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Investigating the Determinants effects of Intention on the Use of UAE Government Mobile Apps (GMA) Users : A Quantitative Approach to Examine the Extended Technology Acceptance Model (TAM)

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ARTICLE DETAILS	ABSTRACT
Article History Published Online: June 2025	<p>The primary objective of this paper is to examine how intention to use may influence the use of mobile applications in the context of the UAE government service sector. The paper used an extension of the Technology Acceptance Model (TAM) to investigate the effect of different variables on intentions towards the utilization of government mobile applications (GMAs). While citizen and residents have widely adopted mobile applications, little has been done to establish the general factors affecting the happiness with government mobile apps in the UAE. By using a quantitative approach, this paper obtained statistical data on the subject topic from a sample of about 477 participants, which include UAE citizens and residents using one of GMAs provided by the Ministry of Interior (MOI). Specifically, the paper is focused on seven variables that predict degree of users' intention, including perceived trustworthiness, perceived effort expectancy, perceived app quality, perceived ease of use, perceived skills readiness, perceived security, and perceived usefulness. The findings highlight that higher perceptions towards mobile apps are significant predictors of user intent and usage patterns. Clear evidences were found that policy makers may enrich the understanding of how governments can improve the adoption of modern technologies such as mobile apps and drive their implications among apps users.</p>
Keywords Mobile application Trustworthiness Perceived security Perceived quality Perceived skills readiness Perceived usefulness Perceived ease-of-use Perceived effort expectancy Intention	
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I. INTRODUCTION

Over the recent years, the speedy development of mobile technology, and the emergence of mobile apps across the globe have led to the remaking of governance, at all levels, resulting in increased access and participation of citizens, within the context of a digital society. The UAE technological market has also proved to be incredibly inclusive as it has resulted in various government mobile applications (GMAs) being the leading methods for governance-citizen interaction, the simplification of services for the public, and overall engagement of the public (Blooshi et al., 2023). Addressing this matter in terms of grasping the motivations behind the users' intention, opinion, as well as usage of GMAs is the key for governments to promote their virtues and improve the level of satisfaction among the citizens (Sharma et al., 2018). Additionally, Technology Acceptance Model (TAM) has been the springboard for knowledge about users think about and actual usage of technology (Iacurci, 2021). TAM asserts that there are two major factors which influence people's attitude and intention for using technology. The factors are known as perceived usefulness (PU) and perceived ease of use (PEOU). These factors greatly affect users' actual usage behavior. Although TAM has been applied extensively in many different contexts, the correlation between the prepositions of mobile app user intention and TAM in government mobile apps is not as closely examined (Al Kurdi et al., 2020). This research does not only spread the TAM framework but also emphasize on an involvement of the complexity of intention state in the context of GMA use. Mobile apps use, a phenomenon that includes all measures of users, experience and cognitive well-being, not only represent what works but also the emotional aspect of feeling good with the app in terms of well-being (Zhou et al., 2020). By combining mobile use to the other determinants, the aim of the study is to offer a better-comprehensive understanding of what sets the implementation in the users' sentiments towards the GMAs (Government mobile applications). Additionally, it exists in the distinctive sociocultural framework of the

UAE providing this study a chance to uncover the particular factors which influence the tendencies and views of customers regarding technology. Moreover, when UAE is deeply invested in digital transformation and is really strengthening its competitiveness through technology, the specific contextual factors in GMA adoption choose to be the most important (Sharma et al., 2018).

1.1. The research problem

There is a dearth of empirical evidence on the antecedents of intention, attitude, and usage on the happiness of GMAs users, which requires more investigations on these crucial domains (Sharma et al., 2018; Mohtar et al., 2022). Although, the application of the TAM has been comprehensively used in different fields to explain user acceptance of technology, little attempt has been made to deploy it to explain the factors that foster the happiness of the GMAs users in the particularly chosen UAE context (Kanaan et al., 2023). While studies utilizing the Technology Acceptance Model (TAM) have examined user acceptance of various technologies, including mobile applications, there is a distinct lack of empirical research focusing specifically on the Ministry of Interior's mobile apps and their impact on user happiness (Mohammad & Alzoubi, 2020). More importantly, there is a lack of research done as far as predicting level of user happiness in the context of GMAs through the constructs of perceived ease of use, perceived usefulness, attitude, intention toward use, and subjective happiness. Discussion of this issue is essential for stakeholders who set goals and create mobile applications that are used to fulfil governmental approaches and provide satisfaction for users. Thus, by incorporating happiness as an extension to TAM in this study, the goal is to present a more developed framework that explains the complex interactive dynamics between the user perception, intention, attitude, usage behaviour and their level of happiness within the UAE GMA sphere.

1.2. The research objective

The paper is aimed at achieving the following objectives:

1. To examine the impact of the identified factors that shapes the users' intention to use UAE government mobile apps (GMAs) with the emphasis on perceived trustworthiness, perceived security and perceived quality, perceived skills readiness, perceived usefulness, perceived ease of use and perceived effort expectancy.
2. To investigate the impact of users' intention to use on the use of UAE Government Mobile Apps (GMAs).

1.3. The research questions

With the mobile technology being adopted by most governments worldwide to offer and interact with citizens, government mobile apps (GMAs) intention, attitude and use analysis are necessary to ensure success. In a country like the UAE, digital transformation is a top priority, so the research objective of identifying the factors that influence the use of GMAs and how they are related to end-user happiness becomes highly interesting. Based on the explanation, the questions of this study can be translated as below:

1. What are the main predetermines of users' intention toward using GMAs?
2. How intention to use influence actual use of GMAs?

2. SIGNIFICANCE OF THE STUDY

Presently, there is notable progress in academic research focusing on the impact of modern technologies in the business. The significance of this research is found in its ability to offer considerable information in relation to the determinants that may lead to the continual intention to use of the UAE Government Mobile Apps (GMA) with special emphasis on actual use of it (Zhang, 2022). With the UAE government keep on the smart city agenda, the psychological and behavioral predictors of user intentions, is important in improving the efficiency of these platforms. Through use of the extension TAM on this study will help in establishing when perceived ease of use, perceived usefulness and other sub-perception are most influential to the use of the system (Kanaan et al., 2023). Therefore, by applying the extension of Technology Acceptance Model (TAM), this research provides empirical evidence on how factors, such as perceived trustworthiness, perceived security, perceived apps quality, and perceived effort expectancy, perceived ease of use, perceived skills readiness, and usefulness affect user intentions towards the utilization of GMAs use (Iacurci, 2021). Given the complexities involved while promoting technology adoption, it is important to understand the determinants affecting individuals' intentions towards its acceptance and usage. Therefore, this research proposed a framework for measuring happiness factors associated with government mobile apps based on TAM's existing theoretical model. Additionally, policymakers, governmental organizations, and developers of government mobile apps in the UAE can benefit from this study to increase the efficiency and usability of governmental mobile applications. Additionally, analyzing the factors that shape users' intentions and usage behavior, it is in the interest of stakeholders to design appropriate interventions and actions that would enhance app designs or functionalities and service distribution in order to increase user satisfaction and use of GMAs (Mohammad & al zoubi, 2020).

3. THEORETICAL FRAMEWORK

Hansen (2019) maintained that the ongoing digital transformation in the UAE reflects the unified efforts by the government to increase accessibility to smart services and transform the region into one of the happiest places by delivering seamless, highly efficient, and improved experiences for the people. Further, Zhou et al. (2020) emphasizes that creating happiness is subjective to how technologies such as mobile apps contribute to the happiness zone by altering customer cultures, personalities, and psychographic elements that influence their perceptions, attitudes, Intentions, choices, and behaviors. While creating happiness for the people remains at the center of the ongoing digital transformation (Alsheikh, 2020), the UAE government must understand what constitutes happiness, dimensions of happiness, and different ways in which technologies such as mobile apps can help deliver this goal.

3.1. Relationship and effect of users' perceived trustworthiness on intention to use government mobile apps (GMAs)

Perceived trustworthiness is the degree of confidence an individual has that a system, service, or entity will be reliable, truthful and capable of delivering its promise or performing its role. When it comes to digital platforms or online services, perceived trust is likely to involve issues to do with protection of individual information, clarity, reliability and the image of the company offering the service (Cabeza-ram et al., 2022). Users' beliefs and intentions are heavily influenced by trust in the technology adoption which is one of the most important factors. Previous study of Information Systems area (IS) in this particular discipline is widely known that trust is one of the key factors for adoption of different technologies even mobile applications (Watson, 2009). The research of government institutions' credibility, especially the citizen participation and electronic governance, is a huge concern within the academic world. Research has shown that public trust for the government to a large degree determines the populations' readiness to engage with its services and projects. Proceeding from the research findings for the mobile apps, these applications are currently expected to increase positively the users' level of trust to the government as the provider of the GMAs (Grimmelikhuijsen, 2023). There is a high possibility that those people who trust government agencies will also have positive attitudes and are willing to try using gamification to learn. Multiple components, including the content of presented information, the way it is said and the way it is done, contribute to the reliability of the GMAs user's perception. The factors listed above can be generally divided into 2 parts: system-level and organizational. These categories are system-related factors, for instance, security and privacy features, and organizational factors, including the agency's transparency, accountability, and reputation (Ramli, 2020). The research concludes that users tend to trust those GMAs that deploy strong security measures and also are clear in the information they pass on about their data management and have a clean record of their service delivery. Multiple researches revealed that trustworthiness and the intentions of consumers to utilize GMA are positively connected (Ramli, 2020). A study by Apaua & Lallie (2022), findings suggest that GMAs and their designing authorities stand a better chance to endear the app among individuals who perceive them as honest and trustworthy. Such a perception is likely to influence positive attitudes and intentions to adopt the app among the GMAs consumers. Trust plays the role of a catalyzer that accelerates the adoption process of cutting-edge technologies by removing the uncertainty and risks involved with its adoption (Denaputri & Usman, 2019). Additionally, Shehada et al. (2018) highlighted, trust and risk perception tend to be related in the scenario of global innovations and adaption. One in the scientists' studies contend that individual's assume the risk that involve the usage of GMAs is the opposite of the level of their trust (Kaye & Johnson, 2020). Thus, there exists a positive correlation between trust and risk similarly as there is a negative connection between the trust and the risk. Involving users in the process of developing trust in the apps and the GMAs is one of the primary steps (Kaye & Johnson, 2020). This approach is beneficial because it influences user's perception of risks as positive and thus leads to higher intentions for using the apps. The users intention to use GMAs depends on how they perceive the trustworthiness of GMAs. Their perception might be influenced by contextual factors like cultural norms and institutional arrangements (Denaputri & Usman, 2019). To give this explanation, adoption intentions can evidently be greatly dictated by citizens' trust in government institutions. On the other hand, this effect would be not a magnified matter in countries with decrease of trust than the other ones. Based on the previous discussion, the influence of users' perceived trustworthiness on intention to use government mobile apps (GMAs) can be drawn as:

H1: There is a positive effect of users' perceived trustworthiness on intention to use government mobile apps (GMAs).

3.2. Relationship and effect of users' perceived security on the intention to use GMAs

Perceived security for users is the measure of the subjective perception or evaluation of users on the level of security offered by a system, product, or service (Apaua & Lallie, 2022). It is representing a user's faith, attitude, and emotions that files the safekeeping of personal information, data, assets, and private moments while the user uses the technologies, platforms or any kind of environments (Denaputri & Usman, 2019). Such perception of security is influenced by the layering of security features that go into their design and implementation, reputation of the provider or organization as well as past experiences (if they did) with security incidents or breaches alongside the social and cultural norms revolving around privacy and trust. Numerous studies have revealed a strong positive relationship which links users' sense of security with their intention to use government-led mobile applications (Sudono et al., 2020). People's trust in GMAs as safe means of service usage and data processing would lead them to believe in the apps better and they would show their intention of app usage. Security perceived especially in assurance of safety as main motive to eliminate worries of the users about probabilities of dangerous operations in mobile apps of the government. Feeling safe is a trust-inducer in the scope of GMAs. If the users do GMAs offer the level of security, they have more chances to keep beliefs that the applications are safe enough for personal information share and the sensitive operations (Kanaan et al., 2023). This means that their intention to use must be higher. Similarly, the users may have a twin perception about the security of these GMAs and the associated risk of using them. The studies are showing that when users believe security is increasing, a decline in their risk perception becomes observable (Belanche et al., 2020). Confident users of the GMAs believe in effective measures taken related to the safety and this is either a major factor or a minor factor (Mensah, 2022). Thus, there is a higher likelihood that individuals who use GMAs for the purposes of ease will develop such attitudes and behaviors. Several researches revealed that participation in GMAs by users is affected by their safety views concerning encryption and authentication as well as their data protection levels (Habib et al., 2018). Trust in the safety of GMAs connecting with the overall perception of the trust of the mobile applications and users' readiness to use them. Security related assessment of a user engages and determines the favorability of the specific app features that pertain to security and privacy. Research also pointed out that the definite security elements featuring secure login measures, data encryption and clear user policy terms strengthens users' confidence in security (Al-Busaidi, 2012). App developers and those into government services have the ability to develop systems that will improve the security system of GMAs and then the users' perception about the GMAs, this leads to the users' intentions in using the GMAs (Fukawa et al., 2021).

Sharma et al. (2018) noticed that the correlation between safety and conviction to use GMA may differ from one nation to another and among the different demographic groups depending on beliefs and culture. Such variables as cultural norms, trust in authorities and previous navigate of mobile technologies may have a huge impact on users' evaluation of security on GMAs that might influence the users' readiness to adopt GMAs as a norm. Becoming aware of them makes it possible to structure focused measures for GMA application within different subjects and communities. Also, the findings of attitude studies show strong positive connection between the GMA security and the users' intent (Apaua & Lallie, 2022). Security being in perception acts as trust enhancement, risk mitigation and quality of features in users' eyes (Kanaan et al., 2023). Belanche et al. (2020) investigated the factors that impacted citizens' probability of using electronic forms of governance such as mobile apps. They established the security concepts came to stand out as highly important determinant of trust in the government's effort in defending the personal data of the users. It was observed that higher levels of security were linked to a greater amount of trust which led to the establishment of a positive relationship between the GMAs and the users' intentions to use mobile applications.. Furthermore, Apaua & Lallie (2022) evaluated the issues involved the public regarding the implementation of mobile government relating to security. They established a comprehensive view of security, highlighting parameters that include authentication procedures, data encryption, and privacy policy. The survey demonstrated the necessity to manage these security detail to foster trust in both users and to encourage wider introduction of GMAs.

Denaputri & Usman (2019) explored the effect of perceived system security in shaping users' attitudes and intentions of using information technology services offered by government agencies. However, according to the study, security assurance and continuity can facilitate the users' trust in the government and their evaluation of the possible threats in using the mobile applications. On the other hand, security was the main reason for trust that led to the relationship between perceived security and intention to use GMAs, indicating that trust and security are linked and an end in itself. The research work stressed the fact that psychological security plays a crucial role in determining trust in the GMA and intentions to use the GMA. The research revealed that the most relevant characteristics considered security features which include reliable authentication, data encryptions and privacy controls as the main factors determining security and adoption. Based on the previous discussion, the influence of users' perceived security on the intention to use GMAs can be drawn as:

H2: There is a positive effect of users' perceived security on the intention to use GMAs.

3.3. Relationship and impact of users' perceived quality on the intention to use GMAs

Users' perceived quality means that the people have subjective assessment or overall judgment of the product, service or experience in terms of excellence, reliability and satisfaction (Novita & Husna, 2020). It refers to users' attitude to various features and attributes, its function, its performance, usability, design, and reliability, in which users can be negative and positive (Alam & Al-Amri, 2020). However, subjective nature of quality means that it can be determined on an individual basis by the differences in preferences, expectations along with experiences (Alzoubi et al., 2022). The users can differentiate between actual and perceived quality by their usage experiences, such as appropriateness to their needs or external factors such as brand name, word-of-mouth and competitors. The user experience is enhanced as GMAs offer immediate feedback, timely processing of users' requests and responsiveness that are perceived to be high quality (Alshurideh et al., 2024). App responsiveness not only provides better user experience but also constructs trust and confidence in the app's abilities. As users become ever more savvy in security and privacy issues related to mobile apps especially government apps that may have very sensitive information, they are getting increasingly aware that their data is at risk (Lee & Ahmed, 2021). Assumed that the GMAs which have embraced the robust security methods and the transparent privacy policies are likely perceived as of better quality compared to their counterparts and are more likely to attract the users' trust and adoption. The quality and contextual relevance of the content provided through GMAs likewise elicit user perceptions. Users' attitude in relation to how they comprehend the trust factor and etiquette of the government behind the app can at times determine their level of opinion about the quality and intent to use the app. Making sure to be open in the communication, accountable and be working under ethical standards will guide to building up trust from the users and the app would be evaluated favorably. The fact is that by creating attractive, easy-to-navigate user interfaces and unique user experience (UX) design components, users tend to have positive attitudes towards GMAs (Tam et al., 2018). Simple, result-oriented navigation, aesthetic-appealing designs and user-friendly interfaces are the factors that can increase the satisfaction level of the users and improve the perception of quality.

Several research studies developed the TAM (Technology Acceptance Model) to get knowledge of users' intentions for using (GMAs)(Alshurideh, Salloum, Al Kurdi, Monem, et al., 2019). Projection of an object's quality appears to be a critical driver in TAM, which afterwards impacts users' attitudes and their likely intention of adapting to technology. High quality is appreciated because it results in positive attitudes and plans to utilize GMAs. Research shows that users' acceptance of GMAs has a lot to do with its ease of use (Obeidat et al., 2012). People's perception of the difficulty of using GMA helps determine the perceived quality. The quality of apps which are quite straight forward to use without any ambiguity and are highly responsive to users can make a positive impact on the prospects of usage and adoption of these apps (Tam et al., 2018). Users check the adequacy or inadequacy of GMAs based simply on whether the information they receive is useful to them or not. High-quality apps are appraised as more relevant with the purpose of assisting users to finish their 'given task' or making them complete their goals that will reflect in using these apps (Novita & Husna, 2020). Researchers highlighted truthfulness and reliability as key usage factors contributing to users' impression on the quality of GMA services (Pranata et al., 2013). The users will be convinced about the GMA utility if they are able to trust the governmental entity (that backs the app) and perceive it as a high standard, credible and reliable source of information. Moreover, study reports on UX design giving credit to the creation of the

positive and negative perception of users as quality and intentions to use GMA (Pascoal et al., 2020). A good interface along with clear navigation, and an easy to use interaction create the sense of high quality, thereby increasing the user's mind-set to engage with that product. GMAs' users' perceptions are changing due to their satisfactory use of the security and privacy settings thus boosting perception of the product's performance. The provision of app privacy and data security, as well as visibility in the types of personal data they collect, is seen as quality and reliable and have the users trust and use more (Lee & Ahmed, 2021). Users' feedback and reviews seem too often shape the interpretation of something being of good quality and influence people's intentions to use those products. Providing positive feedbacks and reviews will indicate high quality and even make the user's opinions about the product improved and the adoption behavior improved also (Park et al., 2021). The target group of researchers as well takes into account the influence of service quality indicators for example the reliability, responsiveness and assurance on the product quality and clients predisposition towards the GMAs.. Based on the previous discussion, the influence of users' perceived quality on the intention to use GMAs can be drawn as:

H3: There is a positive effect of users' perceived quality on the intention to use GMAs.

3.4. Relationship and effect of users' perceived skills readiness on the intention to use GMAs

Users' perceived skills readiness represent a subjective judgment of personal abilities and willingness to employ particular technology or system (Al-Marroof et al., 2021). This notion is mostly followed while examining technical acceptance and usage, where the user's perceived skills readiness mirrors their perception regarding how much they can interact with an implementation's features efficiently. Numerous researchers successfully applied TAM (Technology Acceptance Model) or its extensions for examination of people's purposes to adopt technology, comprising of GMAs. TAM assumes that users are more likely to regard a technology useful and easy to use as a direct impact on their attitudes and behavior regarding the perceived adoption of this technology (Chowdhury et al., 2022). The users' appraisal of their readiness related to skills, which is the matter of their ability to efficiently overcome to do something that should be done via mobile apps, seems to be an important factor and a great hurdle in shaping their thoughts about how easy using the apps will be to them (Al-Marroof et al., 2021). Individuals rely on the level of their skills readiness to take decisions concerning the use or otherwise of smart machine agents which if positive could lead to more positive approaches towards the use of the agents and consequently increase intentions to use them.

As investigated by Al-Hussami et al. (2018), to provide users with the profound literacy about digital and the skills of using mobile applications especially GMAs, they emphasize the role of information and communication technology (ICT) in this regard. Focus groups have been conducted to confirm that users are more often the part of group with higher digital literacy degree which results in their greater confidence and competence to use mobile applications, and their increased plans to use such applications (Al-Marroof et al., 2021). To implement the governmental measures as to upgrade the digital literacy via developing training programs and promotional campaigns which help users to have higher levels of skills readiness and directly contribute on the confirmation of their willingness to use GMAs. Besides their subjective evaluations of the cumulated levels of complexity for GMAs and the extent of the access to technical support, user's notion of their perceived skills readiness is also a factor influencing their intentions to use this applications. It comes to attention that users are more likely to avoid few of the GMAs if they are made to believe that the GMAs are too complex in their service offerings or when they lack the technical know-how to solve minor problems on their own (Mohammad & al zoubi, 2020). According to Al-Gahtani et al. (2007), technical support and user-friendly interface designs can play a considerable role in alleviating the negative perceptions people have about their skills readiness which will make it possible for them to use GMAs with much higher levels of interest. Government mobile applications (GMAs) have become essential tools for delivering public services and engaging citizens (Sharma et al., 2018). Users' intentions to use GMAs are influenced by various factors, among which users' perceived skills readiness plays a significant role.

Many studies have ascertained a positive correlation between users' belief of skills readiness and their willingness to use GMAs (Bongomin et al., 2020). Moreover, the users, who think themselves skillful when it comes to using mobile apps, are more likely to give positive attitude towards using GMAs. Also, Tannady & Andry (2020) discovered that there is a positive relationship between the perceived level of skills readiness and the GMAs adoption intentions of individual citizens in the digital service provision context. Likewise, the villagers that experience the digital divide will be the ones affected by the opinion of skills readiness and decision to adopt the GMAs services. While imperfections exist, such as prominent adoption discrepancies among people with various digital skills and technical access, the studies have clearly shown this correlation. To exemplify this, Uz Kurt et al. (2013) study gave an instance that the people who are well-literate in terms of digital skills and perceived training needs were more disposed to use the government mobile apps, which emphasizes the need to solve the digital divide issues in order to boost the use of government mobile applications. The prior studies concludes that the individual's readiness to learn the skills necessary for virtual reality are much higher, which in turn determines their intentions to use the GMAs (Shwedeh et al., 2022). Understanding the role of perceived skills readiness and its interplay with other factors can inform strategies to promote GMAs adoption and enhance citizen engagement with government services. Based on the previous discussion, the influence of users' perceived skills readiness on the intention to use GMAs can be drawn as:

H4: There is a positive effect of users' perceived skills readiness on the intention to use GMAs.

3.5. Relationship and impact of users' perceived usefulness on the intention to use GMAs

Consumers' perceived usefulness describes the subjective evaluation of the customer in regards the possible benefits, effectiveness, and usefulness of technologies/products/services in completing their tasks, goals, or objectives (Seesuk, 2020). It shows user's perspectives, opinions and judgments of the adequacy, efficiency and suitability of the technology or service in the resolution of their tasks, problems or needs. Usefulness of a technology is one of the core concepts of both the technology acceptance and adoption theories, for instance TAM, which suggests that people are more willing to use a technology if they perceive it as a helpful tool in their work and improvement of their performance, if that user perceives it as such (Alhamad et al., 2021). Users' value judgments of the technology capabilities are the result of related technological characteristics such as functions, capabilities and purpose, as well as personal goals, expectations, and previous experience within this field. Government mobile applications (GMAs) have emerged as vital tools for delivering public services and engaging citizens (Alzoubi et al., 2021). Among the various factors influencing users' intentions to use GMAs, perceived usefulness holds significant importance. Consistent data suggest strong attitude among users towards the chosen mobile applications utility as well as their self-intended actions of employing these apps. The reliability study done by Ismail (2016) revealed that perceived usefulness influences the opinion of using GMA for government services accessibility. Likewise, Kanchanatanee et al. (2014) pieces of evidence suggest that the individual's perception of the usefulness of GMAs in order to use and adopt these systems positively affects her/his intentions. The researchers inspired by these studies further explored moderating influences of a number of controllable factors on the bond between perceived usefulness and intentions to use GMAs demonstrating, Tan & Chou (2008) for example discovered that usefulness perceived can modify the intention to adopt with both age and gender of users, where demographic factors can be moderators for this connection. Furthermore, a strong perceived usefulness enhanced the relationship between high perceived usefulness and intentions for using GMAs. Numerous studies have found a positive relationship between users' perceived usefulness of GMAs and their intentions to use them. For example, research by Lu et al. (2022) demonstrated that citizens who perceive GMAs as useful for accessing government services are more likely to express intentions to adopt and use these applications.

Kurdi et al. (2020) highlighted the Technology Acceptance Model (TAM) that postulates major use of the users' attitude towards technology in their decisions of whether to use technology or not. It was the coincidence of that fruitful work which gave the green light to theory of usefulness perspective, including determinants of technology adoption that also include GMAs. Belanche et al. (2020) their study focused on how users of GMAs see these products as useful and so come into a strong positive relationship which users will regard these products to be useful and come to the conclusion that using this product is necessary for them. Mohammad & al zoubi. (2020) illustrated that effective GMAs were the ones that fell on the category of the citizens as the main instruments through which they reached the government service provision. Chowdhury et al. (2022) analyzed the elements that directly affect the use of GMAs and described the additional factor known as perceived usefulness. Findings of the mentioned study reported that a higher degree of essentialness reinforced the tie between the involved perception of usefulness and intentions relating to the utilization of GMAs thus demonstrating an amplifying effect. To add more, Badi et al. (2021) tested the impact of distinct contextual elements on mobile applications users' perceived usefulness of GMAs. They concluded that indices of intuitiveness and quality of information had a positive impact on users beliefs about the usefulness of GMA which led to an desire to use. (Kondratieva et al., 2020) investigated the concepts shaping citizens' decisions to participate in mobile applications and it unfolded that perceived usefulness is a significant driver (factor). Their research regarded GMAs as a help tool in terms of having access to service information as well as government information. Based on the previous discussion, the influence of users' perceived usefulness on the intention to use GMAs can be drawn as:

H5: There is a positive effect of users' perceived usefulness on the intention to use GMAs.

3.6. Relationship and impact of users' perceived ease-of-use on the intention to use GMAs

User-perceived ease of use relates to the subjective idea of how user-friendly or how intuitive a particular technology, product, or system may be to an individual (Nuseir et al., 2022). It exhibits the customers' comparison of the level of complexity, comprehensibility, and usage convenience of implementing given technologies in order to accomplish the assumed tasks or missions. Readability is one of the most important components of software acceptance and usability models as discussed in these theories. Technology Acceptance Model (TAM) and System Usability Scale (SUS) (Ramli & Rahmawati, 2020). Therefore, according to the study variables and relationships based on previous research studies (Lu et al., 2022), users are determined to be more interested in the new technology when they feel like they can barely get into it without putting lots of effort into learning the features and functions of this technology. The users' idea of easy functionality depicts how they interact with the designed interface, mirror the functionality, and receive user support, such as help documentation and customer support (Denaputri & Usman, 2019). Array of positive experiences with feedback, interactions, and training can lead to higher ease-of-use, while on the other hand technological problems, difficulty, and a frustration can cause it as well. Alshurideh, Salloum, Al Kurdi, & Al-Emran (2019) have indicated that the users' attitude towards technology is the thing that helps it gain acceptance among users. They claim that by implementing flexibility in any government mobile app development system is a technique that increases the probability of its use by an individual. The good think is that the convenience of the mobile app has positive initial perceptions which in turn will drive user's intentions to use the app for accessing government services and information.

The study by Lu et al. (2022) on internet-based government services directly attributes ease of use as factor that affects the way users are oriented towards the services. Users who use government internet based websites and apps that they find immediately and user conveniently become more inclined to appropriate them for various governmental purposes. Citizens who have a good experience with

usability in our apps are more likely to desire to use the services than those who do not have such a good experience (Khatatbeh et al., 2023). Through their investigation on factors that affect people's intentions to use mobile government services, Shaikh et al. (2020) assessed changes in citizen behavior. They prove that factors such as convenience use, a state of ease in using the government apps, motivated the users to have an intention of using such systems. As people find certain state applications as easy-to-use with graphical user interface, they are believed to yield positive intentions to apply for government services via such apps. Also, Alsheikh (2020) study the factors that act as a catalyst of the citizens' decision to use m-governance services in Kingdom of Saudi Arabia. The researchers discover that how users think mobile apps are easy to use along with many other aspects, perceived usefulness for instance, significantly influence those interested in government mobile apps. The ability to make government apps more in-depth and easy will result in high penetration among citizens. Kanchanatanee et al. (2014) in an early and essential paper on the Technology Acceptance model (TAM), restate that the degree of perceived ease of technology use will determine if individuals will have intentions to use the provided technology. They maintain that if the people are able to use the app (examples: emergency response, public inquiries, etc.) and the government mobile apps or internet facilities are easy to use and user-friendly, then they are more likely to adopt them. When people look at mobile apps of the government positively with respect to ease-of-usage then their tendency to use apps for information sharing and service access also increases. Ohk et al. (2015) evidenced that ease of use in using could be important how people develop attitudes toward e-government services and intentionally use them. Government websites and mobile apps getting accepted by users for various matters are seen to be as a result of such user perceptions as they are easy to use and move. A positive usability experience draws users closer to the government apps as the latter would be a top choice any time their needs arise.

Alshurideh et al. (2020) examined the factors that influence the mobility intention of citizens involving m-government services. They discovered that either ease of use (including ease of use of government mobile apps) or familiarity with the technology strongly influences the respondent's intention to use mobile applications. When users through these government apps answer as behavior-friendly, easy-to-operate and user-friendly and understandable they are most likely to announce their intention of using them to access government services. Sharma et al. (2018) ascertained what triggered the community citizens' desire to use the mobile government services in Saudi Arabia. People are convinced that usability remarkably, in conjunction with other factors (like the perceived usefulness), is an important factor in promoting government mobile apps' adoption. In a nutshell, the ability to make the government apps friendlier to the users and simplify them can actually bring the boost into their popularity among citizens. Based on the previous discussion, the influence of users' perceived ease-of-use on the intention to use GMAs can be drawn as:

H6: There is a positive effect of users' perceived ease-of-use on the intention to use GMAs.

3.7. Relationship and impact of users' perceived effort expectancy on the intention to use GMAs

Perceived effort expectancy signifies the level of ease or difficulty given by the user that he or she expects to experience when using a system or technology to perform the task at hand (Utomo et al., 2021). Such a concept is widely studied in relation to the usability development and the adoption of technologies, in such disciplines as the human-computer interaction and usability engineering. Users' perceptions about effort expectancy can be formed by various factors, which include system interface design, task complexity, above or below similar systems and their skills and preferences (Sair & Danish, 2018). However, the impact of users' perceived effort expectancy on intentions to use government mobile apps has been a subject of interest for scholars studying technology adoption, human-computer interaction, and public administration (Chaudhry et al., 2023). They asserted that any the system which user tends to find easy to use experienced a high rate of adoption by the users. This theory, with the main assumption being whether the perceived effort expectancy and adoption of mobile app technology is among the key issues is the foundation for understanding the government app adoption framework.

Rahim et al. (2020) found that factors like users' information source, self-efficacy, risk-taking nature, trust, and previous exposure affected their intention to use e-government services, including mobile applications. The researchers determined that the heuristic role of effort expectancy would affect user attitude and intention to use the internet in interacting with governmental websites. These results insure that the actions to increase the usability and ease of use of citizen mobile government apps would lead to improvements in number of people using them. Mohammad & Al zoubi (2020) carried out the study of determinants, motivating citizens embracing mobile government services. They have concluded that the perceived level of effort required to use the application, which is a constituent of effort expectancy, has a substantial influence on their intention to use the mobile apps by the public sector. Furthermore, they had noted the role of perceived importance and reliability in formulating attitude of public towards mobile government services. It emphasizes the significance of user-friendly interface and functionality testing which should be a constituent part of mobile services. The research of Khan et al. (2019) was designed to realize the factors of national citizens' decision to use e-government services. As for easiness of use (effort expectancy) perceived, they detected its influence on users' attitude and intention towards voice adoption of digital government services. Their review emphasizes the imperative for governments to innovate in the interface and experience of portable government functions.

Studies conducted by Sharma et al. (2018) show that the citizen acceptance of government mobile apps is not only dependent on how easy to use the applications are but also on how minimal the effort on accessing them. As it is easy to access and utilize the mobile apps of the government, they raise the probability of users planning to leverage them for different uses, such as getting government services delivered and joining current affairs and those that match their preferences. Study by Mohtar et al. (2022) showed that favorable attitudes towards

government apps among users are often the result of either their ease to understand or operability. The end users' view that of the government apps as easy and straightforward to use, will most likely help them grow more positive intentions towards them, ultimately, encouraging the apps to be used more. On the other hand, positive perceptions of effort expectancy may justify users to ignore using the apps in implausibility, irrespective of how favorable the app is seen. Taba et al. (2014), pointed out those user-based design principles, that consist of simplicity, clarity, and accurate ease of use, are of great significance in reducing perceived effort and increase of attitudinal intention. Governments that incorporate user testing and process of iterating are more capable of designing apps which are user-friendly. Trust-based perceptions of effort expectancy by govt. mobile users are the key factor in trying to understand the level of comfort the users feel. However, according to Khan et al. (2019), the research explained that users who believe that applications provided by local government are simple to use are usually likely to trust it and feel comfortable using it to find service or information. Similarly, high effort expectancy perception may raise disbelief and suspicions towards the trustworthiness and functionality of a government mobile application. In addition, the effect of user perceived effort expectancy on intention to utilize mobile apps by the government institutions illustrates that usability, simplicity, and ease of use are key in driving retail especially to these citizens. Based on the previous discussion, the influence of users' perceived effort expectancy on the intention to use GMAs can be drawn as:

H7: There is a positive effect of users' perceived effort expectancy on the intention to use GMAs.

3.8. Relationship and impact of users' intention to use GMAs on their GMAs actual use

A research by Ventre & Kolbe (2020) revealed that factors like perceived usefulness of GMAs in improving user interactions with governmental services and perceived usefulness of the applications for apparent benefits play a great role in determining the usage intention. For instance, if the users feel that the GMAs cut across the number of opportunities to gain information or reduce the number of forms to complete, they are more likely to report their intention to use them. Several GMAs' attributes affect the actual usage and adoption intention, especially the perceived usefulness due to the ease and convenience in navigating and utilizing them (Ramli & Rahmawati, 2020). Ease of use, well-articulated commands, and no confusion in the usage also make users more likely to learn and use GMAs. The ease with which user data can be accessed to compromise privacy makes the trust that users have in the government, especially regarding the protection of their data, a key factor influencing their intention to use GMAs (Tan & Chou, 2008). Evolving concerns with respect to data breaches or misuse of information held by online platforms can erode consumer confidence and reduce their willingness to engage with GMAs. Word of mouth recommendations from other user, or government authorities can have a positive impact on the adoption of the GMAs (Alshurideh et al., 2020). Self-organized expectations of use and plan to engage in an expected way as reflected by social norms regarding normative expected online communications with government services also influence adoption intentions. Information provision regarding the advantages of applying GMAs, policy support and organizational endorsement can enable users that had an initial positive attitude to follow through with their positive attitude and engage the applications (Indarsin & Ali, 2017). Public campaigns as well as education campaigns can as well foster awareness and boost adoption intentions (Mohtar et al., 2022).

The actual performance or functionality of GMAs has an impact on reliability experienced by a user and may affect their use of the applications. Disruptions in service or other negative factors influence the use of the system and decrease the actual usage. Functional ICT self-effort, perceived ease of use, perceived usefulness, and perceived further enhance users' satisfaction and increase the likelihood of repeated usage of GMAs. It is known that the main principle for website development is user-oriented approach and workflow improvement based on feedback received. Challenges may persist regarding the utilization of GMAs, but enough user support, training sessions, and subsequent help to ensure long-term use (Venkatesh et al., 2003). Such training sessions ensure that the users are in a position to utilize it by providing them with methods of using it or techniques of getting the most out of GMAs. Additionally, previous research has confirmed that the use of the proposed concept, which is users' intention to use GMAs, is not unidimensional, and that it had an influence on the actual usage of the technology. Despite the utilitarian belief suggesting that perceived usefulness, ease of use, trust, and perceived social pressure are significant for GMA initial adoption are critical to continued GMAs use. An intention to use a specific mobile application mainly depends on proper designing, available support mechanisms for users, as well as clear and open communication between the inhabitants and the agencies of the government (Ramli & Rahmawati, 2020). Based on the previous discussion, the users' influence of intention to use GMAs on their GMAs actual use can be drawn as:

H8: There is a positive effect of users' intention to use GMAs on their GMAs actual use.

Based on the previous discussions, All study constructs and interrelated proposed relationships have been drawn as shown in the study model in figure 1.

3.9. The Study model and hypotheses

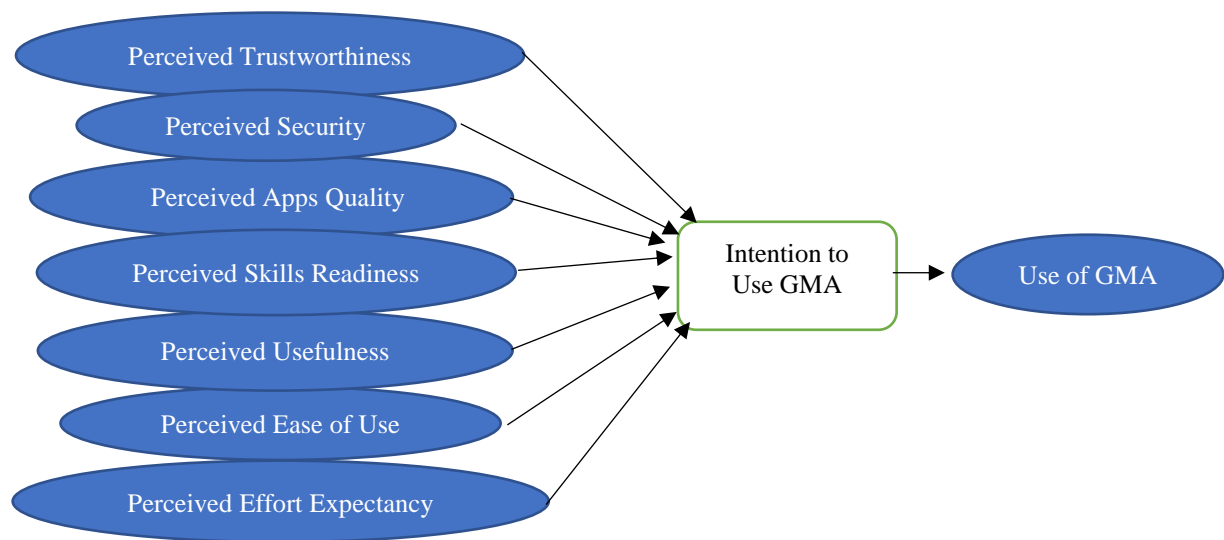


Figure 1. The Conceptual Framework

3.10. The study hypotheses

Based on the previous model as seen in figure 1, the study propose the following:

- H1: There is a positive effect of users' perceived trustworthiness on intention to use government mobile apps (GMAs).
- H2: There is a positive effect of users' perceived security on the intention to use GMAs.
- H3: There is a positive effect of users' perceived quality on the intention to use GMAs.
- H4: There is a positive effect of users' perceived skills readiness on the intention to use GMAs.
- H5: There is a positive effect of users' perceived usefulness on the intention to use GMAs.
- H6: There is a positive effect of users' perceived ease-of-use on the intention to use GMAs
- H7: There is a positive effect of users' perceived effort expectancy on the intention to use GMAs.
- H8: There is a positive effect of users' intention to use GMAs on their GMAs actual use.

4. METHODOLOGY

The study is using a quantitative research technique to obtain the needed data to measure predetermine factors affecting users' intention and use of Ministry of Interior (MOI) app in the UAE. the study employed quantitative surveys to collect data on how users' perceived trustworthiness, perceived quality, perceived effort expectancy, perceived app quality, perceived usefulness, perceived ease of use, perceived skills readiness, and perceived security affect GMA users' intentions and GMAs use. This method is used in similar previous studies such as mobile applications (De Reuver et al., 2016).

4.1. Study Population and Sample

The study population for this study is all those who use government mobile application residing in the UAE. The number of questionnaires for the study received with 477 valid responses, out of the 521. The response rate is 91.5%. The research applied random sampling method from residents or citizens in any of the Emirates in the UAE.

4.2. Data collection

Data was collected from the GMAs specifically MOI application users across all seven emirates i.e., Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Al Fujairah. Data was analyzed based on 477 valid responses to obtain insights from the diverse relationships among the study variables. The study analysis is done with full consideration into may issues such as checking the missing values then explaining the main demographic characteristics in addition to correlations metrics were also considered. Both reliability and validity of the collected data were also checked in addition to using the path analysis of hypotheses testing to technically asses the structural model. This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) technique through with the help of SmartPLS version 3. PLS-SEM has some specific advantages as compared with over conventional covariance-based SEM approaches.

4.3. Questionnaire development

A special questionnaire's items was developed to investigate intention and usage behavior toward UAE Government Mobile Apps (GMA) employing an extension of TAM factors which are perceived ease of use, perceived usefulness, Perceived Trustworthiness, Perceived Security, Perceived Quality, Perceived Skills Readiness, Perceived Effort Expectancy, attitude, and intention toward use. Likert-scale items were used for assessing the study constructs. The anchors ranged from 1 to 5 for each item where 1=strongly disagree to 5=strongly

agree. All constructs were measures from the scales developed in previous research and modified to fit in this study context. Each construct was modified to reflect the unique aspects of government mobile apps in the UAE. To add more, the research used the statistical package for social sciences (SPSS) to calculate descriptive statistics, such as correlation, reliability and regression. The researcher utilized one of the advanced statistical methods such as the Analysis of Moment Structures software (AMOS) to perform Structural Equation Modeling (SEM) or Smart-PLS.

5. DATA ANALYSIS

Data was collected from the GMAs specifically MOI application users across all seven emirates i.e., Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Al Fujairah. Data was analyzed based on 477 valid responses to obtain insights from the diverse relationships among the study variables. The study analysis is done with full consideration into many issues such as checking the missing values then explaining the main demographic characteristics in addition to correlations metrics were also considered. Both reliability and validity of the collected data were also checked in addition to using the path analysis of hypotheses testing to technically assess the structural model. This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) technique through with the help of SmartPLS version 3. PLS-SEM has some specific advantages as compared with over conventional covariance-based SEM approaches.

5.1. Demographics

This study discussed a set of demographic data to give the readers an idea about the main sample description which included gender, age education. Regarding the distribution of gender and age characteristics of demographics. It indicates that there were 162 females (34%) and 315 males (66%). Regarding the age distribution, the results revealed that most people are aged between 31-40 years ($n = 239$, 50.1%), followed by 41-50 years ($n = 132$, 27.7%), and under 30 years ($n = 62$, 13%). The smallest group consists of respondents aged between 51-60 years ($n = 42$, 8.8%) and over 60 years ($n = 2$, 0.4%). Regarding the education levels, it shows that most either had a Bachelor's degree ($n = 226$, 47.4%) or a Master's degree ($n = 208$, 43.6%). A smaller percentage held a High School qualification ($n = 23$, 4.8%), while those with Doctorate degree made up the smallest portion ($n = 20$, 4.2%). Additionally, regarding job experience, 4 categorizes the participants of this study based on their years of job experience. The largest percentage falls within the 11-20 years range ($n = 238$, 49.9%), followed by over 20 years ($n = 122$, 25.6%), 6-10 years ($n = 109$, 22.9%), and less than 5 years ($n = 8$, 1.7%).

5.2. Descriptive statistics

This analysis mainly focuses on several statistical outcomes such as frequency, minimum/maximum values, mean (M), standard deviation (SD), variance, and correlations among the study variables. Regarding the frequency, in this study, there are 477 data points for each variable, showing a consistent sample size across all variables. Regarding minimum and maximum responses' value, these values represent the range of responses collected for each variable. Since the scale ranged from 1 to 5, results showed that all variables duly ranged between 1.00 and 5.00. Regarding the Mean (M), the mean values range from 3.20 to 3.72 across all variables, suggesting moderate to moderately high levels of agreement or endorsement for the studied variables. Regarding the Standard Deviation (SD), this measure the dispersion or variability of scores around the mean. Higher SD indicates greater variability in the responses, while lower SD suggests less variability. Results showed that SD values range from 0.96 to 1.21 across all the variables, indicating some varying levels of consistency in the collected responses. Regarding the Variance measure which indicates the spread of data points around the mean and is the square of the standard deviation. Lower variance (0.93) suggests less variability, while higher values (1.47) suggest greater variability. Table 1 provides descriptive for each unobserved variable individually, considering their frequencies, minimum, maximum, M, SD, and variance, to understand the implications and possible interpretations within the research context. The instruments used for these variables suggests a measurement of perceptions on a scale from 1 (low) to 5 (high).

Table 1. Descriptive statistics

Variables	Frequency	Minimum	Maximum	Mean	SD	Variance
Perceived Trustworthiness (PT)	477	1.00	5.00	3.56	1.13	1.27
Perceived Security (PS)	477	1.00	5.00	3.23	1.02	1.05
Perceived Quality (PQ)	477	1.00	5.00	3.65	1.20	1.43
Perceived Skill Readiness (PSR)	477	1.00	5.00	3.20	1.21	1.47
Perceived Usefulness (PU)	477	1.00	5.00	3.35	1.17	1.36
Perceived Ease of Use (PEOU)	477	1.00	5.00	3.62	1.06	1.12
Perceived Effort Expectancy (PEE)	477	1.00	5.00	3.64	1.08	1.17
Intention to Use GMAs (IGMAs)	477	1.00	5.00	3.63	1.06	1.12
Use of GMAs (UGMA)	477	1.00	5.00	3.55	1.11	1.24

5.3. Correlational statistic

Correlational Statistic analysis gives an insight about how the study variables are related to each other, namely the type of linear relationships present among them (Sekaran, 2003). Pearson correlations were calculated as seen in Table 2. Results showed that all the correlations among hypothesized variables were positive and significant ($p < .05$). Also, IGMA showed a positive and significant correlations with PT ($r = .399$, $p < .01$), PS ($r = .161$, $p < .01$), PQ ($r = .482$, $p < .01$), PSR ($r = .447$, $p < .01$), PU ($r = .373$, $p < .01$), PEOU ($r = .436$, $p < .01$) and PEE ($r = .452$, $p < .01$). The strongest relationship of IGMA was with PQ, and the weakest was with PS. Similar to IGMA, the strongest relationship was with PQ, and the weakest was with PS. Additionally, UGMA was positively and significantly linked

with IGMA ($r = .356, p < .01$). Also, UGMA had stronger correlation with IGMA. Finally, GMAUH had a positive and significant relationship with UGMA ($r = .510, p < .01$).

Table 2. The Correlations Metrix

Variable	PT	PS	PQ	PSR	PU	PEOU	PEE	IGMA	UGMA
PT	1								
PS	.086	1							
PQ	.409**	.020	1						
PSR	.490**	.027	.475**	1					
PU	.284**	.052	.429**	.362**	1				
PEOU	.370**	.020	.452**	.480**	.314**	1			
PEE	.364**	.039	.517**	.446**	.425**	.435**	1		
IGMA	.399**	.161**	.482**	.447**	.373**	.436**	.452**	1	
AGMA	.436**	.192**	.540**	.499**	.436**	.493**	.489**	.652**	1
UGMA	.408**	.030	.449**	.483**	.404**	.384**	.445**	.356**	.398**

$N = 477, ** = p < .01$

5.4. Measurement model assessment

5.4.1. Common Method Bias (CMB)

To study the effectiveness of measurement model, this study checked the path contamination and the collinearity. Based on Hair et al. (2019), the study model's robustness Variance Inflation Factor (VIF) values prefers to be stayed below 3. This indicates the absence of multicollinearity concerns and reinforcing the reliability of the model at hand. Results revealed that both collinearity and common method bias were clearly ruled out, further attesting to the model's quality and reliability.

5.4.2. Measurement Model (MM)

To understand the measurement model using Partial Least Squares Structural Equation Modeling (PLS-SEM), it's crucial to assess the constructs' reliability and validity. This process involves examining several aspects, including indicator reliability, composite reliability (CR), and average variance extracted (AVE) essential to confirm the constructs' convergent validity. Additionally, assessing discriminant validity through Heterotrait-Monotrait HTMT ratios and the predictive relevance of the model are integral parts of this comprehensive assessment (Hair et al., 2019). The assessment of this study constructs include the following: PT, PS, PQ, PSR, PU, PEOU, PEE, IGMA and UGMA.

5.4.3. Indicator Reliability (IR)

The Indicator reliability refers to the amount of indicator variance explained by the latent variable and inspecting the factor loadings of all indicators, indicating the strength of association between the indicators and the constructs. The higher factor loadings suggest stronger relationships, and offer better reliability. A measure is considered reliable when its factor loadings exceed 0.50 according to Hair et al. (2019). All scale factor loadings surpassed 0.70, as detailed as seen in Table 3 and Figure 2, ensuring the reliability of all indicators.

Table 3. Factors Loadings

Indicators	PT	PS	PQ	PSR	PU	PEOU	PEE	IGMA	UGMA
PT1	0.853								
PT2	0.854								
PT3	0.852								
PT4	0.864								
PT5	0.812								
PS1		0.703							
PS2		0.880							
PS3		0.865							
PS4		0.877							
PS5		0.872							
PQ1			0.895						
PQ2			0.874						
PQ3			0.900						
PQ4			0.893						
PQ5			0.827						
PSR1				0.883					
PSR2				0.880					
PSR3				0.916					
PSR4				0.914					
PSR5				0.892					
PSR6				0.764					
PU1					0.871				

PU2					0.869				
PU3					0.830				
PU4					0.896				
PU5					0.788				
PEOU1						0.780			
PEOU2						0.892			
PEOU3						0.842			
PEOU4						0.882			
PEOU5						0.873			
PEOU6						0.733			
PEE1							0.838		
PEE2							0.846		
PEE3							0.882		
PEE4							0.893		
PEE5							0.933		
PEE6							0.919		
IGMA1								0.847	
IGMA2								0.844	
IGMA3								0.886	
IGMA4								0.917	
IGMA5								0.931	
IGMA6								0.930	
UGMA1									0.888
UGMA2									0.926
UGMA3									0.840
UGMA4									0.893
UGMA5									0.942
UGMA6									0.932

5.4.4. Internal Consistency (IC)

Checking the Cronbach's alpha values which evaluates how consistently a set of items measures a single concept, is important in assessing any study model. Its recommended that a Cronbach's alpha value prefers to be above 0.7 to indicate good reliability (Hair et al., 2019). The Cronbach's alpha for all variables in the statistical model clearly surpassed the established benchmark, which all more than 90% as shown in Table 4.

5.4.5. Composite Reliability (CR)

Another criterion for assessing the measurement model of this study is Composite Reliability (CR) which check the internal consistency and stability of the modelled variables. The higher CR values indicate better internal consistency leading to higher reliability of the construct. As seen in Table 4, the measurement model in this study achieved excellent CR values which all is more than 90%, which is all more than (> 0.7) as confirmatory purposed by Hair et al. (2019).

Table 4. Reliability, Validity and Quality of the Measurement Model

Variable	CA	CR	AVE	H ²
IGMA	0.949	0.959	0.798	0.712
PEE	0.945	0.956	0.785	0.693
PEOU	0.913	0.933	0.698	0.578
PQ	0.926	0.944	0.771	0.648
PS	0.902	0.924	0.709	0.568
PSR	0.939	0.952	0.768	0.674
PT	0.902	0.927	0.718	0.570
PU	0.905	0.929	0.725	0.582
UGMA	0.955	0.964	0.818	0.739

5.4.6. Convergent Validity (CV)

Convergent validity refers to how well closely a measure relates to or differs from other items within the same variable. It reflects the extent to which an item positively relates to other items of the same variable. Average Variance Extracted (AVE) served as the metric for assessing convergent validity. A higher AVE value signifies a stronger convergence among the indicators, thus representing higher convergent validity and it prefers exceeding 0.5 (Hair et al., 2019). As seen in Table 4, the AVE values straightforwardly exceeded this defined criterion, confirming the convergent validity of all study constructs are relatively more than 70%.

5.4.7. Predictive Capacity (H^2)

Evaluating predictive validity convoluted calculating the values of communality (H^2) for each block within the measurement model. Positive H^2 values indicate an open and sizable relationship between the indicators and the underlying construct. the results reveal, as seen in table 4 that all H^2 values across blocks of measurement model were positive, which complemented the predictive capacity.

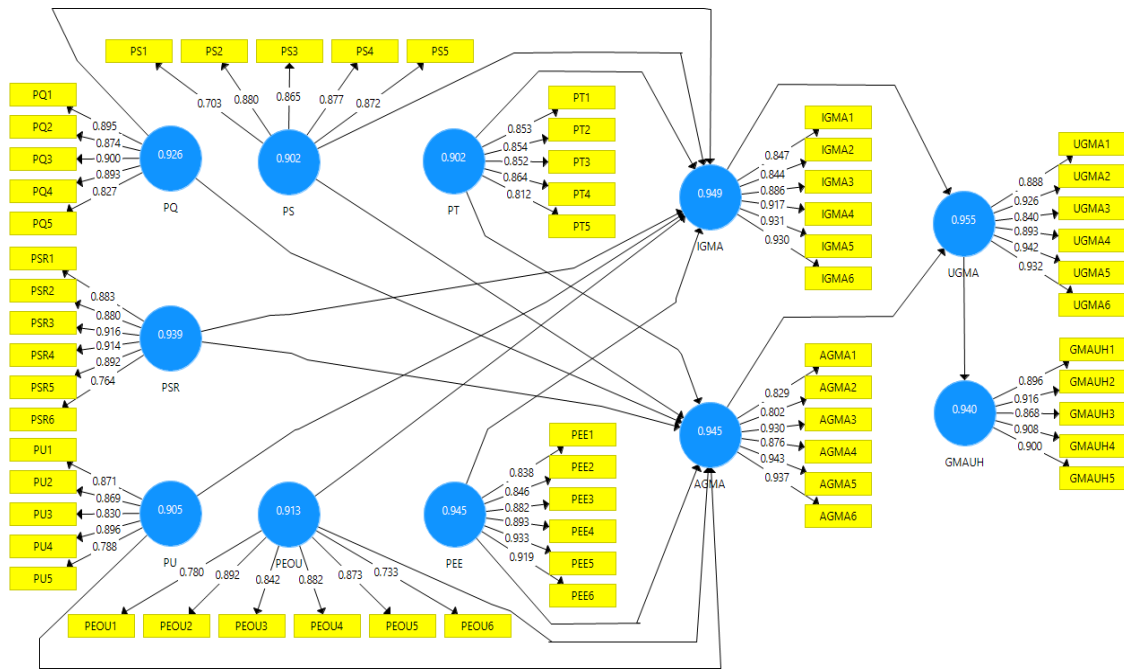


Figure 2. The Measurement Model

5.4.8. Discriminant Validity (DV)

Discriminant validity underscores the capability of a construct's items not only to correlate less strongly with items of other constructs in the questionnaire but also to uniquely define the construct they are intended to measure. In this study, discriminant validity was confirmed based on Heterotrait Monotrait HTMT criteria of <0.85 . The data in Table 5 shows that all HTMT values meet the necessary standard.

Table 5. Discriminant Validity of the Measurement Model – HTMT

Variables	AGMA	GMAUH	IGMA	PEE	PEOU	PQ	PS	PSR	PT	PU	UGMA
AGMA	1										
GMAUH	0.402	1									
IGMA	0.689	0.345	1								
PEE	0.517	0.505	0.477	1							
PEOU	0.530	0.455	0.468	0.468	1						
PQ	0.577	0.479	0.513	0.553	0.492	1					
PS	0.175	0.075	0.152	0.071	0.075	0.088	1				
PSR	0.531	0.465	0.474	0.474	0.519	0.510	0.081	1			
PT	0.472	0.360	0.431	0.394	0.408	0.447	0.123	0.533	1		
PU	0.472	0.414	0.402	0.459	0.345	0.469	0.063	0.394	0.315	1	
UGMA	0.420	0.538	0.375	0.469	0.412	0.477	0.089	0.510	0.441	0.434	1

The square of the Average Variance Extracted (AVE) for each variable against the correlations between variables has been calculated by using the Fornell-Larcker criterion (Fornell & Larcker, 1981). Based on Table 6, this requirement was generally met in this study, ensuring the discriminant validity of most variables. Additionally, the discriminant validity of the measurement model has been calculated by checking the assessment of the cross loadings. The factor loading of any variable should be at 0.2 margin ahead (Hair et al., 2019). Table 7 showed that all the factor loadings in bold and italic font are large enough from other loadings, which ensuring that discriminant validity by this method was eminent.

Table 6. Discriminant Validity of the Measurement Model – Forenell-Larker

Variables	AGMA	GMAUH	IGMA	PEE	PEOU	PQ	PS	PSR	PT	PU	UGMA
AGMA	0.888										
GMAUH	0.379	0.898									
IGMA	0.652	0.326	0.893								
PEE	0.490	0.476	0.453	0.886							
PEOU	0.499	0.425	0.439	0.439	0.836						
PQ	0.541	0.446	0.482	0.517	0.457	0.878					
PS	0.179	0.073	0.154	0.071	0.073	0.085	0.842				
PSR	0.504	0.439	0.450	0.447	0.482	0.476	0.079	0.876			
PT	0.437	0.333	0.401	0.367	0.370	0.410	0.115	0.489	0.848		
PU	0.437	0.383	0.374	0.423	0.320	0.429	0.058	0.367	0.286	0.852	
UGMA	0.400	0.510	0.357	0.445	0.384	0.448	0.095	0.483	0.409	0.401	0.904

Table 7. Discriminant Validity of the Measurement Model – Cross Loading Method

Variables	AGMA	GMAUH	IGMA	PEE	PEOU	PQ	PS	PSR	PT	PU	UGMA
AGMA1	0.829	0.326	0.578	0.457	0.427	0.476	0.178	0.446	0.375	0.407	0.349
AGMA2	0.802	0.323	0.558	0.403	0.413	0.440	0.165	0.435	0.369	0.349	0.374
AGMA3	0.930	0.346	0.574	0.431	0.462	0.487	0.155	0.450	0.405	0.378	0.354
AGMA4	0.876	0.319	0.599	0.435	0.429	0.485	0.143	0.422	0.395	0.372	0.325
AGMA5	0.943	0.345	0.582	0.441	0.457	0.495	0.152	0.461	0.389	0.394	0.360
AGMA6	0.937	0.354	0.581	0.441	0.468	0.495	0.159	0.470	0.391	0.422	0.366
GMAUH1	0.351	0.896	0.289	0.404	0.385	0.429	0.063	0.410	0.328	0.359	0.461
GMAUH2	0.327	0.916	0.290	0.431	0.386	0.399	0.055	0.367	0.285	0.324	0.456
GMAUH3	0.348	0.868	0.280	0.440	0.373	0.387	0.058	0.396	0.280	0.362	0.450
GMAUH4	0.322	0.908	0.292	0.411	0.382	0.392	0.064	0.380	0.281	0.318	0.439
GMAUH5	0.350	0.900	0.312	0.450	0.383	0.395	0.086	0.415	0.319	0.352	0.482
IGMA1	0.549	0.253	0.847	0.375	0.369	0.412	0.120	0.410	0.374	0.332	0.310
IGMA2	0.487	0.287	0.844	0.410	0.359	0.453	0.108	0.377	0.316	0.376	0.315
IGMA3	0.588	0.264	0.886	0.389	0.397	0.427	0.116	0.415	0.370	0.331	0.289
IGMA4	0.580	0.291	0.917	0.427	0.408	0.463	0.159	0.422	0.365	0.321	0.318
IGMA5	0.648	0.318	0.931	0.418	0.408	0.415	0.157	0.392	0.357	0.312	0.337
IGMA6	0.639	0.333	0.930	0.409	0.408	0.412	0.162	0.398	0.365	0.333	0.346
PEE1	0.482	0.425	0.430	0.838	0.412	0.430	0.128	0.433	0.368	0.436	0.392
PEE2	0.384	0.437	0.369	0.846	0.363	0.439	0.054	0.356	0.291	0.332	0.412
PEE3	0.438	0.443	0.390	0.882	0.394	0.470	0.028	0.387	0.338	0.372	0.368
PEE4	0.414	0.423	0.435	0.893	0.375	0.462	0.061	0.390	0.310	0.344	0.402
PEE5	0.444	0.400	0.392	0.933	0.392	0.475	0.059	0.399	0.317	0.372	0.401
PEE6	0.432	0.400	0.384	0.919	0.389	0.470	0.040	0.398	0.317	0.382	0.390
PEOU1	0.342	0.278	0.336	0.266	0.780	0.335	0.054	0.367	0.262	0.184	0.280
PEOU2	0.463	0.393	0.440	0.416	0.892	0.413	0.079	0.437	0.353	0.311	0.347
PEOU3	0.433	0.380	0.373	0.374	0.842	0.379	0.043	0.404	0.301	0.304	0.312
PEOU4	0.458	0.372	0.375	0.404	0.882	0.400	0.067	0.443	0.324	0.292	0.347
PEOU5	0.473	0.391	0.368	0.387	0.873	0.456	0.056	0.415	0.323	0.301	0.330
PEOU6	0.299	0.299	0.289	0.337	0.733	0.281	0.067	0.341	0.286	0.179	0.307
PQ1	0.507	0.407	0.431	0.471	0.430	0.895	0.046	0.432	0.406	0.403	0.410
PQ2	0.428	0.376	0.382	0.431	0.393	0.874	0.052	0.417	0.340	0.355	0.368
PQ3	0.499	0.358	0.452	0.458	0.382	0.900	0.074	0.391	0.372	0.381	0.385
PQ4	0.472	0.386	0.438	0.431	0.408	0.893	0.094	0.423	0.330	0.370	0.384
PQ5	0.464	0.436	0.409	0.479	0.393	0.827	0.106	0.427	0.350	0.372	0.418
PS1	0.036	0.036	0.018	0.012	0.001	0.039	0.703	-0.015	0.049	-0.018	0.018
PS2	0.168	0.055	0.153	0.071	0.073	0.042	0.880	0.080	0.096	0.049	0.096
PS3	0.155	0.062	0.095	0.049	0.079	0.064	0.865	0.046	0.084	0.053	0.046
PS4	0.130	0.078	0.175	0.061	0.039	0.095	0.877	0.102	0.117	0.050	0.125
PS5	0.186	0.062	0.125	0.072	0.073	0.099	0.872	0.057	0.107	0.061	0.067
PSR1	0.433	0.383	0.410	0.414	0.436	0.445	0.076	0.883	0.435	0.381	0.423
PSR2	0.425	0.368	0.383	0.376	0.396	0.387	0.079	0.880	0.424	0.290	0.417
PSR3	0.499	0.428	0.416	0.396	0.435	0.437	0.084	0.916	0.432	0.327	0.445
PSR4	0.485	0.425	0.435	0.426	0.475	0.475	0.059	0.914	0.432	0.365	0.460
PSR5	0.460	0.375	0.402	0.370	0.409	0.382	0.091	0.892	0.470	0.311	0.405
PSR6	0.324	0.317	0.304	0.368	0.381	0.366	0.014	0.764	0.375	0.239	0.389
PT1	0.366	0.284	0.323	0.297	0.342	0.334	0.119	0.463	0.853	0.225	0.382
PT2	0.342	0.282	0.307	0.299	0.329	0.346	0.114	0.441	0.854	0.211	0.374
PT3	0.364	0.236	0.321	0.296	0.304	0.342	0.066	0.382	0.852	0.216	0.301

PT4	0.397	0.283	0.374	0.348	0.310	0.363	0.117	0.393	0.864	0.258	0.345
PT5	0.376	0.322	0.365	0.308	0.287	0.350	0.071	0.397	0.812	0.295	0.333
PU1	0.380	0.322	0.310	0.340	0.275	0.350	0.051	0.321	0.238	0.871	0.322
PU2	0.387	0.371	0.329	0.335	0.281	0.376	0.066	0.339	0.247	0.869	0.334
PU3	0.373	0.282	0.299	0.377	0.264	0.341	0.024	0.284	0.234	0.830	0.328
PU4	0.388	0.337	0.371	0.357	0.296	0.383	0.040	0.340	0.262	0.896	0.353
PU5	0.329	0.315	0.275	0.404	0.244	0.378	0.068	0.271	0.239	0.788	0.378
UGMA1	0.372	0.450	0.326	0.420	0.375	0.408	0.057	0.442	0.377	0.378	0.888
UGMA2	0.378	0.468	0.315	0.415	0.345	0.401	0.091	0.430	0.366	0.357	0.926
UGMA3	0.297	0.437	0.285	0.380	0.316	0.399	0.051	0.408	0.332	0.356	0.840
UGMA4	0.333	0.489	0.310	0.379	0.350	0.424	0.080	0.422	0.348	0.367	0.893
UGMA5	0.397	0.473	0.355	0.415	0.355	0.403	0.109	0.460	0.402	0.366	0.942
UGMA6	0.385	0.450	0.345	0.404	0.341	0.395	0.121	0.456	0.392	0.355	0.932

5.5. Hypotheses results

The study employed bias-corrected bootstrapping with 95% confidence intervals to test the study hypotheses, offering a robust examination of the complex relationships and effects among the predicting and outcome variables, thus allowing for the drawing of substantial conclusions. Hypothesis testing was carried out with the help of bootstrapping method based on path coefficients, p and t-values. Regarding H1, which test the effect of users' perceived trustworthiness on intentions to use government mobile apps (GMAs), results showed that PT had positive and significant impact on IGMA ($B = .117$, $t = 2.203$, $p = .028$), with a small effect ($F2 = .015$; Cohen, 1988), so H1 was supported as shown in table 8 and figure 3. Regarding H2, which test the effect of users' perceived security on the intention to use GMAs, results showed that PS had positive and significant impact on IGMA ($B = .088$, $t = 2.247$, $p = .025$), with small effect size ($F2 = .012$), so H2 was also supported as shown in table 8 and figure 3. Regarding H3, which test the effect of users' perceived quality on the intention to use GMAs, results showed that PQ had positive and significant impact on IGMA ($B = .178$, $t = 3.091$, $p = .002$), with small effect size ($F2 = .030$), so H3 was also supported as shown in table 8 and figure 3. Regarding H4, which test the effect of users' perceived skills readiness on the intentions to use GMAs, results showed that PSR had positive and significant impact on IGMA ($B = .126$, $t = 2.436$, $p = .015$), with small effect size ($F2 = .015$), so H4 was also supported as shown in table 8 and figure 3. Regarding H5, which test the effect of users' perceived usefulness on the intentions to use GMAs, results showed that PU had positive and significant impact on IGMA ($B = .103$, $t = 2.259$, $p = .024$), with small effect size ($F2 = .012$), so H5 was also supported as shown in table 8 and figure 3. Regarding H6, which test the effect of users' perceived ease-of-use on the intentions to use GMAs, results showed that PEOU had a positive and significant impact on IGMA ($B = .150$, $t = 2.944$, $p = .003$), with small effect size ($F2 = .024$), so H6 was also supported as shown in table 8 and figure 3. Regarding H7, which test the effect of users' perceived effort expectancy on the intentions to use GMAs, results showed that PEE had positive and significant impact on IGMA ($B = .147$, $t = 2.788$, $p = .006$), with small effect size ($F2 = .021$), so H7 was also supported as shown in table 8 and figure 3. Regarding the H8, which test the effect of users' intention to use GMAs on their GMAs actual use, results showed that IGMA had a positive and significant impact on UGMA ($B = .168$, $t = 2.715$, $p = .007$), with small effect size ($F2 = .020$), thus H8 was also supported as shown in table 8 and figure 3.

5.6. Quality assessment of the structural model

5.6.1. Effect Size or F^2

In the structural model, the effect size or $F2$, offers an estimate of how much the R^2 value changes when a specific independent variable is removed from the statistical model. It helps to measure the impact of a particular predictor variable on a specific dependent variable. The effect size for all direct effects has already been discussed along with the results of hypotheses.

5.6.2. Coefficient of Determination or R square

To assess how well the structural model predicts actual outcomes, the R^2 value was examined. The R^2 values in the model indicate how much the independent variables collectively contribute to the variance in the dependent variables. Higher R^2 values suggest that the independent variables have a stronger impact on the dependent variables (Hair et al., 2019). In the current statistical model, the dependent variable is IGMA and UGMA while independent variables included PT, PS, PQ, PSR, PU, PEOU, PEE, IGMA and UGMA. According to Table 9, PT, PS, PQ, PSR, PU, PEOU and PEE explained 37.4% of the variance in IGMA. Similarly, IGMA explained a variance of 17.6% in UGMA.

Table 8. Summary of the Hypothesis Testing

No.	Statements	Status
H1	There is a positive effect of users' perceived trustworthiness on intentions to use government mobile apps (GMAs).	Supported
H2	There is a positive effect of users' perceived security on the intention to use GMAs.	Supported
H3	There is a positive effect of users' perceived quality on the intention to use GMA.	Supported
H4	There is a positive effect of users' perceived skills readiness on the intentions to use GMAs.	Supported
H5	There is a positive effect of users' perceived usefulness on the intentions to use GMAs.	Supported
H6	There is a positive effect of users' perceived ease-of-use on the intentions to use GMAs	Supported
H7	There is a positive effect of users' perceived effort expectancy on the intentions to use GMAs.	Supported
H8	There is a positive effect of users' intention to use GMAs on their GMA actual use.	Supported

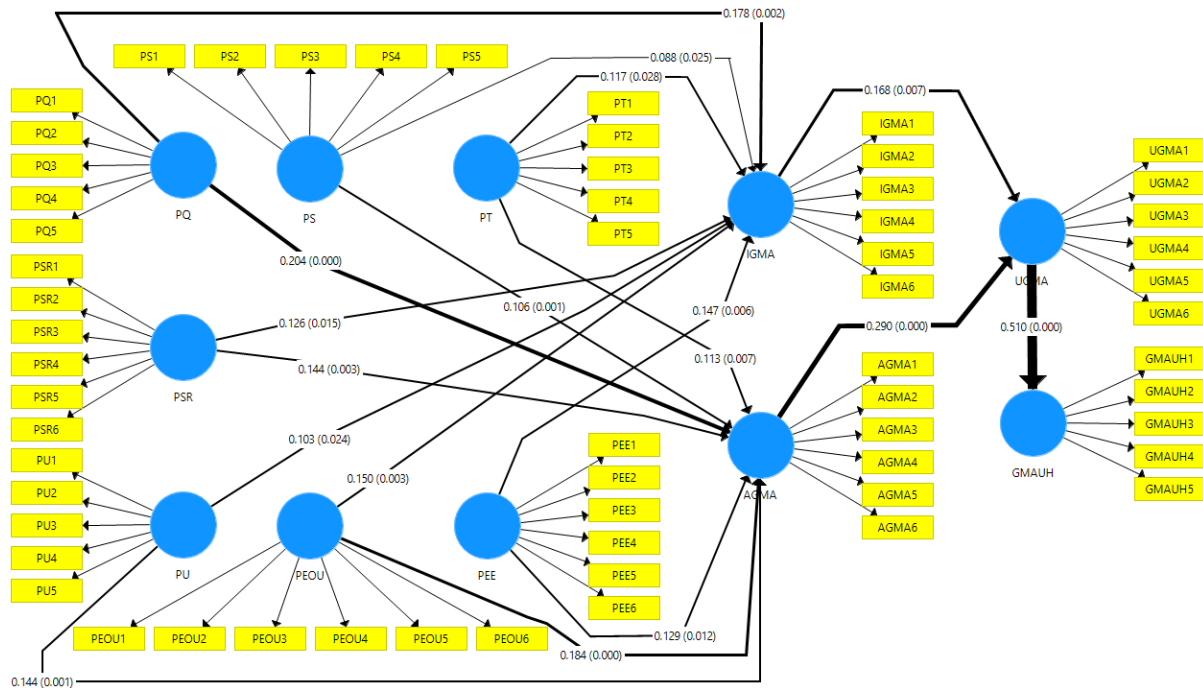


Figure 3. Structural Model

5.6.3. Predictive Relevance or Q square

The study employed a technique called blindfolding technique, where every 7th data point was temporarily left out of the analysis. This method helped us compute cross-validated redundancy or Q2 values for all dependent variables. The Q2 value acts as an indicator of how well the structural model can predict outcomes based on the independent variables. A positive Q2 value suggests that the model is effective in making accurate predictions about the outcomes variables. Indeed, in this study, all outcome variables showed positive Q2 values.

5.6.4. Collinearity issues

The study checked Variance Inflation Factor (VIF) values to find out the signs of problematic collinearity. Fortunately, the obtained VIF values fell under an acceptable value of 3.3, as displayed in Tables 9. This confirmed that the model was not impacted by path contamination or collinearity, indicating its high quality.

Table 9. Quality Measurement of the HOC-HOC Structural Model

Outcome Variables	R Square	Q Square	VIF
IGMA	0.374	0.294	1.692
AGMA	0.470	0.364	1.692
UGMA	0.176	0.143	1.740

In the Table 9 above the concept "HOC-HOC" stands for "Higher Order Construct – Higher Order Construct," a term used in structural equation modeling (SEM) to refer to models that include constructs made up of other sub-constructs. In this context, "HOC-HOC" refers to a specific structural model where higher-order constructs are measured through multiple indicators and are linked to other higher-order constructs in the model. This approach allows for more complex and nuanced analysis of how broad, abstract concepts are related to one another, providing deeper insights into the relationships between variables in the study.

5. DISCUSSION

Substantial outcomes which are consistent with existing research about the favorable influence of users perceived trustworthiness on their intentions to use GMAs offer empirical support to the H1. Not only does this consistency support theoretical expectation confirmations, but it also assists in the development of a greater understanding of the characteristics that facilitate technology adoption in governmental environments. Thus, appropriating these results strengthens the reliability of perceived trustworthiness and the user adoption intentions within governmental contexts. In this regard, the replication of these results is beneficial for researchers since the obtained results contribute to the strengthening of the foundation for the hypothesis that trustworthiness perceptions play a crucial role in user behaviors regarding the government-provided mobile applications. Other studies have also confirmed that trust plays a great role in the attractiveness of the digital service since users are comfortable with the possibility of being at risk (Silva et al., 2019). From this study, respondents showed that perceived trustworthiness of GMAs plays a huge role in their behavioral intention to engage these apps indicating high positive correlation with other comparable research that argues that trust leads to increase in the degree of use. Also, the research evidence supports

the H2 that the claim of users' perceived security has a positive impact on the intention towards GMAs. Improving perceived security in the context of GMAs could be useful to increase the level of user trust and acceptance. Studies consistently demonstrate that users' perceptions of security, encompassing aspects like data protection, privacy assurances, and system reliability, strongly influence their willingness to adopt and engage with GMAs. Actual use of communication technology is positively associated with perceived security as the literature review shows security aspects as being among the most influential factors affecting technology acceptance (Mohammad & Al zoubi, 2020). In this study, users stated that increased and better security measures can enhance their interest to use the apps provided by government, which agrees with the previous studies stressing that without proper security measures, the app usage cannot be encouraged. Supporting to H3 of the study, it is evidenced that there is significant relationship between perceived quality and intention to use GMAs. Previous research has revealed that perceived usefulness and perceived ease of use are directly associated with the perceived quality of an application, which positively affects user happiness and trust. This illustrates the continuing need to enhance and evolve GMAs in order to fulfill the expectations and needs of consumers of digital solutions and services from governmental entities. The research shows that as users perceive GMAs to provide reliable and effective services, they are more likely to express an intention to use the apps. These results are in line with previous work that associates perceived service quality with more user participation and acceptance (Masrury et al., 2019). The H4 of the positive impact of the perceived skills readiness regarding the further usage of the GMAs further develops the understanding of user competence in such settings. Skills readiness is the users' feeling of preparedness to engage with GMAs and perform a variety of functions related to using the website and its tools, as well as their perceived ability to address potential technological difficulties. A study done reveals that perceived skills readiness influences users' intentions to use GMAs positively; this is because the higher the skills readiness the higher the convenience that comes with the perception that these applications are easy to use tools to access government services. Studies show that where people are confident and proficient in their technology abilities they will embrace new technology. In this study, participants noted that their perceived behavioral control of using the technology affected their actual behavioural intentions to use GMAs, supporting earlier research that emphasised a positive relationship between skills readiness and technology acceptance (Al-Maroofo et al., 2021).

The H5 concerning the positive impact of perceived usefulness of the users can help to explain intentions to use government mobile applications (GMAs) responds to one of the principal assumptions regarding the technology acceptance and usage. In light of this relationship, it is crucial that GMAs are designed to meet the functional demands and expectations of users, which in turn, increases their perceived value. Therefore, governmental bodies can increase adoption rates and positive intention toward GMAs by comprehending and enhancing perceived usefulness through user-centered design and functionality updates, thus enhancing the delivery of digital government services. This hypothesis is quite consistent with the premises of the Technology Acceptance Model that point to perceived usefulness as a leading determinant of technology usage. The results reveal the facts suggesting that only that row identifies themselves with a particular kind of GMAs as useful in their daily activities will mention intentions to use GMAs. This lends support to a strong line of research that posits that perceived usefulness has strong positive correlation to the actual use, as well as acceptance of e-services (Denaputri & Usman, 2019). In addition, the H6 postulating that perceived ease of use had a positive influence on the users' willingness to use GMAs investigates the impact of one of the most essential determinants of the technology acceptance model. This relationship demonstrates why it is essential to ensure that GMAs are designed with the appropriate interfaces, low levels of complexity and convenience functions that suit the different users and their technological literacy levels. The findings of previous studies show that perceived ease of use plays an important role influencing the behavioral intention of users to adopt technology. The participants in this study pointed out that Google apps that had a simpler and more obvious interface helped them to contemplate using GMAs. This finding corresponds to the previous studies stating that perceived ease of use increases positive attitude and course intention towards technology use (Bandara & Amarasena, 2018).

The H7 stating that there is a positive impact of perceived effort expectancy on the intentions to use GMAs, is the one that targets a crucial angle of motivation concerning users in digital service environments. This relationship stresses the significance of creating convenient GMAs that do not pose complex and time-consuming interactions, enabling users to be more inclined towards the system, hence improving their satisfaction levels. Through the enhancement of perceived ease of use by applying use centered design and usability assessments on the parts of the governmental agencies that have to do with the issuance and use of GMA, more people will embrace and use the GMAs to enhance digital government services (Utomo et al., 2021). The results of the study also showed that the level of ease experienced when using the apps positively influenced the intention to use GMAs; the literature highlights that minimizing user effort is critical to technology acceptance. Moreover, from the analysis of the data presented, it can be seen that, as the intention to use GMAs rises, the actual usage increases as well supports the H8. This means that while communicating their intention to use government mobile applications because of perceived benefits such as convenience, accessibility, and efficiency, in accessing public services these users are likely to actually engage in the use of this platforms as envisaged (Mohtar et al., 2022). The impact of attitudes on user intentions is well supported by prior research that states the attitudes of the users about a technology will make them adopt it (Belanche et al., 2020).

6. CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

6.1. Conclusion

The research not only advances academic discussion on technology adoption but also provides practical implications for policymakers and developers in terms of refining GMAs design and operation; this is further meant to improve residents' and citizens' satisfaction and, above all, improve the living standard in the UAE. Moreover, the findings of this study underscore the importance of adopting user-centered approaches to both the design of new apps as well as sustaining user interactions for the government agencies and the developers

of the apps. Hence, anticipatable information, privacy concerns and other similar factors help stakeholders improve user confidence and satisfaction. The research also emphasized the need to enhance user feedback systems and the general layout of the interface to generate better experience. Applying these insights can increase acceptance of GMA thus increasing the efficiency of public service delivery and consequently the quality of life for users in the UAE. The findings of this study serve as useful knowledge for future optimization of the development of digital governance and user interaction.

6.1. Theoretical and practical implications

It would be beneficial to know the relationship between the level of user satisfaction with the extent to which a technology is accepted because this information can be useful in informing the marketing strategies that need to be adopted by existing organizations. If user have found their intention in using GMA than business can highlight these positive consequences in their advertisements. Functions highlighting changes that increase customer use, this includes fast and efficient service provision, easy access to information, and demands for customized services all provide companies with a way to create value proposition. Forcing users to share their experiences would be useful to enhance app features and needs sought from the businesses and thus keep business apps loyal to their customers. In order to increase user interaction with the Government Mobile Apps (GMAs), the developers should consider to put more effort on understandability by making use interfaces easy to use and easy to navigate. It could entail ensuring that aspiring users conduct user testing more frequently to discover and address the pain points that arise in their usage of the app, making the use easier for everyone including low digital literacy users. Moreover, there should be more precise feedback mechanism: while using a product, many people would like to have instant notification, or just one click to reach customer support, which gives more safety feeling. Developers should also ensure that government has become more transparent in order to increase perception of security and trust among the people. In this case, clarity of how user data is being protected, frequency of updates of privacy policies and offering detailed information to the users on security features may help to win the trust of the users. This, along with the emphasis of reliability and transparency, can contribute to the increased degree of trust in GMAs which will help users to turn to these apps for their public service needs again. To add more, this study is important because it gives further insight into the application of the theory in the domain of governance and e-governance. Moreover, leveraging the established research on determinants of intention and use of UAE GMA in the tangible business arena, the government agencies related to GMA and other app developers need to focus on the user centered design and feedback mechanism. With knowledge of perceived value, trust, and user experience, they can enrich abstractions of the application to better address the value demands of users. More appreciation must be accorded to such basic fundamentals of audience engagement and motivation, as gamification and individual-friendly customization features and effective customer support.

6.2. Limitations and recommendations

With respect to this study findings, some limitations good to be mentioned. Building upon these theoretical insights, future research could delve deeper into the mechanisms underlying the relationship between GMAs intention to use and actual use of GMAs. Longitudinal studies could track users' intention and behaviors over time to examine how changes in GMA usage influence their subjective well-being. Furthermore, researchers could explore the role of individual characteristics, such as personality traits and cultural values, in mediating the link between intention to use and the actual use among GMAs users in the UAE context. Additionally, comparative studies across different countries or regions could provide valuable insights into the cultural variations in the determinants of GMAs adoption and user satisfaction. The further studies could consider supplementary variables and therefore conduct either a longitudinal or experimental research design for a better understanding of the factors that impact technology acceptance and user intention related to the government mobile apps in the UAE. Moreover, it would be useful for future studies to investigate the influence of user experience design, incorporating gamification factors, and personalization options for gaining additional understanding of the ways to increase the level of user intention to use and actual use of GMAs. Further, the evaluation of the effects of intention literacy, social influence, and quality of technical support will bring the identification of factors that define the level of user actual use in this regard.

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