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PAPER

Factors Influencing Mobile Government Adoption in Qatar: An Integrated Model

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ABSTRACT

This study explores the factors influencing the adoption of mobile government applications (MGAs) among Qatari citizens, positioning MGAs as a critical component of mobile learning and mobile interaction technologies within the context of digital governance. Drawing on established technology adoption theories such as the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT), the research aims to develop an integrated model that examines mobile user adoption behavior. A quantitative methodology was employed, incorporating constructs from these frameworks into a structured questionnaire. Data were analyzed using factor analysis and recursive path modeling to identify and test the relationships among key influencing factors. The findings reveal that variables such as age, mobile proficiency and usage frequency, perceived ease of use and usefulness, trust, overall user experience and satisfaction, government communication channels, and personal preferences or hesitations significantly affect the intention to adopt MGAs. These results offer actionable insights for policymakers seeking to increase mobile government service uptake by tailoring strategies to mobile user needs and concerns.

KEYWORDS

mobile government (m-government), e-government, open government, technology acceptance model (TAM), Qatar

1 INTRODUCTION

The rapid proliferation of smartphones and mobile internet access has transformed how governments interact with citizens, prompting a strategic shift from traditional e-government services to mobile government (m-government) platforms [1]. As mobile technology becomes increasingly embedded in everyday life, policymakers, government agencies, and development practitioners are prioritizing m-government as a more accessible, efficient, and user-centric approach to

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public service delivery [1]. "Digital technologies' rise has paved the way for the surfacing of a new public governance model called the digital era governance (DEG) model (often referred to as e-government, digital government, e-governance, or digital governance) in which digital technologies play a central role [2]." This shift from e-government to m-government is driven by the additional advantages and benefits mobile services provide [3]. Despite the fact that e-government and online public services offer individuals the ability to access essential services anytime and anywhere at lower, standardized costs and with greater simplicity, speed, and convenience [4], people often remain reluctant to adopt new technologies. Instead, they often favor traditional methods that they are more familiar with.

Mobile government and e-government are not distinct entities but are closely connected. E-government encompasses the use of various technologies to provide services to citizens, enhance government operations, and streamline processes. M-government, on the other hand, is an extension of e-government that specifically utilizes mobile technologies, such as smartphones, personal digital assistants (PDAs), Wi-Fi-enabled devices, Bluetooth, and wireless networks, to deliver services. This evolution towards m-government emphasizes the importance of ubiquitous mobile access to essential public services, enabling citizens to interact with government functions seamlessly, regardless of time and location. Sung and Lee [5] note that "mobile e-government services are more inclusive, in general, than their web-based counterparts when it comes to most socio-demographics examined." Unlike web-based services that often require users to sit at a computer and actively seek information, mobile services are integrated into devices people carry with them throughout the day. Consequently, they are more likely to be used frequently and, on the go, making government services "accessible to a broader population [6]." Mobile applications also benefit from features such as push notifications, reminders, and location-based alerts, which proactively engage users without requiring deliberate effort [7]. Furthermore, domain-specific mobile applications, such as those for booking health appointments or paying traffic fines, are typically designed for single, focused tasks. This task-oriented design makes them more intuitive and less overwhelming than comprehensive government websites, lowering the digital literacy barrier for older adults or users with less technological experience. Additionally, mobile applications often support multiple languages, voice commands, and visual icons, improving accessibility for individuals with limited literacy or non-native language proficiency. In fact, certain government services are only available through mobile applications. For instance, Qatar's Ehteraz application, launched during the COVID-19 pandemic, served as a mandatory digital health pass and contact-tracing tool. It provided users with real-time infection status through a color-coded QR system, notified them of potential exposure, and displayed up-to-date vaccination records [8]. The application was required for access to public venues and healthcare facilities, and although its use has since been scaled back, it remains partially active, demonstrating how mobile platforms can become essential elements of national public health infrastructure. Collectively, these advantages make m-government a more inclusive and practical approach to digital public service delivery.

Qatar has significantly expanded its suite of mobile government applications (MGAs) in line with its national digital transformation objectives. As of 2025, residents and citizens have access to a wide range of mobile applications developed by various government entities, offering services across sectors such as law, healthcare, education, and utilities. A notable example is the "Maarif" mobile application, launched by the Ministry of Education and Higher Education (MoEHE), which offers

15 integrated digital services for students, parents, teachers, and higher education institutions. These services include access to exam results, certificate issuance, e-registration in government schools, adult education enrollment, and certificate equivalency verification. The application functions as a unified digital gateway, streamlining the Ministry's services to meet the diverse needs of users and improve service accessibility. It forms part of Qatar's broader digital public service ecosystem, supporting ubiquitous, user-centered access to educational and administrative resources [9].

These applications streamline public service delivery, enabling users to access information and complete transactions efficiently and securely. For a comprehensive and up-to-date list, the Hukoomi e-government portal provides a mobile applications directory that offers detailed information on MGAs currently available in Qatar [10]. Moreover, in recent years, there has been a pressing need in Qatar for accessing open government data (OGD) via mobile devices. Islam and colleagues believe that "open government data is a comparatively new field in e-government, and the factors influencing its continued use by citizens have not been extensively explored [11]." However, Saxena reports that "the OGD policies of the GCC countries are at an early stage, and there are many challenges that need to be addressed [12]." It is worth mentioning that according to the Ministry of Information and Communications Technology, Qatar is advancing on international readiness indices and was ranked "23rd out of 148 developed and developing countries—and first among Arab nations—on the World Economic Forum's 2014 Networked Readiness Index rankings [13]."

2 STUDY RATIONAL

As part of its National Vision 2030, Qatar is undergoing a rapid digital transformation, with MGAs playing an increasingly important role in delivering public services [14]. By developing these applications, the government aims to expand access channels and enhance convenience for users. However, the adoption of these digital solutions by Qatari citizens has lagged their growing availability and development. Understanding the factors that influence citizens' willingness to adopt MGAs is, therefore, essential for increasing engagement and improving the overall effectiveness of digital service delivery.

3 RESEARCH PROBLEM

Despite the rapid development of m-government services in Qatar, their adoption by citizens has not matched expectations. There is a lack of integrated, context-specific research that examines the unique socio-cultural and behavioral factors influencing MGAs adoption among Qatari citizens. Although numerous models exist to examine technology adoption, there remains a scarcity of research specifically focused on MGAs adoption in Qatar. Existing technology adoption models have not been sufficiently adapted to the Qatari context, limiting their applicability and relevance for guiding local digital policy and implementation. The need for studies that explore user perceptions in this context has been highlighted by recent research [15, 16]. This study addresses that gap by integrating key factors from multiple technology adoption models, offering a more comprehensive approach to understanding and improving MGAs adoption within the Qatari context.

4 RESEARCH QUESTION

What are the perceived factors influencing Qatari citizens' adoption of MGAs?

Following the research question of the study, the structure of this research paper is outlined as follows: it begins with an in-depth literature review and then progresses to a detailed explanation of the study's procedures and methodology. The paper subsequently presents the study's findings. Finally, the paper highlights practical implications, offers key conclusions, and discusses the study's limitations along with recommendations for future research.

5 LITERATURE REVIEW

"There are different models that explain how citizens could adopt new technologies [17]." The technology acceptance model (TAM), introduced by Davis [18], focuses on the roles of perceived ease of use and perceived usefulness in shaping users' intentions to adopt new technologies [18]. This model has been extended in later versions, such as TAM2 and TAM3, to include additional variables such as trust and experience. That being said, "theory of reasoned action and theory of planned behavior are the basic theories proceeding to TAM evolution [19]." Moreover, the unified theory of acceptance and use of technology (UTAUT), another prominent model, incorporates demographic factors such as age and gender alongside constructs like effort expectancy, which encompasses factors such as regularity of mobile use, mobile proficiency, and usage frequency. Additionally, the DeLone and McLean information systems (IS) success model [20] emphasizes user satisfaction, integrating external factors such as system and information quality, which are crucial for understanding the overall user experience. Together, these models provide a comprehensive framework for understanding how different variables, from user skills to external influences, shape the intention to adopt technologies.

Research conducted in other GCC countries, which share socio-cultural, technological, and governance similarities with Qatar, has applied variables from extended TAM, UTAUT, and the DeLone and McLean IS success model to explain mobile technology adoption. For instance, a study in Saudi Arabia on the Absher MGAs incorporated perceived ease of use, perceived usefulness, and trust to predict user adoption, with all three constructs found to significantly influence the intention to use m-government services [21]. Alotaibi et al. [22] applied an extended TAM to examine factors influencing users' intentions to adopt m-government applications in Saudi Arabia. The study tested three core TAM constructs alongside three external variables. The findings revealed that perceived usefulness, attitude toward use, and trust had a significant positive influence on the intention to use m-government services. The authors concluded that the extended TAM is suitable for understanding m-government adoption in the Saudi context, with trust and perceived value emerging as key drivers [22]. Similarly, Baabdullah [23] investigated mobile banking adoption in Saudi Arabia by integrating elements from UTAUT2 and the DeLone and McLean IS success model and found that user satisfaction had a direct and positive effect on adoption intention. In a related study, Alzahrani et al. [24] also employed a hybrid model to explore the factors influencing mobile banking adoption and revealed that a lack of digital proficiency presents a significant barrier to adoption.

In the UAE, Eid et al. [25] utilized TAM to explore citizens' intention to adopt m-government services, finding that attitudes towards m-government—whether

marked by hesitation or willingness—significantly shaped user intention. Another UAE-based study by Awani and Sultan [26] examined citizens' intention to adopt m-government services through the lens of advertising effectiveness, highlighting how advertising content influences the intention to adopt MGAs. The study draws on theories from technology acceptance, advertising, and persuasion, demonstrating that promotional strategies and content design are important drivers of m-government adoption. Similarly, Alneyadi [27] emphasized that ease of use, usefulness, and trust are key factors influencing citizens' intention to use m-government services in the UAE, particularly in mobile-based platforms. His findings underline the importance of designing secure, user-friendly, and helpful applications to drive adoption.

Rouibah and colleagues [28] conducted a qualitative study in Kuwait using an extended DeLone and McLean IS Success model as a framework. Through open-ended interviews with 81 participants, they found that information quality, system quality, service quality, perceived value, and user satisfaction significantly influenced both the initial use and continued use of mobile government services. In addition to these established factors, the study also uncovered several other context-specific influences related to trust and user perception. These findings contribute important contextual insights for advancing m-government research in developing Arab countries and highlight the need for validation using quantitative methods.

Within the Qatari context itself, El-Kassem and Al-Kubaisy [29] demonstrated that previous experience in using OGD significantly influenced user adoption behavior. This highlights the importance of regular engagement and familiarity with government platforms as key drivers of m-government adoption [29].

This body of regional research reinforces the importance of employing integrated technology adoption models when examining mobile government adoption. To this end, the present study's framework captures widely established adoption determinants such as ease of use, usefulness, and trust. It also incorporates context-specific variables, including exposure to government advertisement channels, mobile proficiency and usage frequency, regularity of mobile use, user experience, and hesitation towards mobile services. This integrated approach allows for a more nuanced understanding of behavioral intentions. It also offers insights that are both theoretically grounded and practically aligned with Qatar's digital transformation agenda.

The following review of literature discusses, in detail, each factor that could influence intention to adopt MGAs in this study. This integrated framework allows for a more nuanced analysis, consolidating overlapping factors and highlighting unique variables that may specifically impact m-government adoption in Qatar.

5.1 Age

"In the last decade, interactive touchscreen devices have become ubiquitous in young children, and toddlers often first experience touchscreen technology before the age of two [30]." Consequently, younger generations are growing up digitally fluent, increasingly comfortable with navigating mobile technologies from an early age. Age has long been recognized as a key factor in understanding technology adoption patterns, with various studies highlighting its impact on users' willingness to engage with new digital tools. This demographic factor often shapes how individuals perceive the complexity and benefits of emerging technologies. Marangunić and Granić [31] assert that age is a predictor of technology adoption. Similarly, El-Kassem

and Al-Kubaisi [29] found that age significantly influences the intention to adopt OGD in Qatar. Moreover, Dermody and the team found that older adults displayed increased hesitation towards adopting mobile or online government services. They stated that "the uptake of smart home technology is very low among older adults [32]." The UTAUT model emphasizes that age, gender, and experience play significant roles in shaping an individual's perception of technology and their intention to adopt it [33, 34]. Hence, the following hypothesis is proposed:

H1: Age plays a significant role in the intention to adopt mobile government applications.

5.2 Gender

Gender predicts technology adoption [35] and also influences individuals' confidence in using new technologies, shaping their willingness to engage with emerging digital tools. Many studies have consistently shown that women are generally less likely than men to adopt new technologies, have lower confidence in their technical skills, and are less inclined to pursue careers in information technology. This pattern is partly rooted in early educational environments that reinforce gendered views of technological competence. For example, Papadakis [36] found that Greek computer science textbooks perpetuate traditional gender stereotypes, which influence how learners perceive male and female roles in relation to technology. Waqas, Rafiq, and Wu found that "male and younger respondents performed more efficiently than female and adult respondents [37]." Similarly, Papadakis, Tousia, and Polychronaki [38] identified structural and cultural barriers that continue to discourage women from pursuing computer science, reinforcing long-term gender imbalances in the technology field. However, more recent findings suggest that these gender differences are diminishing as both men and women become increasingly exposed to and proficient in using computers and technology in their daily lives [29]. Given these mixed findings, further research is needed to clarify the role of gender in the adoption and use of new technologies [39]. Hence, the following hypothesis is proposed:

H2: Gender plays a significant role in the intention to adopt mobile government applications.

5.3 Regularity of using mobile and Internet

According to El-Kassem and Al-Kubaisi [29], prior experience plays a significant role in determining whether individuals adopt a new technology. Their research highlights that people are more inclined to use a technology if they have had positive experiences with similar technologies in the past. Specifically, they found that users who have previously interacted with OGD portals are more likely to continue using them in the future. This suggests that familiarity breeds confidence and trust, reducing the perceived effort needed to navigate these platforms. The findings of their research underscore the importance of experience in shaping user behavior. When individuals have prior exposure to OGD portals, they develop an understanding of the system's ease of use and usefulness—two key factors in TAM. Positive past interactions reinforce the perception that these portals are accessible and provide

valuable data, making users more likely to return. Furthermore, their study suggests that promoting initial engagement with these portals can yield long-term effects, as early adopters are more likely to integrate the technology into their routines and recommend it to others. That being said, high levels of mobile and Internet use create a favorable environment for m-government adoption, as users who are consistently engaged with these technologies tend to perceive such services as convenient and accessible. Hence, the following hypothesis is proposed:

H3: Regular use of mobile and internet positively impacts the intention to adopt mobile government applications.

5.4 Mobile proficiency and usage frequency

The rating of one's mobile skills is closely linked to the intention to adopt m-government services, as individuals with higher confidence in their mobile abilities are more likely to explore and utilize new applications. Users who perceive themselves as proficient with mobile technology are less likely to encounter barriers in navigating m-government services, increasing their likelihood of adoption. Conversely, lower mobile skills can result in hesitation or reluctance to engage with these services, as users may feel overwhelmed by the perceived complexity of mobile applications. Furthermore, higher mobile proficiency influences perceived ease of use, and frequent users perceive more usefulness [40]. Mukuka [41] reports that "proficiency could influence an individual's perceived usefulness and ease of use of technology, ultimately affecting their willingness to use it." According to TAM models and UTAUT, mobile proficiency and usage frequency are facilitating conditions that positively affect users' perceptions of ease of use and usefulness. Based on previous research [42], it was found that UTAUT1 includes facilitating conditions such as proficiency. UTAUT2 expands UTAUT1 by including habit, which accounts for experience and frequency of use. In other words, facilitating conditions have a significant influence on use intention [42]. Hence, the following hypothesis is proposed:

H4: Higher levels of mobile proficiency and frequency of mobile usage positively impact the intention to adopt mobile government applications.

5.5 Perceived ease of use

"The dimensions of perceived ease of use of an online public service may relate to an individual's perception of the web navigation and ability to use it anywhere anytime [43]." According to Mandari and colleagues [44], "ease of use demonstrates the extent to which m-government would be free from the physical and mental effort." This indicates that the simpler and more intuitive a service is, the more likely users are to adopt it. The less burdensome the system, the more seamlessly it can integrate into users' daily routines, thus increasing the likelihood of continued use and engagement. Lavuri and Thaichon [45] reported that "the perceived ease of use correlates positively with perceived usefulness." In fact, ease of use increases perceived usefulness [46]. Hence, the following hypothesis is proposed:

H5: Perceived ease of use positively impacts the intention to adopt mobile government applications.

5.6 Perceived usefulness

Perceived usefulness is a key concept in understanding technology adoption. It "describes how a system can improve the performance of the system [47]." This concept is critical because it directly influences whether users view the technology as beneficial, which, in turn, affects their willingness to use it. Understanding the role of perceived usefulness is crucial for designing and implementing systems that users are more likely to embrace [18]. Hence, the following hypothesis is proposed:

H6: Perceived usefulness positively impacts the intention to adopt mobile government applications.

5.7 Trust

Trust plays a crucial role in shaping an individual's intention to adopt e-government services in developing countries [43]. "Regarding mistrust in the government and data privacy concerns, public skepticism toward government-managed digital systems remains a major obstacle to widespread adoption [48]." Based on trust theory and social cognitive theory, Chen, Coo, and Yikai [49] found that trust is important for usage intention towards OGD. Additionally, Ramli and team report that "the research variables indicate that perceived usefulness has the most significant influence on the variable trust as the intervening variable [50]." Prayudi and colleagues [51] explored the role of trust in mediating the effect of perceived ease of use and perceived usefulness on the intention to reuse mobile applications. They found that both perceived ease of use and perceived usefulness have a significant positive effect on trust, which, in turn, has a positive effect on the intention to reuse mobile applications. According to Hooda et al. [52], trust is essential in e-government systems that manage sensitive personal data from users. Therefore, it requires greater emphasis on TAMs within the e-government context [52]. Trust plays a central role through several direct mediating effects on users' intention to use e-government and e-government system use behavior [52]. "[E]-government system designers and service providers should strive to convince users that online portals are reliable, secure, and trustworthy [52]." Hence, the following hypothesis is proposed:

H7: Perceived trust in MGAs positively impacts the intention to adopt mobile government applications.

5.8 Overall user experience and satisfaction with MGAs

In today's rapidly evolving digital landscape, understanding users' satisfaction levels is crucial for effective governance. 'With the development of government service delivery through mobile platforms, a compatible measurement model must be found to measure user satisfaction with performing such services through a mobile government portal. Measuring user satisfaction with mobile government services is necessary nowadays due to the increasing popularity of smart devices. Research on government users' satisfaction is lacking, leading to difficulties in understanding users expectations [53]. In this study, satisfaction is defined as a mobile user's overall

positive experience for the mobile services offered [54]. "The overall user experience determines whether individuals will continue to use a specific e-government service or revert to traditional offline alternatives [55]." That being said, Ojo [56] reported that the DeLone and McLean IS success model of 1992 believes that user satisfaction is primarily shaped by three key constructs: system quality, information quality, and service quality. Thakur [57] believes that ease of use, or usability, is a significant variable that influences satisfaction. Amin and colleagues (2014) suggest that focusing on perceived ease of use, perceived usefulness, and trust can enhance consumer satisfaction with mobile commerce [58]. Hence, the following hypothesis is proposed:

H8: A positive overall user experience and satisfaction with MGAs enhance the likelihood of adoption.

5.9 Advertisement channels

"The discussion on public platforms, social media, and networking sites about the nature of government operations and of public services offered via mobile government services can influence the adoption and use of mobile government services [58]." Such dialogues create an opportunity for users to share their experiences, concerns, and suggestions, further shaping public perception of these services. Consequently, positive or negative discussions may significantly impact user attitudes, potentially encouraging or discouraging the widespread adoption of MGAs. That being said, several factors such as age, proficiency, ease of use, perceived usefulness, trust, and overall satisfaction influence how impactful users perceive advertisement channels. These elements shape users' views on the credibility and effectiveness of government advertising in promoting m-government services. For instance, individuals with greater technological proficiency or higher trust in government services may find these advertisements more persuasive, thereby enhancing their impact on the adoption of MGAs. Hence, the following hypothesis is proposed:

H9: The influence of advertisements across different media platforms significantly impacts the intention to adopt mobile government applications.

5.10 Preference or hesitation towards using MGAs

Despite the convenience of m-government services, some individuals still prefer using traditional methods, "such as visiting a government office or calling a government agency over the phone [59]." This preference may arise from a lack of trust in digital systems, concerns about data security, or simply a greater sense of comfort with familiar, face-to-face interactions. The transition from traditional to electronic or mobile services is often based on the assumption that governments can easily move citizens to these more cost-effective platforms. However, governments may need to develop programs that raise awareness of the benefits of e-services and mobile services [59]. Hence, the following hypothesis is proposed:

H10: Hesitation towards using MGAs negatively impacts the intention to adopt mobile government applications.

Based on the review of the literature, Figure 1 illustrates the variables proposed to influence the intention to adopt MGAs. The model integrates core constructs from the TAM, UTAT, and the DeLone and McLean Information Systems Success Model, including perceived ease of use, perceived usefulness, trust, and user satisfaction. It also incorporates context-specific factors such as mobile proficiency, advertisement exposure, usage frequency, and hesitation. These variables are proposed to directly or indirectly influence users' behavioral intentions, providing a comprehensive framework that reflects both theoretical grounding and local relevance.

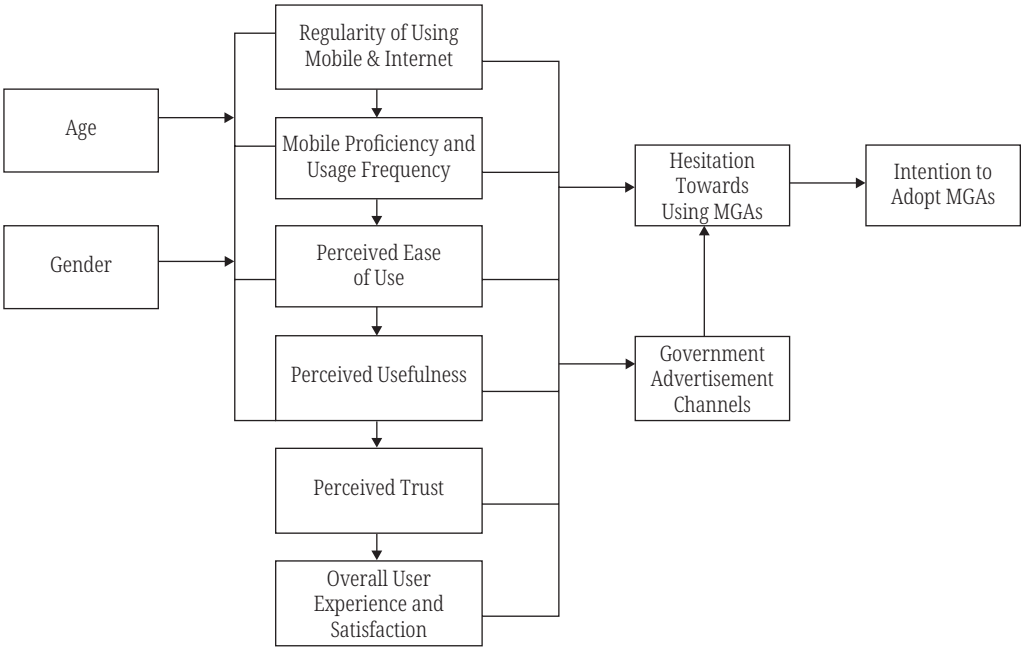

Fig. 1. Conceptual model of factors influencing the intention to adopt MGAs

Source: Author's own.

6 PROCEDURES AND METHODOLOGY

6.1 Sample selection

The Social and Economic Survey Research Institute (SESRI) partnered with a local telecommunications provider in Qatar to create a representative sampling frame for the population. After developing the frame, a random sample was selected to ensure that each telephone number had an equal chance of being included in the survey. Data collection took place in May and June 2024 and involved a representative group of 1025 Qataris and 847 non-Qataris. The study employed computer-assisted telephone interviews (CATI) as the mode of data collection. Table 1 provides an overview of the response distribution in the overall study. That said, this research paper focuses on 854 Qataris (485 males and 369 females) born in 1960 and later who had used Qatari MGAs and had these applications available on their mobile devices.

Table 1. Response rate

Disposition	Freq.
Completed (C)	1872
Not completed	14278
Eligible (E)	3933
Ineligible	8436
Unknown eligibility (UE)	1909
Raw response rate $\frac{C}{C+E+UE}$	**24.3%**

Source: Table created by the author with the help of the sampling expert using data generated with SPSS statistics software (IBM Corporation).

6.2 Instrumentation (Questionnaire construction)

The questionnaire initially included a wide range of items constructed based on previous research, but the study focused on 36 significant statements. The research team assessed each statement using a 5-point Likert scale (strongly disagree to strongly agree) or a frequency-of-use scale (never to always). To comply with Qatar University's Ethical Review Board guidelines, the questionnaire included 'don't know' and 'refused' options, allowing respondents to skip uncomfortable questions. The questionnaire also incorporated demographic questions to provide context for the findings and examine differences across population segments. It was first written in English and then professionally translated into Arabic. Moreover, to minimize social desirability bias, researchers informed participants that there were no right or wrong answers, they could skip any uncomfortable questions, and the data would be represented in an aggregate format. The instrument underwent a rigorous development process, including a pretest with 23 respondents, which helped ensure clarity. Moreover, prior to fieldwork, interviewers received training on m-government survey principles, effective interviewing techniques, and standard practices for administering questionnaires, ensuring high-quality and reliable data collection.

6.3 Validity and reliability

The researcher used SPSS for data analysis. Factor analysis was employed to refine the questionnaire and evaluate its construct validity. This analysis was assessed using three key criteria. The Kaiser-Meyer-Olkin (KMO) test, which measures sampling adequacy for each variable and for the overall model [60], yielded a value of 0.875, as shown in Table 2, which significantly exceeds the recommended threshold of 0.50, indicating excellent sampling adequacy. Additionally, Bartlett's test of sphericity produced a highly significant chi-square value of 7850.917 ($p < 0.001$), confirming that the relationships among the questionnaire items were appropriate for factor analysis and indicating that the correlation matrix is not an identity matrix [61]. Finally, oblique factor rotation was applied to derive the most interpretable factor structure. This process resulted in nine primary factors,

based on the criterion of eigenvalues greater than one. Together, these nine factors accounted for 56.649% of the total variance, providing a clear and meaningful structure to the data.

Table 2. KMO and Bartlett's test

Kaiser-Meyer-Olkin measure of sampling adequacy		.875
Bartlett's test of sphericity	Approx. chi-square	7850.917
	Df	630
	Sig.	.000

Source: Data reported in this table were produced by SPSS Statistics, IBM Corporation.

a) The first factor, 'intention to adopt MGAs,' accounts for 19.271% of the total variance (Cronbach's alpha = 0.839) and is characterized by four statements. The language and terminology used in these questionnaire items are derived from previous research [62]. The four items are as follows:
- **{ITU1}** I intend to use MGAs in the future.
- **{ITU2}** I intend to use MGAs frequently.
- **{ITU3}** I will use MGAs to conduct government transactions.
- **{ITU4}** I would recommend that others use mobile government applications.

b) The second factor, 'regularity of using mobile and Internet,' explains 8.534% of the total variance (Cronbach's alpha = 0.727) and is characterized by two statements. The language and terminology for these items were also derived from previous research [62]. The two items are as follows:
- **{MOBUSE}** How often do you use your mobile phone on a daily basis?
- **{INTERNETUSE}** How often do you use the Internet on a daily basis?

c) The third factor, 'overall user experience and satisfaction with MGAs,' accounts for 5.404% of the total variance (Cronbach's alpha = 0.811) and is characterized by six statements. The language and terminology used in these items come from previous research [62] and pertain to system quality, information quality, and service quality. The six statements are as follows:
1. **{SAT2}** It is easy to find out if a government agency offers its applications via mobile devices.
2. **{SAT3}** In general, I am satisfied with the current awareness campaigns and advertising about MGAs in Qatar.
3. **{SAT4}** I receive enough information and guidance on how to use MGAs.
4. **{SQ2}** I believe that MGAs are easy to navigate.
5. **{SQ6}** I think MGAs provide fast responses to my inquiries.
6. **{SQ7}** I believe that MGAs provide up-to-date information.

d) The fourth factor, 'perceived usefulness,' explains 5.111% of the total variance (Cronbach's alpha = 0.774) and is characterized by five statements. The terminology for these items was adapted from previous research [63]. The five statements are as follows:
1. **{PUSE2}** Using MGAs would enable me to accomplish government transactions more quickly.
2. **{PUSE3}** I believe that using MGAs saves me time, money, and effort, allowing me to perform transactions from any location.
3. **{PUSE4}** Using MGAs would facilitate communication between government agencies and citizens through text messages, applications, and email.

4. **{PUSE5}** The ability to perform government transactions 24/7 would encourage me to use MGAs more frequently.
5. **{PUSE6}** I believe that using MGAs would save me from making multiple visits to different agencies when conducting my transactions.

e) The fifth factor, 'perceived ease of use,' explains 4.865% of the total variance (Cronbach's alpha = 0.729) and is characterized by four statements. The terminology for these items was derived from previous research [64, 65]. The four statements are as follows:

1. **{PEU1}** Learning to use MGAs would be easy for me.
2. **{PEU2}** I believe my interaction with MGAs to access government services would be clear and understandable.
3. **{PEU3}** Using MGAs does not require extensive skills or effort.
4. **{PEU4}** I believe that MGAs are easy to use.

f) The sixth factor, 'hesitation towards using MGAs,' explains 3.775% of the total variance (Cronbach's alpha = 0.634). This factor is characterized by two statements, with the language derived from previous research [66]:

1. **{CULT4}** I feel that visiting agencies to track my transactions is better than monitoring them online.
2. **{CULT3}** Dealing with government agencies face-to-face is preferred to using mobile government applications.

g) The seventh factor, 'mobile proficiency and usage frequency,' explains 3.585% of the total variance (Cronbach's alpha = 0.548) and is characterized by four statements, also derived from previous research [62]:

1. **{MOBPURPOSE7}** How often do you use your mobile phone for email?
2. **{MOBPURPOSE4}** How often do you use your mobile phone for information searches?
3. **{MOBPURPOSE2}** How often do you use your mobile phone for government applications?
4. **{MOBSKILLS}** Overall, how would you rate your mobile skills?

h) The eighth factor, 'trust in MGAs,' explains 3.148% of the total variance (Cronbach's alpha = 0.676) and is characterized by four statements. The language and terminology for these items were derived from previous research [66, 67]:

1. **{TRUST2}** I feel that MGAs provide a safe and trustworthy environment for performing my governmental transactions.
2. **{TRUST4}** I trust MGAs to notify me of important information regarding the status of my governmental transactions.
3. **{TRUST5}** I expect that MGAs will not take advantage of me and will protect my privacy, including my personal information and address.
4. **{TRUST7}** I believe that government agencies in Qatar can be trusted to provide reliable mobile government applications.

i) The ninth factor, 'government advertisement channels,' explains 2.957% of the total variance (Cronbach's alpha = 0.676) and is characterized by five statements, with the language and terminology derived from previous research [62]:

1. **{ADV4}** Advertisements in public spaces.
2. **{ADV1}** Advertisements on social media.
3. **{ADV2}** Advertisements on government agency websites.
4. **{ADV5}** Advertisements through emails and text messages.
5. **{ADV6}** Advertisements on TV and radio channels.

7 STUDY FINDINGS

7.1 Multiple regression analysis

In conducting a multiple regression analysis to assess the intention to adopt MGAs as a function of 10 independent variables, the results revealed that eight variables significantly influenced adoption intention, as shown in Table 3. Furthermore, the coefficient of determination (R^2) is 0.354, which translates into an F-statistic of 41.905, and this result is highly significant with a p-value of 0.000.

Table 3. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	–5.648	2.515		–2.246	.025
	Mobile proficiency and usage frequency	.109	.025	.139	4.389	.000
	Perceived ease of use	.071	.025	.101	2.782	.006
	Perceived usefulness	.205	.032	.220	6.475	.000
	Trust in MGAs	.163	.027	.199	5.979	.000
	Overall user experience and satisfaction with MGAs	.088	.023	.146	3.803	.000
	Government advertisement channels	–.036	.017	–.065	–2.183	.029
	Hesitation towards using MGAs	–.063	.013	–.155	–4.908	.000
	Age of respondent	.003	.001	.074	2.481	.013
	Regularity of using mobile and internet	–.004	.012	–.012	–.380	.704
	Gender	–.011	.030	–.010	–.358	.721

Note: [a]Dependent variable: Intention to adopt MGAs.
Source: Data reported in this table were produced by SPSS Statistics, IBM Corporation.

First, mobile proficiency and usage frequency were found to be significant predictors of the intention to adopt MGAs. This aligns with the findings of Hur et al. (2017), who observed that consumers with a high degree of technological innovativeness are more likely to adopt mobile applications when they perceive them as easy to use, useful, and enjoyable. Individuals who are skilled in using mobile devices and who frequently engage with them tend to feel more confident exploring new digital services, increasing their likelihood of adopting MGAs [68].

Second, perceived ease of use demonstrated a significant positive effect on users' intention to adopt MGAs. As noted by Zhou et al. [69], dissatisfaction with inefficient and time-consuming offline government services often motivates individuals to seek more accessible and convenient alternatives. When users find m-government platforms easy to navigate and interact with, they are more likely to shift from traditional channels, such as in-person visits or paper-based forms, to these mobile platforms. The simplicity and user-friendliness of mobile services lower the barriers to entry and enhance user confidence, making adoption more likely.

Third, perceived usefulness was also identified as a strong predictor of the intention to adopt MGAs. According to Gupta and Mathur [70], individuals are more

inclined to adopt m-government services when they believe these services help them complete tasks more effectively and efficiently [70]. Users who perceive mobile platforms as tools that improve productivity, save time, and streamline government interactions are more motivated to adopt them. Unlike ease of use, which relates to the simplicity of the experience, usefulness refers to the value and benefits users gain from using the service.

Fourth, trust in MGAs was a significant predictor of adoption intention in the regression analysis. This aligns with prior studies showing that perceived trust positively influences users' intention to adopt mobile applications, particularly in contexts involving sensitive data [71].

Fifth, overall user experience and satisfaction with MGAs had a significant positive effect on adoption intention. This underscores the importance of delivering a smooth, intuitive, and rewarding experience for users. As noted by Kim [72], "if the experience from the trial is satisfactory, the user will go on using the app; and if not, the app will most likely be deleted from the smartphone."

Sixth, government advertisement channels were found to significantly influence adoption of MGAs. A study conducted in the UAE emphasized the persuasive power of effective promotional messaging. As stated by Awani [26], 'the message content of advertisements should be carefully designed to trigger people's attention. It should persuade citizens that m-government mobile services are worth using rather than traditional government service channels.' This finding reinforces the role of targeted communication strategies in shaping citizens' perceptions and highlights the importance of advertisement content in encouraging the adoption of m-government services.

Seventh, key hesitations towards using MGAs were found to significantly influence their adoption. One major barrier is a strong preference for traditional service channels. Many citizens are accustomed to in-person or familiar government processes and are reluctant to shift to MGAs, even when mobile alternatives offer greater convenience. This resistance often stems from habit, fear of technology, or a lack of trust in digital platforms. While some users are open to innovation, others require clear evidence that MGAs are not only reliable and secure but also more efficient than conventional methods. Awani [26] suggests that governments actively promote the benefits of MGAs by addressing these concerns and clearly demonstrating their value to encourage wider adoption.

Eighth, age was found to significantly influence the adoption of MGAs in this study, aligning with findings from previous research [29]. This suggests a clear difference between younger and older individuals, as younger users tend to be more exposed to digital technologies and are generally more technologically savvy.

Ninth, regularity of using mobile devices and the Internet was not found to be a significant predictor of the intention to adopt MGAs. One possible explanation for this is that in Qatar, mobile and Internet usage is already widespread and highly integrated into daily life across most demographic groups. As such, frequent use of digital tools may no longer serve as a distinguishing factor in predicting adoption behavior. Instead, factors such as perceived usefulness, trust, and user experience play a more decisive role in shaping adoption intentions in a digitally mature society where regular mobile and Internet use is the norm rather than the exception.

Tenth, gender was not found to be a significant predictor of MGAs adoption intention in Qatar. This result may be explained by the country's substantial efforts towards women's empowerment and digital inclusion. In recent years, the

Qatari government has invested heavily in promoting equal access to education and technology for women. According to an article published by Doha News [73], Qatari women now outnumber their male counterparts in higher education. This suggests that both men and women may possess comparable levels of digital literacy and access to mobile technologies, thereby diminishing the gender gap in m-government adoption.

7.2 Path-SEM analysis

Building on the multiple regression analysis, path analysis and structural equation model (Path-SEM) were applied to further explore the direct and indirect relationships between the factors and demographics and how they collectively influence the intention to use MGAs. This model facilitates the exploration and measurement of the direct and indirect effects of the explanatory variables leading up to the 'intention to adopt MGAs.' Each step logically follows from the previous one, creating a causal chain that reflects the dynamics of technology adoption. The author developed and named the resulting model the integrated mobile government adoption model (IMGAM), as shown in Figure 2.

It is worth noting that according to Kline [74], "a path model provides a visual representation that facilitates the interpretation of direct and indirect effects among variables," while in SEM, "the focus is on understanding the relationships among observed and latent variables." Bollen and Bauldry [75] add that path analysis, a form of SEM, allows for specifying and estimating relationships among observed variables; however, it does not account for measurement error in latent variables. In this study, the researcher applied Path-SEM, which combines the simplicity of path analysis with SEM's ability to handle latent variables, making it well-suited to the study's objectives.

Integrated mobile government adoption model provides a comprehensive visualization of both the direct and indirect effects among the variables within the Path-SEM. The numbers in parentheses indicate the direct effects, quantified through standardized Z-scores that capture the true relationships between the variables. The second set of numbers represents zero-order correlations, calculated using Pearson's simple correlations, which encompass the total effects, combining both direct and indirect influences. Moreover, the mathematical equations that support and define these relationships are presented below, enabling the resolution of the path analytical model:

$$Z2 = \beta 1Z1 + u$$
$$Z3 = \beta 1Z1 + \beta 2Z2 + u$$
$$Z4 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + u$$
$$Z5 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + \beta 4Z4 + u$$
$$Z6 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + \beta 4Z4 + \beta 5Z5 + u$$
$$Z7 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + \beta 4Z4 + \beta 5Z5 + \beta 6Z6 + u$$
$$Z8 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + \beta 4Z4 + \beta 5Z5 + \beta 6Z6 + \beta 7Z7 + u$$
$$Z9 = \beta 1Z1 + \beta 2Z2 + \beta 3Z3 + \beta 4Z4 + \beta 5Z5 + \beta 6Z6 + \beta 7Z7 + \beta 8Z8 + u$$

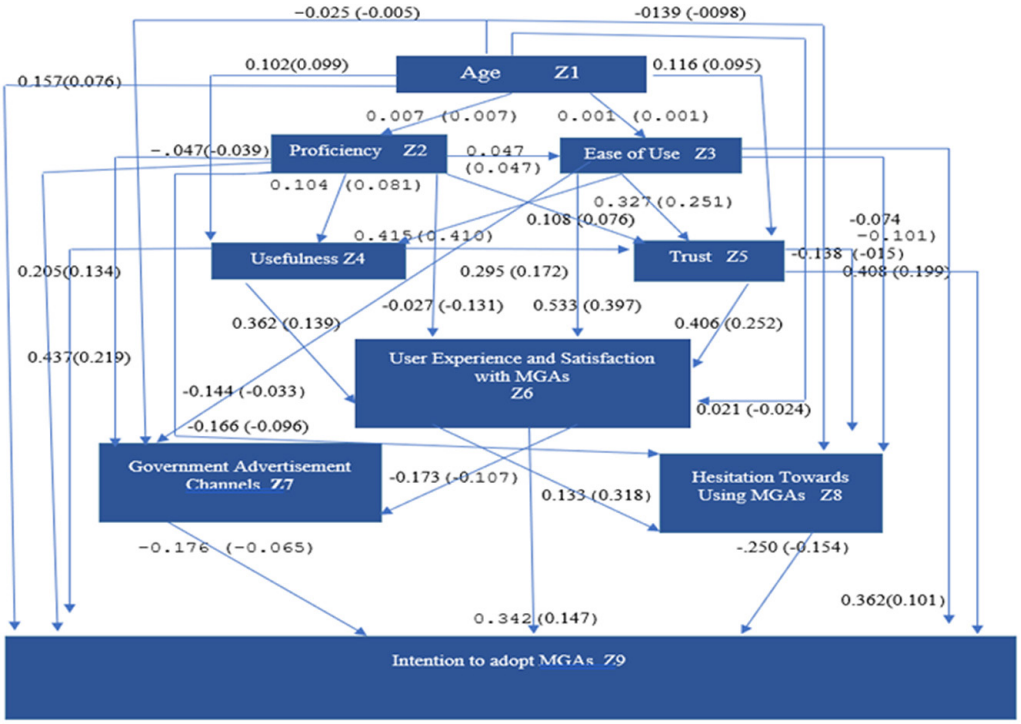

Fig. 2. The integrated mobile government adoption model (IMGAM)

Source: Created by the author using data generated with SPSS statistics software (IBM Corporation).

In this recursive model, the adoption of MGAs begins with age (Z1), which plays a foundational role in shaping user behavior. Age affects users' proficiency (Z2), or how skilled they are at using mobile technology, which, in turn, influences their perception of the application's ease of use (Z3). This aligns with TAM, where ease of use is a critical factor in determining user acceptance of new technology. According to TAM, a user's perception of ease of use influences their perception of the application's usefulness (Z4). Users are more likely to value an application when it is simple to use and clearly supports their goals.

As the model progresses, trust (Z5) becomes an essential element, especially for MGAs that often handle sensitive data. Trust has been integrated into various extensions of TAM, such as TAM2 and TAM3, to address contexts where security, privacy, and trustworthiness are critical. Users need to feel confident in the security of their personal information and trust that the government is a reliable provider of the application. Once trust is established, overall user experience and satisfaction (Z6) play a key role in reinforcing continued use of the application. A good user experience shows that the app meets users' needs and matches what they expect in terms of simplicity, usefulness, and safety. This increases their overall satisfaction.

The cumulative influence of age, proficiency, ease of use, usefulness, trust, and satisfaction affects how users perceive government advertisement channels (Z7). The effectiveness of these advertisements—whether through social media, television, or other forms of outreach—depends largely on users' prior experiences with the application. Users who find the application easy to use, useful, and trustworthy will view government advertisements more positively, as the messages being communicated align with their own experiences. On the other hand, users who have encountered difficulties or mistrust may view advertisements with skepticism, requiring more targeted efforts to address their concerns. Government advertisement channels (Z7)

then shape users' preference or hesitation (Z8). If the advertisements resonate with users, they are more likely to develop a preference for using the application. However, if there is a mismatch between users' actual experiences and what is being advertised, hesitation may arise, leading users to question whether the application truly delivers on its promises.

To clarify the Path-SEM model (see Figure 2), Table 4 summarizes the direct and total effects of each variable on the intention to adopt MGAs. According to the path analysis results, perceived usefulness had the strongest direct effect on the intention to adopt MGAs (0.219), making it the most influential variable in the model. Before considering anything else, users primarily want to know whether the application is useful. This finding reflects the central role of perceived usefulness as outlined in TAM. Users are significantly inclined to adopt MGAs when they believe the service will improve productivity, convenience, or the effectiveness of their interactions with government services.

Once users establish that MGAs are useful, their next key consideration is whether they trust the applications. Trust has the second-highest direct effect (0.199) in the model. This aligns with extended models of TAM and UTAUT, which recognize trust as a key influencer in environments where perceived risk may affect adoption decisions. In contexts involving government services, where data sensitivity and service reliability are critical; users must feel confident that the platform is secure, transparent, and dependable before proceeding. Thus, even if a service is perceived as beneficial, adoption is unlikely without a foundation of trust. Additionally, the direct effect of overall user experience and satisfaction (0.147) reinforces findings from the DeLone and McLean Information Systems Success Model, where user satisfaction plays a central role in system success and continued usage.

Interestingly, mobile proficiency and usage frequency have a stronger direct effect (0.134) than ease of use (0.101). This aligns with UTAUT's emphasis on user context and digital readiness. It implies that people who frequently use mobile devices are more open to adopting MGAs regardless of how easy or difficult they are to use. The implication is that user training and increasing mobile literacy may be more impactful than interface redesigns alone. Moreover, hesitation towards using MGAs also shows a relatively strong negative direct effect (–0.154), indicating that doubt or uncertainty can significantly hinder adoption, even when other factors are favorable.

Other variables such as age, government advertisement channels, and even ease of use exhibit weaker direct effects, suggesting they play a more secondary role in shaping user intentions.

In the case of age, government platforms are increasingly designed to accommodate a broad audience, including older adults, through simplified interfaces, multilingual support, and user assistance features. As a result, age alone no longer strongly predicts adoption, as usability gaps across generations have narrowed. What matters more is attitude, perceived usefulness, and digital trust, which cut across age groups.

Government advertisement channels may help raise awareness but do not necessarily drive adoption. Seeing an advertisement or promotional message is unlikely to prompt action unless users already perceive the service as useful and trustworthy. These channels tend to serve more of an informational role rather than directly influencing user behavior.

Ease of use remains important, particularly within the TAM framework. However, many users today are generally more comfortable navigating mobile apps. If the service is perceived as beneficial, users are often willing to tolerate moderate complexity.

This helps explain why perceived usefulness and trust tend to have stronger impacts on adoption decisions, especially in government service contexts where the outcome is more important than the interface.

Notably, the model also highlights how the strength of each variable's influence is amplified through mediation by other variables. For example, while the direct effect of perceived ease of use is relatively modest (0.101), its total effect increases substantially (0.362) when accounting for indirect paths through the other variables. These findings suggest that the variables do not operate in isolation but rather work together dynamically, reinforcing and enhancing one another's impact on mobile government applications.

Table 4. Direct and total effects of variables on intention to adopt MGAs

	Direct	Total Relation
Mobile proficiency and usage frequency	0.134	0.205
Perceived ease of use	0.101	0.362
Perceived usefulness	0.219	0.437
Trust in MGAs	0.199	0.408
Overall user experience and satisfaction with MGAs	0.147	0.342
Government advertisement channels	–0.065	–0.176
Hesitation towards using MGAs	–0.154	–0.250
Age of respondent	0.076	0.157

Source: Table created by the author using data generated with SPSS statistics software (IBM Corporation).

8 DISCUSSION

The findings of this study reveal significant insights into the factors influencing the intention to adopt MGAs. Notably, age emerged as a significant predictor of adoption intentions, confirming the first hypothesis. In contrast, the analysis found that gender does not significantly influence the intention to adopt MGAs, thereby rejecting Hypothesis 2. This suggests that gender may no longer be a decisive factor in adopting MGAs, with both males and females showing similar levels of willingness to engage with these solutions.

Moreover, the results do not confirm Hypothesis 3, which posited that regular use of mobile and internet positively impacts the intention to adopt MGAs. In contrast, Hypothesis 4 is supported, indicating that higher levels of mobile proficiency positively influence the intention to adopt mobile government applications.

The results of this study confirm Hypothesis 5, indicating that perceived ease of use positively impacts the intention to adopt MGAs. This finding underscores the critical role that user-friendliness plays in influencing individuals' adoption behaviors. Interestingly, the analysis reveals that the direct effect of perceived ease of use on perceived usefulness is the highest within the path recursive system, with a coefficient of 0.410. This substantial direct effect suggests that Qatari users primarily evaluate the usefulness of MGAs based on their ease of use. In other words, if users find an application straightforward and intuitive, they are more likely to perceive it as valuable and, consequently, adopt it. This aligns with TAM, which posits that

perceived ease of use is a fundamental determinant of perceived usefulness and adoption intentions.

The results of this study confirm Hypothesis 6, demonstrating that perceived usefulness significantly and positively affects the intention to adopt MGAs. Specifically, perceived usefulness exhibits the highest direct effect in the model (0.219) on the intention to adopt. This indicates that users who perceive MGAs as beneficial and valuable are more likely to intend to adopt them. This finding aligns with established theories of technology adoption, particularly TAM, which posits that perceived usefulness is a primary determinant of user acceptance. Following closely, Hypothesis 7 confirms that trust in MGAs positively influences adoption intention, showing the second-highest direct effect (0.199). Users who trust the security, reliability, and integrity of MGAs are more likely to adopt them, emphasizing trust as a critical factor in technology adoption.

The total relationships of perceived usefulness (0.437), ease of use (0.362), and trust (0.408) with the intention to adopt MGAs are notably high, surpassing their direct relationships and reflecting the important role of mediating factors.

The results of the analysis confirm Hypothesis 8, which states that overall user experience and satisfaction positively influence the intention to adopt MGAs. This finding highlights the importance of creating seamless and satisfying interactions for users, which plays a pivotal role in their willingness to engage with these applications.

As for Hypothesis 9, the results of the regression analysis reveal a negative relationship between the influence of multiple advertisement channels and the intention to adopt MGAs. This finding indicates that individuals may have preferences for certain channels over others, resulting in varying degrees of effectiveness in reaching the target audience.

Finally, the results of the analysis confirm Hypothesis 10, which posits that hesitation towards MGAs is negatively related to the intention to adopt them. This finding emphasizes the significant impact that individuals' preferences for traditional methods of interaction with government agencies have on their willingness to embrace digital solutions.

9 PRACTICAL IMPLICATIONS

This study offers significant implications for policymakers, developers of MGAs, and educators in Qatar regarding the adoption of MGAs. The findings indicate that multiple factors collectively influence users' intention to adopt these applications. These factors include age, mobile proficiency and usage frequency, perceived ease of use, perceived usefulness, perceived trust, overall user experience and satisfaction, government advertisement channels, and user hesitation or preferences. The results of the study suggest that addressing any single factor in isolation is unlikely to produce substantial improvements. Instead, the combined influence of these variables on adoption intention is considerably stronger than their individual effects, underscoring the need for an integrated, multidimensional approach. These findings guide the next section, which offers specific recommendations for policymakers, developers, and educators. Each suggestion is linked to the key factors found in the analysis and aims to improve the use and impact of MGAs in Qatar.

One of the key demographic findings of the study is that age significantly predicts MGA adoption, while gender does not. This aligns with El-Kassem and

Al Kubaisi's (2023) research on open government adoption in Qatar [29]. Consequently, policymakers should design targeted strategies that support older adults, who may face greater digital challenges. These strategies may include simplified interfaces, accessible service kiosks, and age-specific training materials.

The study also highlights the importance of mobile proficiency and usage frequency in shaping adoption behavior. Policymakers can address this aspect by offering training programs, launching digital literacy campaigns, and ensuring easy access to mobile technology. The government can improve user skills and confidence through these efforts, ultimately leading to higher adoption rates of MGAs [76].

Next, as users' perceptions of ease of use significantly influence their perceptions of an application's usefulness, developers have a critical responsibility to prioritize user-friendly designs [77] to support the adoption of m-government services. This entails simplifying navigation structures, reducing input complexity, and incorporating intuitive in-app guidance features. When MGAs are genuinely easy to use, they are perceived as more useful, thereby increasing users' intention to adopt them.

Furthermore, trust in MGAs emerged as a strong factor influencing user decision-making. Policymakers should prioritize building and maintaining this trust by emphasizing safety features [78], including transparency, reliability, and data security [79]. They must take the lead in implementing robust data privacy regulations and clearly communicating these protections to the public. Educators can support these efforts by incorporating data privacy education into school curricula and community programs, helping users understand their digital rights and the safeguards in place.

Additionally, the results of the study underscore the importance of system quality [80], information quality [80, 81], and service quality [80]. Developers should focus on designing intuitive applications, ensuring accurate and relevant information, and providing prompt customer support. Moreover, governments should provide personalized information to accommodate citizens' preferences [82]. By enhancing these qualities, agencies can improve overall user satisfaction, making it more likely that individuals will adopt MGAs. "User satisfaction can be viewed as the core of successful e-government adoption [83]." Satisfied users often share positive experiences, promoting government services organically within their communities [84].

Another key finding is the role of government communication and advertisement channels in shaping user perceptions. Government awareness campaigns [85] can significantly influence users who prefer traditional government services over electronic and mobile options by effectively communicating the advantages of digital solutions. Targeted campaigns that address the specific concerns of traditional users—such as security, usability, and the potential for improved service delivery—can help alleviate their hesitations.

Finally, the study emphasizes the importance of understanding user hesitation and preferences, particularly among those who still favor traditional service methods. Policymakers should offer hybrid models that allow users to transition gradually from in-person to mobile services. Gathering feedback from non-users and addressing their specific concerns—whether technical, psychological, or experiential—is essential. By fostering inclusive design and gradual onboarding strategies, the government can ensure that no segment of the population is excluded from the benefits of digital transformation.

The following summary table (refer to Table 5) presents a concise overview of key factors that significantly predict MGA adoption, along with their practical implications, recommended actions, and responsible stakeholders:

Table 5. Summary of key findings, practical implications, and recommended actions

Key Finding	Practical Implication	Recommended Action	Responsible Stakeholder
Age significantly influences MGAs adoption.	Older users may face digital barriers that reduce adoption.	Design age-friendly features and training materials.	Policymakers
Mobile proficiency and usage frequency predict adoption.	More proficient users are more likely to adopt MGAs.	Launch digital literacy initiatives and mobile skills training.	Policymakers
Perceived ease of use influences adoption.	Simpler systems improve adoption rates.	Simplify navigation and reduce in-app complexity.	Developers
Perceived usefulness is the strongest direct predictor of adoption.	Users adopt MGAs when they see them as beneficial.	Emphasize time-saving and convenience features.	Developers
Trust in MGAs positively influences adoption.	Lack of trust deters users from adopting MGAs.	Strengthen privacy protocols and promote transparency.	Policymakers, Educators
Overall user satisfaction increases likelihood of adoption.	Positive experiences lead to sustained MGAs usage.	Improve system quality, service support, and interface design.	Developers
Government advertisement channels influence adoption.	Ineffective ads can discourage adoption.	Tailor messages to audience needs and actual user experience.	Policymakers
Hesitation towards MGAs reduces adoption.	Some users avoid MGAs due to preference for traditional methods.	Offer hybrid models to ease the shift from in-person to mobile services and highlight their value.	Policymakers

10 SOCIAL IMPLICATIONS

Citizens in Qatar have long relied on traditional, in-person methods to access government services. However, in line with Qatar's National Vision 2030, which aspires to transform the country into an advanced society capable of achieving sustainable development, there is a growing need to transition towards more efficient, technology-driven public service delivery. This study supports that national vision by identifying key factors influencing m-government adoption, ultimately contributing to greater digital inclusion, accessibility, and citizen engagement in the digital era.

11 CONCLUSION

In conclusion, this study provides valuable insights into the factors influencing the intention to adopt MGAs. The findings confirm that age is a significant predictor of adoption intentions, while gender does not play a decisive role. Additionally, user proficiency, perceived ease of use, perceived usefulness, and trust are critical determinants in shaping individuals' willingness to engage with MGAs. The results also highlight the importance of overall user experience and satisfaction in the adoption process, along with the influence of government advertisement channels. These insights underscore the need for a multifaceted approach in policymaking, emphasizing the importance of enhancing user skills, ensuring user-friendly designs, and building trust in mobile services. Improving ubiquitous mobile access to essential public services remains a key driver for enhancing user engagement with MGAs and achieving more inclusive digital governance. By addressing these factors collectively, policymakers can significantly improve the adoption rates of MGAs in Qatar.

12 LIMITATIONS AND FURTHER RESEARCH

This study is highly significant, as it is the first of its kind in Qatar to integrate many variables from various technology adoption models to investigate the factors influencing the intention to adopt MGAs in the country. However, a limitation of this piece of research is that it only focused on Qatari participants, though the researcher plans to extend this work to include both Qataris and expatriates in future scholarly research. Replicating this research across other GCC countries would provide valuable regional insights by enabling comparisons of findings within different national contexts. Additionally, conducting longitudinal studies would allow researchers to observe how the factors influencing adoption may change over time as individuals become more familiar with mobile government applications.

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14 ETHICAL COMPLIANCE

This study received ethical approval from Qatar University's Institutional Review Board (approval number: QU-IRB 009/2024-EA), in accordance with international ethical guidelines, including the Nuremberg Code 1946–49, the Belmont Report of 1979, and the Declaration of Helsinki of 1964, amended in 2000. Prior to participation, all respondents were informed about the purpose of the study and gave their voluntary, informed consent. The researcher also completed CITI program training in research ethics and compliance.

15 CONFLICT OF INTEREST

The author declares no conflict of interest.

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