.hofstede-insights.com/country-comparison/saudi-arabia/

Hood, C. C., & Margetts, H. Z. (2007). *The tools of government in the digital age*. Palgrave Macmillan.

Hovik, S., & Giannoumis, G. A. (2022). Linkages between citizen participation, digital technology, and urban development. In S. Hovik, G. A. Giannoumis, K. Reichborn-Kjennerud, J. M. Ruano, I. McShane, & S. Legard (Eds.), *Citizen participation in the information society*. Palgrave Macmillan.

Hynes, M. (2018). *The state of digital in government*. https://granicus.com/pdfs/Guide_State_of_Digital.pdf

IDC. (2018). Envisioning an ICT-led approach to the "National Transformation Program" for the Kingdom of Saudi Arabia. Retrieved from http://www.idcntpreport.com

Information Systems Laboratory. (2015). *What is Government 3.0?* http://hraweb.aegean.gr/is-lab/ index.php?option=com_content&view=article&id=262:what-is-government-30&catid=35:2010-03-26-11-56-09&Itemid=69

Johnson, O., Hall-Phillips, A., Chung, T.-L. (Doreen), & Cho, H. (2019). Are you connected through consumption? the role of hashtags in political consumption. *Social Media + Society*, *5*(4), https://doi.org/10.1177/2056305119883427

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2014). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112–133.

Joseph, S. (2015). Advantages and disadvantages of e-government implementation: A literature review. *International Journal of Technology Marketing*, *5*(9), 18–34.

Kemp, S. (2023, February 12). Digital 2023: Saudi Arabia. *DataReportal*. https://datareportal.com/reports/digital-2023-saudi-arabia

Khairur Rijal, N., & Zahrotun Khoirina, R. (2019). The roles of civil society to changing of women driving policy in Saudi Arabia: Case women2drive campaign. *Journal of Islamic World and Politics*, *3*(1). https://doi.org/10.18196/jiwp.3125

Kominers, D., & Wu, L. (2023, July 13). Threads foreshadows a big - and surprising - shift in social media. *Harvard Business Review*. https://hbr.org/2023/07/threads-foreshadows-a-big-and-surprising-shift-in-social-media

Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current

status quo. *International Journal of Information Management*, *63*, 102466. https://doi.org/10.1016/j.ijinfomgt.2021.102466

Kujur, P., & Chhetri, B. (2015). Evolution of world wide web: Journey from Web 1.0 to Web 4.0. *International Journal of Computer Science and Technology*, *6*(1).

Kumar, R., & Pattnaik, P. K. (2023). *Risk detection and cyber security for the success of contemporary computing*. Information Science Reference.

Kuppuswamy, P., & Rekha, S. N. (2015). The effect of social networks media on the quality of changes in the people lifestyle: A study report on Kingdom of Saudi Arabia and other Middle East. *IOSR Journal of Engineering*, *5*(2), 28–33.

Lagendijk, I., Rijke, M., & Wyatt, S. (2018). The challenges of a digital society: A shared response by the Dutch universities. *Digital Society*. http://www.thedigitalsociety.info/challengesofadigitalsociety/wp-content/uploads/2018/11/VSNU-Disa-2018.pdf

Leloup, D., Adam, L., Reynaud, F., & Clairouin, O. (2022, November 25). With Elon Musk at the helm, Twitter faces three major threats. *LeMonde*. Retrieved April 27, 2023, from https://www.lemonde.fr/en/economy/article/2022/11/25/with-elon-musk-at-the-helm-twitter-faces-three-major-threats_6005643_19.html

Leone, S., & Paoli, A. D. (2016). Public administrations in a digital public space: A framework for assessing participatory and multistakeholder models of relationship on Twitter. *Current Politics & Economics of Europe*, *27*(1), 85–122.

Lindner, R., & Aichholzer, G. (2020). E-democracy: Conceptual foundations and recent trends. In L. Hennen, I. van Keulen, I. Korthagen, G. Aichholzer, R. Lindner, & R. Nielsen (Eds.), *European e-democracy in practice* (pp. 11–45). Springer.

Lorentzen, D. G., & Nolin, J. (2016). Approaching completeness. *Social Science Computer Review*, *35*(2), 277–286. https://doi.org/10.1177/0894439315607018

Louçao, I. (2024, January 14). Open government initiatives: Fostering transparency and citizen engagement. *Medium*. https://medium.com/@isabelloucao18/open-government-initiatives-fostering-transparency-and-citizen-engagement-ab5a87963228

Lufkens, M. (2022, May 22). The most followed foreign ministries on social media 2022. *Medium*. https://luefkens.medium.com/the-most-followed-foreign-ministers-on-social-media-2022-3482899b5cae

Ma, A. (2018). China has started ranking citizens with a creepy 'social credit' system. *Business Insider*. https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4

Macnamara, J., Sakinofsky, P., & Beattie, J. (2012). E-electoral engagement: How governments use social media to engage voters. *Australian Journal of Political Science, 47*(4), 623–639.

Manfield, F. (2014). *One does not simply tweet without consequence: A study of the electoral contest in Ashgrove* [Master's thesis, University of Queensland]. https://core.ac.uk/reader/43366890

Margetts, H. (2003). *Information technology in government.* Routledge.

Martínez-López, F., Aguilar-Illescas, R., Molinillo, S., Anaya-Sánchez, R., Coca-Stefaniak, J.A., & Esteban-Millat, I. (2016). *Online brand communities, Progress in IS*. Springer International Publishing Switzerland.

Mathers, N., Fox, N., & Hunn, A. (2000). Using interviews in a research project. *Research Approaches in Primary Car*, 113–134. https://www.researchgate.net/publication/253117832_Using_Interviews_in_a_Research_Project

McNabb, D. (2002). *Research methods in public administration and nonprofit management*. M.E. Sharpe.

Mijwil, M., Aljanabi, M., & Filali, Y. (2023). The purpose of cybersecurity governance in the digital transformation of public services and protecting the digital environment. *Mesopotamian Journal of Cyber Security*. https://doi.org/10.58496/mjcs/2023/001

Miller, H. L. (2022, September 23). 4 ways to apply Elon Musk's leadership style. *Leaders*. https://leaders.com/articles/leadership/elon-musk-leadership-style/

Milliken, P. (2010). Grounded theory. In N. J. Salkind (Ed.), *Encyclopedia of research design* (pp. 549–554). Sage.

Mitchell, D. (2014). Advancing grounded theory: Using theoretical frameworks within grounded theory studies. *The Qualitative Report*, *19*(36), 1–11.

Moon, K., Brewer, T. D., Januchowski-Hartley, S. R., Adams, V. M., & Blackman, D. A. (2016). A guideline to improve qualitative social science publishing in ecology and conservation journals. *Ecology and Society*, *21*(3), 17. https://dx.doi.org/10.5751/

Moon, M. (2002a). Can IT help the government to restore public trust? Declining public trust and potential prospects of IT in the public sector. *Proceedings of the 36th Hawaii International Conference on System Sciences.*

Moon, M. J. (2002b). The evolution of e-government among municipalities: Rhetoric or reality? *Public Administration Review*, *62*(4), 424–433. https://doi.org/10.1111/0033-3352.00196

Mourtada, R., & Alkhatib, F. (2014). *UAE social media outlook: Increasing connectivity between government and citizen.* The Emirati Media Forum.

Murdoch, M., Simon, A. B., Polusny, M. A., Bangerter, A. K., Grill, J. P., Noorbaloochi, S., & Partin, M. R. (2014). Impact of different privacy conditions and incentives on survey response rate, participant representativeness, and disclosure of sensitive information: A randomized controlled trial. *BMC Medical Research Methodology*, *14*(1). https://doi.org/10.1186/1471-2288-14-90

Nath, K., & Iswary, R. (2015). What comes after Web 3.0? Web 4.0 and the future. *International Conference on Computing and Communication Systems*. https://www.researchgate.net/profile/Keshab-Nath/publication/281455061_What_Comes_after_Web_30_Web_40_and_the_Future/links/55e8b3eb08ae3e1218425040/What-Comes-after-Web-30-Web-40-and-the-Future.pdf

Nepal, S., Paris, C., & Georgakopulos, D. (2015). *Social media for government services*. Springer.

Newman, C., Desjarlais, D., Turner, C., Gribble, J. Cooley, P., & Paone, D. (2002). The differential effects of face-to-face and computer interview modes. *American Journal of Public Health, 92*(2), 294–297.

Newman, D. (2017). Top 6 digital transformation trends in government. *Forbes.* https://www.forbes.com/sites/danielnewman/2017/06/29/top-6-digital-transformation-trends-in-government/#68f55d477efc

Nguyen, A. (2021). Digital inclusion. In P. Liamputtong (Ed.), *Handbook of social inclusion* (pp. 1–15). Springer.

O'Byrne, I. (2019). Educate, empower, advocate: Amplifying marginalized voices in a digital society. *CITE Journal*, *19*(14). https://citejournal.org/volume-19/issue-4-19/english-language-arts/educate-empower-advocate-amplifying-marginalized-voices-in-a-digital-society

OECD. (2014). *Recommendation of the council on digital government strategies*. http://www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf

OECD. (2015). *Government at a glance.* OECD Publishing. http://dx.doi.org/10.1787/gov_glance-2015-en

OECD. (2016). *OECD comparative study: Digital government strategies for transforming public services in the welfare areas*. http://www.oecd.org/gov/digital-government/Digital-Government-Strategies-Welfare-Service.pdf

Osimo, D. (2010). Government 2.0: Hype, hope or reality. *European Journal of E-Practice, 9*. https://joinup.ec.europa.eu/sites/default/files/document/2014-06/ePractice%20Journal%20Vol.9-March%202010.pdf

Pastis, S. (2023, July 5). Mark Zuckerberg is trying to disrupt Elon Musk, but maybe he can't—A new paper on the social media space breaks down 5 key challenges. *Fortune*. https://fortune.com/2023/07/05/mark-zuckerberg-vs-elon-musk-threads-twitter-challenges-for-social-media-ai/

Plano Clark, V. L., Huddleston-Casas, C. A., Churchill, S. L., O'Neil Green, D., & Garrett, A. L. (2015). Mixed methods approaches in family science research. *Journal of Family Issues, 36*(3), 390–412.

Protranslate. (2019). *Back translation*. https://www.protranslate.net/blog/en/back-translation/

Ragnedda, M. (2018). Conceptualizing digital capital. *Telematics and Informatics, 35*(8). 2366–2375.

Ragnedda, M., Ruiu, M., & Addeo, F. (2020). Measuring digital capital: An empirical investigation. *New Media & Society, 22*(5), 793–816.

Redding, A. C. (2021). *Elon Musk: A mission to save the world*. Square Fish.

Rodríguez Bolívar, M. (2017). Policy makers' perceptions on the transformational effect of Web 2.0 technologies on public services delivery. *Electronic Commerce Research, 17*(2), 227–254.

Run Run Shaw Library. (2020). *Research methods*. https://libguides.library.cityu.edu.hk/researchmethods/ethics

Saarijarvi, M., & Bratt, E. (2021). When face-to-face interviews are not possible: Tips and tricks for video, telephone, online chat, and email interviews in qualitative research. *European Journal of Cardiovascular Nursing, 20*(4). https://doi.org/10.1093/eurjcn/zvab038

Saloniki, E., Malley, J., & Forder, J. (2019). Comparing internet and face-to-face surveys as methods for eliciting preferences for social care-related quality of life: evidence from England using the ASCOT service user measure. *Quality of Life Research, 28*. https://doi.org/10.1007/s11136-019-02172-2

Saudi National Portal. (2018). *About e-government and Yesser*. Saudi National Portal.

Saudi National Portal. (2022). *Government agencies directory*. https://www.saudi.gov.sa/wps/portal/snp/pages/agencies/?WCM_Page.ResetAll=TRUE

Saudi Vision 2030. (2019). *Vision 2030*. https://www.vision2030.gov.sa/

Serrano, S. (2020, September 23). Twitter celebrates 90 years of Saudi Arabian heritage on #saudinationalday. *Campaign Middle East*. https://campaignme.com/twitter-celebrates-90-years-of-saudi-arabian-heritage-on-saudinationalday/

Solinthone, P., & Rumyantseva, T. (2016). *E-government implementation*. *MATEC Web of Conferences, 79*. https://doi.org/10.1051/matecconf/20167901066

Statista. (2019). *Social network user penetration in Saudi Arabia from 2015 to 2022*. https://www.statista.com/statistics/553656/mobile-messaging-user-reach-saudi-arabia/

Statista. (2020). *Saudi Arabia: Age structure from 2008 to 2018*. https://www.statista.com/statistics/262478/age-structure-in-saudi-arabia/

Statista. (2022a). *Leading countries based on number of Twitter users as of January 2022 (in millions)*. https://www.statista.com/statistics/242606/number-of-active-twitter-users-in-selected-countries/

Statista. (2022b). *Most used social media platforms in Saudi Arabia as of 3rd quarter of 2022*. https://www.statista.com/statistics/1394073/saudi-arabia-most-used-social-media-platforms/

StatPac. (2017). *Disadvantages of written questionnaires.* https://www.statpac.com/surveys/disadvantages.htm

Stein, E. A. (2017). Are ICTs democratizing dictatorships? New media and mass mobilization pass. *Social Science Quarterly (Wiley-Blackwell), 98*(3), 914–941.

Strizhkova, A. (2019). *Ukrainian concept "state in smartphone" in modern state regulation*. The 9th International Youth Science Forum, November 21-23, 2019, Lviv, Ukraine. https://openreviewhub.org/lea/paper-2019/ukrainian-concept-state-smartphone-modern-state-regulation

Stultjens, E., Du Long, K., & van Bommel, M. (2008). *Waarstaatjegemeente.nl Burgerrollen.* PON kennis in uitvoering.

Stuttaford, A. (2018). The propagandist and the censor. *National Review*, *70*(13), 18–20.

Summerville, M. (2018). *Hashtags generate a sense of belonging*. Debating Communities and Social Networks 2018 OUA Conference.

Sunday, O. (2019). Is there any need for theory in research? *International Research Journal of Engineering and Technology, 6*(3).

Talmadge, E. (2016). North Korea announces blocks on Facebook, Twitter and YouTube. *The Guardian*. https://www.theguardian.com/world/2016/apr/01/north-korea-announces-blocks-on-facebook-twitter-and-youtube

Telecommunications and Digital Governments Regulatory Authority. (2022). *UAE government social media accounts*. https://u.ae/en/about-the-uae/digital-uae/uae-government-social-media-accounts

Temple University Libraries. (2019a). Advantages and disadvantages. *Qualitative research: Grounded theory*. https://guides.temple.edu/c.php?g=77914&p=505635

Temple University Libraries. (2019b). How is it done? *Qualitative research: Grounded theory.* https://guides.temple.edu/c.php?g=77914&p=506056

Thomson, S. (2011). Sample size and grounded theory. *JOAAG, 5*(1). https://www.researchgate.net/publication/228513695_Sample_Size_and_Grounded_Theory

Thorne, K., & Kouzmin, A. (2008). Cyberpunk-Web 1.0 "egoism" greets group Web 2.0 "narcissism": Convergence, consumption, and surveillance in the digital divide. *Administrative Theory & Praxis*, *30*(3), 299–323.

Timonen, V., Foley, G., & Conlon, C. (2018). Challenges when using grounded theory. *International Journal of Qualitative Methods*, *17*(1). https://doi.org/10.1177/1609406918758086

Townsend, S. (2016). Saudi Arabia, Microsoft ink technology training deal. *Arabian Business*. https://www.arabianbusiness.com/industries/technology/saudi-arabia-microsoft-ink-technology-training-deal-636291

Tran, V., & Luong, L. (2020). A study on comparing online, telephone, and face-to-face surveys based on different sampling methods in coffee consumers in Vietnam. *Management Science Letters*, *10*, 665–674.

United Nations. (2016). *Benchmarking e-government: A global perspective*. United Nations.

United Nations. (2018). *United Nations e-government survey 2018: Gearing e-government to support transformation towards sustainable and resilient societies*. https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018_FINAL%20for%20web.pdf

Valdes, G., Solar, M., Astudillo, H., Irribaren, M. Concha, G., & Visconti, M. (2011). Conception, development and implementation of an e-Government maturity model in public agencies. *Government Information Quarterly*, *28*(2), 176–187.

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterizing and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, *18*(1). https://doi: 10.1186/s12874-018-0594-7

Veljković, N., Bogdanović-Dinić, S., & Stoimenov, L. (2012). Building e-government 2.0: A step forward in bringing government closer to citizens. *Journal of e-Government Studies and Best Practices*. https://pdfs.semanticscholar.org/8005/5b8dad69215bf395ff7fd244d48d896f70c5.pdf

Washington, K., & Marcus, R. (2022). *Hashtags, memes and selfies: Can social media and online activism shift gender norms?* ALIGN Report.

Waters, R., & Williams, J. (2011). Squawking, tweeting, cooing, and hooting: Analyzing the communication patterns of government agencies on Twitter. *Journal of Public Affairs: An International Journal*. https://doi.org/10.1002/pa.385

Waterson, J. (2023, July 6). Threads review: Twitter without the rough edges or news. *The Guardian*. https://www.theguardian.com/media/2023/jul/06/threads-review-twitter-without-rough-edges-or-news

Westall, S., & McDowall, A. (2016, May 28). Saudi Arabia's rulers adapt message for social media age. *The Peninsula*. https://thepeninsulaqatar.com/article/28/05/2016/Saudi-Arabia%E2%80%99s-rulers-adapt-message-for-social-media-age

Wigand, D. (2010). *Twitter in government: Building relationships one tweet at a time*. 2010 Seventh International Conference on Information Technology: New Generations. https://doi.org/10.1109/itng.2010.171

Yamin, M., & Mattar, R. (2016). e-Government in Saudi Arabia: An empirical study. *BVICAM's International Journal of Information Technology*. https://pdfs.semanticscholar.org/f381/2bdfa1d96fb5b88d1e4cdfd9db95e12decce.pdf

Young, J., Rose, D. C., Mumby, H. S., Benitez-Capistros, F., Derrick, C. J., Finch, T. Garcia, C., Home, C., Marwaha, E., Morgans, C., Parkinson, S., Shah, J., Wilson, K. A., & Mukherjee, N. (2017). A methodological guide to using and reporting on interviews in conservation science research. *Methods in Ecology and Evolution*, *9*, 10–19. https://besjournals.onlinelibrary.wiley.com/doi/pdf/10.1111/2041-210X.12828

Young, M. E., Bell, Z. E., & Fristad, M. A. (2016). Validation of a brief structured interview: The children's interview for psychiatric syndromes. *Journal of Clinical Psychology in Medical Settings, 23*, 327–340. https://doi.org/10.1007/s10880-016-9474-7

Zelenskyy, V. (2019, May 23). *I dream about a state in a smart-phone*. https://www.president.gov.ua/en/news/ya-mriyu-pro-derzhavu-u-smartfoni-volodimir-zelenskij-55585

## Appendix A: Interview Questions with Public Officials

### Introduction to Interview

This interview is done within the thesis titled “Twitter Usage in Saudi Arabia: An Empirical Study on the Challenges Faced by the Government”. With this interview, the author seeks to investigate the usage of Twitter by Saudi public organizations and to evaluate its effectiveness for interaction with the citizens. By answering the questions of this interview, you help to improve the quality and speed of services of state organizations within the country, making the life of the citizens more comfortable and easy. Please, respond to the following questions in an honest, attentive, and careful manner. Ensure that you fully comprehend the meaning of the questions. If you do not understand something, please do not hesitate to contact the interviewer for additional clarifications”. **Your personal information will be kept secure and will not be disclosed to any third party.**

Questions

1. Can you describe how your organization interacts with the public through different social networks?

2. How does your organization use Twitter to interact with Saudi citizens?

3. What are the advantages and disadvantages of using Twitter, compared to other social networks for interacting with Saudi citizens?

4. Does your organization have a strategy for Twitter usage for the present and the future?

5. What are the potential challenges and problems in your organization related to using Twitter for interaction with the public?

6. Which factors might prevent your organization from using Twitter for interaction with the Saudi public?

7. Which countries serve as role models for you in terms of the usage of Twitter and other social media for interacting with the citizens? Is your organization planning to adopt any of these experiences?

8. How did the Covid-19 pandemic affect the interaction of your organization with the public through Twitter?

9. In which way and how fast do you address the suggestions and complaints of your organization received through Twitter?

10. Does your organization provide training and development for those responsible for managing your official Twitter account?

11. Do you have anything more to add regarding this topic?

## Appendix B: Questionnaire 1

This questionnaire is done within the thesis titled "Twitter Usage in Saudi Arabia: An Empirical Study on the Challenges Faced by the Government". By filling it, you will help to understand better the functioning of digital interaction (communication through social networks) within your country and in the future to improve the existing system to make the life of the citizens and public employees more comfortable. Your personal information will be kept secure and will not be disclosed to any third party.

**1) According to your opinion and your knowledge, what is the quality of interaction between public organizations and citizens through social networks in the Kingdom of Saudi Arabia? (where 1 is the minimum and 5 is the maximum)**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| | | | | |

**2) Evaluate the general quality of interaction with the citizens via social networks by your institution with a scale from 1 to 5 (where 1 is the minimum and 5 is the maximum).**

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| | | | | |

**3) Does your public organization plan to be more active in social networks in the future?**

A) Yes;

B) No;

C) Do not know;

D) Other (please specify)_____

**4) Between traditional interaction (the one that does not involve Internet interaction) and digital interaction through social networks, which kind of interaction has more benefits in relation to the following services?** (Please tick one variant)

| Type of service | Digital interaction through social networks | Traditional methods of interaction |
|---|---|---|
| Saving the Time | | |
| Improvement of communication with the public | | |
| Sharing Information with the Public | | |
| Collaboration between the agency and the citizens | | |
| Facilitating access to services | | |
| Improving the quality of services | | |
| Enhancing the transparency | | |
| Improving the decision making | | |
| Reducing the cost of services | | |

**5) Please tick the social networks that you consider the most appropriate and useful for interaction with citizens (multiple choice answers are allowed):**

| Type of the digital interaction service | Twitter | Facebook | Instagram | YouTube |
|---|---|---|---|---|
| Information dissemination | | | | |
| Improvement of communication with the public | | | | |
| Sharing Information with the Public | | | | |
| Collaboration between the agency and the citizens | | | | |
| Facilitating access to services | | | | |
| Improving the quality of services | | | | |

| | | | | |
|---|---|---|---|---|
| Enhancing the transparency | | | | |
| Improving the decision making | | | | |
| Reducing the cost of services | | | | |

**6) Please evaluate the quality of the following manifestations of digital interaction in your company on a scale from 1 to 5 (where 1 is the minimum and 5 is the maximum):**

| Digital interaction manifestation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Information dissemination | | | | | |
| Improvement of communication with the public | | | | | |
| Sharing Information with the Public | | | | | |
| Collaboration between the agency and the citizens | | | | | |
| Facilitating access to services | | | | | |
| Improving the quality of services | | | | | |
| Enhancing the transparency | | | | | |
| Improving the decision making | | | | | |
| Reducing the cost of services | | | | | |

**7) Please evaluate the quality of the following manifestations of digital interaction through Twitter in your company on a scale from 1 to 5 (where 1 is the minimum and 5 is the maximum)**:

| Digital interaction manifestation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Information dissemination | | | | | |
| Improvement of communication with the public | | | | | |
| Sharing Information with the Public | | | | | |
| Collaboration between the agency and the citizens | | | | | |
| Facilitating access to services | | | | | |
| Improving the quality of services | | | | | |
| Enhancing the transparency | | | | | |
| Improving the decision making | | | | | |
| Reducing the cost of services | | | | | |

**8) Please tick the aspect of digital interaction through Twitter that you plan to expand in a short-term perspective (multiple choice answers are allowed)**

| | |
|---|---|
| Information dissemination | |
| Improvement of communication with the public | |
| Sharing Information with the Public | |
| Collaboration between the agency and the citizens | |
| Facilitating access to services | |
| Improving the quality of services | |
| Enhancing the transparency | |
| Improving the decision making | |
| Reducing the cost of services | |

**9. Please tick the aspect of digital interaction through Twitter that you plan to expand in a long-term perspective (multiple choice answers are allowed)**

| | |
|---|---|
| Information dissemination | |
| Improvement of communication with the public | |
| Sharing Information with the Public | |
| Collaboration between the agency and the citizens | |
| Facilitating access to services | |
| Improving the quality of services | |
| Enhancing the transparency | |
| Improving the decision making | |
| Reducing the cost of services | |

**10) Do you monitor and analyse the citizens' feedback on the posts of your public institution?**

A) Yes;

B) No;

C) Do not know

D) Other (please specify) _____

**11) How often do you provide the response to citizens?**

A) Every hour

B) Every day

C) Every two days

D) Every three days

E) Every week

D) Other (please specify)_____

**12) Who is in charge of digital interaction in your public institution?**

A) We have special Communication and Media Department/ Public Relations Department (more than 5 people)

B) We have a special Communication and Media Department/ Public Relations Department (less than 5 people)

C) We do not have a special Communication and Media Department/ Public Relations Department, but we have a responsible person

D) Other (please specify)_____

E) Do not know

**13) What is the key challenge for the development of digital interaction in your public institution? (multiple choice is possible, but one variant is preferable)**

A) Lack of funding

B) Lack of skilled personnel

C) Lack of privacy and security

D) Lack of knowledge about e-governance programs

E) Other (please specify)_____

**14) Please tick the type of content that you normally use in your tweets.**

| **Motion graphic** | **Infographic** | **Videos** | **Text** | **Images** |
|---|---|---|---|---|
| | | | | |

**15) Do you have any clear policy that governs the management of Twitter?**

A) Yes

B) No

C) Other (please specify)_____

## Appendix C: Questionnaire 2

This questionnaire is done within the thesis titled “Twitter Usage in Saudi Arabia: An Empirical Study on the Challenges Faced by the Government”. By filling it, you help to understand better the functioning of digital interaction (communication through social networks) between the citizens and the public institutions within your country and in the future, to improve the existing system to make the life of the citizens and public employees more comfortable. Your personal information will be kept secure and will not be disclosed to any third party.

**1) Your Age**

1. 18-29
2. 30-45
3. 46-59
4. 60+

**2) Your Gender**

1. Male
2. Female
3. Other
4. Do not want to respond

**3) Where do you live?**

1. Urban Area
2. Rural Area

**4) Your occupation:**

1. Student
2. Self-employed
3. Employed (private sector)

4. Employed (governmental sector)

5. Unemployed

6. Other (please specify)_____

**5) Your Education:**

1. Secondary Education

2. Professional Education

3. Higher education

4. Other (please specify)_____

**6) Are you aware of the e-government services in the KSA?**

1. Yes

2. No

3. Other (please specify)_____

**7) How frequently do you use e-government services?**

1. Daily

2. Weekly

3. Monthly

4. Do not use

5. Other (please specify)_____

**8) Before obtaining any official governmental service, do you check information about it on the Internet?**

1. Yes

2. No

3. Depends on the service

4. Other (please specify)_____

**9) Please rate your trust in e-government services in the KSA on a scale from 0 to 5 (where 0 is minimum and 5 is maximum).**

| **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|
| | | | | |

**10) Please rate your satisfaction with the level of development of e-government services in the KSA on a scale from 0 to 5 (where 0 is minimum and 5 is maximum)?**

| **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|
| | | | | |

**11) Do E-government services help you to minimize visits to governmental institutions?**

1. Yes
2. No
3. Other (please specify)_____

**12) For which service do you use e-government services the most frequently? (please select only one variant)**

1. General public services
2. Public order and safety
3. Economic development and taxation
4. Transport
5. Environmental protection
6. Housing and community amenities
7. Open government data
8. Data protection
9. Health

10. Education

11. Social Protection

12. Recreation and culture

13. Other (please specify)_____

**13) What is the most important factor for you in e-government services? (please select only one variant)**

1. 24/7 availability of service

2. Transparent

3. Fast service delivery

4. Access from home/work

5. Fast service delivery

6. Quality of service

7. Other (please specify):_____

**14) Please specify the level of importance for you in e-government services by crossing the appropriate box**

| **Topic** | **Level of importance** | | |
|---|---|---|---|
| Digital security and privacy protection | Low | Medium | High |
| Readiness of public organizations to interact digitally | Low | Medium | High |
| Readiness of public organizations to interact through the social networks | Low | Medium | High |
| Readiness of public organizations to interact through Twitter | Low | Medium | High |
| Engagement of the citizens | Low | Medium | High |
| Increasing the number of digitally available governmental services for citizens | Low | Medium | High |
| Increasing the number of digitally available governmental services for businesses | Low | Medium | High |

| | | | |
|---|---|---|---|
| Digital competencies and professional skills of public officers | Low | Medium | High |
| Ease of Use | Low | Medium | High |
| Design | Low | Medium | High |

**15) According to your opinion and experience, what is the quality of e-government adoption in Saudi Arabia?**

A) Poor;

B) Fair but needs improvement;

C) Good;

D) Very good;

E) Excellent

**16) Which social network do you consider the most appropriate and useful to interact with public institutions? (please use only one variant)**

A) Twitter;

B) Facebook

C) Instagram

D) YouTube

E) Other (please specify)_____

**17) Evaluate the quality of the service provided on Twitter by Saudi state organizations about the following aspects on a scale from 1 to 5 (where 1 is the minimum and 5 is the maximum):**

| **E-government manifestation** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| Information dissemination | | | | | |
| Improvement of communication with the public | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Sharing Information with the Public | | | | | |
| Collaboration between the agency and the citizens | | | | | |
| Facilitating access to services | | | | | |
| Improving the quality of services | | | | | |
| Enhancing the transparency | | | | | |
| Improving the decision making | | | | | |
| Reducing the cost of services | | | | | |

**18. Please indicate which services of the Saudi state organizations you think to require improvement on Twitter (multiple choice answers are allowed)**

| | |
|---|---|
| Information dissemination | |
| Improvement of communication with the public | |
| Sharing Information with the Public | |
| Collaboration between the agency and the citizens | |
| Facilitating access to services | |
| Improving the quality of services | |
| Enhancing the transparency | |
| Improving the decision making | |
| Reducing the cost of services | |