

Factors influencing m-government adoption in the developing world: a UTAUT-based model integrating trust, risk and trendiness

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VINE Journal of
Information and
Knowledge
Management
Systems

797

Received 9 October 2023
Revised 28 August 2024
11 November 2024
11 May 2025
11 October 2025
Accepted 12 October 2025

Abstract

Purpose – This study aims to examine the factors influencing behavioural intention to use mobile government (m-government) in the developing world from a citizens' perspective. For this purpose, it extends the unified theory of acceptance and use of technology (UTAUT) (i.e. performance expectancy, effort expectancy, social influence and facilitating conditions) with perceived trust, risk and trendiness.

Design/methodology/approach – A survey was developed and administered online to citizens of the country of Jordan. The 445 responses received were analysed using the partial least squares structural equation modelling technique.

Findings – This study found support for the UTAUT's positive prediction of only performance expectancy and facilitating conditions on citizens' intention to use m-government. They also found that perceived trust and perceived trendiness positively drive the intention to use m-government, while perceived risk negatively does.

Research limitations/implications – This study examined citizen's intention to use m-government in general terms in a single developing country context. It could be extended by exploring citizen's continuous intention behaviour, focussing on specific m-government services and conducting a cross-country empirical examination.

Social implications – Understanding the factors that influence m-government adoption can help in increasing public service accessibility, driving more citizens' participation and enhancing sustainability.

Originality/value – By empirically considering perceived trust and risk along the UTAUT's factors, this study provides theoretical refinement and contextual insights regarding the factors that influence the adoption of m-government services in the developing world. Additionally, by integrating perceived trendiness, this study introduces a socio-psychological dimension to UTAUT to better understand m-government adoption.

Keywords E-government, M-government, Public service delivery, Risk, Trendiness, Trust

Paper type Research paper



1. Introduction

Governments deliver a wide range of services to citizens (e.g. legal actions and health-care services). However, these services are provided on a large scale, making their delivery a daunting challenge (Anshari and Lim, 2017). Therefore, governments seek to achieve significant transformations in public service delivery. One way that can bring about this is the

VINE Journal of Information and
Knowledge Management Systems
Vol. 56 No. 3, 2026
pp. 797-828
© Emerald Publishing Limited
2059-5891
DOI: 10.1108/VJKMS-10-2023-0255

use of information and communication technology (ICT) (Madaki *et al.*, 2024). The integration of ICT in delivering public services has evolved as electronic government (e-government) – using wire- and Web-based technologies to deliver public services (Song *et al.*, 2024). The rapid advancement and widespread adoption of internet-enabled mobile devices have prompted many countries, especially in the developed world, to embrace mobile government (m-government) to enhance public service delivery (Shareef *et al.*, 2016). However, in the developing world, despite governments' investment, m-government services experience a lower level of adoption by citizens (Chen *et al.*, 2016; Ishengoma *et al.*, 2019). Therefore, it is imperative to understand what factors can enhance citizen engagement with m-government services and realise the full potential of technology for public service delivery.

The acceptance of e-government services by citizens has received significant research over the last decade (Song *et al.*, 2024). The difference between e-government and m-government in delivering services indicates that individuals may emphasise different factors when deciding to use them (Albeshar and Stone, 2016). Therefore, the recent shift to m-government has driven growing research interest in understanding the factors that specifically affect citizen's acceptance of m-government (Wirtz *et al.*, 2023; Zheng and Ma, 2022). This research has mainly focussed on and extended specific theories to predict citizens' intention to use m-government services. Nevertheless, while this research has indeed increased our understanding of factors that predict the intention to use m-government, important factors are yet to be examined to develop a more complete picture of citizens' intention. Moreover, most of this research has been conducted in developed countries, while examining citizens' adoption of m-government in developing countries is relatively limited (Eid *et al.*, 2021). Developing countries have unique economic, social and cultural properties that may shape individuals' behaviour differently towards emerging technology (Ahmad and Khalid, 2017), and therefore the conclusions regarding the adoption of m-government in developed countries cannot be assumed to be applicable to them (Zhang *et al.*, 2023). Therefore, this study aims to investigate the factors that influence citizens' intention to use m-government in a developing country context. Specifically, this study extends UTAUT to analyse, in addition to its key variables (performance expectancy, effort expectancy, social influence and facilitating conditions), the impact of perceived trust, risk and trendiness on citizens' intention to use m-government.

Perceived trust, perceived risk and perceived trendiness have been regarded as important predictors of technology acceptance and use. Perceived trust and risk are two of the main challenges that countries witness when establishing and implementing m-government (Eid *et al.*, 2021; Ishengoma *et al.*, 2019). In addition, growing studies on user acceptance of new technology have also pointed out the essential role of social image in encouraging individuals to accept and use new emerging technologies (Lee and Cho, 2017). In modern society, as one's social image is important, the adoption of trendy technology is becoming a key factor in developing one's self-image (Park and Lee, 2012). Kim *et al.* (2011) argue that individuals are motivated to use advanced mobile devices mainly due to the belief that the trend of new technology could really improve their self-image. It can then be argued that because m-government is relatively new compared to e-government and is performed through mobile devices, it can be perceived as trendy and therefore increase citizen's intention to use it. However, despite the importance of perceived trust, risk and trendiness in explaining the adoption and use of new technology, there have been limited studies that simultaneously integrated them and extended the UTAUT to predict usage intention in the context of m-government. To address this, this study aims to examine the factors that

influence citizens' intention to use m-government by extending the UTAUT perspective by integrating perceived trust, perceived risk and perceived trendiness.

To achieve this, a survey was developed and administered online to conveniently available citizens of Jordan that secured 445 responses. Accordingly, this study makes two contributions to the existing. Firstly, by empirically considering perceived trust and risk along the UTAUT's factors, the study provides theoretical refinement and contextual insights regarding the factors that influence the adoption of m-government services. This crucial in settings where digital infrastructure, public trust and the digital divide play a more pronounced role such as developing countries. Secondly, this study extends the UTAUT model by incorporating perceived trendiness, a construct that has received limited attention in explaining the adoption of m-government services. By integrating perceived trendiness, this study introduces a socio-psychological dimension to understanding m-government adoption, explaining how citizens may be drawn to m-government because it is seen as modern or fashionable.

The remainder of this paper is presented as follows. Next, a brief background on m-government and technology adoption is provided before the hypotheses are developed in Section 3. Section 4 presents and justifies the methodological choices. The results are reported in Section 5 and then discussed in Section 6. Section 7 provides the implications for theory and practice. Finally, Section 8 highlights the study limitations and suggest directions for future work.

2. Background

2.1 *M-government: an overview*

The rapid advances in wireless technologies and the wide use of internet-enabled mobile devices have shifted the focus to m-government to enhance public service delivery (Abaza and Saif, 2015). In comparison to e-government, m-government uses mobile devices and wireless networking technology to provide public services to citizens (Sheng and Trimi, 2008). As such, m-government can be seen as a new e-government channel rather than a new form of e-government (Shareef *et al.*, 2016). However, m-government allows government agencies to achieve greater efficiency, effectiveness and quality in delivering public services compared to conventional e-government due to the ubiquitous nature of mobile devices and wireless technologies (Ishengoma *et al.*, 2019). Mobile devices are always carried on by individuals compared to personal computers, and therefore, m-government can achieve higher time efficiency by making immediate information delivery (i.e. emergency alerts) to service recipients (Albeshir and Stone, 2016). Additionally, because a mobile device is usually owned by one individual, m-government delivers more personalised services and information (Wang *et al.*, 2012), and may be perceived as less risky compared to e-government, which is usually performed using shared personal computers and networks. Moreover, as most mobile devices allow the share of device location, using m-government can increase flexibility by enabling government agencies to send notifications to the right targeted people (Aloudat *et al.*, 2014). Furthermore, m-government expands the delivery of services to people who may not be capable of accessing public services via the internet and to those in rural areas where wire-based communication technology and ICT services are not available (Deep and Sahoo, 2011). In addition, m-government can lead to cost savings for both the government and citizens by reducing the need for physical infrastructure, transportation and paperwork. Thus, the ubiquitous nature of mobile devices and wireless technologies can increase citizens' perception of the value of m-government (Ishengoma *et al.*, 2019; Shareef *et al.*, 2016), and therefore, they may react differently to its use compared to e-government.

2.2 *M-government in Jordan*

Like other developing countries who realised the potential of delivering public services and engaging with citizens through information technology, Jordan established its “e-Government Program” in 2001 to digitally transform public service delivery (Jordan e-Government, 2013). It is designed to improve public service delivery in terms of accuracy, speed, cost, transparency and accountability (Abu-Faraj *et al.*, 2023). To guide the transformation, the “e-Government Program” developed several e-government strategies since then, outlining the government’s vision, goals and action plans for enhancing the delivery of public services through digital channels. In 2006, Jordan launched its official e-government portal, which represents an all-in-one platform for citizens and businesses to access and apply for government services in both Arabic and English. Jordan has made significant progress in offering a wide range of online services covering various sectors (i.e. Health care, education, etc.) through the official e-government portal. Jordan managed to digitalise 960 government services, reaching 40% of its digital transformation of public services (Jordan Times, 2023a). According to the latest United Nation (UN) E-Government Survey, Jordan has witnessed a notable increase in its E-Government Development Index in 2022 to reach 0.6081 (UN, 2022) from 0.5309 in 2020 (UN, 2020), claiming 17 places to reach 100th out of 193 countries. However, despite this notable improvement, Jordan remains behind many other countries.

Capitalising on the wide spread of internet-enabled mobile phones and the high internet penetration among citizens, Jordan launched an e-government mobile portal in 2011 to provide 40 services (Jordan e-Government, 2013). Jordan continued the implementation of different m-government initiatives to enhance government-citizen interactions, improve service delivery and promote transparency and efficiency. With the rapid advancement in mobile-based application technology, Jordan has developed a number of mobile applications that offer citizens access to a range of government services. These apps often provide information, allow citizens to complete transactions online and report issues or complaints to relevant authorities. Examples include the “Tawasol” app for public service complaints and the “Aman” app for public safety. More recently, Jordan has redeveloped the “Sanad” app, allowing both individuals and businesses with digital identity to access public documents, apply for public services, view personal records, digitally sign documents and make payments, among others. The “Sanad” app will provide 450 services by the end of 2023 (Jordan Times, 2023b).

2.3 *Literature review of m-government adoption in the developing world*

Citizens’ adoption of m-government services in developing world has received growing empirical research (see Table 1). This empirical research has been largely grounded in established technology acceptance theories, particularly the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT). Early studies in Egypt, Sudan and Jordan (e.g. Abdelghaffar and Magdy, 2012; Abaza and Saif, 2015; Abu-Shanab and Haider, 2015) primarily used TAM to examine how perceived usefulness and ease of use shape citizens’ intention to use m-government services. These models were later extended by integrating additional constructs such as social influence, trust, awareness and compatibility to reflect contextual realities in developing economies. UTAUT-based studies by Al-Hujran and Migdadi (2013), Talukder *et al.* (2019, 2022), Mensah and Mwakapesa (2022) and Mensah *et al.* (2024), further integrated performance expectancy, effort expectancy, facilitating conditions and social influence as predictive factors. Beyond these mainstream paradigms, social and technology theories have been used to complement and enrich current acceptance models, such as the theory of planned behaviour (TPB)

Table 1. Review of studies on citizens' m-government adoption in the developing world

Author	Adopted theory	Direct predictors	Criterion variable	Service type	Method	Context	Methodology	Sample	Main results
Abdelghaffar and Magdy (2012)	TAM	"Usefulness, ease of use, compatibility, social influence, awareness, personal connections, face-to-face interactions, trust and internet experience"	Intention	m-government	Survey	Egypt		100	All the proposed factors influence intention except ease of use, personal connections, trust and internet experience
Al-Hujran and Migdadi (2013)	UTAUT	"Performance expectancy, effort expectancy, social influence, facilitating conditions, trust and information privacy"	Intention	m-government	Survey	Jordan		217	All the proposed predictors drive intention except information privacy
Hung <i>et al.</i> (2013)	TPB	"Perceived usefulness, perceived ease of use, compatibility, trust, interactivity, external influence, interpersonal influence, self-efficacy and facilitating conditions"	Intention	m-government	Survey	Taiwan		331	All the proposed factors of positively influence attitude, subjective norm and behavioural control of intention to use m-government except compatibility
Abaza and Saif (2015)	TAM	"Usefulness, ease of use, compatibility, social influence, awareness, personal connections, face-to-face interactions, trust and internet experience"	Intention	m-government	Survey	Sudan		100	All the proposed predictors drive intention except ease of use, personal connection, trust and internet experience
Abu-Shanab and Haider (2015)	TAM	"Usefulness, ease of use, social influence, responsiveness, cost of service and compatibility"	Intention	SMS-based government	Survey	Jordan		470	All the proposed predictors drive intention except cost of service
Almarashdeh and Alsmadi (2017)	TAM, UTAUT	"Perceived usefulness, perceived ease of use, social influence, perceived trust in technology and cost of service"	Intention	m-government	Survey	Saudi Arabia		468	All the proposed factors influence intention
Mandari <i>et al.</i> (2017)	IDT	"Relative advantage, ease of use, compatibility, image, results demonstrability, visibility, trainability, government support and awareness"	Intention	m-government	Survey	Tanzania		427	All the proposed predictors influence intention except awareness, image and trust
Saxena (2017)	TAM, UTAUT, TPB	"Perceived usefulness, perceived ease of use, compatibility, trust, influence, self-efficacy, facilitating conditions and attitude"	Intention	m-government	Survey	India		311	Only perceived usefulness, perceived ease of use, trust and attitude influence intention

(continued)

Table 1. Continued

Author	Adopted theory	Direct predictors	Criterion variable	Service type	Method	Context	Methodology	Sample	Main results
Saxena (2018)	TAM, TPB	“Perceived risk, interpersonal influence, self-efficacy and attitude”	Intention	m-government	Survey	India		311	All the proposed factors drive intention except interpersonal influence
Alonazi et al. (2019)	TAM, UTAUT	“Perceived usefulness, perceived ease of use, perceived mobility, social influence and perceived compatibility, perceived trust, culture, awareness, citizens service quality and system quality”	Intention	m-government	Survey	Saudi Arabia		1,286	All the proposed factors influence intention
Talukder et al. (2019)	UTAUT	“Performance expectancy, effort expectancy, social influence, facilitating conditions, mobility and mobile communication service”	Intention	m-government	Survey	Bangladesh		216	All the proposed factors drive intention except social influence
Almaiah et al. (2020)	UTAUT	“Performance expectancy, effort expectancy, social influence, facilitating conditions, compatibility, trust, awareness, self-efficacy information quality, availability of resources, awareness and security”	Adoption	m-government	Survey	Jordan		320	All the proposed predictors drive adoption except social influence
Alqaralleh et al. (2020)	TAM	“Trust in mobile technology, trust in government, ease of use, usefulness, quality of service, compatibility and citizen satisfaction”	Intention	m-government	Survey	Jordan		500	All the proposed factors influence intention except ease of use, quality of service and usefulness
Alneyadi and Hamid (2021)	TAM	“Perceived ease of use, perceived usefulness, social influence, perceived compatibility, trust in technology and perceived risk”	Intention	m-government	Survey	UAE		263	All the proposed predictors influence intention
Eid et al. (2021)	TAM	“Usefulness, ease of use and attitude towards m-government”	Intention	m-government	Survey	UAE		326	All the proposed predictors drive intention
(continued)									

(continued)

Table 1. Continued

Author	Adopted theory	Direct predictors	Criterion variable	Service type	Method	Context	Methodology	Sample	Main results
Ishengoma <i>et al.</i> (2021)	TAM	“Perceived usefulness, perceived ease of use, awareness, power distance, quality of service, trust, personal initiatives and characteristics, perceived mobility and perceived cost”	Intention	m-government	Survey	Tanzania		253	All the proposed factors influence intention except perceived ease of use
Junmonyang (2021)	TAM	“Perceived usefulness, perceived ease of use, perceived risk, trust, self-efficacy, relative advantage, government support, information quality and social influence”	Intention	m-government	Survey	Thailand		400	All the proposed predictors influence intention
Mensah and Mwakapesa (2022)	UTAUT	“Performance expectancy, effort expectancy, content awareness and mobile factor ubiquity”	Intention	m-government	Survey	China		366	All the proposed factors drive intention except content awareness
Talukder <i>et al.</i> (2022)	UTAUT	“Performance expectancy, effort expectancy, facilitating conditions, social influence, self-actualization, user resistance to change, technology anxiety and declining physiological conditions”	Intention	m-government	Survey	Bangladesh		294	All the proposed factors influence intention except social influence
Creutzberg <i>et al.</i> (2023)	UTAUT	“Usefulness, ease of use, social influence, facilitating conditions, reliability, security and convenience of access”	Intention	m-government	Survey	Brazil		806	All the proposed predictors drive intention except ease of use and reliability
Althumibat <i>et al.</i> (2024)	ISSM	“Information quality, service quality, power distance and law enforcement”	Intention	m-government	Survey	Jordan		358	All the proposed factor influence intention
Alwahaibi <i>et al.</i> (2024)	TAM	“Perceived usefulness, perceived ease of use, experience, confidence and time”	Intention	m-government	Survey	Oman		428	All the proposed factor influence intention

(continued)

(continued)

Table 1. Continued

Author	Adopted theory	Direct predictors	Criterion variable	Service type	Method	Methodology Context	Sample	Main results
Fu et al. (2024)	TAM	“Perceived usefulness, perceived information quality, perceived security, perceived mobility and interactivity”	Adoption	m-government	Survey	China	848	All the proposed factors drive intention except perceived usefulness
Gupta and Mathur (2024)	TAM	“Perceived usefulness, perceived ease of use, social influence, information quality and government appeal”	Intention	m-government	Survey	India	431	All the proposed factors drive positive attitude towards m-government except perceived ease of use
Mensah et al. (2024)	UTAUT	“Performance expectancy, effort expectancy, security and privacy, trust and information quality”	Adoption	m-government	Survey	China	414	All the proposed factors drive intention except performance expectancy
Nusir (2025)	TAM	“Perceived usefulness, perceived ease of use, perceived trust, service cost and social influence”	Intention	m-government	Survey	Saudi Arabia	1,500	Only social influence and cost of service influence intention
Source(s): Authors’ own work								

(Hung *et al.*, 2013; Saxena, 2017, 2018), innovation diffusion theory (Mandari *et al.*, 2017) and the information systems success model (Althunibat *et al.*, 2024). Subsequent studies tend to develop integrated frameworks, merging TAM or UTAUT with concepts drawn from theories of trust, quality, risk or culture, to fully explain to citizen's adoption of m-government (Almarashdeh and Alsmadi, 2017; Alonazi *et al.*, 2019).

The empirical research demonstrates several determinants always remain in focus as central to m-government adoption. The two fundamental TAM variables of perceived ease of use and perceived usefulness remain the strongest and most consistent predictors of behavioural intention in nearly all studies, i.e. citizens are primarily motivated by functional benefits and simplicity. Trust in government institutions and mobile technology is also an important consideration, especially in Arab and Asian contexts where data privacy and service reliability are issues (e.g. Alqaralleh *et al.*, 2020; Mensah *et al.*, 2024). Conversely, social influence effect appears to be inconstant: dominant in the earlier Arab studies (e.g. Egypt, Jordan, UAE), it appears to decline in significance in more contemporary or non-Arab settings such as Bangladesh and Brazil (Talukder *et al.*, 2019; Creutzberg *et al.*, 2023). Compatibility, the perception of m-government services' congruence with people's lifestyles or needs, is similarly a robust determinant, frequently evident in Gulf nation and Indian research (Abaza and Saif, 2015; Alneyadi and Hamid, 2021; Gupta and Mathur, 2024). In the same context, quality of information, system and service have been at the forefront of recent research, indicating conceptual transformation from mere acceptance to user satisfaction and experience with the service (Alqaralleh *et al.*, 2020; Althunibat *et al.*, 2024; Fu *et al.*, 2024). Facilitating conditions, including technical support and resource availability, also show recurring influence, especially in UTAUT-based models (Almaiah *et al.*, 2020). Some contextual factors such as cost of service, perceived mobility and awareness have mixed significance, sometimes emerging as barriers rather than enablers (Abu-Shanab and Haider, 2015; Nusir, 2025). At the same time, a growing number of empirical studies consider cultural and institutional dimensions, including power distance, law enforcement and government appeal, to emphasise the socio-political context of developing countries in shaping citizens' adoption (Ishengoma *et al.*, 2021; Althunibat *et al.*, 2024; Gupta and Mathur, 2024).

More recent investigations uncover emerging themes and directions with regard to citizens' adoption of m-government. A key development is the integration of quality constructs (i.e. information, system and service quality), indicating a shift towards evaluating citizens holistic experience to understand their intention to adopt m-government. In parallel, the assurance has become increasingly important theme, as citizens' acceptance of mobile-based public services is influenced by perceptions of risk, security and service reliability. Another emerging direction involves the inclusion of cultural and institutional influences (e.g. Althunibat *et al.*, 2024; Junnonyang, 2021), such as power distance and government support, reflecting the recognition that m-government adoption in collectivist or high-power-distance societies, such as the most of developing countries, cannot be fully explained by technology-centric models alone. Additionally, more recent studies have begun to consider mobility, convenience and digital literacy (e.g. Fu *et al.*, 2024; Ishengoma *et al.*, 2021), aligning with the distinctive nature of mobile platforms and emphasising the need for inclusive access.

Despite these advances, explicit assessment of citizens' concerns and perceived technological trendiness in the developing world was not fully addressed in this literature. Our study builds on and extends this body of literature by introducing risk and trendiness dimensions to UTAUT to develop a more complete understanding of citizens' adoption of m-government. Our inclusion of perceived risk provides a more explicit assessment of citizens'

concerns regarding potential negative outcomes (e.g. security breaches) of using m-government services. Additionally, while trendiness captures the influence of social and technological trends on citizens' behavioural intention to adopt m-government services, this factor has not been sufficiently explored in the m-government context. This addition provides a more contemporary and culturally relevant understanding of user m-government adoption behaviour in a rapidly evolving digital environment and lifestyles.

2.4 Technology adoption

An individual's behavioural intention to adopt a new technology reflects his/her subjective likelihood or willingness to use it in the near future. It represents a significant predictor of his/her actual use of technology (Venkatesh *et al.*, 2012). Individuals interact with and adopt technology as employees in the workplace or as client (service recipients) in the marketplace. With the rapid use of technology by organisations to provide services to their clients, understanding the factors influencing their intention to adopt technology as a channel to receive services has been at the centre of increased research. This research has employed different theories to explain individuals' behavioural intention towards using technology, including the "Theory of planned behaviour", "Technology acceptance model (TAM)" and "Information system success model", among others (Dwivedi *et al.*, 2019). However, while these theories provide different angles to understanding individuals' behavioural intention, they share many similar constructs, which created an urgent need for a unified view (Venkatesh *et al.*, 2003). In responding to this, Venkatesh *et al.* (2003) put forward the UTAUT as a unified perspective to predict individuals' behavioural intention to use technology. It proposes that performance expectancy, effort expectancy, social influence and facilitating conditions are determinants of individuals' behavioural intention to use technology.

This study adopts the UTAUT to understand citizens' intention to use m-government in the context of Jordan. This is because it provides an overarching framework integrating several factors from different theories, and in doing so, it offers higher explanatory power for users' behavioural intention to use m-government than any other existing theory (Williams *et al.*, 2015). However, while the UTAUT2 extended the UTAUT by integrating additional factors, these new factors (i.e. hedonic motivation, price value and habit) are more relevant to explain users' behavioural intention in the context of using consumer technology (Venkatesh *et al.*, 2012). Hedonic motivation, price value and habit are less relevant in understating users' behavioural intention to use m-government. While hedonic motivation can enhance user engagement in certain applications, it may not be the most significant for understanding m-government adoption by citizens. The main motivation for citizens to engage with m-government services is often necessity and utility (e.g. accessing public records, obtaining licences, etc.) rather than enjoyment, such as in the case of entertainment or social media applications. Additionally, using m-government for receiving public services is free in Jordan, and thus the price value is not applicable to predicting m-government usage. Moreover, citizens usually use many m-government services sporadically rather than frequently (e.g. renewing a licence, paying taxes, etc.), which reduces the likelihood of developing habitual usage patterns.

While the adoption of a comprehensive framework such as the UTAUT provides better understandings of users' behavioural intention towards using m-government, the UTAUT ignores important factors that can account for an increase or decrease in users' behavioural intention (Patil *et al.*, 2020), particularly in the context of m-government services. To address this, this study extends the UTAUT by including perceived trust, perceived risk and perceived trendiness to provide a holistic view of m-government adoption. Specifically, the

study argues that perceived trust and perceived trendiness are positively related to the citizen's intention to use m-government, while perceived risk is negatively related. The incorporation of these factors into the UTAUT in particular can enhance our understanding of m-government adoption. M-government services often involve sensitive information and transactions (e.g. legal and health-related documentation). Therefore, trust and risk in technology are usually of paramount importance for users to proceed with its use. Additionally, in contexts where social status is important, users may find trendy technology as a vehicle to enhance their social standing since it encompasses the perception of being modern (Ye *et al.*, 2020).

3. Hypotheses development

The conceptual model (see Figure 1) displays the proposed impact of UTAUT's predictors and perceived trust, perceived risk and perceived trendiness on citizen's behavioural intention to use m-government. In the following subsections, we develop the hypotheses presented in the conceptual model.

3.1 Performance expectancy

Consistent with the UTAUT, performance expectancy in the context of m-government is the extent to which a citizen believes that using m-government will help him/her access, apply for and receive government services more effectively and efficiently. In general, individuals are more likely to accept emerging digital service channels if they see them as more helpful in performing a particular aspect of their lives than the conventional, in-person way. It becomes increasingly recognised that m-government is a convenient platform that places no restrictions on the time of users to receive public services. As opposed to the traditional

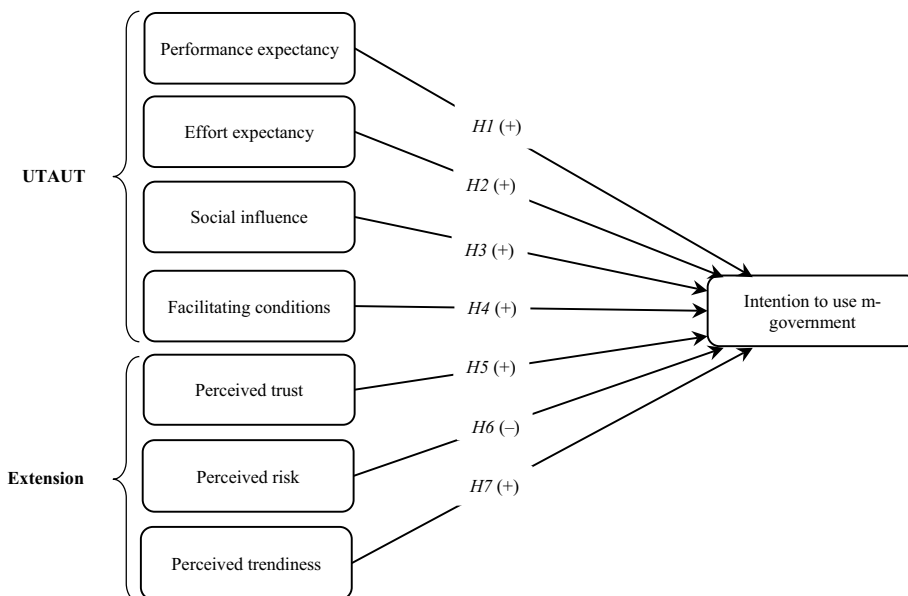


Figure 1. Conceptual model

Source: Adapted from Venkatesh *et al.* (2003)

location-based services, which require the presence of individuals, m-government services facilitate the provision of information to the individual in their environment (Elbatanouny *et al.*, 2023). Moreover, because m-government allows simple login on highly intuitively functioning mobile phones, it enables citizens to get instant information and perform public services more quickly (Alharbi *et al.*, 2020; Kumar *et al.*, 2022). These characteristics of m-government may lead citizens to form a positive image of obtaining government services through it, which in turn can drive them to use it. Citizens in Jordan faces ongoing challenges with public service delivery, including bureaucratic inefficiencies, long wait times and access disparities (Jreisat, 2018). These challenges have created a strong demand for more efficient and convenient channels to delivery public services. Therefore, performance expectancy emerges as a key variable in citizens' decision to accept m-government services. Previous empirical studies support the positive influence of performance expectancy on individuals' intention to use m-government (e.g. Almaiah *et al.*, 2020). Therefore, the study proposes that:

H1. Performance expectancy positively influences citizen's intention to use m-government.

3.2 Effort expectancy

Effort expectancy signals the degree of ease connected with the use of m-government by citizens (Venkatesh *et al.*, 2003). A user's intention to use new technology is affected by how easy it is and how little effort it takes to use this technology. Prior research has demonstrated that the less effort expected into the use of a given technology, the higher the intention to use it (Alalwan *et al.*, 2017). Specifically, as learning how to use the technology becomes easier and interaction with it becomes clear and understandable, users become more comfortable using it (Chen and Aklirikou, 2020). In the context of m-government, when citizens recognise that m-government can be easily and smoothly navigated and operated to receive public services, they are more likely to become interested in using it (Mensah and Mwakapesa, 2022). Additionally, when citizens see that m-government enhances the accessibility of public services and information with less effort and cognitive load, they are more likely to become attracted to using it (Guo *et al.*, 2022). Furthermore, when m-government service platforms are designed in a way that enables accessibility by a wide range of citizens with different levels of digital literacy, low effort of using the platforms is perceived, and accordingly, more adoption is expected (Guo *et al.*, 2022; Molnár *et al.*, 2017). In the context of Jordan, the impact of effort expectancy is shaped by the country's digital divide, which is evident across geographic and socioeconomic lines. While Jordan has a relatively high rate of mobile phone penetration (DataReportal, 2024), significant disparities exist in digital literacy and access to stable internet particularly between urban and rural regions (Masa'deh *et al.*, 2023). Therefore, this study proposes:

H2. Effort expectancy positively influences citizen's intention to use m-government.

3.3 Social influence

In this study, social influence reflects the extent to which an individual perceives that important others (e.g. family and friends) who influence his/her decision believe he/she should use m-government (Venkatesh *et al.*, 2012). Previous research has shown that influence from family and friends is a major determinant of technology adoption (Carmack and Heiss, 2018; Williams *et al.*, 2015). Several studies on technology adoption have supported the positive and significant impact of social influence on attitudes towards

technology (e.g. Zhang *et al.*, 2023). Khlaif *et al.* (2023) indicated that social influence positively affects people's attitudes towards using mobile technology. Similarly, Rana *et al.* (2017) pointed out that social proximity, such as friends, relatives and colleagues, have some influence on individuals' approaching socially acceptable technology. The logic behind this is that users tend to perform actions promoted and accepted by their significant others (Zhang and Zhu, 2021). This is very relevant in the stage of pre-adoption because individuals lack sufficient knowledge, and therefore, they rely on important people to help them decide on using technology (Al-Debei *et al.*, 2013). Jordan is characterised by collectivist culture, with individual decisions are often informed and influenced by family and friends (Al-Hassan, 2024). This cultural trait increases the role of social influence, particularly in digital adoption where recommendations from significant others can build confidence in using m-government services (Rabaa'i, 2017). Empirical evidence is provided in the literature on the positive impact of social peers on citizens' intention to m-government adoption (Gupta and Mathur, 2024). Based on the above, it can be posited that:

H3. Social influence positively influences citizen's intention to use m-government.

3.4 Facilitating conditions

In the context of m-government, facilitating conditions reflect the extent to which a citizen believes that necessary resources and infrastructure, such as money, knowledge and expertise, are available to support him/her in using m-government. Thus, facilitating conditions represent environmental enablers that allow citizens to overcome the difficulty associated with and promote the use of m-government (Ye *et al.*, 2020). Citizens could be more encouraged to use new technology if an adequate amount of supportive services and resources are available to them (Alalwan *et al.*, 2017). These resources can be owned by citizens or provided by the government, including hardware, access to the internet and knowledge (Creutzberg *et al.*, 2023). The resources can also come in the form of technical support from government centres that are responsible for the services (Alkhwaldi and Al-Ajaleen, 2022). Governments also provide mobile app versions that are compatible with smart phone operating systems, which can increase the intention to use m-government. In Jordan, despite the government invested significant amount on ICT infrastructure for e-government, inconsistent internet access, device availability and technological infrastructure remain (Masa'deh *et al.*, 2023). Citizens' access to technical support, internet and digital tools may significantly influence their ability to adopt m-government services. Several studies that examined the relationship between facilitating conditions and online government services revealed that facilitating conditions are very important in adopting online government services (e.g. Mensah and Mwakapesa, 2022). Based on the above, this study proposes:

H4. Facilitating conditions positively influence citizen's intention to use m-government.

3.5 Perceived trust

Perceived trust in the context of m-government refers to user confidence in m-government's ability to consistently provide reliable services and fulfil its tasks. Thus, users develop trust in m-government when it establishes reliability and technical capability in providing services (Mensah *et al.*, 2024; Shahzad *et al.*, 2019). When citizens develop trust in m-government, the uncertainty regarding its usefulness no longer exists, and therefore, they are more likely to form positive attitudes towards it (Eid *et al.*, 2021). Moreover, when citizens perceive m-government as trustworthy (i.e. consistently functioning as intended without frequent

disruptions or issues), they are more inclined to adopt it as a reliable channel to obtain public services and transactions. Additionally, users usually consider m-government a success, and are thus more willing to use it, when they recognise it is capable of providing bespoke services to their needs (Alqaralleh *et al.*, 2020). Furthermore, if citizens trust the m-government to provide services 24/7 and free of geographical restriction, their intentions to adopt it will increase (Alharbi *et al.*, 2020). A growing number of empirical studies have demonstrated a positive influence of trust on citizens' intention to use m-government in a variety of developing countries, including the United Arab Emirates (Ahmad and Khalid, 2017), Saudi Arabia (Faisal and Talib, 2016) and China (Mensah *et al.*, 2024). Based on the above, the study proposes:

H5. Trust positively influences citizen's intention to use m-government.

3.6 Perceived risk

Based on Featherman and Pavlou's (2003) widely accepted conceptualisation of perceived risk in the context of e-service, we consider perceived risk in the context of m-government as the likelihood of a citizen suffering a loss in the pursuit of an intended result of using m-government services. This loss can take the form of monetary or personal data loss. The monetary loss can result from hackers accessing the user's bank account details during m-government service transaction due to a lack of security (Kumar *et al.*, 2008). The fear of financial loss when using m-government services can discourage citizens from adopting them. Similarly, personal data loss can result from identity theft and unauthorised access to the user's personal data by a third party. Citizens are concerned about their personal data when using m-government services because they believe that mobile applications access and collect more personal data than they might expect, notice or be aware of (Zheng and Ma, 2022). Such concerns can lead individuals to avoid m-government services to protect their privacy (Mei and Zheng, 2024). Therefore, high perceived risk is likely to reduce citizens' intention to use m-government. Previous studies have commonly viewed perceived risk as a critical negative determinant of citizens' intentions towards m-government services (e.g. Ohme, 2014; Saxena, 2018). In the context of Jordan, perceived risk may play a major determinant of using m-government services as people are tend to avoid risk and ambiguity due to the high uncertainty avoidance culture (Al-Adwan *et al.*, 2022). Therefore, we provide the following hypothesis:

H6. Perceived risk negatively influences citizen's intention to use m-government.

3.7 Perceived trendiness

In the context of this study, perceived trendiness is defined as the degree to which a user perceives the use of m-government to obtain public services as fashionable, cool and aligned with current trends in the community. It is expected that the perceived trendiness of m-government would enhance individuals' intention to use for three reasons. Firstly, trendy technologies are often linked with enhanced status, profile and prestige (Cho and Lee, 2017; Ye *et al.*, 2020). Therefore, individuals are more likely to use m-government to enhance their status and social image. Secondly, the use of trendy technologies is often perceived as aligning with modern-day lifestyles. Therefore, individuals may be motivated to use m-government to stay relevant and connected in the contemporary world (Fu *et al.*, 2024). Thirdly, trendy technologies are often associated with perceptions of innovation and sophistication (Lee and Cho, 2017). The use of innovative and sophisticated technology

often signals intelligence and forward-thinking, which may boost individuals' professional and social standing. Jordan has a relatively young population, many of whom are early adopters of technology. Two-thirds of Jordan's population are under the age of 30, making it one of the youngest populations in the world (Unicef, 2022). M-government service channels perceived as modern and up-to-date which may be perceived appealing to enhance social status and recognition particularly among youth. From an empirical point of view, growing evidence is pointing out that perceived trendiness is a significant predictor of a user's intention to use a variety of technologies, including fitness apps (Lee and Cho, 2017) and social commerce technologies (Osatuyi and Turel, 2019). Based on the above reasoning, the study puts forward that:

H7. Perceived trendiness positively influences citizen's intention to use m-government.

4. Methodology

4.1 Sample and data collection

This study adopted a quantitative approach to test the proposed model in the context of Jordan. This context helps in understanding m-government adoption by citizens for three reasons. Firstly, Jordan shows a high mobile phone penetration rate among citizens, making it a suitable setting for exploring m-government adoption. According to the latest report by DataReportal (2024), 77% of the Jordanian population access the internet through mobile devices. In terms of mobile device connections, Jordan recorded just over nine million active connections in early 2024, representing 80.4% of the population (DataReportal, 2024). Secondly, in Jordan, like in many Middle Eastern societies, social status is important for maintaining recognition and influence (El Dardiry, 2017). Therefore, in such a context, the perceived trendiness of m-government may play a role in its adoption to enhance social status and image. Finally, people in Jordan are characterised by high uncertainty avoidance, which suggests that they tend to avoid risk and ambiguity (Al-Adwan et al., 2022). Therefore, factors such as trust and risk are emphasised in technology use.

To collect the required data, a survey was developed. The survey consisted of three parts. The first part, the cover letter, introduced the research team, explained the aim and importance of the study and determined the targeted respondents. It also made the respondents aware of their rights to not take part in the survey and the procedures will be taken to protect their anonymity and the confidentiality of their responses. The second part of the survey included closed-ended questions on demographic and general information (i.e. gender, age, educational level and internet use experience). The final part consisted of closed-ended questions on the independent and dependent variables. The survey was initially developed in the English language and then translated into Arabic. To ensure the linguistic equivalency of both versions of the survey, an experienced, independent researcher evaluated them and made some changes. The final Arabic version was pilot tested for clarity and face validity by relevant researchers and subsequently by potential respondents to ensure the readability of the questions.

This study targets the Jordanian citizens as respondents to our survey. However, surveying each citizen in Jordan is impracticable due to financial, time and reach constraints (Saunders et al., 2012). Consequently, choosing a representative and sizable sample from which generalisations can be applied to Jordan is more appropriate. Given the fact that a complete and up-to-date sampling frame of Jordanian citizens cannot be obtained, this study adopted a non-probability sampling method. In practice, obtaining a full and up-to-date list of all citizens in Jordan is extremely challenging due to population size, inaccessibility (e.g. remote areas), lack of accurate census data, constant changes (e.g. births, deaths) and privacy

(names of people) to perform probability sampling, where every citizen has an equal chance of being selected in the sample. Therefore, this study adopted a non-probability sampling method. In particular, the convenient sampling method was used, thereby respondents were selected based on availability and accessibility. However, to reach more diverse respondents and increase the response rate, the snowball sampling method was also used, thereby asking the respondents to refer other potential respondents.

The survey was administrated online to 1,700 potential respondents due to three main reasons. Firstly, online surveys reach more respondents, especially those situated in distant geographical areas across Jordan, which can enhance sample representativeness (Saunders *et al.*, 2012). Secondly, online surveys provide a higher level of anonymity for the citizens compared to other mediums of survey administration (e.g. face-to-face, mail, etc.), which can increase the number and honesty of the responses (Saunders *et al.*, 2012). Finally, online surveys automatically store responses into a database, promoting more efficient and accurate data entry. In total, 503 responses were received (response rate = 29.58%), of which 445 were valid for analysis. The 455 citizens who participated in this study varied in terms of gender, age, education and internet usage experience (see Table 2).

4.2 Measurement items

This study adapted scales from the previous literature to measure the selected study variables. Using previous measurement scales can achieve two main advantages. Firstly, existing measurement scales have undergone several rigorous validity and reliability tests in different contexts, leading to more reliable results (Bryman and Bell, 2015). Secondly, the use of established and common measurement scales enables the comparability of our findings with those of prior studies (Bryman and Bell, 2015). This is crucial for drawing

Table 2. Demographic profile of the sample (n = 445)

Characteristics	No.	%
<i>Gender</i>		
Female	230	51.7
Male	215	48.3
<i>Age</i>		
18–25	81	18.2
26–35	141	31.7
36–45	161	36.2
46–55	50	11.2
More than 55 years	12	2.7
<i>Education</i>		
High school or less	71	16.0
College	35	7.9
Bachelor	231	51.9
Master	84	18.9
PhD	24	5.4
<i>Internet experience</i>		
Up to one year	78	17.5
One to two years	182	40.9
More than two years	185	41.6

Source(s): Authors' own work

broader conclusions across different studies and contexts, and building a cohesive body of knowledge on m-government adoption. All the measurement items of the UTAUT variables (i.e. performance expectancy, effort expectancy, social influence, facilitating conditions and behavioural intention to use) were adopted from [Venkatesh et al. \(2003\)](#). As for the new variables, perceived risk was captured using six items from [Alalwan et al. \(2018\)](#). Example items include “I believe that m-government is trustworthy” and “Even if not monitored, I would trust m-government to do the job right”. Perceived trust was measured using six items based on the work of [Gefen et al. \(2003\)](#). Example items include “Using m-government subjects my banking account to potential fraud” and “Using m-government exposes me to an overall risk”. Perceived trendiness was captured using four items from [Cho and Lee \(2017\)](#). Example items include “Using m-government is the current trend” and “Using m-government adheres to the technological trend of this era”. All the constructs are specified as first-order reflective constructs and were measured on a five-point Likert scale ranging from “strongly disagree = 1” to “strongly agree = 5”.

5. Data analysis and results

This study relied on the partial least squares structural equation modelling (PLS-SEM) technique for data analysis. The reasons to opt for this SEM technique are three. Firstly, PLS-SEM produces results that are more robust when examining complex models that involve several constructs and many indicators ([Akter et al., 2017](#)). This is because PLS-SEM is less prone to the identification problem that emerges when testing large models compared to covariance-based SEM ([Reinartz et al., 2009](#)). PLS-SEM is suitable for predictive-oriented models ([Shmueli et al., 2019](#)). This is because PLS-SEM is designed to maximise the explained variance of the dependent variable ([Hair et al., 2017](#)). Finally, PLS-SEM estimates models without restriction on the number of observations ([Hair et al., 2019](#)).

5.1 Common method bias

As an initial procedure in to data analysis, we examined the data for potential common method bias (CMB). This is of paramount importance since the ratings of both the independent and dependent variables in this study were provided by the same citizen at one point in time using the same survey. For this purpose, we used Harman’s single-factor technique, under which the 36 scale items covering the study constructs were loaded into factor analysis to check whether the majority of variance is produced by one factor ([Podsakoff et al., 2003](#)). The analysis revealed that no single factor was able to account for more than 50% of the variance in the model, and therefore we can claim that our data is free of CMB ([Podsakoff et al., 2003](#)).

5.2 Reliability and validity

We assessed the reliability of the measurement items for each construct from the internal consistency perspective. To do so, we ran the composite reliability (CR) analysis to estimate the average intercorrelations among the items that measure each variable in the model. The analysis indicated that the constructs’ measurements have achieved CR between 0.80 and 0.95

(see [Table 3](#)), which all exceed the widely accepted threshold value of 0.7 for a satisfactory level of internal consistency, and thus, they are reliable measurements ([Hair et al., 2019](#)).

Two types of validity must be present in the measurement model to be considered legitimate: convergent validity and discriminant validity. To check for convergent validity, the factor loadings and average variance extracted (AVE) of the construct were obtained

Table 3. Measurement items

Construct	Item	Standardised loadings*	AVE	Cronbach's alpha	Composite reliability
Performance expectancy	PE1	0.88	0.77	0.92	0.93
	PE2	0.92			
	PE3	0.90			
	PE4	0.89			
Effort expectancy	EE1	0.87	0.81	0.90	0.94
	EE2	0.89			
	EE3	0.88			
	EE4	0.87			
Social influence	SI1	0.89	0.82	0.89	0.93
	SI2	0.92			
	SI3	0.90			
Facilitating conditions	FC1	0.85	0.71	0.86	0.91
	FC2	0.89			
	FC3	0.88			
	FC4	0.75			
Perceived trust	TS1	0.92	0.80	0.93	0.96
	TS2	0.92			
	TS3	0.90			
	TS4	0.91			
	TS5	0.84			
	TS6	0.86			
Perceived risk	PR1	0.94	0.73	0.93	0.94
	PR2	0.96			
	PR3	0.85			
	PR4	0.90			
	PR5	0.71			
	PR6	0.72			
Perceived trendiness	TN1	0.85	0.79	0.91	0.93
	TN2	0.90			
	TN3	0.92			
	TN4	0.87			
Intention to use	IT1	0.93	0.87	0.95	0.96
	IT2	0.92			
	IT3	0.95			
	IT4	0.93			

Note(s): *Significant at 0.01
Source(s): Authors' own work

(Hair *et al.*, 2019). Table 3 shows that the factor loadings and AVE of all the constructs are higher than 0.7 and 0.5, respectively, indicating that convergent validity is present (Fornell and Larcker, 1981). To examine discriminant validity, Fornell and Larcker's (1981) criterion was used, which contends that a construct can demonstrate discriminant validity if the squared root of its AVE is higher than its correlation with other constructs within the same measurement model. Table 4 reveals that all the constructs have discriminant validity since their squared roots of AVE (the diagonal line) are higher than their intercorrelations (the non-diagonal line).

To provide further assurance regarding the discriminant validity of the measurement model in our variance-based data analysis, we used the heterotrait-monotrait ratio of correlations' (HTMT) criterion. Based on the analysis reported in Table 5, the model

Table 4. Descriptive statistics, intercorrelation and the square root of AVE

Construct	Mean	SD	A	B	C	D	E	F	G	H	I	J	K	L
A Gender	1.52	0.50	–											
B Age	2.49	1.00	–0.24**	–										
C Education	2.90	1.05	0.08	0.18**	–									
D Internet experience	2.01	0.90	–0.11*	0.19**	0.26**	–								
E Performance expectancy	4.20	0.77	–0.05	–0.03	0.11*	0.07	0.90							
F Effort expectancy	4.00	0.76	–0.04	–0.16**	0.06	0.15**	0.37**	0.88						
G Social influence	3.80	0.84	–0.15**	–0.04	–0.04	0.04	0.48**	0.62**	0.90					
H Facilitating conditions	4.04	0.70	–0.08	–0.09*	0.07	0.13**	0.58**	0.43**	0.50**	0.84				
I Perceived trust	3.61	0.88	0.00	–0.09*	–0.07	–0.04	0.32**	0.39**	0.41**	0.46**	0.90			
J Perceived risk	2.61	0.88	0.00	0.08	0.08	0.01	–0.07	–0.15**	–0.24**	–0.13**	–0.13**	0.85		
K Perceived trendiness	4.21	0.67	–0.02	–0.07	0.05	0.00	0.62**	0.35**	0.42**	0.57**	0.38**	–0.13**	0.89	
L Intention to use m-government	4.19	0.73	–0.06	–0.04	0.02	0.06	0.62**	0.52**	0.46**	0.61**	0.43**	–0.23	0.75**	0.93

Note(s): Figures in the diagonal line are the square root of AVE. SD = Standard deviation; * $p \leq 0.05$ and ** $p \leq 0.01$

Source(s): Authors' own work

demonstrates discriminant validity, as its HTMT scored values are below the recommended threshold of 0.85 (Henseler et al., 2015).

5.3 Hypotheses testing

The aim of this study was to examine the impact of performance expectancy, effort expectancy, social influence, facilitating conditions, perceived trust, perceived risk and perceived trendiness on citizen’s intention to use m-government services. Prior to hypotheses testing, we examined for potential multi-collinearity among the independent variables using the variance inflation factor (VIF) to ensure the adequacy of the data for the assumptions of the multiple regression analysis. The results reveal that all VIF values of the variables (performance expectancy = 1.86, effort expectancy = 1.05, social influence = 1.77, facilitating conditions = 2.30, perceived trust = 1.39, perceived risk = 2.23 and perceived trendiness = 1.72) are below 10, confirming that there are no high correlations among them, suggesting the suitability of the data for regression analysis.

To test the hypotheses, we relied on the PLS-SEM technique. The analysis using SmartPls 3.0 revealed that the factors together explain 65.4% of the variance in citizen’s intention to use m-government. The results also show that performance expectancy ($\beta = 0.18, p < 0.01$), facilitating conditions ($\beta = 0.21, p < 0.01$), trust ($\beta = 0.10, p < 0.05$) and trendiness ($\beta = 0.29, p < 0.001$) have a positive significant impact on citizen’s intention to use m-government, while perceived risk ($\beta = -0.09, p > 0.05$) have a negative significant impact (see Table 6). Thus, H1, H4, H5, H6 and H7. However, effort expectancy ($\beta = 0.08, p > 0.05$) and social

Table 5. Discriminant validity test using HTMT

Construct	1	2	3	4	5	6	7	8
1 Performance expectancy	–							
2 Effort expectancy	0.743	–						
3 Social influence	0.540	0.693	–					
4 Facilitating conditions	0.650	0.831	0.690	–				
5 Perceived trust	0.343	0.388	0.417	0.496	–			
6 Perceived risk	0.098	0.168	0.266	0.153	0.123	–		
7 Perceived trendiness	0.684	0.574	0.470	0.651	0.415	0.152	–	
8 Intention to use m-government	0.663	0.564	0.502	0.683	0.468	0.059	0.808	–

Source(s): Authors’ own work

Table 6. Hypotheses testing

Path	Path coefficient	p-value	t-value	Result
Performance expectancy → intention	0.18	0.004	3.01**	H1. supported
Effort expectancy → intention	–0.08	0.153	1.43	H2. unsupported
Social influence → intention	0.07	0.149	1.46	H3. unsupported
Facilitating conditions → intention	0.21	0.000	3.54**	H4. supported
Perceived trust → intention	0.10	0.019	2.34*	H5. supported
Perceived risk → intention	–0.09	0.024	2.22*	H6. supported
Perceived trendiness → intention	0.29	0.000	7.67***	H7. supported

Note(s): * $p \leq 0.05$; ** $p \leq 0.01$ and *** $p \leq 0.001$

Source(s): Authors’ own work

influence ($\beta = 0.07, p > 0.05$) have no impact on citizen's intention to use m-government, providing no support to *H2* and *H3*.

It is important to note that although we did not theoretically hypothesise the moderating role of gender, age and experience on the relationship between the proposed factors and citizens' intention to use m-government, we have empirically tested it. It was revealed that gender moderates ($\beta = 0.29, p < 0.05$) only the relationship effort expectancy and citizens' intention to use m-government in such a way that the relationship is stronger for females. Moreover, the analysis uncovered that age negatively moderates ($\beta = -0.10, p < 0.05$) only the relationship between perceived trust and citizens' intention to use m-government, suggesting the relationship is weaker for older citizens. Finally, the analysis demonstrated that experience does not moderate the relationship between the proposed factors and citizens' intention to use m-government.

6. Discussion

The aim of this study was to examine the factors that influence citizen's intention to use m-government. The study extended the UTAUT by incorporating trust, perceived risk and perceived trendiness to better explain citizen's intention to use m-government. Our analysis revealed that performance expectancy positively influences citizens' intention to use m-government services. In other words, the more citizens perceive that m-government enhances efficiency, the stronger their intention to adopt it. This is likely because such services increase productivity in applying for and receiving services, eliminate the need for physical visits and waiting lines, and provide quick and convenient access to government information through mobile devices. These advantages highlight the comparative value of m-government relative to traditional face-to-face services, making it a more attractive option for citizens. In Jordan, the above observation is particularly relevant given that the majority of government ministries have digitalised simple services such as tax payments and renewal of licences in recent years. Citizens want these services more and more to save time, make bureaucracy easier and improve accessibility, especially in urban areas where infrastructure is more digitalised. Our results are in line with prior work, such as [Talukder et al. \(2019\)](#), who confirmed performance expectancy as a determining variable in m-government adoption, and [Almaiah et al. \(2020\)](#), who emphasised its key role in affecting user intentions. Collectively, this suggests that in Jordan, as in other places, the perceived usefulness of m-government is one of the strongest drivers towards adoption.

The study also revealed that effort expectancy does not play a role in citizens' intention to use m-government. In this case, perceived ease of use was not a significant factor on citizens' behavioural intention in our research. Even though effort expectancy is seldom to have no effect on technology adoption, its effect may decrease or even disappear based on the unique characteristics of technology and users. This can be partly explained in the Jordanian case by the widespread coverage of mobile phones and mobile applications, which has risen above 90% in recent years, and increased citizens' acquaintance with online platforms for banking, travelling and social networking. Such widespread use may have generated a technologically literate population, where user-friendliness of m-government becomes second nature rather than the main determinant. Besides, the majority of the Jordanian government initiatives, such as the "Jordan e-Government Program" and the latest m-government platforms, have been well-promoted and engulfed in day-to-day transactions with public services. Consequently, citizens may not see the simplicity of use as a significant determinant of their intention but instead other variables. This confirms [Ahmad and Khalid \(2017\)](#), who also discovered that perceived ease of use did not significantly affect m-government adoption, and it emphasises the importance of contextual elements such as levels of digital literacy and

current levels of exposure to technology in Jordan when assessing citizens' adoption behaviour.

Social influence was also found to have no considerable impact on the intention of citizens to use m-government. Therefore, close referents such as friends, family, or colleagues did not impact respondents' decisions to adopt the services in question. While the outcome might be counterintuitive since people tend to rely on others' perceptions or experiences during the pre-adoption phase ([Al-Debei et al., 2013](#)), it can be explained in several ways. Firstly, our respondents appear to have a strong personal interest in using m-government services and thus may rely more on their own assessments than on external opinions. Secondly, as highly experienced users of mobile-based applications, they may feel confident in evaluating the usefulness and ease of use of m-government independently. In the Jordanian context, this result may also reflect the growing normalisation of digital platforms, where the adoption of mobile applications is a routine and individual decision rather than a socially driven one. With the government's active promotion of m-services (e.g. platforms for tax filing, health records and bill payments), many citizens may see such services as part of everyday interaction with the state, thereby reducing the weight of social pressure in shaping their behaviour. Based on these arguments, it can be followed that in Jordan, personal confidence in technology use and the perceived relevance of government services outweigh social referents in shaping adoption decisions. Our findings are consistent with [Talukder et al. \(2019\)](#), who also reported that social influence does not play a significant role in citizens' behavioural intention to adopt m-government.

The study indicated that facilitating conditions are positively associated with citizens' willingness to use m-government services. That is, as long as individuals have the necessary resources at their disposal, i.e. stable internet access, adequate knowledge, technical support and device compatibility, the chances of m-government usage rise. While certain facilitating conditions are based on citizens' inherent capacities, government agencies are also essential in that they give guarantees for easy-to-use applications to be available, technical assistance and reliable infrastructure in an effort to promote adoption. Facilitating conditions are strongly ensconced as a matter of significance within information systems literature, where they are always identified as technology adoption enablers. For example, [Teo \(2010\)](#) emphasised that the facilitation conditions diminish obstacles, lower the learning curve and increase individuals' confidence in embracing new technologies. Similarly, [San et al. \(2017\)](#) confirmed their stimulating role in motivating citizens to embrace m-government services. In Jordan, this is most applicable. The government has invested heavily over the past decade in mobile and digital infrastructure to enable citizens to have easy access to governmental services. Initiatives such as the "Digital Jordan" strategy have centred on upgrading technical support, increasing broadband penetration and harmonising mobile applications across government. They enhance facilitating conditions and hence induce broader use of m-government. Our results therefore emphasise that institutional and individual forces must be coordinated to establish an enabling environment for the diffusion of m-government in Jordan to be effective.

Perceived trust was also found to significantly and positively influence citizens' intention to use m-government services. It follows that the higher the citizens' trust in the integrity and reliability of m-government portals, the greater will be their formation of their behavioural intention towards the adoption of these as alternatives to traditional Web- or location-based services. Trust is established when citizens are sure that the system shall always function as intended, with few errors or failures, and when there are technological and legal boundaries that guarantee their information and transactions are protected. All these assurances reduce uncertainty and increase citizens' readiness to rely on m-government for access to essential

services. In the Jordanian setting, trust may be particularly important given the character of the personal information being processed via such mechanisms as tax systems, health portals and civil records. The willingness of citizens to adopt m-government is then determined not only by the technological performance of the systems but also by the ability of government to demonstrate transparency, ensure data protection and provide sound legal frameworks. To foster widespread adoption and sustained use of m-government services in Jordan, it is important to sustain and develop such trust. The ability of trust to drive technology adoption has been strongly emphasised in previous research as a main motivator for technology adoption, particularly in e-government and m-government (Hung *et al.*, 2013; Alomari, 2022; Dbesan *et al.*, 2023). Our findings support this evidence and are consistent with Ahmad and Khalid (2017), who asserted that trust is positively associated with end-users' intentions to adopt mobile government services.

Our analysis also revealed that perceived risk negatively influences citizens' intention to use m-government. Although mobile platforms may appear less risky than traditional Web-based e-government accessed through shared computers, since mobile phones are typically personal devices, the absence of strong perceptions of government cybersecurity capabilities can heighten concerns. In such cases, citizens may perceive that the government lacks full control over cyber risks, which discourages them from using these services despite their potential benefits. Interestingly, our sample showed relatively high levels of internet experience, which often enables users to transact online even while being aware of associated risks. This indicates that while digital literacy can reduce hesitation, concerns about institutional safeguards remain a decisive barrier. The finding aligns with prior studies (Ohme, 2014; Mei and Zheng, 2024) that identified perceived risk as a major obstacle to the adoption of m-government. In the Jordanian context, this result highlights the importance of strengthening cybersecurity infrastructure and public communication around data protection. As citizens are increasingly being requested to provide sensitive information, such as financial, legal and health-care documents, open visible security measures and transparency in handling such information must be ensured to buffer perceived risk. Without these assurances, even experienced digital users may hesitate to engage fully with m-government platforms.

Our data also supported the positive influence of perceived trendiness on citizens' intent to use m-government in Jordan. Compared to other the factors in the model, perceived trendiness exerted the greatest impact on behavioural intention. This suggests that aside from functional benefits, citizens are motivated by the reality that they desire to keep up with technological developments and to be associated with what is trendy. Through m-government, the individual can feel that he or she is enhancing social image and status since using advanced digital platforms portrays progressiveness and receptiveness to change. When people view a technology as popular or highly supported in their social networks, they will be more likely to adopt its usage. This is consistent with the notion that technology adoption is not only a rational decision but also a socially symbolic act. Moreover, the rapid diffusion of smart mobile devices in Jordan has increased public awareness of digital trends, encouraging citizens to engage with government services delivered through mobile platforms. Our result aligns with Lee and Cho (2017), who demonstrated that perceived trendiness positively shaped intentions to use fitness and health applications, and with Kim *et al.* (2011), who found that smartphone adoption was driven in part by the anticipation that emerging technologies enhance social image.

7. Implications

7.1 Theoretical implications

This study advances the current knowledge in two ways. Firstly, by extending UTAUT with perceived risk and trust, our study provides theoretical refinement and contextual insights

regarding the factors that influence the adoption of m-government services in the context of a developing country. Despite growing empirical attention on m-government adoption, there remains a need to contextualise existing theories in settings where digital infrastructure, public trust, sociocultural aspects and the digital divide play a more pronounced role, such as developing countries. Additionally, although m-government and e-government differ in how public services are accessed, potentially leading citizens to prioritise different factors in their adoption decisions (Zheng and Ma, 2022; Ohme, 2014), much of the existing literature implicitly assumes that citizens adopt both in similar ways. This is problematic as it may lead to oversimplified models that do not fully capture the unique characteristics and needs of mobile users, providing misleading insights for governments aiming to drive more citizens' adoption of m-government platforms. However, while m-government adoption from citizens' perspective has received a growing empirical attention, there is still a need to contextualise existing theories in settings where digital infrastructure, public trust, sociocultural aspects and the digital divide play a more pronounced role such as developing countries. Factors influencing citizens' intention to adopt m-government services in developed countries may differ significantly from those in developing countries.

Secondly, this study extends the UTAUT model by incorporating perceived trendiness, a construct that has received limited attention in the m-government service context, providing a more comprehensive understanding of the factors that influence citizens' intention to use m-government. While UTAUT focuses on rational and utilitarian drivers of technology adoption (e.g. performance expectancy, effort expectancy), it overlooks symbolic or image-related factors. By considering perceived trendiness, this study introduces a socio-psychological dimension to understanding m-government adoption, explaining how citizens may be drawn to m-government because it is seen as modern or fashionable. This enriches UTAUT by accounting for more affective or identity-based motivations particularly relevant in mobile-based services. Additionally, this addition provides a more contemporary and culturally relevant understanding of user m-government adoption behaviour in a rapidly evolving digital environment and lifestyles. Perceived trendiness captures the influence of social and technological trends on citizens' behavioural intention to adopt m-government services. Our study highlights the role of the need for social recognition and status as drivers for technology adoption in the context of m-government, which has not been advanced before.

7.2 Practical implications

Our study provides implications that emphasise citizen-centred design to increase citizens' intention towards using m-government. Firstly, when developing m-government applications and services, governments should, in parallel, develop favourable facilitating conditions for citizens, as our results indicate that their intention towards using m-government is significantly driven by facilitating conditions. It is recommended that governments provide technical infrastructure and support so users encounter fewer difficulties when using m-government applications and services. In addition, governments should aim at developing training (e.g. tutorial videos or user manuals) so citizens gain the knowledge and skills to work with m-government applications and services effectively.

Secondly, governments should put in place an effective mechanism through which citizens' perceived risk of using m-government could be alleviated, as our results highlighted a negative impact of perceived risk on users' behavioural intention to use m-government. This perceived risk could seriously diminish the users' positive perceptions of using m-government for obtaining public services. To address this, governments may need to provide awareness programmes so citizens could have a better understanding of the risks associated with the use of m-government and how to avoid them, thereby becoming more

confident in their ability to work with m-government while significantly alleviating their perceived risk.

Finally, governments should also place additional emphasis on developing citizens trust in m-government. This can be accomplished by ensuring that m-government is consistently performing and free of technical problems, developing regulations and legislation that protect the user's privacy rights, building more security measures and features into it and providing 24 / 7 support to answer users' inquiries and address their concerns. These simple actions can increase citizens' confidence in m-government as a reliable channel, ultimately facilitating its successful implementation and widespread adoption.

7.3 Social implications

This study has positive implications for society. Firstly, by understanding the factors that influence the intention to use m-government by citizens, this study provides insights that can help in designing public services to be more accessible through mobile devices, which are often more widespread among citizens. This can be particularly impactful in rural areas with limited resources and infrastructure needed for the traditional government services (e.g. offices, computers, etc.), providing citizens with easier and more equitable access to government services regardless of their socioeconomic segments and geographical locations. Secondly, providing insights on the factors that encourage citizens to select m-government as a channel for public services can help policymakers prioritise design aspects that drive more citizens' engagement in public policy and governance development. This can lead to more empowered and involved citizens, enhancing their democratic and transparency view of governments. Finally, identifying the most influential factors for citizens' adoption of m-government helps in developing online platforms that attract more users, which can enhance resource efficiency and protect the environment. Contrary to the traditional location-based public services, online-based public services can significantly reduce the need for paper-based transactions and citizens' use of transportation, which can minimise administrative costs, waste and carbon footprints.

8. Limitations and future research

The current study has some limitations, which could be starting points for future work. Firstly, the study model was tested in a single country (Jordan) with specific contingencies, and therefore the results may not be generalised to other countries. Therefore, our model could be re-examined in other developing countries in future studies to validate our results across diverse contexts. Moreover, it would be insightful if future research could empirically compare our model between a developing country and a developed country. This would identify how cultural norms and economic variations may influence m-government adoption.

Secondly, the study relied on the non-probabilistic, convenient sampling method to select the respondents in Jordan as discussed in Section 4.1. Future studies could complement the convenience sampling method with a more detailed stratification or use a probabilistic sampling method to increase citizens' representativeness and minimise potential bias, ensuring a more robust inferences across the Jordanian population.

Thirdly, this study used a cross-section data collection design, providing limited ability to develop a comprehensive understanding of citizen's intention to use m-government. Therefore, future research should seek a longitudinal analysis to study the use of m-government over years, which could provide a more dynamic understanding of changes in citizens' behavioural adoption intentions and the factors shaping this behaviour. Additionally, a longitudinal analysis would enable the observation of whether initial citizens' intentions translate into continued use.

Fourthly, this study extended the UTAUT to understand individuals' behavioural intention to use m-government by integrating relevant factors (i.e. perceived trust, perceived risk and perceived trendiness). A valuable future research avenue could be an empirical examination of additional relevant factors, such as service quality, accessibility, personalisation, perceived environmental risk and cybersecurity effectiveness, of m-government adoption. These factors are essential for attracting citizens and can significantly influence citizen experience and retention, especially in the context of digital public services.

Fifthly, this study examined only uses' behavioural intention to use m-government but not the continuous intention behaviour that occurs at the post-adoption stage. As such, another valuable opportunity for future research is to investigate the influence of the factors identified in this study on the continuous intention to use m-government.

Finally, this study looked at the behavioural intention of using m-government for public services in general terms without referring to a specific service (e.g. health-care service). Different m-government services cater to different citizens' needs (e.g. licence renewal, tax services, etc.) and some of them are more complex than others. Each service has unique demands and challenges, and therefore the factors that explain citizens' behavioural intention to use them may vary accordingly. A segmented analysis would offer a clearer understanding of citizens' needs across different services. Therefore, future studies could aim at exploring citizens' intention to adopt a particular m-government service being delivered by specific government unit.

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