INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 08 Issue 03 March 2025

DOI: 10.47191/ijmra/v8-i03-64, Impact Factor: 8.266

Page No. 1438-1448

Technophobia and Intention to Use E-Government in Vietnam: The Mediating Role of Perceived Ease of Use and Perceived Risk

Thu Thuy Nguyen[1], Tran Minh Mai[2], Thi Phuong Anh Tran[3], Tra My Nguyen[4], Diem Quynh Pham[5], Vu Phuong Linh Le[6]

[1,2,3,4,5,6] National Economics University, Viet Nam

ABSTRACT: The study proposes a research model with two mediators, Perceived Ease of Use and Perceived Risk, to examine the impact of Technophobia on the Intention to Use e-Government of Vietnamese people. Through data analysis of 265 research samples collected from people nationwide, the research results found that Technophobia has a positive relationship with Perceived Risk. In addition, a direct relationship between Technophobia and Perceived Ease of Use and Intention to Use e-Government was not found. However, an indirect relationship between Technophobia and Intention to Use e-Government was demonstrated through the mediator Perceived Risk. Based on the research results, the authors propose to state management agencies solutions to reduce people's fear of technology and encourage people to use e-Government.

KEYWORDS: E-Government, Perceived Ease of Use, Perceived Risk, Technophobia, Intention Behavior

I. INTRODUCTION

Over the past two decades, governments worldwide have integrated information and communication technology (ICT) into national development strategies as a key policy initiative (Smith, 2008). E-Government is broadly defined as the provision of government information and services online (Wang et al., 2020). The E-Government initiative focuses on reimagining government operations to enhance interaction quality with individuals and businesses, achieved through improved connectivity, increased accessibility, superior service delivery, and refined processes and systems.

In this context, developing countries have made significant efforts to bridge the digital divide and harness the potential of E-Government. However, E-Government implementation in developing nations continues to face numerous challenges. While factors such as lack of readiness, low awareness, or security concerns have been identified as barriers to E-Government adoption (Hooda Nandal & Singla, 2019; Sabani, 2021), technophobia remains a particularly critical obstacle in developing countries, where substantial disparities in IT proficiency persist (Sabani et al., 2023).

Although the role of technophobia has been significantly emphasized in prior research on E-Government (Muneer et al., 2024), there is a limited body of literature examining the relationship between technophobia and the intention to use E-Government services. Furthermore, various theoretical models have been employed in E-Government research, including the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), the Technology Acceptance Model (TAM) (Davis, 1989), and the Theory of Planned Behavior (TPB) (Ajzen, 1991). However, given societal advancements, existing literature has yet to fully capture the complexities of citizen adoption of E-Government services. Several studies have emphasized the need for a unified and context-specific model to better analyze E-Government adoption (Chan et al., 2011; Coursey & Norris, 2008; Dwivedi et al., 2017). Additionally, a notable gap in existing research on E-Government adoption in Vietnam is its predominant focus on technological aspects of the system (Nguyen et al., 2024), while overlooking psychological dimensions from the citizens' perspective, such as their concerns and anxieties regarding E-Government usage.

Therefore, this study integrates "Technophobia" into the TAM framework in the context of E-Government services, considering it a stress-inducing factor that inhibits users' intention to adopt E-Government services. Accordingly, this study examines the relationship between "Technophobia" and the "Intention to use" E-Government services among citizens.

Moreover, previous research on fear-driven behavior has reported mixed findings regarding the motivational role of fear arousal and compliance with recommended behaviors (Janis, 1967). Scholars have suggested that the relationship between these constructs can be better understood by incorporating a mediating variable (Hair et al., 2020). Perceived ease of use is a key

determinant in E-Government adoption (Kurfalı et al., 2017; Lallmahomed et al., 2017; Park et al., 2007). The proposed model in this study incorporates "Perceived Ease of Use" and "Perceived Risk" as mediating factors to explain the impact of "Technophobia" on the "Intention to use" E-Government services. This research aims to provide critical insights by presenting empirical evidence illustrating the indirect relationship between "Technophobia" and the "Intention to use" E-Government services through the integration of "Perceived Risk" and "Perceived Ease of Use."

While research on E-Government adoption has primarily focused on developed countries (Ganapati et al., 2012), this study examines the Vietnamese context, a developing nation. Vietnam is currently in the process of building its E-Government system and undergoing a digital transformation. However, Vietnamese citizens generally lack digital literacy (Ministry of Information and Communications, 2021). Only approximately 30% of the population regularly utilizes online public services, in stark contrast to adoption rates exceeding 90% in countries such as Denmark and South Korea (Ministry of Information and Communications, 2021). This disparity highlights the challenges Vietnam faces in implementing and promoting E-Government adoption.

This study aims to identify the relationship between "Technophobia" and the "Intention to use" E-Government services among citizens, considering the mediating roles of "Perceived Ease of Use" and "Perceived Risk" in the Vietnamese context. The findings will provide deeper insights into the challenges Vietnamese citizens face in accessing and utilizing E-Government services amid rapid digital transformation. Based on these findings, the study will propose solutions to help authorities enhance service quality, improve user experience, and promote E-Government adoption, contributing to increased administrative efficiency and public sector digital transformation in Vietnam.

The subsequent sections will present the theoretical framework, hypotheses, and research model. Analytical tools will be employed to evaluate the hypotheses and models. The results will be analyzed and discussed to determine practical implications, leading to recommendations and proposals. Finally, the study's limitations and directions for future research will also be addressed.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. Theoretical Framework on E-Government and Intention to Use E-Government Services

When citizens are concerned about security issues, they tend to perceive access to and use of services as more difficult, as they must exert greater effort to ensure the safety of their personal information and transactions. The study by Alawneh et al. (2013) in the field of E-Government in Jordan also demonstrated that perceived risk reduces the perceived ease of use of online public services. Similarly, Kumar et al. (2007) found in their study on E-Government in India that concerns about security and privacy negatively affect the perceived ease of use of online services. Likewise, Colesca (2009) emphasized that perceived risk is a crucial factor influencing users' evaluation of ease of use in the context of E-Government in Romania. In this study, users' concerns about the security and reliability of online public services diminish their trust and make them perceive service usage as more complex. Therefore, the research team proposes the following hypothesis:

H1: Perceived Risk negatively affects the Perceived Ease of Use of E-Government services.

Perceived risk implies an individual's belief in the potential loss associated with pursuing a particular outcome (Warkentin et al., 2002). In the E-Government context, Carter and Bélanger (2005) found that concerns about privacy and data security are primary barriers preventing citizens from using government online services. Warkentin et al. (2002) further noted that perceived security risk not only reduces trust in E-Government systems but also significantly lowers the intention to use these services. Several studies have found that perceived risk affects individuals' adoption of E-Government services (Lian et al., 2015). Therefore, the research team proposes the following hypothesis:

H2: Perceived Risk negatively affects the intention to use E-Government services.

In adopting and using new technology, perceived ease of use plays a crucial role as it directly influences how users approach and integrate technology into their daily lives or work environments (Dwivedi et al., 2017; Gefen & Straub, 2000). Perceived ease of use is defined as the extent to which an individual believes that using a particular system will require minimal effort (Davis, 1989). Based on the Technology Acceptance Model (TAM), several researchers have emphasized the importance of perceived ease of use as a determinant of citizens' acceptance of E-Government services, both directly and indirectly (Carter & Bélanger, 2005). The findings of these studies confirm that developing user-friendly E-Government websites will positively influence citizens' intention to use such services. This has also been demonstrated in previous studies (Alalwan et al., 2017; Muthu et al., 2016). Therefore, the research team proposes the following hypothesis:

H3: Perceived Ease of Use positively affects the intention to use E-Government services.

B. Technophobia

Technophobia is a critical psychological factor to consider in research related to technology and electronic consumer behavior. This factor may stem from a lack of confidence in using technology or concerns about not fully understanding new technologies, leading to stress and anxiety when engaging with them. A similar concept is "computer anxiety," defined as an individual's apprehension or fear when using computers (Simonson et al., 1987; Venkatesh, 2000).

In the context of this study, the authors incorporate the variable "technophobia," recognizing its relevance in examining Vietnamese citizens' behavior in accessing and using E-Government services. The theoretical basis for this hypothesis is drawn from studies on anxiety (Davis, 1989; Featherman & Pavlou, 2003; Venkatesh et al., 2000), which suggest that fear can lead to negative cognitive responses, particularly in forming expectations about technology access.

Although technophobia typically results in avoidance behavior, in the case of essential public services such as E-Government, users may be motivated to learn how to use them despite their discomfort with technology. Citizens are encouraged to use E-Government services not only to access public services but also to avoid feeling left behind in the digital age. According to Venkatesh et al. (2000), technophobia not only negatively affects behavioral intention to use technology but also influences other perceptions related to technology. Technophobia can reduce behavioral intention to use technology (Venkatesh et al., 2003), especially in the E-Government context, where users often tend to avoid services when faced with difficulties (Bélanger & Carter, 2012). Moreover, Davis (1989) pointed out that anxiety decreases perceived ease of use, as users feel challenged and incapable of efficiently accessing technology. Furthermore, Featherman and Pavlou (2003) found that technological concerns increase perceived risk, making users feel insecure and uneasy when using services.

Based on this theoretical foundation, the authors propose the following hypotheses:

H4: Technophobia negatively affects the intention to use E-Government services.

H5: Technophobia negatively affects the Perceived Ease of Use of E-Government services.

H6: Technophobia positively affects the Perceived Risk of E-Government services.

C. Mediating Role of Perceived Ease of Use and Perceived Risk

Recognizing the limited number of studies that have directly examined the impact of technophobia on the intention to use E-Government services, this study aims to explore the relationship between these two concepts. Furthermore, researchers often argue that the relationship between these concepts can be better understood by incorporating mediating variables (Hair et al., 2020). Therefore, the research team decided to use two mediating variables, perceived ease of use and perceived risk, to further explain the relationship between technophobia and intention to use E-Government services.

According to Davis (1989), "Perceived Ease of Use" is defined as "the extent to which an individual believes that using a specific system will not require much effort." Based on the TAM model, many studies have highlighted the significant role of perceived ease of use in driving technology adoption intentions, both directly and indirectly (Alalwan et al., 2017; Carter & Bélanger, 2005). It has also been considered a mediating variable in measuring the impact on technology adoption intention in research by Chen & Aklikokou (2020). Thus, the impact of other factors can be explained through the mediating variable "Perceived Ease of Use."

"Perceived Risk" refers to an individual's belief in the likelihood of experiencing a loss when pursuing a specific outcome (Warkentin et al., 2002), which may influence their intention to use a particular product or service. In technology adoption research, perceived risk is considered a factor influencing technology acceptance and usage (Lian, 2015; Roy et al., 2015; Xie et al., 2017). Alawneh et al. (2013) found that perceived risk reduces the perceived ease of use of online services in the E-Government domain. Reddick & Roy (2013) provided evidence that concerns over technical errors and data loss reduce the perceived ease of use of services.

Based on these foundations, the research team proposes the following hypotheses:

H7: Perceived Risk mediates the relationship between Technophobia and (a) Perceived Ease of Use, (b) Intention to use E-Government services.

H8: Perceived Ease of Use mediates the relationship between (a) Technophobia and (b) Perceived Risk affecting intention to use E-Government services.

H9: Perceived Risk and perceived ease of use jointly mediate the effect of Technophobia on the Intention to use E-Government services.

III. METHODOLOGY

The study employs a quota sampling method, encompassing all citizens regardless of age or educational background, due to the broad accessibility of e-Government services to the public. The research covers a wide geographical scope, including both rural and urban areas. Data collection was conducted through both online (via Google Forms distributed over the internet) and offline methods (using paper-based questionnaires).

Accordingly, the minimum sample size must be at least five times the total number of observed variables. This sample size is considered appropriate for studies utilizing factor analysis (Comrey & Lee, 2013). With 15 observed variables, the minimum required sample size is 75. However, to ensure high-quality data analysis and processing, the study aimed to obtain 265 samples to enhance the objectivity of the results.

The data collection process lasted three months, from July 2024 to October 2024. A total of 275 responses were gathered through both online and offline methods. After assessing the validity of the responses, 10 were deemed invalid and excluded, resulting in 265 valid responses (accounting for 96.37%). Table 1 presents the demographic characteristics of the study sample.

Table 1. Demographic characteristics

Indicators		Frequency	Ratio
Gender	Male	124	46.8%
	Female	141	53.2%
Age	Under 20 years old	47	17.7%
	From 20 to 35 years old	66	24.9%
	From 35 to 50 years old	79	29.8%
	Over 50 years old	73	27.6%
Occupation	Housewife	46	17.3%
	Civil servant/Officer	84	31.7%
	Worker	72	27.2%
	Freelance	40	15.1%
	Other	23	8.7%
Residence	Urban	150	56.6%
	Rural	115	43.4%
Have you ever used e-Government services?	Used	159	60%
	Not used	106	40%

N = 265

Source: *Research team results*

The measurement scales in this study were developed based on previous research, with modifications by the authors to enhance clarity, relevance, and accessibility for respondents (Table 2). The Perceived Ease of Use (PEU) scale consists of four observed variables adapted from the study by Chen & Aklikokou (2020). The Perceived Risk (PR) scale comprises five observed variables derived from the research of Mensah et al. (2020). The Behavioral Intention (BI) scale was constructed based on two previous studies: Kaushik & Mishra (2019) and Pérez Chacón et al. (2021). The Technolophobia (TA) scale includes three observed variables developed based on the studies of Kaushik & Mishra (2019) and Malik et al. (2016). All items were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

IV. RESULT

A. Reliability Measurement

1) Cronbach's Alpha Coefficient

Table 2 presents the internal reliability of the factors using Cronbach's Alpha coefficient. The results indicate that the Cronbach's Alpha values for the variables TA, PR, PEU, and BI are 0.915, 0.890, 0.920, and 0.869, respectively. These values confirm that all variables exhibit strong reliability. Furthermore, no observed variables were eliminated from any factor scale, allowing for the subsequent Exploratory Factor Analysis (EFA) to examine the relationships among variables within each factor group.

2) Exploratory Factor Analysis (EFA)

Table 2 displays the results of the EFA. The findings reveal that the Kaiser-Meyer-Olkin (KMO) coefficient is 0.854, which falls within the acceptable range of [0.5; 1], confirming the suitability of factor analysis. Additionally, Bartlett's Test yields a significance value (sig) of 0.00 < 0.05, demonstrating that the observed variables are correlated within the factors. Next, the factor loadings of the variables are examined. The factor loadings for all variables exceed 0.5 (Table 2), which satisfies the threshold for high-quality observed variables.

Table 2. Descriptive Characteristics, Cronbach's Alpha, and Factor Loadings of Observed Variables

	Indicator	Cronbach's Alpha	Mean	Factor Loading
PEU	**Perceived Ease of Use**	**.920**		
PEU1	Learning to use e-government services is easy.		3.35	.810
PEU2	E-government services are easy to use.		3.37	.909
PEU3	The way to use e-government services is clear and easy to understand.		3.29	.923
PEU4	The use of e-government services is flexible.		3.28	.780
PR	**Perceived Risk**	**.890**		
PR1	Using e-government services may result in my personal information being stolen.		3.06	.660
PR2	I feel psychologically uncomfortable using e-government services.		2.73	.745
PR3	I think that using e-government services is unsafe due to privacy and security concerns.		2.77	.900
PR4	I believe that there may be negative consequences from using e-government services.		2.76	.885
PR5	Overall, I think that there may be a degree of risk associated with using e-government services.		3.01	.726
TA	**Technophobia**	**.915**		
TA1	I avoid technology because it is unfamiliar to me.		3.36	.853
TA2	I do not keep up with important technological advances.		3.34	.930
TA3	I am reluctant to use technology because I am afraid of making irreversible mistakes.		3.29	.841
BI	**Intention to Use**	**.869**		
BI1	I intend to use e-Government services regularly.		3.43	.719
BI2	I am likely to use e-Government services in the future.		3.71	.823
BI3	I am interested in using e-Government services.		3.62	.906

Source: *Research team results*

3) Confirmatory Factor Analysis (CFA)

The CFA results indicate the following model fit indices: CMIN/df = 2.020 < 5; CFI = 0.968 > 0.95; GFI = 0.923 > 0.9; TLI = 0.960 > 0.9; RMSEA = 0.062 < 0.08 (See Figure 2). These values confirm that the model exhibits a good fit (Hair et al., 2020).

Table 3 presents the composite reliability (CR), discriminant validity indices, and correlation matrix. The findings indicate that both the composite reliability (CR) and average variance extracted (AVE) exceed the recommended thresholds of 0.7 and 0.5, respectively (Hu & Bentler, 1999). Thus, the constructs' internal consistency reliability and discriminant validity in this study are confirmed.

Table 3. Composite Reliability and Correlation Matrix

	CR	AVE	CBA	PR	PEU	BI
TA	0.915	0.783	0.885			
PR	0.892	0.624	0.528	0.797		

PEU	0.921	0.746	-0.082	-0.205	0.864	
BI	0.871	0.693	-0.081	-0.273	0.593	0.837

Source: *Research team results*

B. Hypothesis Testing

The results of the Structural Equation Model (SEM) indicate that the model is a good fit. The model fit indices are as follows: CMIN/df = 2.020 < 5; CFI = 0.968 > 0.95; GFI = 0.923 > 0.9; TLI = 0.960 > 0.9; RMSEA = 0.062 < 0.08 (Schuberth et al., 2020) (see Figure 1).

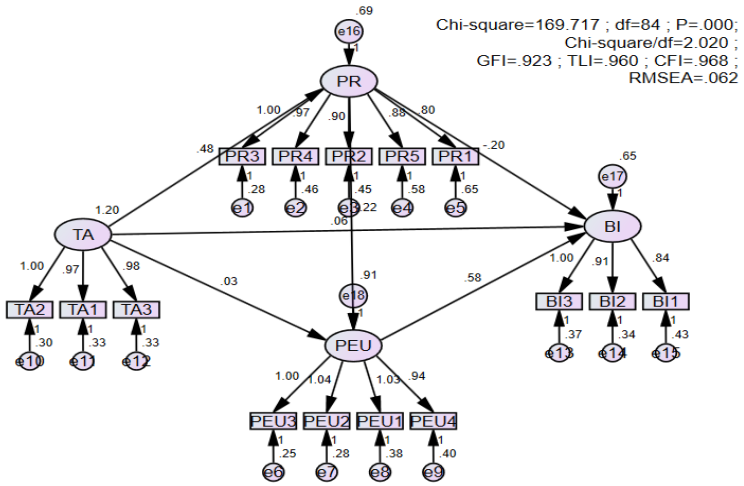

Figure 1: SEM Results

Source: *Research team results*

Table 4 presents the results of hypothesis testing using SEM. The study employed Structural Equation Modeling (SEM) to test hypotheses H1 to H6, yielding the following results: Perceived Ease of Use (PEU) has a strong positive impact on Behavioral Intention (BI) to use E-Government Services (β = 0.578, P-value < 0.05). Therefore, H1 is supported. Perceived Risk (PR) was found to have a negative effect on Perceived Ease of Use (PEU) (β = -0.225, P-value < 0.05). Additionally, Perceived Risk (PR) exhibits a statistically significant negative relationship with Behavioral Intention (BI) to use E-Government Services (β = -0.201, P-value < 0.05). Therefore, H2 and H3 are supported. The relationships between Technophobia (TA) and Behavioral Intention (BI) (β = 0.059, P-value > 0.05) as well as Perceived Ease of Use (PEU) (β = 0.027, P-value > 0.05) were not statistically significant. Meanwhile, Technophobia (TA) was found to have a positive relationship with Perceived Risk (PR) (β = 0.477, P-value < 0.05). Thus, H4 and H5 are not supported, whereas H6 is supported.

Table 4. Hypothesis Testing Results.

		Standardized estimates	**P-value**
H1	PEU -> BI	.578	***
H2	PR -> BI	-.201	.008
H3	PR -> PEU	-.225	.005
H4	TA -> BI	.059	.366
H5	TA -> PEU	.027	.709
H6	TA -> PR	.477	***

Source: *Research team results*

Next, the study examined the mediating hypotheses among the observed variables using the bootstrapping technique with 5000 resamples at a 95% confidence interval. Perceived Risk (PR) was found to act as a mediator in the relationship between Technophobia (TA) and Perceived Ease of Use (PEU) (β = -0.121, P-value < 0.05). Additionally, Perceived Risk (PR) also mediated the relationship between Technophobia (TA) and Behavioral Intention (BI) to use E-Government Services (β = -0.103, P-value < 0.05). Thus, H7a and H7b are supported (see Table 5). Furthermore, Perceived Ease of Use (PEU) does not mediate the relationship between Technophobia (TA) and Behavioral Intention (BI) (P-value > 0.05). However, Perceived Ease of Use (PEU) mediates the

relationship between Perceived Risk (PR) and Behavioral Intention (BI) (P-value < 0.05). As a result, H8a is rejected, while H8b is supported. Finally, Technophobia (TA) negatively affects Perceived Risk (PR), which in turn reduces Perceived Ease of Use (PEU), ultimately impacting Behavioral Intention (BI) to use E-Government Services (TA → PR → PEU → BI: P-value < 0.05). Therefore, H9 is supported.

Table 5. Mediation Effect Testing

		Standardized estimates	P-value
H7a	TA -> PR -> PEU	-0.121*	0.013
H7b	TA -> PR -> BI	-0.103*	0.013
H8a	TA -> PEU -> BI	0.017	0.706
H8b	PR -> PEU -> BI	-0.126*	0.014
H9	TA -> PR -> PEU -> BI	-0.121**	0.011

Source: *Research team results*

V. CONCLUSION AND RECOMMENDATIONS

The research results indicate that Hypothesis H1: ***"Perceived risk negatively affects the Perceived ease of use of E-Government services"*** is supported, aligning with previous studies such as those by Alawneh et al. (2013) and Kumar et al. (2007). In this context, empirical evidence suggests that when citizens perceive a higher level of risk associated with a service, they tend to feel less secure when accessing and utilizing that service. This perception creates psychological barriers and increases uncertainty in decision-making, especially concerning mobile government services that involve sensitive personal information. These concerns cause hesitation in using the service and may even prompt individuals to seek additional security measures to mitigate risks. This not only increases user costs and complicates the user experience but also creates a continuous negative feedback loop, necessitating constant advancements and upgrades in mobile government systems to meet users' escalating expectations regarding security and privacy. According to Apau and Koranteng (2019), this phenomenon significantly hinders the adoption and widespread acceptance of mobile government services. Citizens tend to doubt the capability of these platforms to protect personal information, reducing trust and increasing reluctance to use such services. Consequently, Perceived risk not only negatively impacts Perceived ease of use but also indirectly affects government efforts in promoting digital transformation and technological integration in public service delivery.

Furthermore, the study finds that Hypothesis H2: ***"Perceived risk negatively affects the Intention to use E-Government services"*** is supported. This finding is consistent with the conclusions of Warkentin et al. (2002), who asserted that risk perception plays a crucial role in diminishing the intention to use e-government services. In practice, citizens who perceive significant threats—such as potential loss of personal data or cybersecurity risks—are more likely to limit or completely avoid engagement with these services. Pavlou (2003) also identified perceived risk as one of the primary barriers to technology adoption, particularly in online transactions. Risks related to data disclosure, identity theft, or electronic fraud not only heighten concerns but also foster a cautious attitude toward interacting with new technological platforms. As a result, even when citizens recognize the potential benefits of mobile government services, they may still lack the confidence to actively engage with them.

Hypothesis H3: ***"Perceived ease of use positively affects the Intention to use E-Government services"*** is supported by the data. This finding aligns with previous studies by Tung and Rieck (2005) and Carter and Bélanger (2005). When users perceive a system as simple, easy to interact with, and free from obstacles, they are more likely to view it as effective in meeting their needs, thereby increasing their willingness to adopt it. Perceived ease of use plays a crucial role in shaping citizens' attitudes and intentions regarding mobile government services. Specifically, factors such as user-friendly interfaces, intuitive design, clear guidance, and well-organized functionalities are essential in enhancing the user experience. When service interactions are easy to understand, non-complex, and require minimal learning effort, users are more comfortable engaging with the system. This increases their appreciation of the technology's utility and user-friendliness, ultimately fostering satisfaction and encouraging future adoption.

Hypothesis H4: ***"Technophobia negatively affects the Behavioral intention to use E-Government services"*** is rejected. First, the benefits of E-Government services, including convenience, transparency, and efficiency, outweigh concerns about technology. Second, the widespread availability of technology, increased internet accessibility, and digital literacy have facilitated the adoption of E-Government services. Lastly, governments are actively enhancing user-friendly interfaces, strengthening security measures, and providing user support. As a result, E-Government services are becoming increasingly accessible, secure, and reliable.

Hypothesis H5 is rejected, indicating that ***"Technophobia does not affect the Perceived ease of use of E-Government services"*** This unexpected finding can be explained by the distinction between technophobia, which focuses on negative emotions, and perceived ease of use, which pertains to users' subjective assessment of a platform's simplicity and user-friendliness (Liesa-Orús et al., 2023). These two concepts belong to different domains—emotion and cognition. Thus, they may not be directly related. Perceived ease of use is primarily influenced by interface design factors, such as clear layouts, intuitive navigation, simple language, and easy-to-follow instructions (Liesa-Orús et al., 2023). If an E-Government system is well-designed, users will perceive it as easy to use regardless of their technological anxieties. E-Government services tend to enhance perceived usability by ensuring seamless interactions and minimizing cognitive effort required for task completion. This suggests that even if users experience technophobia, system usability can play a significant role in shaping their perceptions of ease of use (Hung et al., 2013).

Hypothesis H6, ***"Technophobia positively affects the perceived risk of e-Government"*** is supported. This finding aligns with the research of Featherman and Pavlou (2003). The results indicate that as users' Technophobia increases, they tend to perceive greater risks and threats when accessing and using online services, particularly e-Government services. Alkhawaja et al. (2021) and Wilson et al. (2023) also found that Technophobia negatively influences users' attitudes toward information technology adoption, suggesting that individuals may experience heightened negativity when faced with increased anxiety related to technology. This perception leads users to consider e-Government services as potential threats, making them more cautious and less willing to accept risks associated with usage.

Mediating analysis for Hypothesis H7a, ***"Perceived risk mediates the relationship between Technophobia and perceived ease of use"*** is supported by the data. Featherman and Pavlou (2003) demonstrated that Technophobia increases individuals' perceived risks when using e-Government services. This means that citizens with higher levels of Technophobia perceive e-Government services as more threatening. This finding is consistent with prior studies showing that Technophobia can heighten negative attitudes and perceptions related to information technology (Ubed et al., 2017; Wilson et al., 2023). This increased risk perception hinders e-Government adoption, as users who feel at risk actively seek ways to mitigate those risks. Consequently, service developers must continuously add and update features to enhance security. This complexity may negatively impact perceived ease of use, making it harder for users to access and interact with e-Government services. This finding highlights a critical challenge for developers in balancing accessibility and high-security standards for e-Government platforms.

The study also supports Hypothesis H7b, ***"Perceived risk mediates the relationship between Technophobia and the intention to use e-Government services"*** As users' Technophobia rises, they tend to assess technological risks more critically, including concerns over personal data loss, system malfunctions, or a lack of understanding of system operations, ultimately reducing their intention to use e-Government services. This finding aligns with previous studies, such as Warkentin et al. (2002) and Alawneh et al. (2013), which identify perceived risk as a major barrier to technology adoption. Practically, these results emphasize that system developers should focus on improving security, simplifying interfaces, increasing operational transparency, and educating users to alleviate concerns and build trust. This finding not only contributes to technology acceptance theory but also provides practical solutions to enhance user experience and increase the adoption of e-Government services.

Hypothesis H8a, ***"Perceived ease of use mediates the relationship between Technophobia and the intention to use e-Government services"*** is not supported. This indicates that while Technophobia negatively impacts perceived ease of use, this relationship is not strong enough to mediate its influence on the intention to use e-Government services. In the e-Government context, users are often influenced by other factors such as perceived risk (Alawneh et al., 2013), system reliability (Carter & Bélanger, 2005), or government mandates rather than solely perceived ease of use. Moreover, Technophobia may directly induce strong feelings of insecurity and fear, leading users to reject the system outright without considering its usability (Sääksjärvi & Samiee, 2011). For example, in Reddick and Roy's (2013) study, concerns about personal data loss and system errors were identified as much more significant barriers than a user-friendly interface when deciding to use online services. Furthermore, if an e-Government system is already optimized for ease of use, differences in perceived ease of use between users with high and low Technophobia may not be substantial enough to establish a clear mediating role. This result highlights that developers should focus more on addressing user concerns about risk, transparency, and trustworthiness rather than solely improving interface design or usability. This is particularly important in designing e-Government systems that meet the increasing expectations of users in an era of growing technological complexity.

Continuing with Hypothesis H8b, the data analysis supports that ***"Perceived ease of use mediates the relationship between perceived risk and the intention to use e-Government services"*** Specifically, the analysis shows that perceived ease of use functions as an independent mediating variable, transmitting the effect of perceived risk on the intention to use e-Government services. When users perceive a high level of risk, they tend to evaluate the service as difficult to use, ultimately reducing their

intention to adopt e-Government services. Therefore, to enhance usage intention and mitigate perceived risks, e-Government solutions must be optimized for usability, making them more accessible and user-friendly.

Finally, Hypothesis H9, ***"Perceived risk and perceived ease of use mediate the impact of Technophobia on the intention to use e-Government services"*** is supported with a negative relationship. This finding suggests that the influence of Technophobia on the intention to use e-Government services increases when users perceive high risks and low ease of use. Specifically, when users experience Technophobia but simultaneously perceive e-Government services as having low risk (e.g., strong information security and data protection), the negative impact of anxiety on intention is minimized. Similarly, when users find services easy to use, intuitive, and requiring minimal technological skills, Technophobia is reduced, thereby improving usage intention. Previous studies have also shown that Technophobia increases risk perception in online services while making these systems appear more complex and difficult to use (Featherman & Pavlou, 2003; Slade et al., 2015). This result aligns with the Technology Acceptance Model (TAM), where external factors like anxiety influence intention through perceived ease of use and usefulness. These findings emphasize the importance of minimizing Technophobia and building user-friendly, easily accessible e-Government platforms to encourage greater adoption of these services.

Theoretical Contributions

This study makes significant contributions to existing research. Our findings indicate that Perceived Risk and Perceived Ease of Use not only serve as independent mediators between Technophobia and Intention to Use E-Government but also function as sequential mediators, transmitting the effect of Technophobia on the intention to adopt e-government services.

Practical Implications

The findings of this study hold practical and educational significance for governments in general and the Vietnamese government in particular, which are responsible for strengthening the intention to use e-government services.

First, the Vietnamese government must prioritize user experience by simplifying online procedures and ensuring accessibility across all devices to enhance Perceived Ease of Use and reduce Perceived Risk. This includes clear navigation, minimal steps to complete tasks, and optimization for online access across different devices. Providing support through FAQs, guidance, and human assistance is crucial, along with proactively building trust through transparent communication and incorporating user feedback.

Second, the Vietnamese government should prioritize raising public awareness of information and digital technology by integrating IT education into curricula to enhance knowledge and reduce Technophobia among Vietnamese citizens. Community awareness campaigns and digital literacy programs can empower individuals to manage their technology use and protect themselves on online platforms.

Third, the Vietnamese government must proactively address user concerns through transparent communication and education on the online applications provided by the government. Increased transparency, coupled with a well-established and clear knowledge system, can alleviate user anxiety, build trust, and encourage service adoption. This will ultimately contribute to a more effective implementation of the government's digital transformation initiatives.

Limitations and Future Research

First, demographic characteristics were not analyzed, even though they may significantly impact individuals' intention to use e-government services. For instance, disparities between urban and rural areas may hinder access to essential aspects of e-government services.

Second, the sample size does not fully reflect the demographic characteristics of different geographic locations and professional backgrounds.

` Third, the cross-sectional nature of this study means that its findings may not remain valid in the future due to societal developments and advancements in information technology.

This model presents a general theoretical framework for e-government adoption. Therefore, future research could focus on a specific service or location to provide a more in-depth analysis. Additionally, integrating other theoretical frameworks, such as the Theory of Perceived Risk (TPR) and the Diffusion of Innovation (DOI), could be explored. Moreover, specific aspects such as the effectiveness of cybersecurity systems and the reliability of e-government platforms could be examined further.

REFERENCES

1) Ajzen, I. (1991). The Theory of planned behavior. *Organizational Behavior and Human Decision Processes*.
2) Alawneh, A., Al-Refai, H., & Batiha, K. (2013). Measuring user satisfaction from e-Government services: Lessons from Jordan. *Government information quarterly*, *30*(3), 277-288.

3) Alenezi, H., Tarhini, A., Alalwan, A., & Al-Qirim, N. (2017). Factors Affecting the Adoption of e-Government in Kuwait: A Qualitative Study. *Electronic Journal of E-government,* 15(2), pp 84-102.
4) Belanger, F., & Carter, L. (2012). Digitizing government interactions with constituents: an historical review of e-government research in information systems. *Journal of the Association for information Systems*, *13*(5), 1.
5) Carter, L. and Bélanger, F. (2005) The Utilization of E-Government Services: Citizen Trust, Innovation and Acceptance Factors. Information Systems Journal, 15, 5-25.
6) Chan, C. M., Hackney, R., Pan, S. L., & Chou, T. C. (2011). Managing e-Government system implementation: a resource enactment perspective. *European Journal of Information Systems*, *20*(5), 529-541.
7) Chen, L., & Aklikokou, A. K. (2020). Determinants of E-government adoption: testing the mediating effects of perceived usefulness and perceived ease of use. *International Journal of Public Administration*, *43*(10), 850-865.
8) Colesca, S. E. (2009). Understanding trust in e-government. *Engineering Economics,* 63(3).
9) Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis*. Psychology press.
10) Coursey, D., & Norris, D. F. (2008). Models of e-government: Are they correct? An empirical assessment. *Public administration review*, *68*(3), 523-536.
11) Curtin, G. G., Sommer, M. H., & Vis-Sommer, V. (2003). The world of e-government. *Journal of Political Marketing*, *2*(3-4), 1-16.
12) Davis, F. D. (1989). Technology acceptance model: TAM. *Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption*, *205*, 219.
13) Davis, F. D. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *984*.
14) Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, *34*(2), 211-230.
15) Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., & Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, *34*(2), 211-230.
16) Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: a perceived risk facets perspective. *International journal of human computer studies, 59(4)*, 451-474.
17) Ganapati, S., & Reddick, C. G. (2012). Open e-government in US state governments: Survey evidence from Chief Information Officers. *Government Information Quarterly*, *29*(2), 115-122.
18) Gefen, D., & Straub, D. W. (2000). The relative importance of perceived ease of use in IS adoption: A study of e-commerce adoption. *Journal of the association for Information Systems*, *1*(1), 8.
19) Han, Y., Shao, X. F., Tsai, S. B. J., Fan, D., & Liu, W. (2021). E-government and foreign direct investment: evidence from Chinese cities. *Journal of Global Information Management (JGIM),* 29(6), 1-17.
20) Hooda Nandal, A., & Singla, M. L. (2019). Investigating the impact of metaphors on citizens' adoption of e-governance in developing countries: an empirical study. *Transforming Government: People, Process and Policy*, *13*(1), 34-61.
21) Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, *6*(1), 1-55.
22) Janis, I. L. (1967). Effects of fear arousal on attitude change: Recent developments in theory and experimental research. *Advances in experimental social psychology*, *3*, 166-224.
23) Kaushik, K., & Mishra, R. (2019). Predictors of E-government adoption in India: Direct and indirect effects of Technophobia and information quality. *International Journal of Business Information Systems*, *31*(3), 305-321.
24) Kumar, V., Mukerji, B., & Butt, I. (2007). Factors for Successful E-Government Adoption: A Conceptual Framework. *Electronic Journal of E-government*, *5*(1), 63-76.
25) Kurfalı, M., Arifoğlu, A., Tokdemir, G., & Paçin, Y. (2017). Adoption of e-government services in Turkey. *Computers in human Behavior*, *66*, 168-178.
26) Lallmahomed, M. Z., Lallmahomed, N., & Lallmahomed, G. M. (2017). Factors influencing the adoption of e-Government services in Mauritius. *Telematics and Informatics*, *34*(4), 57-72.
27) Lian, J. W. (2015). Critical factors for cloud based e-invoice service adoption in Taiwan: An empirical study. *International Journal of Information Management*, 35(1), 98-109.
28) Mensah, I. K., Zeng, G., & Luo, C. (2020). E-Government services adoption: an extension of the unified model of electronic government adoption. *Sage Open*, *10*(2), 2158244020933593.

29) Moudud-Ul-Huq, S., Sultana Swarna, R., & Sultana, M. (2021). Elderly and middle-aged intention to use m-health services: an empirical evidence from a developing country. *Journal of Enabling Technologies*, 15(1), 23-39.
30) Muneer, F., Azam, A., Yang, H., & Saeed, M. (2024). Examining Perceived Privacy, Perceived Security and Technophobia into UMEGA in Improving Adoption Behavior of E-Government Services: An Evidence from Pakistan. *International Journal of Human–Computer Interaction*, 1-13.
31) Muthu, P. P., Thurasamy, R., Alzahrani, A. I., Alfarraj, O., & Alalwan, N. (2016). E-Government service delivery by a local government agency: The case of E-Licensing. *Telematics and informatics*, *33*(4), 925-935.
32) Nguyen, T. T. U., Nguyen, L. D. P., Huynh, H. T. N., Van Nguyen, P., & Nguyen, N. P. M. (2024, November). Exploring the Impact of Technophobia on Citizens' Behavioral Intention to Use E-Government: The Role of Problem-focused Coping Strategy. In *The 2nd International Conference: Resiliency by Technology and Design (RTD 2024)* (pp. 59-76). Atlantis Press.
33) Nguyen, T. T. U., Nguyen, P. V., Huynh, H. T. N., Vrontis, D., & Ahmed, Z. U. (2024). Identification of the determinants of public trust in e-government services and participation in social media based on good governance theory and the technology acceptance model. *Journal of Asia Business Studies*, *18*(1), 44-61.
34) Park, J., Yang, S., & Lehto, X. (2007). Adoption of mobile technologies for Chinese consumers. *Journal of electronic commerce research*, *8*(3).
35) Pavlou, P. A. (2003), Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International journal of electronic commerce, 7(3)*, 101-134.
36) Pérez Chacón, S. R., Rodriguez Vilchez, J. L., Cabrera Berrios, J. A., Raymundo Ibañez, C. A., & Mauricio, D. S. (2021). Increasing e-government adoption by emphasizing environmental sustainability: an extended case study in Peru. *Transforming Government: People, Process and Policy*, *15*(4), 550-565.
37) Reddick, C. G., & Roy, J. (2013). Business perceptions and satisfaction with e-government: Findings from a Canadian survey. *Government Information Quarterly,* 30(1), 1-9.
38) Roy, M. C., Chartier, A., Crête, J., & Poulin, D. (2015). Factors influencing e-government use in non-urban areas. *Electronic Commerce Research*, 15, 349-363.
39) Sabani, A. (2021). Investigating the influence of transparency on the adoption of e-Government in Indonesia. *Journal of Science and Technology Policy Management*, *12*(2), 236-255.
40) Sabani, A., Thai, V., & Hossain, M. A. (2023). Factors affecting citizen adoption of E-government in developing countries: an exploratory case study from Indonesia. *Journal of Global Information Management (JGIM)*, *31*(1), 1-23.
41) Sarstedt, M., Hair Jr, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses!. *International Journal of Market Research*, *62*(3), 288-299.
42) Simonson, M. R., Maurer, M., Montag-Torardi, M., & Whitaker, M. (1987). Development of a standardized test of computer literacy and a computer anxiety index. *Journal of educational computing research*, *3*(2), 231-247.
43) Smith, P. J. (2008). E-Democracy and Local Government-Dashed Expectations. In *Electronic Government: Concepts, Methodologies, Tools, and Applications* (pp. 1708-1717). IGI Global.
44) Ubed, R. S., Ariutama, I. G. A., & Yudanto, A. A. (2017). An Analysis of Technology Acceptance Model with Extensions in Affective Components and Anxiety for Village Financial System (Siskeudes), A Case Study in Tangerang District, Indonesia.
45) Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. *Information systems research*, *11*(4), 342-365.
46) Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, *46*(2), 186-204.
47) Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
48) Wang, C., & Teo, T. S. (2020). Online service quality and perceived value in mobile government success: An empirical study of mobile police in China. *International Journal of Information Management*, *52*, 102076.
49) Warkentin, M., Gefen, D., Pavlou, P. A., & Rose, G. M. (2002). Encouraging citizen adoption of e-government by building trust. *Electronic markets*, *12*(3), 157-162.
50) Wilson, M. L., Huggins-Manley, A. C., Ritzhaupt, A. D., & Ruggles, K. (2023). Development of the Abbreviated Technophobia Scale (ATAS).