Patterns of Mobile and Internet Usage and the Adoption of Mobile Government Applications in Qatar

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Abstract:

This research examines the ways in which both mobile and internet use patterns relate to people's adoption of mobile government (M-Government) applications in Qatar conducted from March 25, 2024 to April 25, 2024. The research is based on a nationally representative survey of 1,872 adults conducted between March and April of 2024, of which 1,025 were Qatari nationals and 847 were expatriates with higher incomes. The surveys sought to investigate how demographic factors, technology skills and perceptions shape the use of mobile government services. Data were collected using a Computer-Assisted Telephone Interview (CATI) system and analyzed descriptively and inferentially. The results showed nearly universal smartphone penetration (95%) with younger and more educated respondents demonstrating greater mobile skills. While respondents demonstrated a relatively high awareness of M-Government applications and rated them as relatively useful, actual adoption was below expectations. The study concludes with recommendations to improve user experience, increase awareness of M-Government applications, and

explore demographic differences to support Qatar's national vision for digital transformation.

Keywords: Mobile government, Qatar, M-Government adoption, digital transformation, mobile usage, public service delivery

1. Introduction

The adoption of mobile technology skyrocketed worldwide due to its improved connectivity and affordability. Mobile technology reorganized the social relations, education system, governmental processes, business operations and numerous other aspects of life. According to UNESCO, mobiles are being used by all categories of people including illiterates. Furthermore, the access to Internet on mobile phones increased the use of mobile technology and its functions. Mobile online communication involves browsing the mobile web and using mobile applications to access content (UNESCO, 2023). In line with the mobile technology advancements, the governments adopted strategies that include the development of mobile government applications to efficiently maximize their interactions and transactions with citizens and other various entities (Al-Shafi & Weerakkody, 2010).

In line with Qatar National Vision 2030, their digital transformation agenda has focused on leveraging mobile technology in public services. Mobile Government (M-Government) applications provide important pathways for effective

communication, improved access, and flexible administrative processes for residents and expatriates (Wansink, 2020). Users can access a variety of governmental services from their smartphones without having to travel to service centers in person. Despite the increasing infrastructure for mobile technology and government interventions, actual use and sustained engagement with M-Government applications have yet to reach the initial intended levels (El-Kassem, 2025). This research will provide insights into patterns of mobile wireless and internet use, and factors (socio-demographic and behavioral) associated with the adoption of mobile government applications in Qatar (Hukoomi, 2020).

2. Research Objectives

1. To identify demographic characteristics of mobile and internet users in Qatar.
2. To investigate the frequency and purpose of mobile and internet usage among Qatari nationals and higher-income expatriates.
3. To evaluate level of awareness, interest, and experience with M-Government applications.
4. To identify the most used governmental applications and levels of user satisfaction.
5. To offer insights and recommendations for M-Government enhancements and user engagement.

3. Research Significance

This research contributes to understanding how technology adoption is aligned with national strategies for digital governance. A qualitative and comparative examination of the Qatari nationals and higher-income expatriates also offers different perspectives on usage behavior and perceptions. The findings provide useful recommendations for policymakers and developers to promote user-friendliness, accessibility, and trustworthiness of M-Government services. Furthermore, the study complements Qatar's agenda to enhance efficient service delivery, transparency, and citizen engagement via mobile logic.
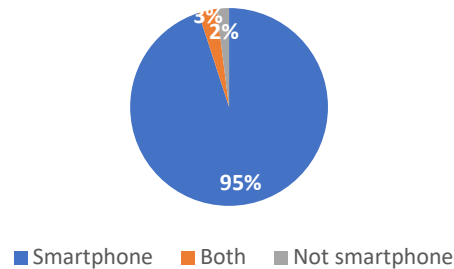
4. Mobile the Adoption of Mobile Government Applications in Qatar

4.1 Types of Mobile Devices

The majority of the respondents reported using a smartphone (95%), while 3 percent said they are using both smartphones and traditional phones, and 2 percent reported using only the traditional phone (see Figure 1).

Figure 1: Types of Mobile Phones Used

Results show that less respondents with secondary or less studies (91%) used a smartphone, compared to respondents with a higher level of education, such as undergraduates (97%) and postgraduates (97%). Almost all student respondents (99%) reported using smartphones, while 96 percent of employed and 92 percent of unemployed are using a smartphone (see Figure 2).

**Figure 2: Types of Mobile Phones Used by Employment Status**
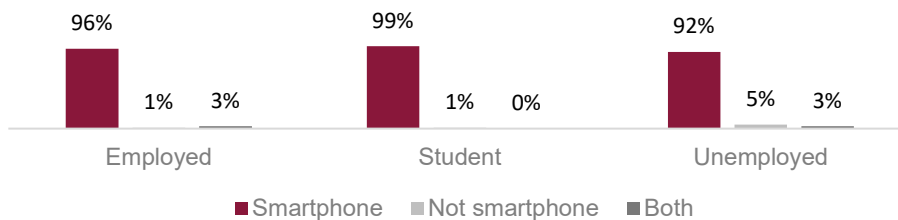
4.2　　　　　　Mobile Skills

The survey included a question about self-perception of mobile skills. Hence, the respondents were asked to rate their mobile usage skills as beginner, intermediate, advanced and no skills. The majority of respondents (56%) perceived themselves as advanced users, whereas 40 percent rated themselves as intermediate users. Slightly more Qataris (58%) than higher-income expatriates (56%) reported being advanced users (see Figure 3). Around 2 percent rated themselves as beginners and 2 percent without any mobile skills. More Qataris reported being beginner (4%) and not skilled (2%) users, compared to higher-income expatriates (2% and 1% respectively) (see Figure 3).
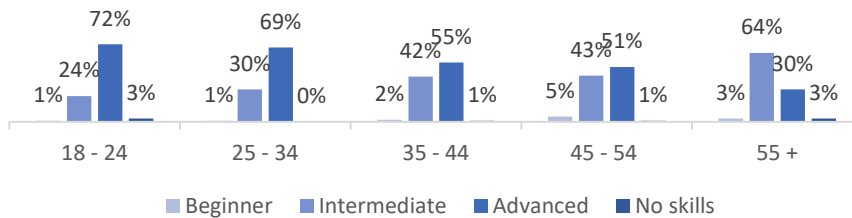
Figure 3: Self-Perception on Mobile Usage Skills by Respondent Type
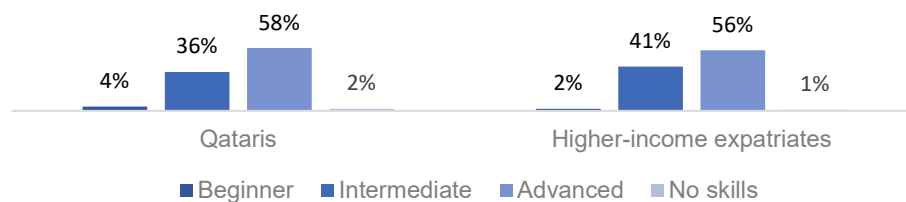
Predictably, more younger respondents within the age group of 18 – 24 years old perceived themselves as advanced users (72%), compared to only 30 percent of respondents above 55 years old (see Figure 4).

Figure 4: Self-Perception on Mobile Usage Skills by Age

A higher percentage of postgraduate respondents (65%) reported being advanced users, compared to respondents with secondary or less studies (47%). Less unemployed respondents (41%) than employed (59%) and students (72%) rated themselves as advanced users of mobile phones (see Figure 5), while those with an income higher than 50,000 QAR (65%) were considerably more advanced in using mobile phones than those with an income lower than 50,000 QAR (48%).

Figure 5: Self-Perception on Mobile Usage Skills by Employment Status
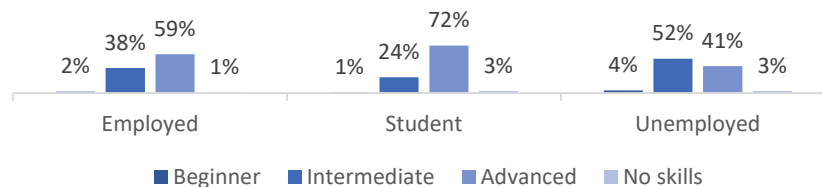
4.3 Frequency of Mobile and Internet Usage

The mobile devices, particularly the smartphones, became an important aspect of people's lives worldwide, as they convey multifaceted functions applicable to daily chores, work, entertainment, business, health, social interactions etc (El-Kassem,

2025). With the development of mobile applications and easy access to Internet, any type of task can be achieved more efficiently and faster, leading to a greater reliance on mobile devices and Internet, as well as a higher frequency of using them. Aiming to explore the frequency of mobile and internet usage, the survey participants were asked to rate their daily usage of mobiles and Internet on a five-point scale from "always" to "never". We present the frequency-related findings in the sections below.

Frequency of Mobile Usage

The majority of the respondents (49%) reported always using the mobile on a daily basis, followed by 31 percent who often use the mobile, 18 percent who sometimes use it, 2 percent who rarely use it and 0 percent who never use it. Respondents with secondary or less studies were more inclined to use the mobile phone sometimes (26%) than postsecondary (15%), undergraduate (16%) and postgraduate (13%) respondents (see Figure 6).

Figure 6: Daily Frequency of Mobile Usage by Education Level
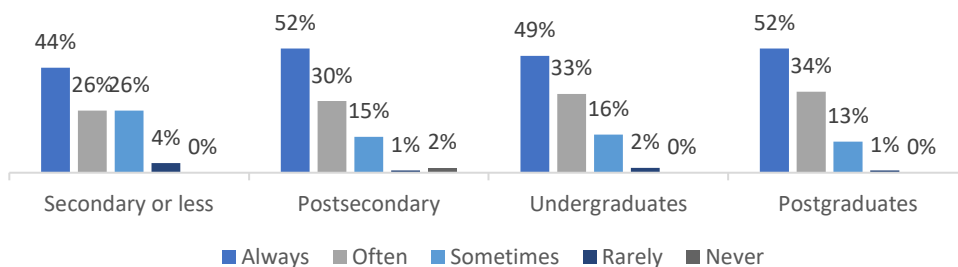
Less unemployed respondents (35%) always used the mobile phone than employed respondents (53%) and students (48%) (see Figure 7). In addition, those with an income above 50,000 QAR (57%) were more inclined to use the mobile phone always, compared to those with an income below 50,000 QAR (45%).

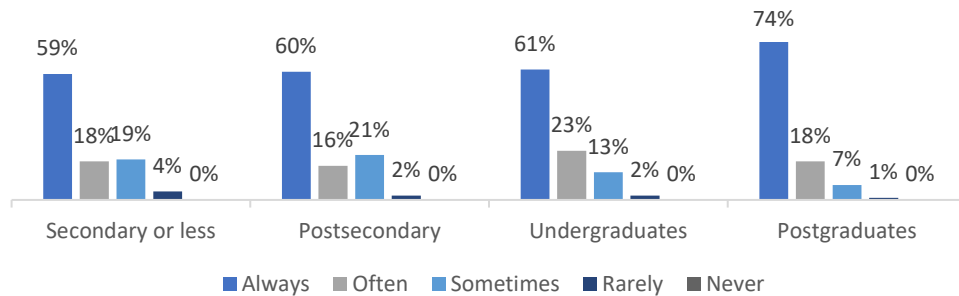**Figure 7: Daily Frequency of Mobile Usage by Employment Status**
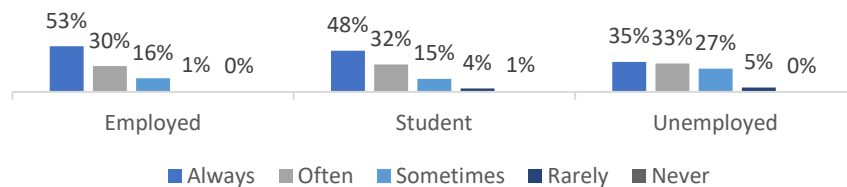
Frequency of Internet Usage

The majority of the respondents (62%) reported always using the Internet on a daily basis, followed by 21 percent who use the Internet often, 15 percent who sometimes use it, 2 percent who rarely use it and 0 percent who never use it. Respondents with secondary or less studies were less inclined to use the Internet always (59%) than postsecondary (60%), undergraduate (61%) and postgraduate (74%) respondents (see Figure 8
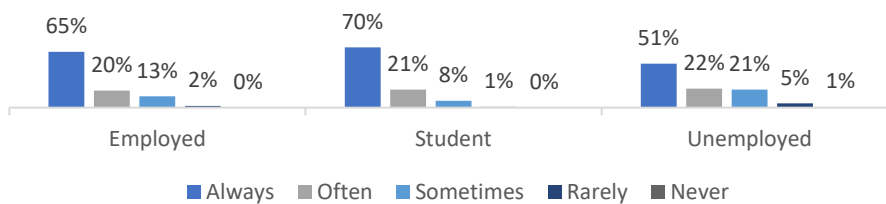
Figure 8: Daily Frequency of Internet Usage by Education Level

Similarly to the phone usage, less unemployed respondents (51%) always used the Internet than employed respondents (65%) and students (70%) (see Figure 9).
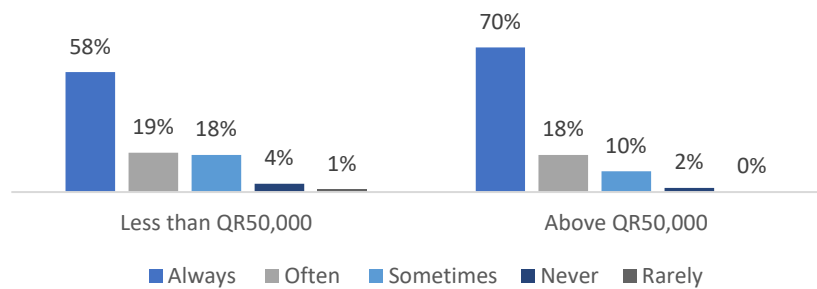
Figure 9: Daily Frequency of Internet Usage by Employment Status

In addition, those with an income above 50,000 QAR (70%) tended to use the mobile phone always, compared to those with an income below 50,000 QAR (58%) (see Figure 10).

Figure 10: Daily Frequency of Internet Usage by Income

4.4   Purpose of Mobile Phone Usage

Aiming to determine the purposes of utilizing the mobile phone, respondents were asked to describe on a scale from "always" to "never" their usage of mobile phone for specific reasons. Table 1 presents the results concerning the main reasons of using a mobile phone. The majority of respondents (58%) declared that they always use the mobile phone just for calling, however, information search (53%), social media (50%) and email (43%) were also in the top of the most common reasons (see Table 1). A high proportion of respondents reported never using the mobile phone for communicating via SMS (16%) or shopping online (15%) (see Table 1). Government applications seem to be accessed sometimes via the mobile phone by 37 percent of the respondents, and always by 24 percent of respondents.

Table 1: Purposes of Mobile Phone Usage

Type of purpose	Always	Often	Someti mes	Rare ly	Never
Communication via SMS	22%	10%	21%	31%	16%
Government applications	24%	18%	37%	17%	4%
Online shopping	13%	15%	35%	22%	15%
Information search	53%	21%	20%	4%	2%
Social media	50%	25%	19%	4%	2%
Online entertainment	25%	21%	32%	13%	9%
Email	43%	18%	21%	12%	6%
Just for calling	58%	18%	18%	5%	1%

- *Communication via SMS:* Most of the respondents (31%) were rarely utilizing the phone for this purpose (see Table 1). However, the results indicate significance when correlating with the respondent type, age, employment

status and income. Hence, higher-income expatriates (17%) were more likely to never use the mobile phone for sending SMS than Qataris (11%). More respondents above 55 years old (32%) inclined to always communicate via SMS than younger respondents between the age 18 to 24 (22%). A high proportion of unemployed respondents (22%) never used SMS compared to a much lower proportion of employed (14%) and students (14%) who never communicated via SMS on their phones. More respondents with an income higher than 50,000 QAR (30%) tended to always use the mobile phone for communicating via SMS compared to those earning below 50,000 QAR (22%) (see Figure 11).

**Figure 11: Use of Mobile for Communication via SMS by Income**
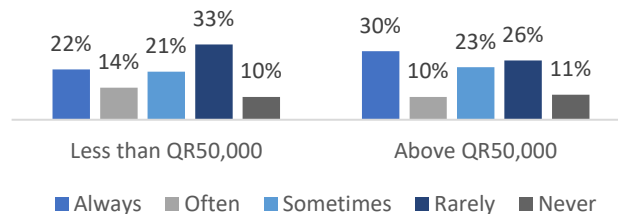
- *Government applications:* The results concerning the use of government applications on mobile phone indicate high significance with gender (P=0.000), considerably more male respondents (28%) than females (18%) always accessing government applications on the mobile phone (see Figure 12).

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Figure 12: Use of Mobile for Government Applications by Gender
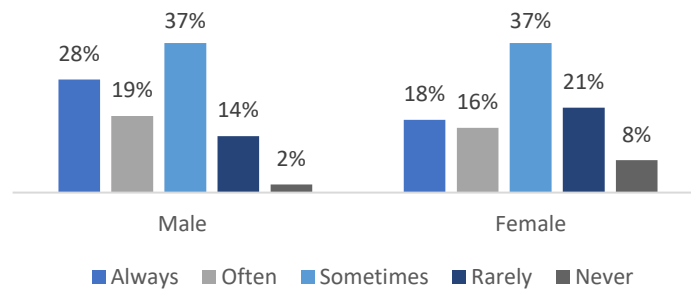
Age also plays a significant role in using mobile phones to access governmental platforms, the findings revealing that those between 45 to 54 years old (31%) and between 35 to 44 years old (28%) were more likely to always use phones for such purpose compared to young respondents of age between 18 to 24 (7%). In addition, education level, marital status and employment status are significant contributors (P=0.000) to the likelihood of using the mobile phone for government applications. Undergraduates (27%) and postgraduates (26%) were more likely to always use the phone for government applications than those with secondary or less (19%) and postsecondary (17%) studies (see Figure 13).

**Figure 13: Use of Mobile for Government Applications by Education**
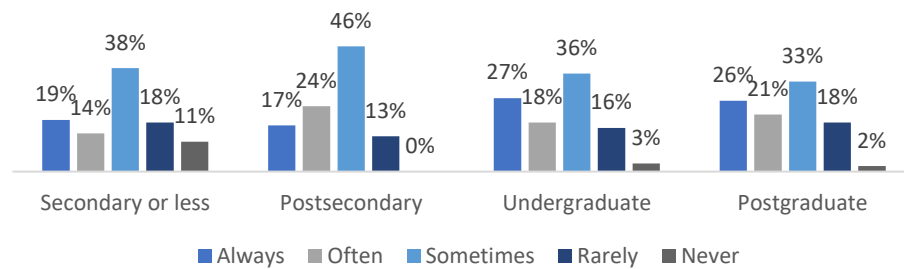
A higher proportion of previously married respondents (29%) seemed to always use governmental applications on the phone than married (26%) and never married (17%). As expected, employed respondents (27%) were more inclined to use the governmental applications always than unemployed (18%) and students (7%).

▪ *Online shopping:* Most of respondents reported using the mobile phone for online shopping sometimes (35%) and rarely (22%) (see Table 1). However, more Qataris were inclined to use the mobile phone for online shopping always (23%) and often (18%) than higher-income expatriates (11% and 14% respectively) (see Figure 14). The younger respondents, female respondents, never married respondents and students were significantly more likely to frequently shop online on a mobile phone.

Figure 14: Use of Mobile for Online Shopping by Respondent Type
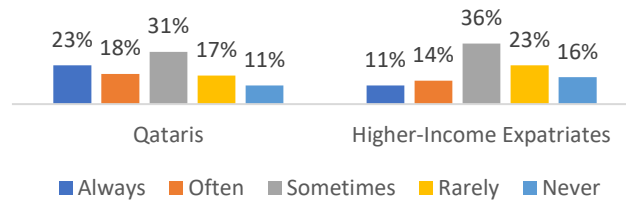
- *Information search:* Information search was the option selected as the main reason for using the mobile phone always by most of respondents (53%) (see Table 1). Those aged between 35 to 44 years old (60%) were more likely to search information on mobile phone than respondents between 18 to 24 years old (40%). In addition, more postgraduates (62%) preferred to always use the mobile phone for information search than respondents with secondary or less studies (47%). Surprisingly, more unemployed respondents (56%) always conducted information search on mobile phone than students (39%) and employed (55%) (see Figure 15).

Figure 15: Use of Mobile for Information Search by Employment Status
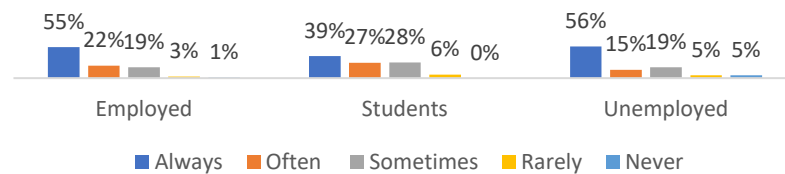
- *Social media:* Around 50 percent of respondents were always accessing social media platforms on the mobile phone, with more Qataris (62%) than higher-income expatriates (47%) (see Figure 16) and more females (59%) than males (43%) doing so. Younger respondents tended to always use the mobile phone for social media in comparison with older respondents.

Figure 16: Use of Mobile for Social Media by Respondent Type
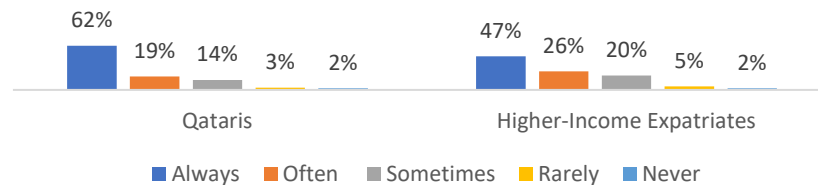
Additionally, more students (63%) than unemployed (58%) and employed (46%) respondents always used the mobile phone for social media.

- *Online entertainment:* Within the category of online entertainment, 32 percent of respondents reported using the mobile phone for this reason only sometimes. Looking at the respondent type, more Qataris seemed to always use the mobile for online entertainment (36%) than higher income expatriates (23%) (see Figure 17).

**Figure 17: Use of Mobile for Online Entertainment by Respondent Type**
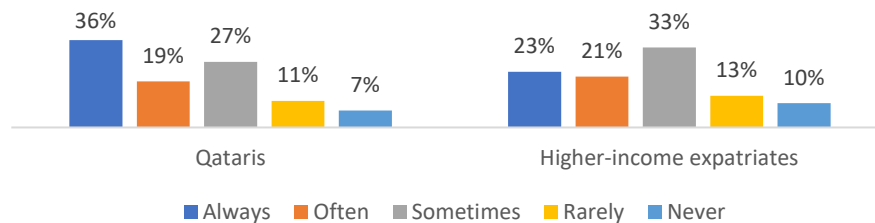
More females (32%) than males (20%) always used the mobile phone for online entertainment. Age, marital status and employment status are also significant predictors for using the mobile to be entertained, younger respondents, single respondents and students being more likely to access online entertainment on the phone.

▪ *Email:* Accessing the email is an important reason to always use the phone for 43 percent of respondents. More males (48%) than females (35%) always accessed the email on the phone, while more respondents between 35 to 44 years old (54%) did so compared to respondents between 18 to 24 years old (19%) (see Figure 18).

Figure 18: Use of Mobile for Email Access by Age
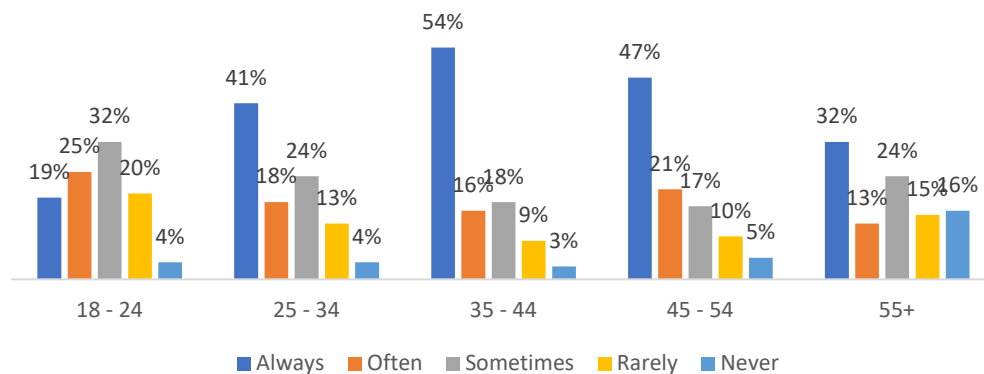
Postgraduates (59%) were more likely to always access email on the phone than respondents with secondary or less studies (27%), while more married people (47%) than previously married (39%) and never married (34%) did so. Predictably, more employed respondents (50%) always used the mobile phone for email access than unemployed (28%) and students (21%). In addition, those with an income higher than 50,000 QAR (47%) were more likely to always use the mobile for email access than those with wages below 50,000 QAR (33%) (see Figure 19).

Figure 19: Use of Mobile for Email Access by Income
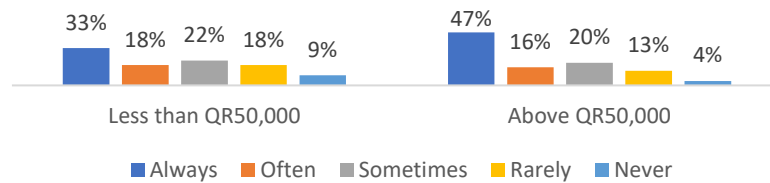
- *Just for calling:* The majority of the respondents (58%) always used the mobile phone just for calling (see Table 1). The findings show that gender, age, marital status and employment status are significant factors for using the mobile phone just for calling.

4.5   Availability of Government Applications for Mobile Devices

The Governmental entities in Qatar adopted strategies to improve their communication and interactions with citizens and residents. As such, the provision of mobile applications that can be downloaded on various smartphone types represents an essential measure in accomplishing easier and faster interactions with the audience in Qatar (Kalton (2009), Chen and Kalton (2010), and Barron et al. (2015). To examine the opinion of the general population, the survey respondents were asked if mobile government applications were available for their mobile devices. A total of 95 percent of participants confirmed that mobile government applications are suitable for their type of devices, while 5 percent did not, with more males (97%) confirming this question than females (91%).

In terms of age, a higher proportion of respondents between 35 to 44 years old (97%) confirmed the availability of mobile government applications on their phones compared to a lower proportion of respondents between 18 to 24 years old (87%) (see Figure 20).

Figure 20: Availability of Government Applications for Mobile Devices By Age
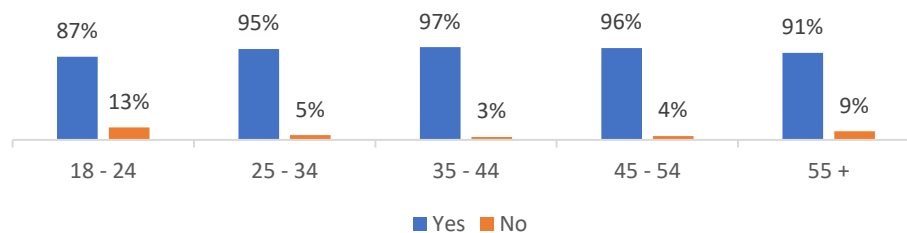
Postgraduates (99%) were more likely to ensure that their mobile device can support the governmental software applications than respondents with a secondary or less education level (88%). A higher proportion of employed respondents (98%) confirmed this question, compared to lower proportions of unemployed respondents (87%) and students (86%).

5. Methodology

This study employed a nationally representative telephone survey conducted between May and June 2024. The research targeted Qatari nationals and higher-income expatriates, both considered key user segments of Qatar's digital

transformation initiatives. A total of 1,872 adults aged 18 or older were interviewed, including 1,025 Qataris and 847 higher-income expatriates. The survey was implemented using Computer-Assisted Telephone Interviewing (CATI) technology to ensure accuracy, efficiency, and high-quality data recording. This methodology allowed the research team to systematically assess mobile government adoption while minimizing interviewer bias and data-entry errors.

In Qatar, approximately 98% of adults have access to at least one mobile phone, making a wireless-based sampling approach ideal. Working in collaboration with local mobile service providers, SESRI (Social and Economic Survey Research Institute, Qatar University) developed a comprehensive sampling frame. To ensure eligibility, screener questions identified whether respondents were Qatari nationals or higher-income expatriates earning at least 5,000 QAR per month, which corresponds to the threshold distinguishing white-collar expatriates. Respondents below this income level, blue-collar workers, and individuals under 18 were excluded.

In a phone survey, the result (or disposition) from dialing a phone number can be described in two stages. First, a call receives either a response or no-response (e.g., non-working or disconnected numbers, immediate hang up or call refusal) from the dialing. Then, in the second stage, a phone number that does receive a response can be identified as either eligible or ineligible (e.g., blue-collar expatriates, non-resident, under 18 years old).

6. Results and Discussion

5.1 Demographic Characteristics of Respondents

The research sample consisted of 1,872 individuals, with 55% (n = 1,025) identified as Qatari nationals and 45% (n = 847) identified as expatriates of high-income status.

Gender and Age Distribution

The gender distribution in the sample was balanced with approximately half of the respondents being male (52%) and half being female (48%). The sample contained a majority of respondents aged 25–44 years (64%) followed by respondents who were aged 45–54 years (18%). There were some respondents aged 18–24 years (13%), and the smallest portion of respondents were aged 55 years and older (5%).

Educational and Employment Characteristics

Participants had a high level of education, with 72% of respondents being educated to a university level or higher. This is a representation of the educated demographic of Qatar's population and also illustrates the level of digital literacy for participation in m-government behavior. In terms of employment, the sample was made up of 68% of respondents of full-time employment, 14% students, 10% self-employed, and 8% out of the labor force (retired, not working, stay-at-home-makers).

Income and Marital Status

All expatriates had greater income, exceeding 5,000 QAR a month, mirroring traits of other white-collar workers. About 65% of respondents were married while 35%

were single, a demographic characteristic that may factor into the behavioral adoption of technology.

5.2 Internet and Mobile Device Usage

5.2.1 Device Ownership

The vast majority of respondents (95%) reported ownership of a smartphone. 3% owned both smartphones and traditional phones, and only 2% used only traditional mobile phones. This level of penetration highlights the significant level of access to mobile technology across the population of Qatar.

5.2.2 Mobile Skills

Respondents self-reported mobile phone skills as high. Over 90% indicated that they could download mobile applications, install mobile applications, and manage mobile applications on their own. These high self-reported skill levels illustrate great potential opportunity for the delivery of services online and through mobile.

5.2.3 Frequency of Mobile and Internet Usage

Daily internet usage was almost universal across participants, with 98% reporting access to the internet at least once per day. Daily mobile phone usage demonstrated a similar pattern as 92% of participants reported continuous mobile phone usage for a variety of activities (e.g. communicating, social networking, e-government services).

5.2.4 Purpose of Mobile Phone Usage

Mobile phones were used for communicating (93%), searching for information (82%), social media (79%) and entertainment (73%). 66% of respondents also reported using mobile apps to provide financial or governmental services. This demonstrates that participants use a mobile device as an integral part of their digital lifestyle.

7. Conclusion & Recommendations

The main findings of this study can be outlined in the following points:

- Most of the respondents reported using a smartphone (95%) in their daily life, with an added 3 percent saying that they are using both smartphones and traditional phones. This means that almost 98 percent of people in Qatar (either citizens or higher-income expatriates) are using smartphones in their communications already, highlighting mobile technology's penetrative influence and high potential to be harnessed for better end-to-end communications between various government entities and the public. Moreover, a total of 95 percent of participants confirmed that mobile government applications are suitable for their type of devices, while only 5 percent did not.

- When exploring the awareness of the general population in Qatar of mobile government applications, the findings show that 77 percent of the respondents knew the meaning of mobile government apps before completing the survey,

while 23 percent did not. This indicates the need for more tailored awareness campaigns to reach out to those portions of the public who are ignorant of the availability of such mobile applications for their use.

- Aiming to identify the top five most accessed ministries via mobile applications in Qatar, the respondents were asked to list five of the mobile government applications they use most often. As expected, Ministry of Interior's mobile applications were utilized by the great majority of the population, followed by the mobile applications of Ministry of Municipality, Ministry of Public Health came third, followed by the Ministry of Communications & Information Technology, then the Ministry of Education and Higher Education as the fifth ministry in the top five mostly used government applications.

- When we explored the factors behind the unsatisfactory mobile government experience for some segments of the respondents, difficulty in using the mobile government applications was perceived as the main reason behind the unsatisfactory mobile government experience, followed by the poor system quality. Thus, more training and hands-on workshops are needed to further promote the usage of such government applications.

- Generally, most respondents perceived that mobile government applications are easy to use (PEOU). However, agreement was notably lower among the youngest

and oldest age groups. This indicates an opportunity and certainly a challenge that government entities must tackle should they aim for more usage rates of their mobile government apps.

- As for the perceived usefulness (PU) of government apps, again the youngest respondents, those between the ages of 18-24 years old, were least likely to support the statements related to the perceived usefulness of m-government applications. Instead, they had moderate perception of the usefulness of those applications. This pattern suggests that while the younger demographic recognizes the utility of m-government services, they may not yet fully embrace them or perceive them as transformative in the same way as older age groups do. This could be attributed to the fact that younger users may be less likely to engage with government services in general. As they are still in the initial stages of their careers or educational paths, they may have fewer interactions with government agencies or fewer complex administrative tasks that require the use of m-government applications. As a result, they might not yet fully appreciate the timesaving and convenience benefits that these applications offer, which could explain their more moderate responses.

- Moreover, younger generations may have higher expectations for digital services. If the m-Government applications do not meet their standards for user experience, design, or functionality, they may be less likely to strongly agree with statements

about the usefulness of these apps. They might view these services as lacking compared to the fast, intuitive apps they commonly use in other areas of their lives, such as social media, entertainment, or e-commerce platforms. By understanding these factors, it becomes clear that the younger demographic may view m-government applications with a more cautious or pragmatic outlook, awaiting further improvements or broader use before they fully embrace the perceived usefulness of these services. This could present an opportunity for governments to tailor their messaging, features, and outreach to address the specific needs and expectations of this age group.

The results suggest that citizens view these services as beneficial, reliable, and worth recommending, indicating strong potential for widespread adoption. Overall, governments in general can capitalize on the tremendous benefits that government mobile applications can provide not only to promote efficiency in the country, but also to increase digital engagement and enhance the overall public trust in the country.

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