



Exploring the Impact of Technology Anxiety on Citizens' Behavioral Intention to Use E-Government: The Role of Problem-focused Coping Strategy

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Abstract. This study aims to explore the citizens' behavioral intention to use e-government in the context of technology anxiety. The research framework is drawn from the coping theory, which is utilized as a theoretical lens for examining the interplay between technology anxiety, coping process, and behavioral intention among Vietnamese citizens. The research employed a quantitative approach and utilized an online survey instrument, ultimately collected a total sample of 592 citizens residing in Ho Chi Minh City, Vietnam. The findings reveal that citizens with higher levels of technology anxiety perceived e-government as more threatening rather than challenging. In addition, the study also discovered the positive relationships between primary appraisals and problem-focused coping, suggesting an interesting notion that individuals experiencing threat appraisal still prone to adopt problem-focused coping in response to their anxiety regarding the use of e-government. Ultimately, in the context of e-government adoption, problem-focused coping was found to positively influence citizens' behavioral intention to use e-government in the future. The research contributes to the existing literature by providing a more comprehensive understanding of the psychological and cognitive processes that influence citizens' intentions to adopt e-government in the presence of technology anxiety. Consequently, the study's findings offer several practical implications for government agencies to the anxiety level of citizens regarding e-government, thereby improving the implementation of e-government as well as the adoption rate of e-government initiatives among Vietnamese citizens.

Keywords: Technology Anxiety, Coping Theory, Primary Appraisal, Problem-focused Coping, Behavioral Intention, E-government Adoption.

1. INTRODUCTION

The rapid advancement of information and communication technologies (ICTs) has fundamentally reshaped the way businesses and organizations operate and deliver services. Driven by the pursuit of efficiency, cost optimization, and enhanced customer experiences, the private sector has been at the forefront of embracing digital innovations and integrating them seamlessly into daily operations (Brynjolfsson & McAfee, 2014). Acknowledging the transformative potential of ICTs, governments worldwide have also actively pursued the implementation of e-government initiatives. In brief, e-government refers to the use of ICTs as a digitalize approach for bettering the delivery of public services, enhancing citizen's experience more convenience and satisfying (Al-adawi et al., 2005; Shareef et al., 2011).

The implementation of e-government has been proven to yield numerous benefits, from enhancing the accessibility and efficiency of government operations and services to reducing the transactional costs and corruption (Bertot et al., 2012; Cho, 2017; Lee et al., 2018). Furthermore, research by López-López et al. (2018) and Alkrajji & Ameen (2021) both support the notion that e-government fosters transparency, which in turn influences citizen satisfaction and loyalty towards online public services. Therefore, it is apparent that e-government adoption plays a crucial role in transforming the citizen-government relationship, leading to increased trust among citizens (S. Kim & Lee, 2012; Venkatesh et al., 2016).

In recent decades, governments across developing nations have invested substantial efforts in bridging the digital divide and harnessing the potential of e-government. Yet, despite these efforts, the implementation of e-government in developing countries continues to confront several challenges in achieving success. While factors such as lack of readiness, low awareness or security concerns have been identified as hindrances to e-government adoption (Hooda Nandal & Singla, 2019; Sabani, 2020), technology anxiety emerges as a particularly crucial barrier in developing nations where significant disparities exist in terms of ICT literacy (Sabani et al., 2023; Samsor, 2021).

Similarly, although the Vietnamese government has actively attempted to keep pace with the fast-paced development of digitalization in the public sector, the current level of e-government adoption among citizens remains modest. In 2022, Vietnam's e-government only obtained a global ranking of 86th in the E-Government Development Index (EGDI). Besides, it is notable that a majority of existing research on e-government adoption in Vietnam concentrate on the technological dimensions within the system (e.g. system quality) (Lu & Nguyen, 2016; Trang et al., 2023). This has led to the gap in the current literature that neglects to explore the psychological aspects from citizens' perspectives, such as their anxieties and concerns regarding e-government use. Consequently, to address this gap, this study will investigate technology anxiety among Vietnamese citizens, considering it as a stressor hindering their intention to utilize e-government. Moreover,

this research will adopt coping theory as the theoretical framework for building the research model, as it is considered as a valuable tool for explaining how individuals react to stress, even in the context of information technology (Beaudry & Pinsonneault, 2005; Fadel, 2012; Fadel & Brown, 2010). As a result, the purpose of this study is to examine how citizens perceive the use of e-government in relation to technology anxiety and to explore the effect of coping strategies, particularly problem-focused coping, on the behavioral intention to use e-government among citizens.

In response to the research's purpose, the three research questions are as follows:

RQ1: How does citizen's technology anxiety affect their evaluation regarding the use of e-government?

RQ2: Whether citizen's appraisal influences the adoption of problem-focused coping strategy to manage their technology anxiety?

RQ3: How does problem-focused coping strategy affect citizen's behavioral intention to use e-government?

2. LITERATURE REVIEW & HYPOTHESIS FORMULATION

2.1. Coping theory

Lazarus and Folkman's (1984) coping theory is grounded in the transactional model of stress and coping, explaining how individuals appraise and cope with stressful events or situations. The process of coping encompasses two phases, including cognitive appraisal and coping stage, triggered when individuals start acknowledging the stressful circumstances they encounter.

Upon encountering a stressful event, individuals first engage in a cognitive appraisal, initially evaluating the situation (stressor) and its potential impact. This evaluation determines whether the situation is perceived as threatening (threat appraisal) or challenging (challenge appraisal). Some people may judge stressor as a threat if they perceive the situation negatively due to the potential risks, harm, or negative consequences that could lead them to failure, mostly associated with negative emotions. On the other hand, one's appraisal would be justified as challenging if the situation is positively framing as presenting opportunities for self-growth or personal gain from dealing with the stressful situation. Commonly, people are engaged in challenge appraisal when they perceive themselves as possessing adequate coping resources to meet the situational demands, whereas threat appraisals are associated with perceived inadequacy in coping resources (Lazarus & Folkman, 1984). Notably, one's primary appraisal is influenced by various factors, including their beliefs, values, experiences, and perhaps the environmental situation Lazarus (1991), suggesting that individuals' appraisal may be different for the same stressor. Yet, either threat or challenge appraisal arises, their coping process would progress to come up with the adoption of coping strategies tailored to

manage the identified stressor, referring to the second phase. Based on the appraisal, individuals will employ corresponding coping strategies to manage stress. The two primary coping strategies that are commonly employed include problem-focused coping and emotion-focused coping. The former type of coping aims to directly address the source of stress, while the latter coping style seeks to regulate the emotional response to stress without necessarily changing the situation itself. Behavioral efforts relating to problem-focused coping may involve information seeking or taking action to directly handle the stress, whereas emotion-focused coping behaviors revolve around relaxation techniques or positive reframing to ease the negative emotions and stabilize the emotional state.

According to Lazarus and Folkman (1984), the specific coping strategy employed depends on the individual's appraisal of the situation. Problem-focused strategies are more likely to be adopted when the situation is perceived as changeable, while emotion-focused strategies are more commonly employed when the situation is deemed unchangeable or uncontrollable. Given the dynamic nature of coping (Lazarus & Folkman, 1984), this study will focus primarily on problem-focused coping and explore its relationship with threat appraisal, in the context of e-government adoption.

2.2. Hypothesis formulation

Technology anxiety and primary appraisal

The concept of technology anxiety has been explored in various studies, which have expanded upon the definition of computer anxiety to encompass the extent to which users exhibit fear or apprehension regarding the utilization of information technology, irrespective of whether they are contemplating or actually using it (Celik, 2016; Meng et al., 2022). Alkhawaja et al. (2021) have further refined this definition to include user's feeling of incapability or lack of self-confidence in effectively managing the technology. Concerning the e-government context, this study delineates technology anxiety as the citizen's concerns or worries that they may hold due to the anticipated negative outcomes and their perceived inability to adapt when considering the use of e-government.

From a social cognitive theory perspective, the term "anxiety" is indicative of a negative affective response (Compeau et al., 1999). Several studies have demonstrated that individuals exhibiting high degree of technology anxiety tend to harbor more negative perceptions regarding the utilization of technology (Alahakoon, 2016). In previous studies, Igbaria et al. (1996) and Ubed et al. (2017) both discovered that people's apprehension about technology had a detrimental impact on their perception of usefulness, which led to a reduction in their positive attitude about the technology. This might imply that individual's perception regarding the potential benefits and opportunities presented by technology, which align with challenge appraisal, could be hindered by technology anxiety. Furthermore, Alkhawaja et al. (2021) and Wilson et al. (2023) have also figured out that technology anxiety exerts a negative effect on user attitudes towards the

employment of information technology, suggesting that individuals may experience negative attitudes when confronted with heightened anxiety concerning technology. Considering that threat and challenge appraisals are associated with negative and positive emotions, respectively, it is predicted that technology anxiety would precipitate citizens to perceive using e-government as a threat rather than a challenge. The following hypotheses are proposed to test this prediction:

H1: Technology anxiety has a positive correlation with threat appraisal.

H2: Technology anxiety has a negative correlation with challenge appraisal.

Primary appraisal and problem-focused coping strategy

With regard to coping strategies, Folkman (1984) seminal work proposed that individuals engaging in challenge appraisal are posited to encounter a positive affective state. As a result, they are more prone to embrace problem-focused coping techniques, as this approach aims to address the stressor directly and also potentially ameliorate their situation. This assertion has been confirmed by several studies (Litwic-Kaminska, 2020; Marakhimov & Joo, 2017; Ohly & Fritz, 2010).

On the other hand, threat appraisal, characterized by negative emotions, is associated with a preference for emotion-focused coping strategies, since this approach prioritizes regulating negative emotions to maintain a tolerable internal state (Folkman, 1984). However, other research has suggested a more nuanced relationship, suggesting that that threat appraisal can also precipitate problem-focused coping efforts to handle the stress level. Supporting this, in research exploring the role of threat appraisal, Fugate, Prussia, and Kinicki (2012) found that threat appraisal in organizational settings can lead to problem-focused coping, potentially due to a perceived need for control. Similarly, a study by Tomaka et al. (2018) discovered that when individuals perceive a threat, they are not only inclined to use solely emotion-focused coping strategies, but rather exhibit the necessity to employ a combination of both emotion-focused and problem-focused coping. Furthermore, the findings of Krok et al. (2023) also revealed the mediation role of problem-focused coping on the correlation between threat appraisal and resilience with health behaviors. All things considered, it seems reasonable to derive that problem-focused coping can possibly be facilitated by both threat and challenge evaluations. Consequently, we hypothesize that:

H3: Challenge appraisal positively influences problem-focused coping strategy.

H4: Threat appraisal positively influences problem-focused coping strategy.

Problem-focused coping strategy and behavioral intention to use e-government

Building upon the foundational work of Venkatesh et al. (2003), the earlier conceptualization of behavioral intention pertains to “a measure of the strength of individual’s intention to perform a specified behavior”, which is linked with the user’s

initial stage of adopting information technology. Tailoring the concept to the context of e-government, this study defines “behavioral intention” as the extent to which citizens express their intention or planning to use e-government in the future.

Prior research has demonstrably shown the critical role of coping strategies in managing stress and enhancing overall well-being during stressful situations (Budimir et al., 2021). Problem-focused coping, an adaptive coping behavior, is expected to generate positive outcomes in response to the stress-inducing factor. For example, in an examination of the effectiveness of coping strategies, M. S. Kim & Duda (2003) discovered a positive correlation between problem-focused coping strategies and all outcome variables, encompassing satisfaction, enjoyment, as well as the desire to continue. This strategy was reported to be effective in both immediate and long-term scenarios upon encountering the stressor. Furthermore, problem-focused coping was found to be positively associated with generating positive psychological growth, according to Chu et al. (2022).

In the realm of information technology field, Beaudry and Pinsonneault (2005) highlighted the significance of adaptation behaviors in shaping how users interact with technology. They found that users’ adaptation efforts centered on problem-focused coping resulted in greater effectiveness and efficiency in performing technology-related tasks (Beaudry & Pinsonneault, 2005), which potentially leading to a positive influence on utilization (Thompson et al., 1991). Consequently, it is anticipated that citizens who adopt problem-focused coping strategies, particularly discovering and exploring novel approaches to use e-government, can alleviate their level of technology anxiety. This, in turn, can lead to a more positive attitude towards e-government that translates into a greater intention to utilize it in the future. Building on this rationale, the following hypothesis is proposed:

H5: Problem-focused coping strategy positively influences behavioral intention to use e-government

2.3. Research model

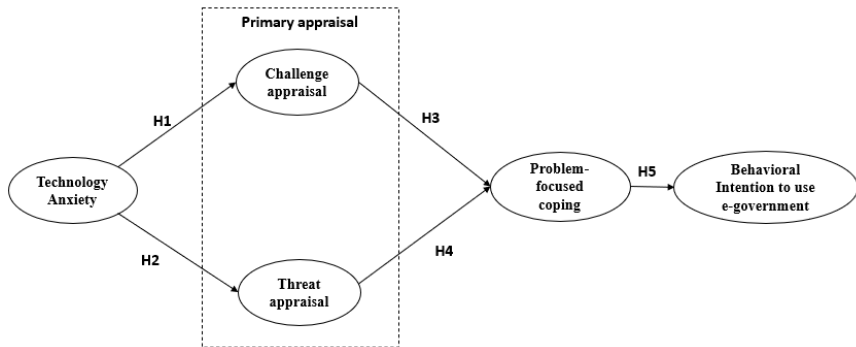


Fig. 1. Research model

3. METHODOLOGY

3.1. Measurement

Five studied variables corresponding to five key constructs, including technology anxiety, challenge appraisal, threat appraisal, problem-focused coping, and behavioral intention, were examined via a total of 19 items. Each item was measured on a 5-point Likert scale, ranging from 1 – “Strongly disagree” to 5 – “Strongly agree”. The questionnaires were adapted from established and reliable instruments drawing from prior research, with minor modifications to ensure contextual relevance to the Vietnamese setting and the specific topic of e-government.

In particular, the technology anxiety construct was adapted from Alkhawaja et al. (2021). Behavioral intention was assessed using three items developed by Venkatesh et al. (2003). The remaining constructs, including threat appraisal, challenge appraisal, and problem-focused coping, were adapted from the instrument employed by Marakhimov and Joo (2017).

3.2. Data collection

During the data collection phase, responses were gathered by means of an online survey questionnaire. This approach facilitated the efficient acquisition of responses from a large and geographically diverse population within a limited timeframe. Additionally, the chosen online survey platform offered a functionality that mandated completion of all questions before submission, thereby minimizing the issue of non-response bias. Furthermore, online surveys also enhance participant confidentiality as they eliminate the need for direct interaction with researchers, resulting in more genuine results. To achieve

a diverse sample, the survey was administered in Ho Chi Minh City, Vietnam's most populous metropolis. This strategy aimed to capture a broad range of citizen perspectives. Consequently, the survey successfully collected responses from 592 citizens, with females constituting 58% of the sample. The sample's descriptive analysis revealed an age distribution, with 21% individuals falling within the 18-24 years old group, 42% individuals between 25-35 years old, 28% belonging to the age group of 36-45 and the group of 46-55 years old accounted for approximately 9% of the total. Notably, the survey did not receive any responses from participants aged 55 and above.

4. RESULTS

4.1. Reliability and validity evaluation

An explanatory factor analysis (EFA) was conducted using SmartPLS version 4 to evaluate the dimensionality, construct validity, and reliability of the measurement model. The reliability and validity of the measurement model are evaluated using two established indicators, including Cronbach's alpha (α) and composite reliability (CR). The corresponding results are listed in Table 1. As per Hair et al. (2019), Cronbach's alpha serves as the lower bound, while composite reliability acts as the upper bound for internal consistency reliability. The α value for all items varies from 0.736 to 0.930, surpassing the minimum level of 0.6, which signifies satisfactory scale reliability. To further ensure the level of reliability and consistency of the measures, composite reliability (CR) values are also examined. Based on the findings, all five variables yield CR values exceeding the required threshold of 0.7, thereby confirming the consistency and dependability of the measurement model.

Dimensionality, which corresponds to the number of underlying factors captured by the observed variables, was established since all factor loadings were greater than 0.5, meeting the required criteria for convergence (Hair et al. 1998). Furthermore, the calculation of Average Variance Extracted (AVE) values was employed for assessing the degree to which items within a construct measure the intended concept. Following the threshold suggested by Hair et al. (2014), all five constructs exhibited AVE values in the range of 0.548 to 0.826, which are exceeding the threshold level of 0.5, suggesting satisfactory convergent validity.

Table 1. Validity and reliability test results

Constructs	Indicators	Loadings	α	CR	AVE
Technology anxiety (TEA)	TEA1	0.884	0.930	0.933	0.826
	TEA2	0.937			
	TEA3	0.909			
	TEA4	0.905			
Challenge appraisal (CHA)	CHA1	0.771	0.811	0.820	0.638
	CHA2	0.826			
	CHA3	0.821			
	CHA4	0.776			
Threat appraisal (THR)	THR1	0.848	0.736	0.806	0.548
	THR2	0.714			
	THR3	0.662			
	THR4	0.724			
Problem-focused coping (PRO)	PRO1	0.909	0.921	0.926	0.807
	PRO2	0.896			
	PRO3	0.903			
	PRO4	0.885			
Behavioral Intention (BI)	BI1	0.900	0.874	0.881	0.798
	BI2	0.899			
	BI3	0.880			

4.2. Discriminant validity

The current research utilizes the Heterotrait-Monotrait (HTMT) ratio as a means to evaluate the discriminant validity across five variables under investigation. Henseler et al. (2015) recommend that the HTMT ratio should be under the threshold of 0.9 to establish discriminant validity in PLS-SEM. As presented in Table 2, all HTMT values range from 0.028 to 0.504, thereby falling below the required threshold of 0.9. Thus, it can be deduced that the research model assures the distinguishment of all underlying variables. Given that the previously mentioned AVE values lie within the acceptable range, it can be concluded that the convergent and discriminant validity of the measurement model are both validated in this study.

Table 2. Discriminant validity – HTMT ratio

	BI	CHA	PRO	TEA	THR
Behavioral Intention (BI)					
Challenge Appraisal (CHA)	0.347				
Problem-focused Coping (PRO)	0.342	0.262			
Technology Anxiety (TEA)	0.028	0.325	0.049		
Threat Appraisal (THR)	0.504	0.086	0.209	0.192	

4.3. Results of the structural model

Direct effect

The results of hypothesis testing are summarized in table 3. Accordingly, all proposed relationships were statistically significant at the 1% level, indicating strong support for all hypotheses.

Technology anxiety displayed a significant correlation with both primary appraisals, exerting a negative influence on challenge appraisal ($\beta = -0.287$, $p=0.000$) and a positive influence on threat appraisal ($\beta = 0.180$, $p=0.001$). As anticipated, challenge appraisal ($\beta = 0.231$, $p=0.000$) and threat appraisal ($\beta = 0.185$, $p=0.001$) both significantly influenced problem-focused coping in a positive direction. Finally, problem-focused coping ($\beta = 0.311$, $p=0.000$) demonstrated a positive and statistically significant relationship with citizens' behavioral intention to use e-government.

Table 3. Total direct effects

Hypothesis	β	Mean	St.Dev	t-value	p-value	Result
H1 TEA \rightarrow CHA	-0.287	-0.292	0.046	6.203	0.000	Supported
H2 TEA \rightarrow THR	0.180	0.184	0.056	3.199	0.001	Supported
H3 CHA \rightarrow PRO	0.231	0.232	0.056	4.093	0.000	Supported
H4 THR \rightarrow PRO	0.185	0.190	0.055	3.362	0.001	Supported
H5 PRO \rightarrow BI	0.311	0.315	0.055	5.695	0.000	Supported

Indirect effect

This study further explores the indirect effects between the study variables, whose results are presented in Table 4. The analysis revealed significant positive indirect effects of both challenge appraisal ($\beta = 0.072$, $p = 0.005$) and threat appraisal ($\beta = 0.057$, $p = 0.012$) on citizens' behavioral intention to use e-government. Conversely, the indirect effect of technology anxiety on problem-focused coping ($\beta = -0.03$, $p=0.199$) was not statistically significant. Similarly, the total indirect effect of technology anxiety on citizens' behavioral intention to use e-government ($\beta = -0.01$, $p=0.237$) was not significantly correlate, thus both of which were not supported.

Table 4. Total indirect effects

Hypothesis	β	Mean	St.Dev	t-value	p-value	Result
TEA → BI	-0.01	-0.01	0.009	1.182	0.237	Unsupported
TEA → PRO	-0.03	-0.03	0.026	1.285	0.199	Unsupported
CHA → BI	0.072	0.074	0.025	2.818	0.005	Supported
THR → BI	0.057	0.061	0.023	2.499	0.012	Supported

5. DISCUSSION

This study expands the existing body of knowledge on e-government adoption by leveraging coping theory to explore the relationship between technology anxiety, coping process, and citizens' intention to use e-government services. The findings reveal a nuanced interplay between these factors, shedding light on understanding how e-government is perceived by citizens experiencing technology anxiety, and most importantly, highlighting the critical role of problem-focused coping in shaping citizens' behavioral intentions towards e-government use.

As expected, technology anxiety exerted a positive influence on threat appraisal. This means that citizens with higher levels of technology anxiety perceived e-government services as more threatening. This aligns with the prior studies suggesting that the technology anxiety can heighten negative attitudes and perceptions regarding information technologies (Alahakoon, 2016; Ubed et al., 2017; Wilson et al., 2023). In contrast, technology anxiety had a negative influence on challenge appraisal, suggesting a converse interpretation with threat appraisal as citizens were less likely to perceive e-government as a challenge to be overcome. Individuals experiencing technology anxiety express a low level of self-confidence in technology skills and perceive e-government platforms as somewhat uncomfortable and confusing, leading them to view using e-government as threats rather than opportunities.

Interestingly, threat and challenge appraisals both significantly influenced problem-focused coping in a positive direction, contributing to our understanding of the relationship between primary appraisal and problem-focused coping. This suggests that regardless of how citizens initially perceive e-government (as a threat or a challenge), they are likely to adopt problem-focused coping strategies and attempt to put efforts into exploring methods to overcome their anxieties and navigate e-government platforms with greater confidence. These problem-focused coping behaviors might involve actively seeking information and tutorials to learn how to use e-government services effectively or exploring alternative approaches to accomplish tasks. This finding consistent with the original coping theory of Lazarus and Folkman's (1984), and also align with current studies (Krok et al., 2023; Marakhimov & Joo, 2017; Tomaka et al., 2018).

Finally, the study demonstrated a significant positive correlation between problem-focused coping and citizens' behavioral intention to use e-government, indicating that citizens who actively seek solutions to mitigate their technology anxiety regarding e-government are more likely to intend and plan to use e-government in the future. This finding is similar to previous research (Beaudry & Pinsonneault, 2005; Thompson et al., 1991), implying that individuals engaged in problem-focus coping are likely to develop positive attitudes towards the use of information technology, leading to a greater inclination to adopt it.

6. IMPLICATIONS

6.1. Theoretical contributions

This study proposes a novel theoretical model for investigating e-government adoption through the lens of coping theory, focusing on their anxieties (stressors) related to e-government use. The findings provide strong support for the applicability of coping theory in examining behavioral intentions, not only within the realm of psychology but also in the context of information technology adoption. Furthermore, the study contributes to the existing knowledge of coping mechanisms by demonstrating that problem-focused coping strategies can be employed in response to both challenge and threat appraisals. While Lazarus and Folkman (1984) suggest that individuals facing threat tend to rely more heavily on emotion-focused coping due to the associated negative emotions, our findings reveal that citizens experiencing technology anxiety as a threat still engage in problem-focused coping to actively manage their stress. This highlights the complex interplay between primary appraisal and subsequent coping strategies, enriching our understanding of this dynamic. Additionally, the study offers valuable insights into citizens' perceptions of e-government through the examination of technology anxiety. By examining these psychological aspects, our research contributes to the current literature on e-government adoption in Vietnam, specifically from the perspective of citizens in a developing nation and their stress-related responses to e-government use.

6.2. Practical contributions

Given the modest e-government adoption rate in Vietnam, this study offers several practical contributions for Vietnam's government agencies to raise more citizens' intentions to utilize e-government. Considering the research's findings, it is utmost significant for the governmental institutions to address the technology anxiety among citizens. By alleviating these anxieties and the associated perceived threats of e-government use, the government can foster positive attitudes and a greater willingness to participate in e-government services.

To ease technology-related stress, Vietnamese government should develop a more user-friendly and accessible e-government platforms with intuitive interfaces and seamless navigation, which subsequently enhancing citizens' experiences when accessing online public services. Furthermore, the e-government portals must provide clear instructions accompanied by visual aids (if applicable) for each section. These instructions should explain how e-government functions and offer step-by-step guidance on effectively utilizing various services. Also, it is crucial for the governmental agencies to provide readily available and accessible user support services, such as online tutorials, frequently asked questions (FAQs), and helplines staffed by trained personnel. As citizens are willing to put effort into actively learning and exploring novel approaches to use e-government, public institutes should equip citizens with the skills and knowledge necessary to navigate e-government platforms effectively. For example, the government can offer digital literacy training programs focusing on the most in-demand online public services. With readily and sufficient resources (e.g. guidelines, instructions), citizens can directly find solutions to their own problems easier, fostering a problem-solving mindset and a sense of control, thus reducing their technology anxiety level with e-government use.

By implementing these initiatives, Vietnam's government agencies can create a more supportive environment for e-government adoption, empowering citizens to overcome their anxieties and enjoy various benefits provided by e-government. This can ultimately lead to increased public satisfaction with government services and greater citizens' intention to willingly participate in the future digital landscape.

7. CONCLUSION

This study contributes to the current literature on e-government adoption from the view of coping to understand citizen perceptions towards e-government. By investigating the interplay between citizens' appraisal of technology anxiety related to e-government use and their subsequent adoption of problem-focused coping strategy, the study provides insights into how the coping process shapes citizens' behavioral intention to use e-government. Notably, the findings reveal that citizens tend to perceive technology anxiety associated with e-government as a threat rather than a challenge. Yet, both threat and challenge appraisals were found to significantly influence the adoption of problem-

focused coping, which ultimately leads to increased intention to utilize e-government among citizens.

8. LIMITATIONS & FUTURE RESEARCH

This study recognizes certain limitations that should be taken into account for strengthening future investigations. Firstly, due to time and geographic constraints, the data collection employed a convenience sampling method via online surveys. This approach has led to selection bias, as participants likely comprised medium to frequent Internet users, potentially limiting the generalizability of the findings. Besides, the survey was primarily conducted in a single city, resulting in a relatively small sample size compared to the national population. Consequently, the findings may not accurately reflect the assessments of the entire Vietnamese citizens. Future research efforts should aim for a larger sample size and more geographically diverse sample through probability sampling techniques to enhance generalizability and reduce potential bias. Secondly, given the study's context in Vietnam, this may limit its applicability to other cultural settings. Cross-national comparisons through research conducted in multiple countries would be valuable in future studies. Third, the subjective nature of stress highlights the potential benefit of incorporating qualitative methods, such as in-depth interviews, in future research. This approach could provide a more nuanced understanding of citizens' concerns regarding e-government use. By exploring stressor categories that inhibit user adoption, future studies could delve deeper into the specific stressors related to e-government use faced by citizens and further explore a wider range of factors affecting their beliefs and perceptions towards e-government implementation. These insights could support the government agencies to tailor practical recommendations more effectively for e-government development initiatives. Lastly, future research could incorporate other coping mechanisms (e.g. emotion-focus coping) into the current research model, thereby examining a more holistic view of how citizens cope with stress associated with e-government use.

REFERENCES

- Al-adawi, Z., Yousafzai, S., & Pallister, J. (2005). Conceptual Model Of Citizen Adoption Of E-Government. *The Second Interanational Conference on Innovation in Information Technology (IIT'05)*.
- Alahakoon, C. N. K. (2016). Impact of computer self-efficacy and computer anxiety: a practical indicator of dental students' computer competency in Sri Lanka. *Journal of the University Librarians Association of Sri Lanka, 19*(2). <https://doi.org/10.4038/jula.v19i2.7886>
- Alkhwaja, M. I., Halim, M. S. A., & Afthanorhan, A. (2021). Technology anxiety and its impact on e-learning system actual use in Jordan public universities during the Coronavirus disease

- pandemic. *European Journal of Educational Research*, 10(4). <https://doi.org/10.12973/EU-JER.10.4.1639>
- Beaudry, A., & Pinsonneault, A. (2005). Understanding user responses to information technology: A coping model of user adaptation. In *MIS Quarterly: Management Information Systems* (Vol. 29, Issue 3). <https://doi.org/10.2307/25148693>
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2012). Promoting transparency and accountability through ICTs, social media, and collaborative e-government. *Transforming Government: People, Process and Policy*, 6(1). <https://doi.org/10.1108/17506161211214831>
- Brynjolfsson, E., & McAfee, A. (2014). The second machine age: Work, progress, and prosperity in a time of brilliant technologies. In *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W W Norton & Co.
- Budimir, S., Probst, T., & Pieh, C. (2021). Coping strategies and mental health during COVID-19 lockdown. *Journal of Mental Health*, 30(2). <https://doi.org/10.1080/09638237.2021.1875412>
- Celik, H. (2016). Customer online shopping anxiety within the Unified Theory of Acceptance and Use Technology (UTAUT) framework. *Asia Pacific Journal of Marketing and Logistics*, 28(2). <https://doi.org/10.1108/APJML-05-2015-0077>
- Cho, J. S. (2017). Evolution of e-government: Transparency, competency, and serviceoriented government with Korean government 3.0. *Journal of Business and Retail Management Research*, 12(1). <https://doi.org/10.24052/jbrmr/v12is01/eoegtcasogwkg3>
- Chu, G. M., Goger, P., Malaktaris, A., & Lang, A. J. (2022). The role of threat appraisal and coping style in psychological response to the COVID-19 pandemic among university students. *Journal of Affective Disorders Reports*, 8. <https://doi.org/10.1016/j.jadr.2022.100325>
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly: Management Information Systems*, 23(2). <https://doi.org/10.2307/249749>
- Fadel, K. J. (2012). User adaptation and infusion of information system. *Journal of Computer Information Systems*, 52(3).
- Fadel, K. J., & Brown, S. A. (2010). Information systems appraisal and coping: The role of user perceptions. *Communications of the Association for Information Systems*, 26(1). <https://doi.org/10.17705/1cais.02606>
- Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46(4). <https://doi.org/10.1037/0022-3514.46.4.839>
- Fugate, M., Prussia, G. E., & Kinicki, A. J. (2012). Managing employee withdrawal during organizational change: The role of threat appraisal. *Journal of Management*, 38(3). <https://doi.org/10.1177/0149206309352881>

- Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis: Pearson New International Edition*. *British Library Cataloguing-in-Publication Data*.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1). <https://doi.org/10.1007/s11747-014-0403-8>
- 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). <https://doi.org/10.1108/TG-04-2018-0026>
- Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems*, *13*(1). <https://doi.org/10.1080/07421222.1996.11518115>
- Kim, M. S., & Duda, J. L. (2003). The Coping Process: Cognitive Appraisals of Stress, Coping Strategies, and Coping Effectiveness. *Sport Psychologist*, *17*(4). <https://doi.org/10.1123/tsp.17.4.406>
- Kim, S., & Lee, J. (2012). E-Participation, transparency, and trust in local government. In *Public Administration Review* (Vol. 72, Issue 6). <https://doi.org/10.1111/j.1540-6210.2012.02593.x>
- Krok, D., Telka, E., Szcześniak, M., & Falewicz, A. (2023). Threat Appraisal, Resilience, and Health Behaviors in Recovered COVID-19 Patients: The Serial Mediation of Coping and Meaning-Making. *International Journal of Environmental Research and Public Health*, *20*(4). <https://doi.org/10.3390/ijerph20043649>
- Lazarus, R. S., & Folkman, S. (1986). Cognitive Theories of Stress and the Issue of Circularity. In *Dynamics of Stress*. https://doi.org/10.1007/978-1-4684-5122-1_4
- Lee, K., Choi, S. O., Kim, J., & Jung, M. (2018). A study on the factors affecting decrease in the government corruption and mediating effects of the development of ICT and E-government—a cross-country analysis. *Journal of Open Innovation: Technology, Market, and Complexity*, *4*(3). <https://doi.org/10.3390/joitmc4030041>
- Litwic-Kaminska, K. (2020). Types of cognitive appraisal and undertaken coping strategies during sport competitions. *International Journal of Environmental Research and Public Health*, *17*(18). <https://doi.org/10.3390/ijerph17186522>
- Lu, N. L., & Nguyen, V. T. (2016). Online Tax Filing—E-Government Service Adoption Case of Vietnam. *Modern Economy*, *07*(12). <https://doi.org/10.4236/me.2016.712135>
- Marakhimov, A., & Joo, J. (2017). Consumer adaptation and infusion of wearable devices for healthcare. *Computers in Human Behavior*, *76*. <https://doi.org/10.1016/j.chb.2017.07.016>
- Meng, F., Guo, X., Peng, Z., Ye, Q., & Lai, K. H. (2022). Trust and elderly users' continuance intention regarding mobile health services: the contingent role of health and technology anxieties. *Information Technology and People*, *35*(1). <https://doi.org/10.1108/ITP-11-2019-0602>

- Ohly, S., & Fritz, C. (2010). Work characteristics, challenge appraisal, creativity, and proactive behavior: A multi-level study. *Journal of Organizational Behavior, 31*(4). <https://doi.org/10.1002/job.633>
- Sabani, A. (2020). Investigating the influence of transparency on the adoption of e-Government in Indonesia. *Journal of Science and Technology Policy Management, 12*(2). <https://doi.org/10.1108/JSTPM-03-2020-0046>
- Sabani, A., Thai, V., & Hossain, M. A. (2023). Factors Affecting Citizen Adoption of E-Government in Developing Countries. *Journal of Global Information Management, 31*(1). <https://doi.org/10.4018/jgim.318131>
- Samsor, A. M. (2021). Challenges and Prospects of e-Government implementation in Afghanistan. *International Trade, Politics and Development, 5*(1). <https://doi.org/10.1108/itpd-01-2020-0001>
- Shareef, M. A., Kumar, V., Kumar, U., & Dwivedi, Y. K. (2011). E-Government Adoption Model (GAM): Differing service maturity levels. *Government Information Quarterly, 28*(1). <https://doi.org/10.1016/j.giq.2010.05.006>
- Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *MIS Quarterly: Management Information Systems, 15*(1). <https://doi.org/10.2307/249443>
- Tomaka, J., Palacios, R. L., Champion, C., & Monks, S. (2018). Development and Validation of an Instrument that Assesses Individual Differences in Threat and Challenge Appraisal. *Journal of Depression and Anxiety, 07*(03). <https://doi.org/10.4172/2167-1044.1000313>
- Trang, N., Phuong, N., Linh, L., & Hien, H. (2023, September 14). The Influence of Determinants of Citizen Relationship Quality in E-Government Adoption. *The 4th Asia Pacific Conference on Industrial Engineering and Operations Management*. <https://ieomsociety.org/proceedings/2023vietnam/230.pdf>
- Ubed, R. S., Ariutama, I. G. A., & Yudianto, 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*. <https://doi.org/10.2991/icbmr-17.2017.47>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems, 27*(3). <https://doi.org/10.2307/30036540>
- Venkatesh, V., Thong, J. Y. L., Chan, F. K. Y., & Hu, P. J. H. (2016). Managing citizens' uncertainty in e-government services: The mediating and moderating roles of transparency and trust. *Information Systems Research, 27*(1). <https://doi.org/10.1287/isre.2015.0612>
- Wilson, M. L., Huggins-Manley, A. C., Ritzhaupt, A. D., & Ruggles, K. (2023). Development of the Abbreviated Technology Anxiety Scale (ATAS). *Behavior Research Methods, 55*(1). <https://doi.org/10.3758/s13428-022-01820-9>

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