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Exploring the Determinants of Jordanian Citizens' Intentions to Utilize E-Government Services: A Citizen-Centric Assessment

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Abstract

The Jordanian government has made strenuous efforts to design and deploy e-government portals on the Internet. However, some factors have caused Jordan's ranking on the E-Government Development Index (EGDI) to decline in the past years. This paper aims to understand the impact of factors that affect the behavioural intention to use e-government from the perspective of Jordanian citizens to improve it and raise the e-Government Development Index. This study proposes a research model that considers constructs such as perceived ease of use, perceived usefulness, and perceived trust on behavioural intention. Data was collected through a questionnaire survey. Data were analysed using Structural Equation Modelling (SEM) using IBM SPSS AMOS 25. The results of the analysis showed that ease of use, perceived usefulness, and perceived trust have a positive and significant impact on citizens' behavioural intention to adopt e-government services.

Keywords: E-Government, Behavioural Intention, Trust, Perceived Ease Of Use, Perceived Usefulness, Jordan

Introduction

E-government in the knowledge era has been recognized as a tool for digital revolution. It signifies the development of societies where governments interact with the needs and requirements of their citizens to enhance economic and social development and the well-being of their people (Goloshchapova et al., 2023). The benefits of e-government are evident in the interactions between governments and citizens, as well as between government departments, to provide ease, comfort, and access, thereby improving the services offered. This reduces costs, facilitates access to information, achieves transparency and accountability, and enhances people's lives and their ability to perform daily tasks without complications (Abu-Faraj and Masa'deh, 2023). Therefore, governments are required to continuously monitor developments in information and communication technology in their operations and to utilize e-government as a tool to combat corruption, collusion, and

nepotism, thereby establishing good governance and a government capable of ensuring the happiness and well-being of its people by providing distinguished services as expected by society (Wiprayoga et al., 2023).

The implementation of e-government has been widespread across various countries worldwide. For instance, Denmark consistently ranks as a global leader in e-government due to its strong digital initiatives, such as MitID, Denmark's secure digital identity system, which allows citizens to access government and private sector services online, from banking to healthcare. The Digital Post is a mandatory service that enables citizens to communicate digitally with the government, reducing paper use and improving the flow of information (Yasuoka et al., 2022). In contrast, the United States has created platforms such as USA.gov, which centralizes access to government services, along with several sector-specific portals, such as HealthCare.gov, for healthcare information. These e-government initiatives aim to streamline public services, enhance transparency, leverage mobile technology, meet the evolving needs of citizens online, and make government resources more accessible (Epstein, 2022).

The Malaysian government has implemented the MyGov portal and MyEG services. The MyGov portal unifies access to various public services, allowing Malaysian citizens to perform tasks such as license renewals, tax payments, and document retrieval. Complementing this, the MyEG platform provides an easy-to-use online service for handling government transactions, such as road tax renewals, traffic summons payments, and obtaining work permits for foreign workers (Soong et al., 2020; Ali et al., 2024). The Government of the Hashemite Kingdom of Jordan has implemented the official Jordanian e-government portal and the SANAD mobile application, which allows citizens to access digital services using a single electronic identity (Alkhwaldi and Al-Ajaleen, 2022). These services include paying taxes, renewing licenses, registering companies, and other essential government functions, thus enhancing convenience and efficiency for citizens. The National Contact Center in Jordan provides support through dedicated hotlines and an SMS gateway, allowing citizens to reach out for assistance or receive government notifications (Abu-Faraj et al., 2023).

Saudi Arabia offers a wide range of e-government services. A case in point is the Absher, a comprehensive platform utilized by citizens and residents in Saudi Arabia, providing various services such as the renewal of driving licenses, visas, and other civil affairs. The E-Visa service simplifies the process for visitors coming for tourism, Hajj, Umrah, and other travel purposes. Med Consult and E-Marriage Contracts provide online medical consultations and simplified marriage contract processes. E-Power of Attorney offers a service that allows citizens to create and verify legal documents digitally without the need to visit government offices. These e-government services aim to enhance the mission of digital government, focusing on citizens and residents to facilitate procedures, efficiency, and effectiveness (Elmouzan and Alhammad, 2020).

E-government has garnered the attention of scholars and researchers in both developed and developing countries. It has been defined as the use of information and communications technology to foster openness and communication between government

departments, citizens, and establishments (Grigalashvili, 2022; Lindgren et al., 2021; Setiawan et al., 2023).

The theoretical foundation of this paper is based on the Technology Acceptance Model (TAM) proposed by Davis (1989), which asserts that perceived usefulness and perceived ease of use are fundamental determinants of technology adoption. Perceived usefulness refers to the extent to which a person believes that using a particular system would enhance their job performance, while perceived ease of use indicates the degree to which an individual believes that using the system would require minimal effort. Numerous studies have confirmed the relevance of TAM in various contexts, including E-Government services (Sulistyowati et al., 2021; Alomari et al., 2020).

Trust theory is particularly pertinent to this study as it offers a comprehensive framework for understanding how trust influences the acceptance and use of technology. Trust in e-government services can be viewed as a form of trust in the institutions that provide these services. According to Mayer et al. (1995), trust is the willingness to be vulnerable to another party based on positive expectations regarding that party's actions and intentions. In the context of e-government services, perceived trust encompasses citizens' confidence in the security, reliability, and integrity of these services. Perceived trust significantly affects the behavioural intention to use e-government services. When citizens believe that e-government services are secure and that their personal information will be protected, they are more likely to utilize these services (Muangmee et al., 2021).

In addition to the core constructs of TAM, perceived trust is another critical factor influencing citizens' intention to use e-government services. Trust in e-government services includes the belief that the government will provide reliable and secure services while safeguarding users' privacy and data (Uche et al., 2021). Trust is especially relevant in the context of e-government, where concerns about data security and privacy are paramount (Muhammad and Hromada, 2023). This paper aims to extend the TAM model by examining the perceived trust factor that impacts citizens' behavioural intention to use e-government services in Jordan, utilizing a quantitative research method and distributing questionnaires to Jordanian citizens residing in the capital city, Amman.

Problem Statement

The inaugural UN E-Government Survey was launched in 2001, with the 2022 edition marking its twelfth release. This biennial report tracks global e-government progress among all UN member states. It assesses recent e-government trends using the E-Government Development Index (EGDI), a normalized composite index that includes the Online Service Index (OSI), Telecommunication Infrastructure Index (TII), and Human Capital Index (HCI). Each of these indices is a composite measure that can be assessed independently. With values normalized between 0 and 1, the overall EGDI is calculated by averaging the three component indices. This regular assessment allows member states to monitor progress and implement improvements based on survey findings.

Table 1 below summarizes the comparison of index values and ranks achieved from 2010 to 2022 for the E-Government Development Index (EGDI) in Jordan. The initial results were promising, as Jordan achieved its best ranking of 50th globally among the 193 member

states of the United Nations in the evaluation of 2012. However, subsequent rankings were 98 in 2014, 79 in 2016, 91 in 2018, 117 in 2020, and 100 in 2022, with an EGDI of 0.6081).

Table 1
E-Government Development Index in Jordan EGDI

HCI value	TII value	OSI value	EGDI value	Rating class	No of Countries	Global ranking	Year
0.8694	0.1806	0.5333	0.5278	HEGDI	193	51	2010
0.8013	0.2717	0.3922	0.4884	HEGDI	193	98	2012
0.7202	0.3104	0.5197	0.5167	HEGDI	193	79	2014
0.7344	0.3458	0.4565	0.5123	HEGDI	193	91	2016
0.7387	0.4406	0.4931	0.5575	HEGDI	193	98	2018
0.6800	0.5540	0.3588	0.5309	HEGDI	193	117	2020
0.6967	0.4681	0.6594	0.6081	HEGDI	193	100	2022

Source: Department of Statistics, 2024

Numerous countries face a lack of citizen acceptance of e-government, which hinders governments from fully delivering public services and prevents citizens from reaping the complete benefits of e-government (Nookhao and Kiattisin, 2023). Despite the promised advantages of utilizing e-government services in Jordan, the majority of citizens remain reluctant to engage with these services. Kanaan et al. (2023) noted that governments in both developed and developing nations must enhance their e-government services to bolster citizens' confidence in using these e-services. The reluctance to access government services online is linked to the low adoption rates of e-government within Jordanian society (Al Drees, 2023; Alryalat et al., 2023; Alryalat, 2024). This presents a significant challenge for the Jordanian government, which must find ways to motivate or persuade end users to incorporate e-government into their daily activities. Kilani (2021) emphasized that policymakers in the Jordanian government should concentrate on increasing citizens' behavioural intention to utilize e-government services. Furthermore, Al-Kaseasbeh et al. (2019) indicated that there is a low level of e-government service usage in Jordan, highlighting a gap between the services provided and their actual use.

Research Questions

This study seeks to answers the following research questions:

1. RQ1: How does perceived usefulness influence citizens' behaviour intention to use e-government services in Jordan?
2. RQ2: How does perceived ease of use influence citizens' behaviour intention to use e-government services in Jordan?
3. RQ3: How does perceived trust influence citizens' behaviour intention to use e-government services in Jordan?

To address these questions, this study examines various factors to understand citizens' intentions to use e-government services within the Jordanian context. By conducting this research, the proposed model is expanded to include perceived trust as an independent variable alongside the main constructs of the Technology Acceptance Model (TAM). This approach allows for a comprehensive study of these factors and their impact on the behavioural intention to use e-government services among citizens in Jordan. The integration

of these context-specific constructs aims to provide a more accurate reflection of the services that have been previously overlooked. The findings of this paper offer implications for the government and policymakers on how to enhance the ease of use and usefulness of online government services, as well as how to manage user trust and self-efficacy. Keeping citizens well-informed about these services can effectively motivate them to utilize them, ultimately saving time, effort, and costs, and ensuring that the benefits of these services are realized more effectively than through traditional government offices.

The remainder of the paper is structured as follows: The next section proposes the research model, highlights the significance of the constructs used, and formulates the hypotheses. Following that, the research methodology is discussed. The subsequent section analyses the data and presents the results. The findings of this research are then discussed in relation to the existing literature, including implications for theory and practice, limitations, and future research directions. Finally, the paper concludes with the concluding remarks of this study.

Foundational Framework: Model and Hypotheses

Perceived Usefulness and Behavioural Intention

Many researchers have extensively investigated the impact of perceived usefulness on the behavioural intention to use various technologies and services (Davis et al., 1989; Faqih, 2020). These studies have reported a strong positive relationship between perceived usefulness and behavioural intention to use different technologies and services. Research conducted by Wiprayoga et al. (2023) demonstrated that perceived usefulness positively influences behavioural intention to use. Additionally, the study by Zubir and Latip (2022) found that perceived usefulness has a direct positive relationship with the behavioural intention to use e-government services, identifying it as the strongest predictor of such intention.

In Malaysia, Tahar et al. (2020) found that perceived usefulness does not affect the use of e-filing. Previous studies indicate that perceived usefulness (PU) is positively associated with intention in the context of e-filing service providers' application systems. Many studies in information systems have provided evidence of the significant effect of PU on usage intention (Suleman and Zuniarti, 2019). Ali and Anwar (2021) mention that a user's trust receives a significant boost when they fully grasp the usefulness of an online service. The general public tends to utilize online services only when they perceive tangible benefits from doing so. It is argued that government websites should offer informative content and services that directly benefit the public. ElKheshin and Saleeb (2020) posit that public citizens are more inclined to engage with e-government services when they recognize their practical value. Challenges persist on some government websites concerning the material of government information provided, including issues such as slow information updates, incomplete construction of information resource databases, and service offerings that fail to meet the actual needs of the people (Almaiah & Nasereddin, 2020). Users are less likely to use e-government services if they find the website lacking informative and beneficial content. Based on the above, the following hypothesis was developed:

H_1: Perceived Usefulness Positively Influences Behaviour Intention to Use E-Government Services.

Perceived Ease of Use and Behavioural Intention

Perceived ease of use (PEOU) denotes the extent to which a person perceives using a specific system as effortless (Davis, 1989). Perceived ease of use in technology-based e-government plays a vital role in increasing interest in its usage. The easier it is to interact with the technology or system (Méndez-Rivera, 2023). Numerous research endeavours have consistently shown that perceived ease of use (PEOU) significantly influences the intention to use, both directly and indirectly, as indicated by various scholars over the years. Many studies have found that PEOU is an important component influencing user acceptance of technology usage and is significantly associated with behavioural intention to use. Research conducted by Ali and Anwar (2021) shows that there is a strong positive correlation between perceived ease of use and behavioural intention because perceived ease of use allows users to navigate e-government services without difficulty. Other research that shows consistent results is by Zubir and Latip (2022), which indicates that perceived ease of use positively influences behavioural intention to use e-government services. Research conducted by Kaur (2020) also shows a positive relationship between perceived ease of use and behavioural intention to use e-government services. Based on the above, the following hypothesis was developed:

H_2: Perceived Ease of Use Positively Influences Behaviour Intention to Use E-Government Services.

Perceived Trust and Behavioural Intention

Perceived trust can be used to determine the behavioural intention of using new technology, as it involves the state of individuals' faith regarding a particular technology. Other behaviours, such as trust, often follow individuals' faith intentions. In determining the behaviour leading to the use of e-government services, citizens must exert a great degree of confidence and faith in the e-government system to continue using it (Muangmee et al., 2021). Increased ease of use and usefulness leads to a positive effect on the user's trust and influences the intention to use e-government services (Kurniawan et al., 2022). In e-government, trust significantly impacts behavioural intention, enhancing the effects of perceived usefulness and ease of use (Almaiah et al., 2020). Studies confirm that trust is crucial in e-government service usage (Mensah et al., 2021; Kamarudin et al., 2021). Several studies (e.g., Alryalat et al., 2023; Hooda et al., 2022) have supported the significant influence of perceived trust on the intention to use e-government systems. While some studies (e.g., Alryalat et al., 2023; Muangmee et al., 2021) have used perceived trust as a single construct, other studies (e.g., Sulistyowati et al., 2021) have differentiated between trust in the Internet and trust in government. We argue that a higher level of perceived trust will help citizens exert a greater degree of confidence and faith in the e-government system, leading them to use it more than in its absence. Based on the above, the following hypothesis was developed:

H_3: Perceived Trust Positively Influences Behaviour Intention to Use E-Government Services.

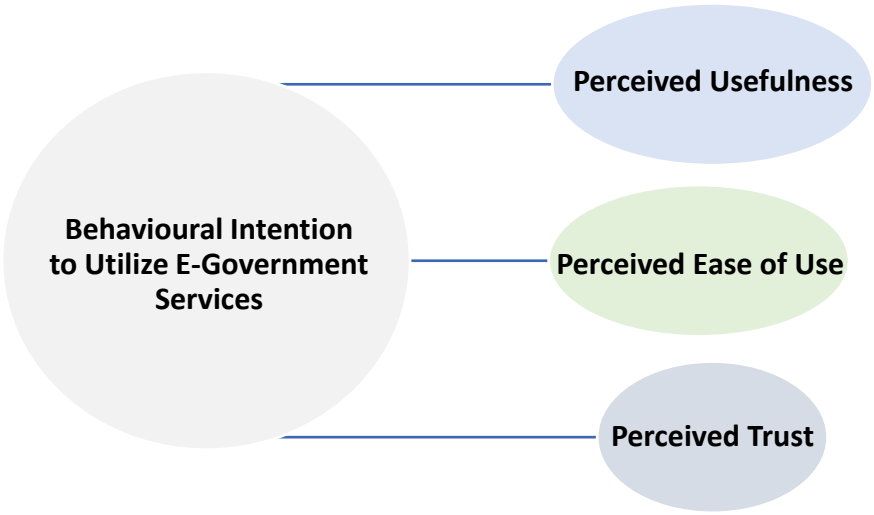

Figure 1. Proposed research model (Adapted from TAM & Trust Theories)

Research Methodology

The current study utilized a closed-ended structured questionnaire to gather primary data for the constructs: Perceived Usefulness, Perceived Ease of Use, Perceived Trust, Behavioural Intention, and Attitude. The choice of a closed-ended structured questionnaire was made because it encourages respondents to make quick decisions and facilitates effective data coding for analysis (Taherdoost, 2022). In this study, the survey was deemed the most suitable choice compared to alternative approaches. Considering this as a quantitative study, the questionnaire was designed to collect answers using a ten-point Likert scale. Awang (2015) proposed that utilizing a 10-point interval scale is appropriate, as it allows for more independent data measurement and aligns with the objectives of the questionnaire for the actual survey.

The study aimed to gather information from Jordanian citizens aged 18 and above, residing in nine districts of Amman and utilizing e-government services; however, the exact size of the population was unclear. Structural Equation Modelling (SEM) was employed to analyze the data. According to Awang (2015) and Awang et al. (2018), fulfilling the criteria for parametric statistical analysis requires obtaining respondents through a probability sampling method.

Consequently, a simple random sampling technique was selected, as it accurately represents the actual state of the population, with each individual chosen without biases or inclinations. This method effectively mirrors the characteristics of the population and offers greater generalizability (Sekaran & Bougie, 2016). In the first step of the sampling process, the number of blocks for each district and the buildings within each block were obtained from the Department of Statistics. The list of buildings for each block was then entered into the SPSS program, which randomly selected buildings based on the number of questionnaires to be distributed in each district, as indicated in the provided table. After randomly obtaining the buildings, a list of apartment numbers in each building was entered into the SPSS program, which then randomly selected an apartment number. If no response was obtained from the selected apartment, the nearest apartment was visited.

The study employed the stratified random sampling method at each stage of the sampling procedure, ensuring that each unit of the population had an equal opportunity to be selected. A total of 372 questionnaires were randomly distributed across the districts. Data were collected through face-to-face distribution, and the researcher collected the completed survey questionnaires. This approach helped reduce time and manage financial constraints. The surveys were conducted from June to August 2024. The questionnaire was developed based on the study's objectives, problem statement, and hypotheses to assess the impacts of independent constructs on dependent constructs. It consisted of two sections: Part (A) gathered demographic characteristics of respondents, including age group, gender, education level, frequency of Internet access, and utilization of e-government services. Part (B) of the survey, concerning e-government services, included five sections with 22 items measured on a 10-point Likert scale. This section contained questions related to the selected constructs of the proposed model. To ensure clarity, the questionnaire was initially created in English and then translated into Arabic by a professional proofreader. The Arabic version was subsequently reviewed by a different independent professional translator for reverse translation into English, ensuring that the meaning remained consistent throughout the translation process.

Over three months, 372 questionnaires were distributed to Jordanian citizens aged 18 and older who use e-government services, with participants requested to spend approximately 10-15 minutes completing the survey. All participants filled out the questionnaires, resulting in 370 responses being used for data analysis. In this research, structural equation modelling (SEM) was employed using AMOS software to accurately analyze the complex relationships between constructs (Awang, Afthanorhan, and Asri, 2015; Awang et al., 2018). SEM was developed to create a model for efficiently examining the connections between constructs exhibiting various intricate indicators. AMOS 25.0 was chosen for model estimation, as it is a covariance-focused method that simultaneously estimates measurement and structural equations defined in the model, utilizing the covariance structure obtained from the observed data (Aimran, Ahmad, Afthanorhan, and Awang, 2017a).

Table 2
Developing the Sampling Frame

Administrative Districts	Population	Sampled percentage	Questionnaires distributed
Amman Qasabah	665,930	665,930/3,055,004 = 22%	665,930/3,055,004*372 = 81
Marka	694,554	694,554/3,055,004 = 23%	694,554/3,055,004*372 = 85
Quaismeh	407,097	407,097/3,055,004 = 13%	407,097/3,055,004*372 = 50
Al-Jamiah	621,297	621,297/3,055,004 = 20%	621,297/3,055,004*372 = 76
Wadi Essier	303,061	303,061/3,055,004 = 10%	303,061/3,055,004*372 = 37
Sahab	122,354	122,354/3,055,004 = 4%	122,354/3,055,004*372 = 15
Jizah	89,697	89,697/3,055,004 = 3%	89,697/3,055,004*372 = 11
Muaqqar	57,164	57,164/3,055,004 = 2%	57,164/3,055,004*372 = 7
Na'oor	94,850	94,850/3,055,004 = 1%	94,850/3,055,004*372 = 12
Total	**3,055,004**	**100%**	**372**

Source: field data analysis, 2025

Findings and Discussion

Demographic Analysis of Respondents

Table three (3) illustrates that the dataset provides insights into several demographic and behavioural characteristics of 372 respondents. In the sample, there were 137 (36.8%) female respondents and 235 (63.2%) male respondents, with most participants aged 18-24 years (35.5%). Regarding marital status, 49.5% of participants were single, 43% were married, 4.3% were divorced, and 3.2% were widowed. Additionally, 47.3% of those surveyed hold a Bachelor's degree. Concerning internet access, most respondents (75.8%) accessed it several times a day, while the least represented group used it once a month (1.3%). A significant number of respondents frequently utilize e-government services for their governmental transactions (28.3%), while the smallest group consisted of those who seldom use e-government services for their governmental transactions (21.3%).

In terms of gender, 63.2% are male and 36.8% are female. The age distribution indicates that the majority are younger, with 35.5% aged 18–24 and 27.7% aged 25–34, while older age groups constitute smaller proportions. Regarding marital status, 49.5% are single, 43.0% are married, and smaller groups are divorced (4.3%) or widowed (3.2%). Educational attainment is dominated by participants with a bachelor's degree (47.3%), followed by those with a high school diploma (15.9%) or a college degree (15.3%). Internet usage is high, with 75.8% accessing it multiple times daily, and most respondents frequently use e-government services, with 28.3% reporting very frequent use and 22.9% reporting frequent use. Finally, participants are distributed across various locations in Amman, with significant concentrations in Amman Qasabah (21.2%), Al-Jami'ah (20.7%), and Marka (18.8%), while smaller numbers come from peripheral areas like Muaqqar (1.9%). This demographic and usage data highlight a predominantly younger, educated, and digitally active population, which may influence the findings and applicability of this study.

Table 3
Descriptive Statistics for All Principle Constructs (N= 372)

Variables	*f* (n=372)	*%*	Variables	*f* (n=372)	*%*
Gender			**Frequent Internet Use**		
Male	235	63.2	Multiple times a day	282	75.8
Female	137	36.8	Once a day	40	10.8
Age			Several times a week	27	7.3
18-24	132	35.5	Once a week	6	1.6
25-34	103	27.7	Several times a month	12	3.2
35-44	64	17.2	Once a month	5	1.3
45-54	49	13.2	**e-Government Access Frequency**		
55-64	19	5.1	Very frequently	105	28.3
45-54	5	1.3	Frequently	85	22.9
Marital status			Occasionally	102	27.5
Single	184	49.5	Rarely	80	21.3
Married	160	43.0	**Place of Residence**		

Divorced	16	4.3	Amman Qasabah	79	21.2
Widowed	12	3.2	Marka	70	18.8
Education			Quaismeh	50	13.4
Less High school	31	8.3	Al-Jami'ah	77	20.7
High school	59	15.9	Wadi Essier	39	10.5
College	57	15.3	Sahab	15	4.0
Bachelor's degree	176	47.3	Jizah	11	3.0
Master's degree	36	9.7	Muaqqar	7	1.9
Doctoral Degree	11	3.0	Na'oor	24	6.5
Others	2	.5			

Source: field data analysis, 2025

Measurement Model

To evaluate the internal consistency of the survey measures, we employed Cronbach's alpha (α) to conduct a reliability analysis. All constructs exhibit strong internal consistency, as their Composite Reliability (CR) values exceed the recommended threshold of 0.70. The CR values range from 0.856 to 0.875, indicating that the measurement items reliably measure the constructs. The results indicated that the reliability of the four constructs is high, with α values ranging from 0.855 to 0.917. Table 4 displays Cronbach's alpha values and Composite Reliability for all four constructs along with the number of items for each construct.

Table 4
Cronbach's alpha (α) of the constructs and Composite Reliability

Construct	No of Items	Cronbach's Alpha (α)	Composite Reliability
Perceived Usefulness (PU)	6	0.868	0.875
Perceived Ease of Use (PEOU)	6	0.855	0.872
Perceived Trust (PT)	4	0.907	0.856
Behavioural Intention (BI)	6	0.917	0.875

Source: field data analysis, 2025

This study validated the scales using convergent and discriminant validity computation through confirmatory factor analysis (CFA). In this research, CFA was conducted in two stages to examine the effectiveness of the measurement model. The initial stage involved performing separate CFA for each construct, while the second stage involved a combined CFA where all constructs were analysed together in a unified model (Awang, 2015; Awang et al., 2017).

Before testing the structural model, the measurement aspect of the model was evaluated in advance to avoid any potential impact on the interaction between the two models caused by measurement errors. To determine the unidimensionality of a model consisting of four factors—Perceived Usefulness (PU), Perceived Ease of Use (PEO), Perceived Trust (TR), and Behavioural Intention (BI)—the correlation matrix was examined. The fitness statistics and internal consistency were used to evaluate the model's appropriateness, discriminant validity, and reliability.

Table 5 shows the results of the fitness statistics. After the removal of three items with poor factor loadings, the revised structural equation model demonstrates improved fit and validity. The model explores the relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEO), Perceived Trust (TR), and Behavioural Intention (BI). The revised model fit indices indicate an excellent fit: Chi-square/df is 1.048, well below the acceptable threshold of 3, and the RMSEA value of 0.011 suggests a close fit to the data. Additionally, the CFI, IFI, and TLI are all at 0.997, exceeding the recommended threshold of 0.95, further confirming the strong fit of the model (Hair et al., 2018). All retained items exhibit factor loadings above the recommended minimum of 0.60, as per Afthanorhan et al. (2020) and Hair et al. (2018). For instance, the items under Perceived Usefulness range between 0.73 and 0.84, indicating strong reliability of the indicators. Similarly, the factor loadings for Perceived Ease of Use range from 0.74 to 0.78, and Perceived Trust shows values between 0.76 and 0.79, confirming the appropriateness of these measures.

Table 5
Measurement Model Estimates

Construct	CFA	Recommended Value
Chi-square/df	1.048	< 3.0
CFI	0.926	>0.900
IFI	0.903	>0.900
TLI	0.931	>0.900
RMSEA	0.011	<0.08

Source: field data analysis, 2025

Convergent validity is achieved when two related constructs, Average Variance Extracted (AVE) and Composite Reliability (CR), correspond (Shkeer and Awang, 2019; Raza and Awang, 2020). The value of Average Variance Extracted (AVE) should be greater than 0.50, while the value of Composite Reliability (CR) should exceed 0.60 (Kashif et al., 2016; Mahfouz et al., 2020). Table 6 presents the list of factor loadings for each item of the constructs, along with the composite reliabilities (CR) and average variance extracted (AVE). The results indicate that the constructs in this study demonstrate good reliability and convergent validity, meeting the commonly accepted criteria for CR and AVE in Structural Equation Modelling (SEM).

Table 6
Reliability and Validity

Construct	CR	AVE
Perceived Trust	0.856	0.598
Perceived Usefulness	0.875	0.584
Perceived Ease Use	0.872	0.578
Behavioural Intention	0.875	0.583

Source: field data analysis, 2025

Structural Model

Table 7 provides evidence of discriminant validity based on the Fornell-Larcker criterion. The square roots of the Average Variance Extracted (AVE) for each construct (indicated in bold on the diagonal) are all greater than the correlations between the

constructs (off-diagonal values), demonstrating that each construct is distinct from the others. For instance, the square root of the AVE for Perceived Trust (0.773) is greater than its correlation with Perceived Usefulness (0.565), Perceived Ease of Use (0.562), and Behavioural Intention (0.497). Similarly, the square root of the AVE for Perceived Usefulness (0.764) exceeds its correlations with other constructs, such as Perceived Ease of Use (0.559) and Behavioural Intention (0.508). This pattern holds true for all constructs, confirming that they possess strong discriminant validity, meaning they are conceptually distinct and measure different theoretical concepts. This is a crucial criterion in validating measurement models, ensuring that each construct is not only reliable but also distinct from the others.

The structural equation model illustrates the relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEO), Perceived Trust (TR), and Behavioural Intention (BI). The standardized coefficients indicate the strength of the relationships between these constructs. Perceived Usefulness (PU) has a notable impact on Behavioural Intention, with path coefficients of 0.29. This suggests that users' perceptions of how useful the system is significantly influence their intention to use it. Similarly, Perceived Ease of Use (PEO) has a positive, albeit smaller, influence on Behavioural Intention (0.14), implying that while ease of use is important, it is less influential than perceived usefulness. Perceived Trust (TR) also has a notable impact, with a 0.13 coefficient affecting Behavioural Intention, highlighting the importance of trust in shaping the intention to use the system. The model explains 43% of the variance ($R^2 = 0.43$) in Behavioural Intention, indicating that the combination of perceived usefulness, ease of use, and trust provides substantial insight into users' intentions to use the system. It can also be inferred that almost half of this proposed model can explain behavioural intention from the citizens' perspective.

Table 7
Discriminant Validity

Variables	Perceived trust	Perceived usefulness	Perceived ease of use	Behavioural intention
Perceived trust	0.773			
Perceived usefulness	0.565	0.764		
Perceived ease of use	0.562	0.559	0.760	
Behavioural intention	0.497	0.508	0.545	0.764

Source: field data analysis, 2025

Model Interdependencies

The analysis revealed a significant influence of Perceived Usefulness on Behavioural Intention to use technology systems (Songkram et al., 2023). Specifically, the findings showed that the effectiveness experienced by users significantly affects their decision to continue using the technology. Users who recognize the benefits of the technology are more likely to continue utilizing it. The structural equation model demonstrated significant relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEO), Perceived Trust (TR), and Behavioural Intention (BI). Meanwhile, the results, presented in Tables 8-10, provide detailed insights into the strength and significance of these relationships.

Table 8
Perceived ease of use and behavioural intention

Variable			Estimate	S.E.	C.R.	P	Result
Behavioural Intention	<---	Perceived Usefulness	.136	.067	2.037	.042	Significant

Source: field data analysis, 2025

The estimate is 0.136 with a p-value of 0.042, which is significant. This indicates that perceived usefulness has a direct, albeit relatively small, positive effect on behavioural intention. As users perceive the system to be useful, their intention to use it is enhanced.

Table 9
Perceived ease of use and behavioural intention

Variable			Estimate	S.E.	C.R.	P	Result
Behavioural Intention	<---	Perceived Ease Use	.282	.074	3.826	***	Significant

Source: field data analysis, 2025

The estimate is 0.282 with a significant p-value of *** ($p < 0.001$), indicating that perceived ease of use has a significant and relatively large positive effect on behavioural intention. This implies that users who find the system easy to use are more likely to intend to use it.

Table 10
Perceived trust and behavioural intention

			Estimate	S.E.	C.R.	P	Result
Behavioural Intention	<---	Perceived Trust	.129	.072	1.790	.073	Not Significant

Source: field data analysis, 2025

The estimate is 0.129 with a p-value of 0.073, which is not significant. This suggests that, in this model, perceived trust does not have a statistically significant direct effect on behavioural intention, indicating that trust alone may not be sufficient to influence users' intention to use the system. In this model, Behavioural Intention is significantly predicted by Perceived Usefulness and Perceived Ease of Use, but not by Perceived Trust directly.

Theoretical Implication

Regarding the theoretical importance of the study, integrating perceived trust as an external factor with the TAM constructs can enhance adoption and acceptance studies. This study advances previous research in Jordan by focusing on factors that demonstrate individual differences in user behaviour. The emphasis on individual differences enriches the deep-learning analysis. Consequently, this study makes a key contribution to the literature, paving the way for further research addressing the behavioural intention to use e-government services in Jordan. Furthermore, the proposed methodology enhances the predictive power of the analysis and results of the current study. The variance explained by the model in the outcome variable, termed intention to use e-government services, is 43%.

This indicates that these antecedent variables are important predictors of behavioural intention to use e-government services in Jordan, representing a significant portion of the variability in this result.

Implication for Practice

The findings of this study have important implications for the Jordanian Ministry of Digital Economy and Entrepreneurship and other governmental entities in Jordan. Integrating e-government into Jordanian society could prompt policymakers to re-evaluate e-services platforms, fostering innovation and improving citizen trust, ease of use, and perceived usefulness. Understanding users' perceptions can guide providers in prioritizing these aspects in future digital solutions. Therefore, governmental and technological bodies should facilitate citizens' perception of e-government as a tool to enhance daily life, offering convenience, cost savings, and accessibility. Future research should explore gender-specific differences in personal preferences and cultural backgrounds.

Limitations and Future Research directions

Similar to other studies, this research also has its limitations. Initially, it has examined a simple and concise model to evaluate the behavioural intention of Jordanian citizens to use e-government services. Subsequent studies could broaden this model by incorporating additional factors such as Internet familiarity and uncertainty avoidance, along with mediators like attitudes and moderators such as resistance to change and computer self-efficacy, to analyze the performance of the revised model. Future investigations might also consider the actual utilization of e-government services as the outcome variable.

Secondly, the sample used to validate the proposed research model primarily consists of Jordanian citizens aged 18 and older, living in Amman and using e-government services. Future studies should also gather information from Jordanian citizens aged 18 and older, residing in Irbid or Zarqa, who are using e-government services. Thirdly, upcoming research should collect data from Jordanian citizens who have limited understanding of the newly established e-government systems and minimal familiarity with technologies and applications that can assist them in accomplishing their e-government tasks through various portals.

Future studies may also employ structural equation modelling to confirm the current models of behavioural intention to use e-government services (Ratnawati and Darmanto, 2023). The results of this research are more applicable to the Jordanian context or countries in the Arab region. Consequently, the findings of this research should be used cautiously (Alryalat et al., 2023; Alkhwaldi et al., 2023; Ali and Anwar, 2021). Furthermore, upcoming research should explore the awareness of e-government services through social media channels to ensure that users are adequately informed about the progress achieved by the government in this area (Alryalat, 2024; Almajali, 2023).

Conclusion

The study explores the determinants of Jordanian citizens' intention to use e-government services, yielding several key findings that include the identification of perceived usefulness as a significant predictor of behavioural intention, with a variance explained by the model indicating a 43% predictive power for this relationship. The sample consisted of 372 respondents, predominantly younger (35.5% aged 18-24), educated (47.3% with a Bachelor's

degree), and digitally active (75.8% accessing the internet multiple times daily), with most respondents being male (63.2%). A considerable portion of the participants frequently utilized e-government services, illustrating a trend towards embracing digital solutions for governmental transactions. Consequently, the findings suggest that strategies to integrate e-government into Jordanian society should focus on enhancing citizens' perceptions of the usefulness, trust, and ease of use of these services to improve overall public engagement. Additionally, the study acknowledges limitations such as a simplified model and calls for future research to include additional factors like internet familiarity and different demographic variables to better understand user behaviour, paving the way for further investigations into the factors shaping the acceptance and usage of e-government services among Jordanian citizens and highlighting the importance of user perception in the digital transition of governmental services.

Based on the findings of the study, several recommendations for future actions and implications can be proposed to enhance the effectiveness and adoption of e-government services. First, the government should focus on improving the quality and relevance of e-government services by ensuring they meet the practical needs of citizens, which includes regularly updating information and expanding service offerings to cover more transactions. Additionally, implementing marketing and awareness campaigns can educate citizens on the tangible benefits of e-government services, such as time savings and convenience, thereby enhancing the perception of usefulness.

To boost citizen trust, the government should work on transparency initiatives that improve government processes and data protection measures, building trust among citizens by regularly sharing information about how data is handled to alleviate privacy concerns. Moreover, establishing user feedback mechanisms will allow citizens to provide their input on e-government services; actively responding to feedback and implementing changes based on user suggestions can foster greater trust in government platforms. To improve ease of use, it is crucial to ensure that e-government portals are designed with user experience in mind, prioritizing intuitive navigation and accessibility features that cater to all segments of the population. Providing training programs or workshops aimed at enhancing digital literacy, particularly for older citizens or those unfamiliar with technology, alongside robust customer support, can assist users in navigating the services.

Furthermore, conducting ongoing user research will help monitor citizen perceptions of e-government services, informing policy decisions and identifying emerging trends or issues that need addressing. Future studies should also explore the impact of additional variables, such as cultural factors and socio-economic status, on the acceptance of e-government services to provide a more comprehensive understanding of user behaviour. Encouraging interagency cooperation among different government departments can streamline services and share resources, resulting in more integrated and efficient e-government offerings. Additionally, special outreach programs should be created for underrepresented groups, such as individuals in rural areas, the elderly, or those with limited internet access, as tailoring services to these demographics can increase overall service engagement. By implementing these recommendations, the Jordanian government can address the identified barriers to e-government services and promote a more favourable environment for digital interactions between citizens and the government.

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