

Adoption of E-Government Services in Jordan: Exploring the Interplay of Perceived Usefulness, Ease of Use, Uncertainty Avoidance and Cultural Dynamics

Maysoune Ismail Abou Elnaja, Asyraf Afthanorhan and Hamdy Abdullah

Faculty of Business and Management, University Sultan Zainal Abidin, Malaysia

Abstract: With the tremendous development in the field of information technology, e-government has had great luck in this development, as countries around the world have developed their electronic services to provide well-being for their citizens, and to increase investments and commercial transactions in all economic fields of the country. Nowadays the increasing interest in e-government, the bulk of academics are focusing on studying the factors influencing the adoption and actual use of these electronic services by citizens. Using the Technology Acceptance Model (TAM) as a theoretical framework, the study focuses on the relationship between perceived usefulness, ease of use, and Behavioural intention. Previous studies have shown that there is a positive relationship between perceived usefulness and Behavioural intention, as well as between ease of use and Behavioural intention to adopt and use e-government services, and the strong influence of cultural factors on adopting this technology. The study focuses on the relationship between perceived usefulness, ease of use, and Behavioural intention by developing a conceptual model to study these relationships and using uncertainty avoidance as a moderating variable. This study provides concepts for decision-makers to increase interest in the impact of citizens' behavioural intention and cultural influence to increase the adoption and effective use of e-government in developing countries including Jordan.

Keywords: Perceived usefulness, Behavioural intention, E-Government services, Technology Acceptance Model (TAM).

INTRODUCTION

Citizens in today's digital age benefit from an information and communication technology (ICT)-driven society in which the government uses ICT to improve quality of life through various e-service projects. The focus of E-Government research has shifted beyond the government's role as a service provider. Researchers are increasingly considering citizens' roles as active users and beneficiaries of these E-Government services (Afrizal & Wallang, 2021). The information technology revolution has significantly contributed to the emergence of a knowledge-based economy, where information and knowledge are pivotal to economic competitiveness (Riyadh, *et al.*, 2019). Recognizing the transformative potential of this technological revolution, both developed and developing countries have formulated national policies and strategies to bolster their knowledge economies. E-Government is a crucial component in this context, playing a vital role in realizing these objectives. With the widespread adoption of new technologies and the Internet, governments worldwide are striving to transition from traditional paper-based processes to digital e-services. This shift is aimed at improving service delivery, enhancing efficiency, and increasing accessibility for citizens (Elisa, *et al.*, 2023). The integration of these technologies in government operations not only streamlines processes but also ensures that citizens can access services more conveniently and effectively, thereby fostering a more engaged and informed populace.

The fundamental goal of this project is to create a comprehensive E-Government model for the Jordanian government based on the existing Theory of Acceptance Model (TAM). This model investigates the relationship between perceived utility, ease of use, and Behavioural intention by developing a conceptual framework that covers these interactions and uses uncertainty avoidance as a moderator. Using this constructed model, decision-makers can acquire insights into the success of the currently implemented E-Government systems for government employees, improving their understanding of how these factors influence the adoption and use of E-Government services.

LITERATURE REVIEW

According to literature evaluations, there are various definitions of e-government. According to the United Nations, e-government is defined as "the use and implementation of government Information and communication technology in the public sector, as it aims to effectively manage data and information, expand participatory communication channels and provide more advanced public services, reliable information, and broad knowledge for all citizens (Alabdallat, 2020; Kalu and Masri, 2019). E-government aims to diminish service wait times, streamline operations, curb corruption, and lower service delivery costs. Additionally, it seeks to boost transactional efficiency, enhance convenience, and broaden

accessibility (Alabdallat, 2020; Kalu and Masri, 2019). The focus on e-government adoption revolves around reshaping governmental internal and external relationships to alleviate the burden of intricate bureaucratic systems (Almutairi, *et al.*, 2020; Mahlangu and Ruhode, 2021).

The adoption of e-government services has been extensively studied across various countries and cultural contexts, revealing numerous factors that influence citizens' Behavioural intentions. The title of the current study, "A Conceptual Model for the Study of Perceived Usefulness, Perceived Ease of Use, Uncertainty Avoidance and Behavioural Intention Use of E-government," aims to explore these factors within the specific context of developing countries. Despite the breadth of research available, several gaps remain, particularly in understanding the nuanced interactions between perceived usefulness, perceived ease of use, and cultural dimensions such as uncertainty avoidance in influencing e-government adoption.

In Malaysia, Zubir and Latip (2022) found that perceived usefulness and ease of use positively influenced the intention to use e-government services. Kaur (2020) studied the relationship between perceived usefulness, perceived ease of use, and intention to use e-government services. The results suggest that all factors play a significant role in encouraging citizens to adopt e-government services within the Punjab region. In India Sahu and Gupta (2021) found that perceived usefulness, perceived ease of use, trust, and attitude towards using significantly influence the Behavioural intention to use e-government services. Masimba and Zishiri, (2021) investigated cultural variables that influenced Zimbabwe people's Behavioural Intention (BI), they found that these cultural variables significantly influenced the user's perceived usefulness, ease of use, Behavioural intention, and attitude toward using e-government services.

However, Almotawke & Qureshi (2021) highlight that the success of E-Government hinges on citizen adoption. Numerous governments worldwide struggle with low utilization of E-Government services, particularly evident in Arab countries. Despite all the promised benefits of using E-Government services and their utilizations in Jordan, the majority of the citizens are still reluctant to use E-Government services. The unwillingness to acquire government services through the website and the linkage between such

unwillingness and the percentage of Jordanian society adopting E-Government (Kasasbeh, *et al.*, 2023; Alryalat, *et al.*, 2023). Currently, this is a major challenge for the Jordanian government to motivate or convince end users to use E-Government in day-to-day activities. Kilani, (2021) mentioned that the policymakers in the Jordanian government should focus on boosting the Jordanian behaviour intention to use E-Government services.

In addition, Al-Kaseasbeh, *et al.*, (2019) stated that there appears to be a low level of use of E-Government services in Jordan, and there is a gap between E-Government services provided and use. There are only a few studies that have attempted to understand it. The Jordanian government faces the problem of low usage of E-Government services (Al-Refaie & Ramadna, 2020) and problems persuading Jordanians to conduct online transactions, especially through its online services, (Anouze & Alamro, 2019). E-Government reflects a new manner of interacting with citizens and businesses (Doran, *et al.*, 2023). Regarding technology's behaviour use, mainly the thought motivates the users. It means that users often use something perceiving that they will benefit from it. In other words, users can decide whether to use it or not (Alkhwaldi, *et al.*, 2023). Using E-Government once a year will not be considered a feasible use of its many applications. The E-Government has the challenge of making the citizens use the services frequently (Mustaf & Mohammed 2020). (Alqudah & Muradkhanli, 2021; Nofal, *et al.*, 2021) reported that many important studies on the adoption of e-government, but there is an urgent need to investigate the Behavioural intention use of E-Government and trust factors that influence use. Numerous studies have highlighted the advantages of E-Government like increased transparency and combat corruption (Ismail, *et al.*, 2020); cost reduction (Bosio, *et al.*, (2023); time-saving (Hariguna & Rahardj, 2022); economic growth (Azim, *et al.*, 2020); and sustainable development (Othman, *et al.*, 2020). The low Behavioural intention toward the use of E-Government and the failure of the government to motivate the end user to adopt and use E-Government would lead Jordan to a low rank in the index of member states in the development of E-Government usage.

This low ranking worldwide could lead to huge investment hindrances in developing the infrastructure of e-government, in turn will not benefit in terms of overall efficiency, waste of

resources, and the use of public funds (Abu-Faraj, *et al.*, 2023). The Corona Virus Disease 2019 (COVID-19) pandemic crisis, E-Government has become a very urgent need. It is imperative in most countries all over the world, its great importance manifested in solving the problem of lockdown and quarantined citizens, who experienced social, economic, health, and psychological hardships during the lockdown and quarantine due to COVID-19. This crisis has demonstrated the urgent need for the actual use of E-Government in Jordan and for better adoption from citizens to more effectively deal with lockdowns and quarantines. For example, the e-learning system emerged and developed as a means to facilitate the educational process (Al-Okaily, *et al.*, 2020; Al Gharaibeh, 2020).

Institutional Innovation Adoption: A Theoretical Overview

Based on a comprehensive review of e-government services literature, the present study used the Technology Acceptance Model (TAM) theory and Hofstede cultural dimensions theory to explain the relationship among perceived usefulness, perceived ease of use, uncertainty avoidance, and behavioural intention to use e-government services in Jordan. It's essential to justify the selection of these theories and their incorporation into the research framework. This ensures a comprehensive understanding of the chosen theories' relevance and applicability.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) theory, developed by Fred Davis, aims to explain how individuals adopt and utilize technology (Davis, *et al.*, 1989). TAM comprises two key elements: "perceived usefulness," which measures the extent to which a person believes a system will enhance their work performance, and "perceived ease of use," which assesses the degree to which a person perceives a system as effortless. Research studies have empirically supported TAM (Davis, *et al.*, 1989; Fishbein, *et al.*, 1977). The model underscores the interplay between system design and its outcomes, including usefulness, ease of use, attitude toward, Behavioural intention, and actual system usage. These elements reflect users' subjective perceptions, which may not always align with reality. Acceptance of a system diminishes if users do not perceive it as beneficial and user-friendly (Kaur, 2020). TAM serves to illuminate factors influencing Behavioural intention in technology adoption, particularly in e-government contexts.

Additionally, TAM is theoretically robust, enabling it to elucidate user behaviour across diverse demographics and contexts in utilizing e-Government services (Abdulkareem, Ramli, 2020). Second, the Technology Acceptance Model (TAM) is rooted in a theory examining how individuals adopt and utilize various technologies. TAM posits that when individuals encounter a new software system, multiple factors influence their decisions on its usage. It serves as a theoretical framework for understanding the relationships between perceived usefulness, perceived ease of use, and users' attitudes and behaviours toward technology (Zaineldeen, *et al.*, 2020). While initially tailored to computer behaviour, TAM can be adapted to analyze the acceptance of various technologies, including e-government services (ElKhashin, 2020). Studies often employ TAM to gauge public interest in e-government initiatives, given its focus on technology acceptance (Zubir, and Latip, 2022). Unlike the Theory of Reasoned Action (TRA), which pertains to general consumer behaviour, TAM is specific to technology and is commonly applied at the individual level (Faqih, 2020). Moreover, The Technology Acceptance Model (TAM) is better suited for individual rather than organizational application as it does not address its effects on policies, management, expectations, and workplace dynamics (Mailizar, *et al.*, 2021).

Hofstede Cultural Dimensions Theory

Hofstede's cultural dimensions theory has been widely employed in research within the field of IT/IS to explore the correlation between national culture and the adoption of e-government (Kumar, *et al.*, 2020). Florence Kluckhohn and Fred Strodtbeck (1961), building upon Clyde Kluckhohn's pioneering work in 1951, introduced one of the earliest cultural models, laying the groundwork for subsequent models. They proposed a theory of culture, rooted in value orientations, which posited that common human groups face a finite set of problems with limited solutions. They contended that values within societies form a dominant value system. Utilizing anthropological principles, they identified five value orientations, later testing four of them in five subcultures of the American Southwest, including two Native American groups. The study of cultural differences in organization and management has been both facilitated and hindered by the plethora of conflicting national culture models. These models serve as valuable tools for cross-national comparisons of management processes, HRM

policies, and business strategies. Some models even offer quantifiable measures, numerical indicators for various countries, widely used in cross-cultural research (Nardon and Steers, 2009).

Currently, six prominent models of national cultures are extensively referenced and applied in organizational research. These encompass frameworks introduced by Kluckhohn and Strodtbeck, Hofstede, Hall, Trompenaars, Schwartz, and House with his GLOBE associates. Each model sheds light on distinct facets of societal beliefs, norms, and values. Consequently, achieving consensus among these models is considered highly challenging. Here is a condensed overview of one dimension of Hofstede's model, focusing on Uncertainty Avoidance (Hills, 2002). Geert Hofstede, a Dutch management academic (1980), introduced the most widely embraced cultural model in organizational studies. Drawing from a multinational employee survey, his model posits that cultural distinctions arise from varying societal values, with some cultures valuing equality while others prioritize hierarchy. Additionally, attitudes toward certainty or ambiguity influence how individuals handle unforeseen situations. Hofstede argues that these value orientations provide valuable insights into organizational behaviours across cultures. Initially, he delineated four dimensions to differentiate cultures, later expanding to five dimensions with Michael Bond in 1991 (Nardon and Steers, 2009).

RESEARCH FINDINGS: HYPOTHESES TESTING AND ANALYSIS

The Relationship between Perceived Usefulness and Behavioural Intention

Perceived usefulness is one of the fundamental antecedent factors of technology usage and it is one of the important predictors of users' intentions (Tarhini, *et al.*, 2019). Many researchers extensively investigated the impact of perceived usefulness on the Behavioural intention to use different technologies and services (Davis, *et al.*, 1989; Faqih (2020). These studies reported a strong positive relationship between perceived usefulness and Behavioural intention to use various technologies and services. In addition, previous studies showed that perceived usefulness positively influences Behavioural intention to use (AL-Nawafleh, *et al.*, 2019). The study by Zubir and Latip, (2022) found that PU has a direct positive relationship with Behavioural intention to use e-government services, and PU is the strongest predictor of Behavioural intention to use e-

government services. Tahar, *et al.*, (2020) found that perceived usefulness does not affect the use of e-filing. Previous studies indicate that PU is positively associated with intention in the context of e-filing service providers, and application systems.

Many studies in information systems have provided evidence of the significant effect of PU on usage intention (Suleman, and Zuniarti, 2019). As Ali and Anwar (2021), 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 in informative and beneficial content. Based on the above, the following hypothesis was developed:

H1: Perceived Usefulness Positively Influences Behaviour Intention to Use E-Government Services.

The Relationship between 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). Numerous research endeavours have consistently shown that perceived ease of use (PEOU) significantly influences the intention to use, 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 intention to use (AL-Nawafleh, *et al.*, 2019). Moreover, a positive relationship was found between perceived ease of use and Behavioural intention to use, which was emphasized through different contexts and technological applications (Ali and Anwar, 2021; Masimba and Zishiri, 2021; Tahar, *et al.*, 2020;

Zubir and Latip, 2022). Based on the above, the following hypothesis was developed:

H2: Perceived Ease of Use Positively Influences Behaviour Intention to Use

The Relationship between Perceived Usefulness and Behaviour Intention to Use E-Government Services with Uncertainty Avoidance as Moderator Variable

Citizens collectively contribute to the formation of a country's culture through their values, beliefs, perceptions, expectations, assumptions, and behaviours. Geert Hofstede's cultural dimension theory demonstrates how societal cultures influence the values of individuals and the connections between these values and behaviour, utilizing a structure derived from factor analysis. This theory has been widely employed in IT/IS research to explore how culture influences the adoption of e-government systems (Wallace, 1995; Hofstede 2001). Given this significant influence of culture on people's thoughts, it would be reasonable to assume that culture can influence how people perceive technology (Huang, *et al.*, 2019). To this end, the concept of culture and technology appropriateness is applied to the Jordanian e-government provided to citizens and the cultural characteristics of the user (Riyadh, *et al.*, 2019).

Some scholars such as McSweeney (2002) have asserted that Hofstede's cultural dimensions are limited to testing different cultures because of their questionable reliability and validity; However, recent studies have indicated that Hofstede's cultural dimensions are valid and useful in exploring the influence of culture on an individual's acceptance of technology (Tarhini, *et al.*, 2017; Teo and Huang 2019). The original Hofstede's framework consists of five main dimensions: individualism-collectivism, uncertainty avoidance, power distance, masculinity-femininity, and Long-Term Orientation. All of these dimensions have been majorly linked to the adoption of new technology. Moreover, uncertainty avoidance dimensions are more influential and more impactful in IT adoption studies than the other cultural dimensions. (Al-Okaily, *et al.*, 2020). However, uncertainty avoidance dimensions are more influential and more impactful in IT adoption studies than the other cultural dimensions. (Huang, *et al.*, 2019). Hofstede (1980) defines Uncertainty Avoidance (UA) as the capacity to tolerate ambiguous and uncertain situations. High UA individuals

experience more stress and anxiety in uncertain scenarios compared to low UA individuals (Nevala, 2023). Some scholars propose a direct link between UA and technology adoption, suggesting that cultures with high UA may resist technological changes (Zakour, 2004).

It's theorized that UA also moderates various relationships within the Technology Acceptance Model (TAM). In education, Sánchez-Franco, *et al.*, (2009) anticipate UA's moderate impact on relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioural Intention (BI), especially in resolving unclear situations. Almaiah, *et al.*, (2022) confirm UA's positive influence on Perceived Ease of Use. UA's efficiency aligns with previous studies, indicating its significance in reducing users' perception of technology risk. Yang and Wibowo (2020) found that UA moderators positively affect the intention to use e-government. McCoy, *et al.*, (2007) discovered significant relationships between PU, PEOU, and BI in high UA settings, supporting the moderate effect of UA. However, McCoy, *et al.*, (2005) failed to identify significant differences between high and low UA samples. Tarhini, *et al.*, (2017) investigated the impact of individual-level culture, including UA, on e-learning tools, finding UA's modification of the relationship between PU and BI but not between PEOU and BI. Faqih, (2020) found uncertainty avoidance cultural values have little statistical importance on the relationship linking PU with BI to adopt e-learning technologies. Based on the above, the following hypothesis was developed:

H3: Uncertainty Avoidance Moderates the Relationship Between Perceived Usefulness and Behaviour Intention to Use E-Government Services.

The Relationship between Perceived Ease of Use and Behaviour Intention to Use E-Government Services with Uncertainty Avoidance as Moderator Variable

A nation's culture is collectively shaped by its citizens' values, beliefs, perceptions, expectations, assumptions, and behaviours. Geert Hofstede's cultural dimension theory highlights how societal cultures influence individual values and behaviours through a factor analysis framework. This theory is extensively used in IT/IS research to explore how culture affects e-government system adoption (Wallace, 1995; Hofstede, 2001). Given the significant influence of culture on people's thoughts, it is reasonable to assume that culture

also impacts how people perceive technology (Huang, et al., 2019). For example, the concept of cultural and technological appropriateness has been applied to the Jordanian e-government and its users' cultural traits (Riyadh, et al., 2019). Although some scholars like McSweeney (2002) question the reliability and validity of Hofstede's cultural dimensions, recent studies affirm their usefulness in understanding how culture affects technology acceptance (Tarhini, et al., 2017; Teo and Huang, 2019). Hofstede's framework includes five key dimensions, all of which are significantly linked to technology adoption. Among these, uncertainty avoidance (UA) has a significant impact on technology adoption studies (Al-Okaily, et al., 2020; Huang, et al., 2019).

Hofstede (1980) defines UA as the capacity to handle ambiguous and uncertain situations. Individuals with high UA experience more stress and anxiety in uncertain scenarios compared to those with low UA (Nevala, 2023). Some researchers suggest a direct connection between UA and technology adoption, proposing that cultures with high UA may resist technological changes (Zakour, 2004). UA is also believed to moderate various relationships within the Technology Acceptance Model (TAM). In education, UA is anticipated to moderate the effects of Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Behavioural Intention (BI) in unclear situations (Sánchez-Franco, et al., 2009). Almaiah, et al., (2022) confirm UA's positive influence on PEOU, consistent with studies showing UA reduces perceived technology risk. Yang and Wibowo (2020) find UA positively affects the intention to use e-government. McCoy, et al., (2007) found significant relationships between PU, PEOU, and BI in high UA settings, supporting UA's moderating role, although McCoy, et al., (2005) found no significant differences between high and low UA samples.

Tarhini, et al., (2017) examine individual-level culture, including UA, in e-learning, finding UA moderates the PU-BI relationship but not the PEOU-BI relationship. Faqih (2020) reports minimal statistical significance of UA on the PU-BI link in e-learning technology adoption. Based on the above, the following hypothesis was developed:

H4: Uncertainty Avoidance Moderates the Relationship Between Perceived Ease of Use and Behaviour Intention to Use E-Government Services.

PROPOSED FRAMEWORK

The study adopts a conceptual framework based on the Technology Acceptance Model (TAM) developed by Davis in 1989, which effectively explicates the factors influencing the adoption of e-government services. TAM posits that perceived usefulness (PU) and perceived ease of use (PEOU) are pivotal determinants that directly affect an individual's Behavioural intention to use a technology. Perceived usefulness is defined as the user's belief that employing a particular technology will enhance their performance, while perceived ease of use refers to the degree to which a person believes that using a specific technology will be effort-free (Davis, 1989). These core concepts are critical in understanding how citizens in Jordan assess and decide to engage with e-government services, making them central to this study's investigation of technology adoption in a governmental context. Additionally, this study examines the moderating role of uncertainty avoidance, a cultural dimension that could affect the relationship between these perceptions and Behavioural intention, particularly in a Jordanian context where cultural factors significantly influence technology acceptance (Hofstede, 1980). Based on the discussion above: Below is the research framework for this study.

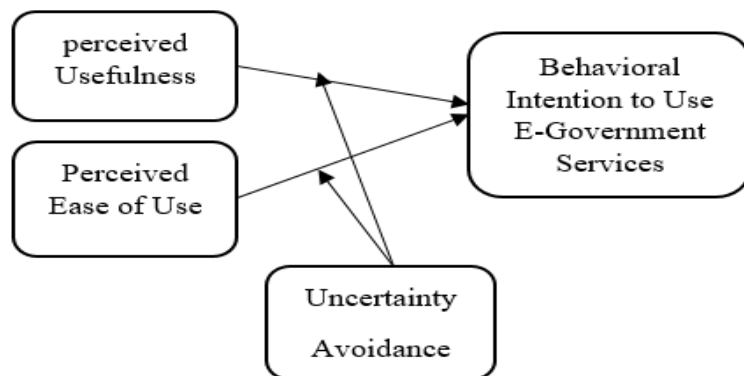


Figure 1: Conceptual Model

CONCLUSION

Determinants of Institutional Innovation Usage among University Students

With the tremendous development in the field of information technology, e-government has had great luck in this development, as countries around the world have developed their electronic services to provide well-being for their citizens, and to increase investments and commercial transactions in all economic fields of the country.

With the beginning of the emergence of e-government, several theories emerged, the most important of which was the TAM theory developed by Fred Davis, which aims to explain how individuals adopt and use technology, and it serves as a theoretical framework for understanding the relationships between perceived benefit, perceived ease of use, and users' attitudes and behaviours toward technology. With the increasing interest in e-government, the bulk of academics are focusing on studying the factors affecting the adoption and actual use by citizens of these electronic services.

Previous studies have shown that there is a positive relationship between perceived usefulness and Behavioural intention, as well as between ease of use and Behavioural intention to adopt and use e-government services (Ali and Anwar, 2021) and the strong influence of cultural factors on adopting this technology (Masimba and Zishiri, 2021).

The study contains some variables categorized based on the main objective of the current research, which further restricts our research list. This study is only theoretical research, not empirical research, and empirical application will be necessary to validate the framework.

THEORETICAL CONTRIBUTIONS

This study contributes significantly to academic and practical fields by deepening the understanding of factors influencing the adoption of E-Government services in Jordan. Built upon the Technology Acceptance Model (TAM), the research expands this framework to encompass uncertainty avoidance, creating a comprehensive analytical tool for examining E-Government adoption within specific cultural contexts: Extension of TAM: Integrating uncertainty avoidance enhances the understanding of factors shaping citizens' Behavioural intentions, crucial for E-Government adoption influenced by cultural dynamics. Cultural Context: Addressing a gap in the literature, the study uses uncertainty avoidance

as a moderating variable, exploring how cultural differences affect the acceptance and usage of E-Government services in Jordan. Behavioural Intention: The research delves into the mediating role of attitudes towards E-Government services, offering insights into the relationships between perceived usefulness, ease of use, trust, and Behavioural intentions within the Jordanian context. Policy Recommendations: Practical implications include tailored policy strategies to improve E-Government adoption rates, focusing on enhancing trust through security measures and transparency, and simplifying user interfaces. Strategic Planning: Insights aid in developing targeted strategies that address Jordanian citizens' specific needs, utilizing uncertainty avoidance to mitigate barriers and promote E-Government benefits. Enhancing User Experience: By emphasizing factors like perceived usefulness and ease of use, service providers can enhance user satisfaction and foster sustained engagement with E-Government initiatives. This study offers a robust framework for understanding and enhancing E-Government adoption, expanding theoretical models with critical variables and actionable insights for effective implementation in developing countries.

PRACTICAL CONTRIBUTION

This study on a conceptual model for understanding the adoption of E-Government services through perceived usefulness, perceived ease of use, uncertainty avoidance, and Behavioural intention offers practical benefits for enhancing service implementation and utilization:

Enhanced Service Design: By pinpointing key factors like perceived usefulness and ease of use, the study helps in crafting user-friendly E-Government services. This includes making services intuitive and emphasizing their advantages to boost adoption.

Customized Communication: Understanding the influence of uncertainty avoidance allows for tailored communication strategies that address cultural concerns, fostering trust and acceptance of E-Government services.

Support for Policy Decisions: Policymakers can leverage the findings to prioritize investments in user experience and cybersecurity, which are essential for increasing adoption rates.

Continuous Improvement: Feedback mechanisms ensure ongoing enhancement of services based on

user experiences, keeping them relevant and effective. In summary, this research provides actionable insights to improve the design, implementation, and adoption of E-Government services, especially in developing countries.

FUTURE RESEARCH DIRECTIONS

The motivation behind the research study was to examine the relationship between perceived usefulness and ease of use on Behavioural intention to use e-government and the effect of uncertainty avoidance as a moderating factor. The primary goal was to discover the factors affecting the use of e-government. This information can be valuable to decision-makers, such as policymakers to design more effective e-government initiatives and for government agencies to use the insights learned from this study to develop targeted strategies that address the specific needs and interests of citizens, and how cultural differences influence the acceptance and use of e-government services. Moreover, future research endeavors should focus on more comprehensive data to validate and examine the model with attitude toward using electronic services as a mediating variable and add variables such as trust to examine it with perceived usefulness and ease of use on Behavioural intention and relevant moderating variables such as individualism, collectivism, and power distance. Also, future researchers can test some other contextual variables relevant to e-government services such as perceived privacy, perceived security, service quality, user experience, service innovation, service integration, etc.

REFERENCES

1. Abdulkareem, A. K. & Mohd Ramli, R. "Does trust in e-government influence the performance of e-government? An integration of information system success model and public value theory." *Transforming Government: People, Process and Policy*, 16.1 (2022): 1-17.
2. Abu-Faraj, M. A., Masa'deh, R. E. & Alshurideh, M. T. "E-Government implementation: A case study of Jordanian e-Government program." In *The Effect of Information Technology on Business and Marketing Intelligence Systems*, Cham: Springer International Publishing, (2023): 1355-1368.
3. Oluwashina, A. & Olalekan, D. O. "An empirical analysis of an e-government system for economic growth in ECOWAS countries." *e-BANGI Journal*, 21.2 (2024): DOI 10.17576/ebangi.2024.2102.30
4. Afrizal, D. & Wallang, M. "Attitude on intention to use e-government in Indonesia." *Indonesian Journal of Electrical Engineering and Computer Science*, 22.1 (2021): 435-441.
5. Aburishah, K. E., Dahiyat, A. A., Owais, W. O., Al Shanti, A. M. & AlQudah, L. A. "The effect of ownership structure and board structure on accounting conservatism throughout financial reporting: Evidence from Jordanian industrial corporations." *Cogent Business & Management*, 9.1 (2022): 2112819.
6. Alabdallat, M. "E-government services and user interaction." *Journal of Public Administration and Governance*, 10.3 (2020): 45-56.
7. Ahmed, A. S. & Duellman, S. "Accounting conservatism and board of director characteristics: An empirical analysis." *Journal of Accounting and Economics*, 43.2-3 (2007): 411-437.
8. Ali, B. J. & Anwar, G. "Factors influencing the citizens' acceptance of electronic government." *International Journal of Engineering, Business and Management (IJEEM)*, 5.1 (2021): DOI:
9. Al-Kaseasbeh, H. M., Harada, Y. & Saraih, U. N. B. "E-government services assessment from the perspective of citizens' interaction and satisfaction in Jordan: Pilot study." *International Journal of Research & Review*, 6.12 (2019): 50-56.
10. Alkhwalidi, A. F., Al-Qudah, A. A., Al-Hattami, H. M., Al-Okaily, M., Al-Adwan, A. S. & Abu-Salih, B. "Uncertainty avoidance and acceptance of the digital payment systems: A partial least squares-structural equation modeling (PLS-SEM) approach." *Global Knowledge, Memory and Communication* (2023).
<https://www.emerald.com/insight/2514-9342.htm>
11. Almotawkel, N. A. A. & Qureshi, E. A. "Analytical comparison of the performance efficiency of the administrative system of e-government in the Arab countries." (*Details missing for volume, issue, and page numbers*).
12. Almaiah, M. A. & Nasereddin, Y. "Factors influencing the adoption of e-government services among Jordanian citizens." *Electronic Government, An International Journal*, 16.3 (2020): 236-259.

13. Almutairi, A., et al. "E-government adoption and public sector transformation." *International Journal of Public Sector Management*, 33.5 (2020): 567-583
14. AL-Nawafleh, E. A., ALSheikh, G., Abdulllah, A. A. & Tambi, A. M. "Review of the impact of service quality and subjective norms in TAM among telecommunication customers in Jordan." *International Journal of Ethics and Systems*, 35.1 (2019): 148-158.
15. Al-Okaily, M., Lutfi, A., Alsaad, A., Taamneh, A. & Alsyof, A. "The determinants of digital payment systems' acceptance under cultural orientation differences: The case of uncertainty avoidance." *Technology in Society*, 63 (2020): 101367.
16. Alryalat, M., Alryalat, H., Alhamzi, K. & Hewahi, N. "E-government services adoption assessment from the citizen perspective in Jordan." *International Journal of Electronic Government Research (IJEGR)*, 19.1 (2023): 1-17.
17. Alqudah, M. A. & Muradkhanli, L. "E-government in Jordan and studying the extent of the e-government development index according to the United Nations report." *International Journal of Multidisciplinary: Applied Business and Education Research*, 2.4 (2021): 365-375.
18. Al-Refaie, A. & Ramadna, A. M. "Barriers to e-government adoption in Jordanian organizations from users' and employees' perspectives." In *Open Government: Concepts, Methodologies, Tools, and Applications*, IGI Global, (2020): 2190-2210.
19. Anouze, A. L. M. & Alamro, A. S. "Factors affecting intention to use e-banking in Jordan." *International Journal of Bank Marketing*, 38.1 (2019): 86-112.
20. Bosio, E., Hayman, G. & Dubosse, N. "The investment case for e-government procurement: A cost-benefit analysis." *Journal of Benefit-Cost Analysis*, 14.S1 (2023): 81-107.
21. Davis, F. D. "Perceived usefulness, perceived ease of use, and user acceptance of information technology." *MIS Quarterly*, 13.3 (1989): 319-340.
22. Davis, F. D., Bagozzi, R. P. & Warshaw, P. R. "User acceptance of computer technology: A comparison of two theoretical models." *Management Science*, 35.8 (1989): 982-1003.
23. Doran, N. M., Puiu, S., Bădîrcea, R. M., Pirtea, M. G., Doran, M. D., Ciobanu, G. & Mihit, L. D. "E-government development—A key factor in government administration effectiveness in the European Union." *Electronics*, 12.3 (2023): 641.
24. Elisa, A., Sampson, K. & Jones, L. "Exploring the impact of e-government services on economic development: A case study of developing countries." *Journal of Information Technology and Economic Development*, 14.1 (2023): 45-65.
25. ElKhashin, S. A. & Saleeb, N. "Assessing the adoption of e-government using the TAM model: Case of Egypt." *International Journal of Managing Information Technology (IJMIT)*, 12.1 (2020): 1-14.
26. Faqih, K. M. "The influence of perceived usefulness, social influence, internet self-efficacy, and compatibility on users' intentions to adopt e-learning: Investigating the moderating effects of culture." *IJAEDU-International E-Journal of Advances in Education*, 5.15 (2020): 300-320.
27. Fishbein, M. & Ajzen, I. "Belief, attitude, intention, and behavior: An introduction to theory and research." *Philosophy and Rhetoric*, 10.2 (1977): 130-132.
28. Fan, J. P. H. & Wong, T. J. "Corporate ownership structure and the informativeness of accounting earnings in East Asia." *Journal of Accounting and Economics*, 33.3 (2002): 401-425.
29. Gharaibeh, M. K. & Gharaibeh, N. K. "An empirical study on factors influencing the intention to use mobile learning." *Advances in Science, Technology, and Engineering Systems Journal*, 5.5 (2020): 1261-1265.
30. Hariguna, T., Rahardja, U. & Sarmini. "The role of e-government ambidexterity as the impact of current technology and public value: An empirical study." *Informatics*, 9.3 (2022): 67.
31. Hills, M. D. "Kluckhohn and Strodtbeck's values orientation theory." *Online Readings in Psychology and Culture*, 4.4 (2002): 3.
32. Hofstede, G. "Culture and organizations." *International Studies of Management & Organization*, 10.4 (1980): 15-41.
33. Huang, F., Teo, T., Sánchez-Prieto, J. C., García-Peñalvo, F. J. & Olmos-Migueláñez, S. "Cultural values and technology adoption: A model comparison with university teachers from China and Spain." *Computers & Education*, 133 (2019): 69-81.
34. Ismail, I., Fathonih, A., Prabowo, H., Hartati, S. & Redjeki, F. "Transparency and corruption: Does e-government effectively

- combat corruption?" *International Journal of Psychosocial Rehabilitation*, 24.4 (2020): 5396-5404.
35. Kasasbeh, H. A., Alzoubi, M., Jaradat, H. M. & Alsmadi, A. A. "The impact of e-government and size on corruption: An empirical study on Jordan." *Cutting-Edge Business Technologies in the Big Data Era: Proceedings of the 18th SICB "Sustainability and Cutting-Edge Business Technologies"*, 2 (2023): 108.
 36. Kaur, J. "User acceptance of e-government services in Punjab." *Journal of Electronic Government Studies and Best Practices*, 11.1 (2020): 22-35.
 37. Kumar, S., Baishya, K., Sadarangani, P. H. & Samalia, H. V. "Cultural influence on e-government development." *Electronic Journal of Information Systems Evaluation*, 23.1 (2020): 17-33. DOI:
 38. Kalu, E. & Masri, R. "Challenges of e-government implementation in the Nigerian public service." *International Transaction Journal of Engineering, Management & Applied Sciences & Technologies*, 10.1 (2019): 13-25.
 39. Kilani, Y. M. M. "The moderating role of innovation valence between adoption and actual use of e-government services: An extension of DeLone and McLean information success model." *International Journal of Business Innovation and Research*, 26.3 (2021): 273-295.
 40. Mailizar, M., Almanthari, A. & Maulina, S. "Examining teachers' behavioral intention to use e-learning in teaching mathematics: An extended TAM model." *Contemporary Educational Technology*, 13.2 (2021): ep298.
 41. Masimba, F. & Zishiri, C. "Adoption of e-government in developing countries: A case of Zimbabwe." *Indiana Journal of Humanities and Social Sciences*, 2.11 (2021): 29-37.
 42. McCoy, S., Galletta, D. F. & King, W. R. "Integrating national culture into IS research: The need for current individual level measures." *Communications of the Association for Information Systems*, 15.1 (2005): 12.
 43. McCoy, S., Galletta, D. F. & King, W. R. "Applying TAM across cultures: The need for caution." *European Journal of Information Systems*, 16.1 (2007): 81-90.
 44. McSweeney, B. "Hofstede's model of national cultural differences and their consequences: A triumph of faith—a failure of analysis." *Human Relations*, 55.1 (2002): 89-118.
 45. Mahlangu, G. & Ruhode, E. "Factors enhancing e-government service European higher education." *Computers & Education*, 52.3 (2021): 588-598.
 46. Mustaf, A., Ibrahim, O. & Mohammed, F. "E-government adoption: A systematic review in the context of developing nations." *International Journal of Innovation: IJI Journal*, 8.1 (2020): 59-76.
 47. Nardon, L. & Steers, R. M. "The culture theory jungle: Divergence and convergence in models of national culture." *Cambridge Handbook of Culture, Organizations, and Work* (2009): 3-22. <http://26202235.s21i.faiusr.com/61/ABUIAB/A9GAAgmauq-wUox9e89QY.pdf>
 48. Nevala, E. "Just let me buy my thing! A survey study on consumers' perceptions of social influence in e-commerce." (2023).
 49. Nofal, M. I., Al-Adwan, A. S., Yaseen, H. & Alsheikh, G. A. A. "Factors for extending e-government adoption in Jordan." *Periodicals of Engineering and Natural Sciences*, 9.2 (2021): 471-490.
 50. Othman, M. H., Razali, R. & Nasrudin, M. F. "Key factors for e-government towards sustainable development goals." *International Journal of Advanced Science and Technology*, 29.6 (2020): 2864-2876. <https://www.researchgate.net/publication/341509023>
 51. Riyadh, H. A., Sukoharsono, E. G. & Alfaiza, S. A. "The impact of corporate social responsibility disclosure and board characteristics on corporate performance." *Cogent Business & Management*, 6.1 (2019): 1647917.
 52. Sánchez-Franco, M. J., Martínez-López, F. J. & Martín-Velicia, F. A. "Exploring the impact of individualism and uncertainty avoidance in web-based electronic learning: An empirical analysis." (*Details incomplete — page numbers and journal missing*).
 53. Suleman, D. & Zuniarti, I. "Consumer decisions toward fashion product shopping in Indonesia: The effects of attitude, perception of ease of use, usefulness, and trust." *Management Dynamics in the Knowledge Economy*, 7.2 (2019): 133-146.
 54. Tahar, A., Riyadh, H. A., Sofyani, H. & Purnomo, W. E. "Perceived ease of use, perceived usefulness, perceived security, and intention to use e-filing: The role of technology readiness." *The Journal of Asian*

- Finance, Economics and Business*, 7.9 (2020): 537-547.
55. Tarhini, A., Hone, K., Liu, X. & Tarhini, T. "Examining the moderating effect of individual-level cultural values on users' acceptance of e-learning in developing countries: A structural equation modeling of an extended technology acceptance model." *Interactive Learning Environments*, 25.3 (2017): 306-328.
56. Tarhini, A., Alalwan, A. A., Shammout, A. B. & Al-Badi, A. "An analysis of the factors affecting mobile commerce adoption in developing countries: Towards an integrated model." *Review of International Business and Strategy*, 29.3 (2019): 157-179.
57. Teo, T. & Huang, F. "Investigating the influence of individually espoused cultural values on teachers' intentions to use educational technologies in Chinese universities." *Interactive Learning Environments*, 27.5-6 (2019): 813-829.
58. Venkatesh, V. & Bala, H. "Technology acceptance model 3 and a research agenda on interventions." *Decision Sciences*, 39.2 (2008): 273-315.
59. Zaineldeen, S., Hongbo, L., Koffi, A. L. & Hassan, B. M. A. "Technology acceptance model concepts, contribution, limitation, and adoption in education." *Universal Journal of Educational Research*, 8.11 (2020): 5061-5071.
60. Zakour, A. B. "Cultural differences and information technology acceptance." *Proceedings of the Southern Association for Information Systems Conference* (2004). <https://aisel.aisnet.org/sais2004/26>
61. Zubir, M. H. H. & Latip, M. S. A. "Behavioural intention to use e-government services in Malaysia: Extended TAM model to examine the effect of perceived security." *Journal of Administrative Science*, 19.2 (2022): 119-139. <http://jas@uitm.edu.my>

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:

Abou Elnaja, M.I., Afthanorhan, A. and Abdullah, H. "Adoption of E-Government Services in Jordan: Exploring the Interplay of Perceived Usefulness, Ease of Use, Uncertainty Avoidance and Cultural Dynamics." *Sarcouncil Journal of Economics and Business Management* 4.1 (2025): pp 1-11.