

## The Quality of E-services and E-filing Website Satisfaction that Affect the Intention of Individuals' Personal Income Tax Payment Online in Saraburi, Thailand

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### **Subin Putsom**

Assistant Professor, Faculty of Business Administration, Asia-Pacific International University, Thailand

E-mail: subin@apiu.edu

### **Rey Mom\***

Lecturer, Faculty of Business Administration, Asia-Pacific International University, Thailand

E-mail: rey@apiu.edu

\*Corresponding Author

*Received: 28/01/2025*

*Revised: 20/02/2025*

*Accepted: 31/03/2025*

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### **Abstract**

The purpose of this research is to study the causal relationship between the quality of e-services and satisfaction with the e-filing website that affects the intention of individuals' personal income tax payments. Data were collected using a questionnaire from a sample of 409 income-earning individuals within Saraburi Province, Thailand. The statistics used were frequency, percentage, Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The results showed that the Confirmatory Factor Analysis supported the consistency between the measurement Model and the empirical data for all variables. The study found that e-service quality has both direct and indirect effects on the intention of income-earning individuals to pay taxes online, with satisfaction with e-filing websites serving as a mediating factor. In addition, the quality of e-services directly influences users' satisfaction with the e-filing website, which in turn directly influences the intention of income-earning individuals to pay taxes online. As for the results of the analysis of the Structural Equation Model and the total influence values revealed that e-service quality has the strongest influence on the intention to pay tax online, primarily through satisfaction with the e-filing website ( $TE = 0.97$ ). Then, e-service quality has a total influence on satisfaction with the e-filing website ( $TE = 0.92$ ), which is statistically significant at the 0.01 level. Additionally, satisfaction with e-filing websites has a total influence on intention to pay taxes online ( $TE = 0.35$ ), statistically significant at the 0.05 level.

**Keywords:** E-service Quality, E-Filing, Website Satisfaction, Online Tax Payment Intention

### **1. Introduction**

The evolution of information and communications technology (ICT) and the prevalence of the Internet have led to changes in organizational service delivery processes (Teo et al., 2008). Garad and Qamari (2021) said that from this evolution, government agencies have developed services into e-government that focuses on providing services to citizens through

interaction and exchange between citizens and government online websites. Providing e-government services allows citizens to interact and conduct transaction online in a faster, more convenient, and efficient manner (Pham et al., 2023). The traditional government service delivery model requires citizens to communicate with government agencies to request services by interacting directly with their officials. Meanwhile, with e-government enables citizens to complete transactions and communicate with government agencies remotely, using their phone or computers to access service through digital platforms and websites. According to Papadomichelaki & Mentzas (2012), e-government services both benefit citizens and facilitate government agencies by streamlining transactions, which is more convenient and efficient as well as saving time and money. There are various services that the citizens can choose from such as payment of customs duties, paying income tax, buying insurance, business registration, issuance of a passport, requesting a car registration or driver's license, or even voting or elections, etc. In addition, providing e-government services reduces costs and the need for physical presence, as citizens no longer have to travel to government offices to request services. Providing e-government services also facilitates government agencies to have thorough access to the general public. Whether individuals live in urban or rural areas, e-government services can be accessed at any time through a personal computer or mobile device with an Internet connection. Citizens can communicate and exchange information at anytime from anywhere (Pham et al., 2023), and it also helps make the work of government agencies transparent and increases the credibility of government agencies as well (Esselimani et al., 2021).

An important government agency in Thailand that is involved in collecting taxes from the public is the Revenue Department, under the supervision of the Ministry of Finance. It is an e-government service agency responsible for developing an efficient electronic service system to increase trust and reduce concerns in using the service by taxpayers who can check their status after filing online taxes by using the Revenue Department E-filing system, which is a service system for filing and paying taxes via the internet. The taxpayer enters the information that must be filled in in the form. Taxes can now be filed online, eliminating the need to complete and submit paper tax returns. Taxes are paid concurrently using electronic instructions for banks to transfer tax money to the Revenue Department (Nuttaro, 2023). Currently, the Revenue Department is campaigning for taxpayers to submit income tax forms through the online tax filing and payment system (e-filing) to be in line with the government action plan, which is the use of e-filing services for 100% of form filing, paying all types of taxes and is a One-Click Service Unit service to increase efficiency in tax collection, promote the use of e-filing and e-Tax Invoice (Kongkaew, 2023). Although such systems are promoted and supported by government agencies, a review of the literature e-government service delivery reveals that, especially in developing countries such as Thailand, citizens have increased expectations regarding the credibility of this services. This is the desire for high-quality e-government services that create value, foster satisfaction, and the people's intention to come back and use e-government services again.

Parasuraman et al. (1985) stated that their study on service quality in a commercial environment found a positive relationship between customer satisfaction and service quality, which in turn positively influences customers' purchase intentions. These relationships have been studied in the case of e-government. Furthermore, empirical studies have shown that service quality is positively related to website satisfaction, which leads to citizens' intention to

use the service (Kala et al., 2024). However, Pham and colleagues (2023) have addressed a lack of research regarding the factors that influence citizens' intention to use e-government services. Effective e-government should provide good quality services from the government agencies customer satisfaction, and willingness to use these services (Nookhao & Kiattisin, 2023). If studied in this framework, useful insights will be gained for improving and presenting services that truly meet the needs of citizens for e-government services. Therefore, the researcher is interested in studying the quality of e-services in terms of information quality, website reliability, website responsiveness, website guarantees, website usability, and personalized services. In conjunction with the study of satisfaction with e-filing websites and online tax payment intentions of individual income taxpayers who pay income tax through online channels, namely the websites of the Revenue Department, Ministry of Finance, the objective is to study the causal relationship between the quality of e-services and satisfaction with e-filing websites that affect the intention to pay taxes online of individual income earners at Muak Lek District, Saraburi Province. This study reviews the literature on e-service quality, satisfaction with e-filing websites, and online tax payment intentions. It outlines the research framework, methods, and data analysis, and discusses the findings derived from empirical data, along with the confirmation of the results. The results of this research will be forwarded to relevant government agencies in order to develop, improve, and promote the use of e-government services of the e-filing system for taxpayers according to the goal of 100% service use in the future.

## 2. Literature Review and Hypotheses Development

### 2.1 E-service Quality

Website service quality or e-service quality refers to the degree to which a website provides convenience and efficiency in selecting, purchasing and delivering products and services. The definition of service therefore covers services both before and after trading through the website (Zeithaml et al., 2002). In general, there are various criteria that customers use to evaluate the service quality of a website and the delivery of service quality through the website, including the availability of information and content, ease of use, privacy, security, graphical style and fulfillment (Hsin Chang, 2007). Swaid and Wigand (2009) stated that e-service quality can be measured by 6 criteria: information quality, website reliability, website responsiveness, website assurance, website usability and the provision of personalized services (personalization), with the following details. (1) Information Quality is the valuable outcome that results from the use of information produced by the system for relevant agencies when conducting online transactions. Online users rely on the text, descriptions, and images provided by websites to understand products and services. Users will use the services through various features of the system that are designed such as ease of website use, ease of information search, response time and download time, product quality, service provider quality, program quality, system design, quality of computer interaction, and so on (Sharma & Lijuan, 2015). (2) Website Reliability refers to the consistency of performance and reliability of use (Parasuraman et al. 1985). This also means the accuracy of the services delivered by the company, correct payment processing and information displayed on the website is clear, current and complete. Products or services that deliver quality or reliability are recognized as having a significant impact on customer satisfaction and quality and website trustworthiness is a strong predictor of positive

intentions and attitudes toward websites (Barrera et al., 2014). Evaluating the credibility of a website's services covers criteria such as trustworthiness and trust, etc. (3) Website Responsiveness refers to the efficient management of problems and the delivery of information via the Internet (Ahemed et al., 2017). Kim and Lee (2002) stated that the responsiveness of a website shows its ability to respond to customers every time they come to use the services, such as information inquiries, information downloads, and search speed.

Responsiveness is also the ability to handle complaints with speed and efficiency of services. AlBalushi (2021) stated that the efficiency and effectiveness of the responsiveness of e-government websites are determined by the response rate to inquiries and complaints, the facilitation of communication and the response from service providers, and providing information in a timely manner. 4) Website Assurance is the level of trust and confidence in the website for those who use the services. Increasing customer trust and confidence increases customers' purchase intentions and makes it easier for companies using Internet channels to retain customers (Sabri et al., 2022). There should be guarantees of website security such as physical security, financial security, and confidentiality (Shankar & Datta, 2020). Online service providers need to build trust by impressing their customers with website assurances that lead to trust, safety, and privacy. 5) Website Usability define as the quality of the user experience when interacting with a website, software, device or application. The use of the website takes into account the overall effectiveness, efficiency, and satisfaction of the user. Ugras et al. (2016) stated that website usability refers to website users being able to work quickly and easily to accomplish their tasks and users being able to use the website to achieve specific goals with efficiency, effectiveness, and satisfaction. Bilgihan et al. (2016) analyzed that perceived website usability and perceived website usefulness affect customer satisfaction with online shopping. The results show that website usability is a crucial factor in positively influencing the perceived benefits and perception of usability. Perception of usage has a positive effect on customer satisfaction. Additionally, customer satisfaction directly affects customer attitude and indirectly affects purchase intention. 6) Providing Personalized Services (Personalization) means customizing the experience of using online services to suit the preferences and needs of each individual. It tailors recommendations, products, content, and interactions based on user behavior, purchase history, and other information related. The goal of personalized services is to increase customer satisfaction and engagement by providing a more personalized form of online services (Kaptein & Parvinen, 2015).

This involves personalizing the online service model by providing services that suit the needs of customers by analyzing customer needs, changing service formats to attract website users, and increasing positive thoughts and attitudes toward websites (Ahemed et al., 2017). Therefore, this research has brought about the quality of e-services. It consists of a total of 6 variables according to the studies of Swaid and Wigand (2009), and Morsi (2023) used in the study.

## **2.2 Service Satisfaction**

Saleem et al. (2022) defined customer satisfaction as the process of comparing customer expectations with actual product performance after purchase. Junardi and Sari (2019) stated that e-customer satisfaction is the feeling that online buyers of goods and services receive something that exceeds the customer's expectations and exceeds consumer's satisfaction after

comparing previous purchase experiences and it may even exceed the online buying experiences. Service satisfaction is the result of the service experienced. It is found that the perceived service quality is related to various service experience outcomes such as customer satisfaction, customer retention and customer loyalty (Lionello et al., 2020). Customer satisfaction is an important variable that leads to customer beliefs about the probability of receiving services and leads to positive feelings (Udo et al., 2010). According to Kotler and Keller (2006), satisfaction arises from the user experience of a product or service during the purchase process and is an important factor affecting future product or service consumption behavior, such as repeat purchases of the product or service online and leads to loyalty (Pereira et al., 2017). Satisfaction is one of the most important success tools for online government-to-consumer (G2C) transactions (Pham et al., 2023). Satisfied online service users are more likely to make repeat purchases and recommend online services to others (Pereira et al., 2017) and literature on public services for the people. Population satisfaction is considered an important outcome that academics and practitioners are increasingly interested in studying (Petrovsky et al., 2017). Therefore, examining the relationship between perceived service quality and citizen satisfaction will make the research model more comprehensive and accurate. Satisfaction of service users refers to the impact that people feel about the use of e-government services, which indicates the mental or emotional state of the people involved and is the result of the evaluation of knowledge and understanding of the services experienced. Perceived e-service quality and user satisfaction are important indicators of e-government success (Lionello et al., 2020). Perceived service quality arises from collecting information and evaluating citizens' overall service use regarding services provided by service providers or the government through online services. Perceived good service quality indicates a positive experience with the service and will make citizens more satisfied (Chan et al., 2021) and providing electronic services for disseminating information to the public will meet standards equivalent to the general expectations of service users. Because the quality of the website directly affects effective service delivery, user satisfaction and trust in the service (Veeramootoo et al., 2018) and Li and Shang (2020) stated the influence on citizens' intention to use electronic services, the researchers therefore hypothesized the study as follows.

**Hypothesis 1:** E-service quality has a direct influence on satisfaction in using E-filing services.

**Hypothesis 2:** E-service quality has a direct influence on online tax payment preferences.

### 2.3 Intention to use online services

This research on intentions to pay taxes online via E-filing has adopted the Technology Acceptance Model (TAM) theory. It is a well-accepted and famous theory that has been used to measure the success of technology use. It was developed by Davis (1985) to study the context of information system adoption. It states that the perception that technology is useful and easy to use is the main variable that will affect users' attitudes and affect actual usage behavior, together with the Theory of Reasoned Action (TRA) which describes consumer behavior based on individual intentions (Gultom, 2020). This theory states that personal attitudes and norms affect people's intentions and has been used to measure consumer intentions towards specific contexts such as technology adoption (Zahid et al., 2022). Online service intention refers to the decision-making process of a customer while purchasing a

product or service from an online website. After evaluating all relevant elements (Saleem et al., 2022), assessing individuals' purchase intentions is often complex and there are many factors that influence the intention to use online services (Zhang et al., 2014).

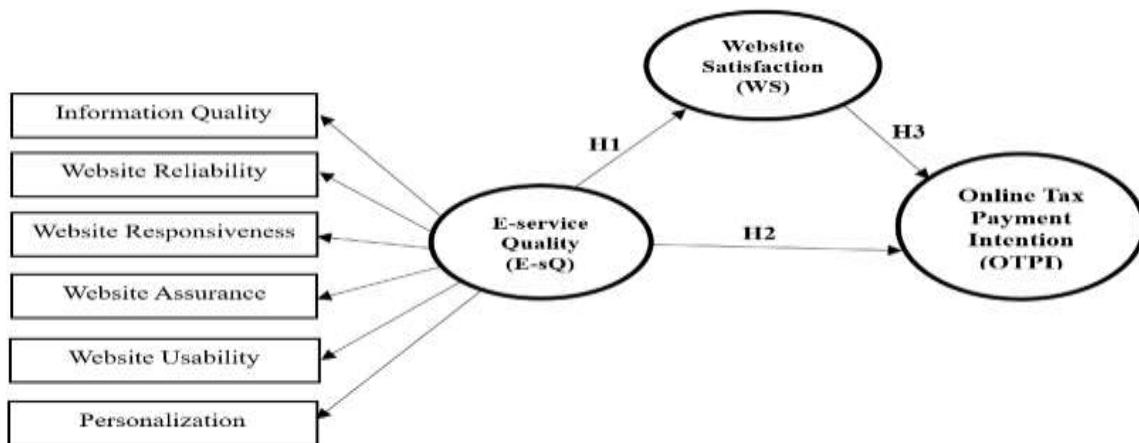
Online purchase intention is related to the product or service that the customer will base his biased decision on evaluating the website (Shin & Biocca, 2017). Moreover, (Gan, 2017) stated that buying products and goods online has become a very important, useful, and attractive activity on social media platforms. The study said that most of them intend to use online services in the business sector. From the study of government services, it was found that there is literature related to the use of online services by citizens towards government services related to their intention to use online services, as a study by Zubir and Abdul Latip (2023) stated that social pressure on ease of use, perceived ease of use, and perceived usefulness has a positive effect on citizens' intention to use e-government services. Government agencies promote use by improving perceived benefits and utilization so that citizens recognize the importance of perceived benefits and promote the use of technology to improve user experience. According to a study by Zahid and colleagues (2022), preferences for using e-government services are influenced by many factors, such as attitude, personal norms, perceived behavioral control, and trust. There are also other influential factors such as the influence of the media and family, the individual's perception of their abilities, and the economic situation of the individual. (income), family structure and social bonds. Oladimeji and colleagues (2023) said that there is a relationship between trust and satisfaction in using government online services. Online service users feel satisfied because they are influenced by the attractiveness, trustworthiness and desire to use the online system. People's level of trust directly affects satisfaction and the satisfaction of online service users will affect repeat purchases. Moreover, the section on e-government shows that when citizens use e-services, their tendency to continue using government websites increases in direct proportion to their level of satisfaction with e-services. Therefore, the researcher has hypothesized the study as follows.

**Hypothesis 3:** Satisfaction with using E-filing services has a direct influence on the intention to pay taxes online.

**Hypothesis 4:** E-service quality has an indirect influence on online tax payment intention through satisfaction with E-filing websites.

Therefore, compared to these foundational studies, the current research builds upon Swaid and Wigand's (2009) model of e-service quality and applies it specifically to e-filing services, a context less explored in prior literature. This distinction is important as it focuses on online government services, an area where service quality and satisfaction have been less rigorously analyzed in comparison to retail or commercial services. Then, the conceptual framework of this research is shown in Figure 1, which tests the concept of e-service quality, which has a total of 6 sub-dimensions consisting of; information quality, website reliability, website responsiveness, website assurance, website usability, and provision of personalized services (personalization) have a direct influence on satisfaction in using the service and an indirect influence on online tax payment intention, with satisfaction with the website being a mediator variable in the context of individual income earners who pay taxes through the E-

Filing website of the Revenue Department, Ministry of Finance.



**Figure 1** Research Conceptual Framework

### 3. Research Methodology

#### 3.1 Population and Samples

The population used in this research is individual income earners aged 18 years and over, living in Saraburi Province, year 2023. The total population is 24,719 people (Data Center HPC4, 2023) using a sample size calculation formula according to the conditions of Structural Equation Modeling: SEM. Hair and colleagues (2014) stated that the sample size should be 200 samples or more. The general condition that is widely accepted is that the sample size should be 10 times the number of questions. This research has a total of 36 questions so the sample size should not be less than  $36 \times 10$  which equals 360 samples. The researcher used a purposive sampling method by choosing to collect data from individual income earners who have experience in filing income tax payments through the Revenue Department's E-Filing website, Ministry of Finance only. The researchers chose purposive sampling because the study specifically required data from individual income earners in Saraburi Province who had experience using the Revenue Department's E-filing website, ensuring that all respondents could accurately evaluate e-service quality, satisfaction, and online tax payment intention, making this method highly suitable for targeting the relevant population. The data collection method was by using Google Forms sent via online channels through the Line, Messenger, and Facebook applications. After sending the questionnaire to the sample group, it was found that there were a total of 409 respondents, which was more than the sample size required. Therefore, the data used in the analysis for this research is in accordance with the specified statistical conditions.

#### 3.2 Research Variables

This research has determined the variables used in the study into 3 types: 1) one independent variable, which is e-service quality, which has a total of six sub-variables: information quality, website reliability, website responsiveness, website assurance, website usability, and the provision of personalized services (personalization). 2) one mediator variable, which is satisfaction with the website, and 3) one dependent variable, which is the intention to pay taxes online of individual income earners residing in the Muak Lek District area, Saraburi Province.

### 3.3 Research Tools

The instrument used to collect data for this research was a closed-ended questionnaire divided into four parts: Part 1: General information of the respondents, divided into eight items: gender, age, marital status, education level, occupation, average annual income, number of times filing tax payments online and types of income taxes. The nature of the questions is closed-ended with only one answer to be selected. Part 2 has questions about the quality of e-services. It consists of six sub-variables: information quality with five items, website reliability with five items, website responsiveness with four items, website assurance with four items, website usability with four items, and personalization with four items. Items were developed and improved from the questions of Swaid and Wigand (2009), Morsi (2023), and Pham et al. (2023). Part 3 has questions about satisfaction with the website, five items, developed and improved from the questions of Chan et al. (2021) and Pham et al. (2023), and Part 4 has questions about intentions to pay taxes online, totaling five questions, were developed and improved from the questions of Zahid et al., (2022), Nookhao and Kiattisin (2023) and Pham et al. (2023). The questions in parts 2, 3, and 4 were closed-ended and approximated using a 5-point estimation Likert Sale, in which 5 points equals the highest level, 4 points equals a high level, 3 points equals a moderate level, 2 points equals a low level, and 3 points equals the least level. All questions were checked for accuracy by three experts with an IOC between 0.67 - 1.00 and a test (tryout) was conducted of the questionnaire by collecting data from a sample group with similar characteristics to the respondents, totaling 30 sets. Then the questionnaire was used to collect information from a total sample of 409 people. The Cronbach's Alpha confidence values are shown in Table 1.

**Table 1** Cronbach's Alpha confidence values of 30 and 409 questionnaires

Variables	n = 30	n = 409
E-service Quality	0.98	0.95
Information Quality	0.94	0.77
Website Reliability	0.95	0.82
Website	0.87	0.80
Responsiveness		
Website Assurance	0.96	0.79
Website Usability	0.91	0.87
Personalization	0.95	0.79
Website Satisfaction	0.97	0.84
Online tax payment intention	0.96	0.84
<b>Total</b>	<b>0.99</b>	<b>0.95</b>

Therefore, Cronbach's Alpha confidence value is greater than 0.70, considered to be within the acceptable criteria (Cho & Kim, 2015), indicating that the tools used in this research have sufficient confidence values so that the data can be analyzed in the next phase.

### 3.4 Data Analysis and Statistics Used

This research used a packaged program to analyze data and the statistics used were

divided according to the nature of the data and the objectives of the study as follows; First, analysis of personal data of respondents, which are gender, age, marital status, educational level, occupation, average annual income, number of times filing tax payments online, and types of income taxes was done by using Frequency and Percentage. Second, Confirmatory Factor Analysis: E-service quality used for CFA includes information quality, website reliability, website responsiveness, website assurance, website usability and the provision of personalized services (personalization), satisfaction with the website, and intention to pay taxes online of individual income earners. These criteria are used to consider the harmony of variables. Results show a relative standard factor loading value of more than 0.60, and a chi-square value ( $\chi^2/df$ ) being less than 4.00. The p-value must not be statistically significant or not less than 0.05, GFI was greater than 0.90, AGFI was greater than 0.90, and RMR was lower than 0.05, RMSEA was less than or equal to 0.05 (Choi & Seltzer, 2010), CV was greater than or equal to 0.70, and AVE value was greater than or equal to 0.50 (Hair et al., 2014). Finally, Analysis of influence among variables using Path Analysis of Structural Equation Modeling (SEM) to test the harmony of the research model with empirical data and to test the hypothesis of the influence of the variables studied. The standard criteria used include the relative chi-square value ( $\chi^2/df$ ) having a value less than 4.00, the p-value not being statistically significant or not less than 0.05, GFI having a value greater than 0.90, AGFI is greater than 0.90. NNFI is greater than or equal to 0.90, IFI is greater than or equal to 0.90, CFI is greater than or equal to 0.90, and RMSEA is less than or equal to 0.05 (Hair et al., 2014).

## 4. Research Results

### 4.1 General data analysis of respondents

The respondents of this research are people with income in Saraburi Province, Thailand. The total number was 409 people classified as follows: Most of the respondents were female, 214 people, accounting for 52.3 percent, aged between 31 - 40 years, 157 people, accounting for 38.4 percent, single status, 200 people, accounting for 48.9 percent, graduated with a bachelor's degree, 339 people, accounting for 82.9 percent, occupations as employees of private companies, 146 people, accounting for 35.7 percent, have an average annual income of approximately 200,001 baht - 300,000 baht, 141 people, accounting for 34.5 percent, have filed taxes online 2 - 3 times, 287 people, accounting for 70.2 percent, and the type of income tax that was submitted for payment online was the P.N.D. 90 form, numbering 259 people, accounting for 63.3 percent.

### 4.2 Confirmatory Factor Analysis (CFA)

The results of the confirmatory factor analysis of the latent variable component indicators in the measurement model are consistent between the theoretical data and the empirical data of the all dimensions and variables. In appendix shown the all items of each variable and standard factor loading value more than 0.60 considered high convergent validity (Hair et al., 2014; Awang et al., 2015). For the details of three main variables are as follows; E-Service Quality (E-sQ) has a  $\chi^2/df$  value equal to 0.58, a p-value value equal to 0.80, a GFI value equal to 1.00, an AGFI value equal to 0.99, an RMR value equal to 0.00, an RMSEA value equal to 0.00, a CR value equal to 0.96 and an AVE value equal to 0.79. Website Satisfaction (WS) has a value of  $\chi^2/df$  equal to 1.59, p-value equal to 0.21, GFI value equal to

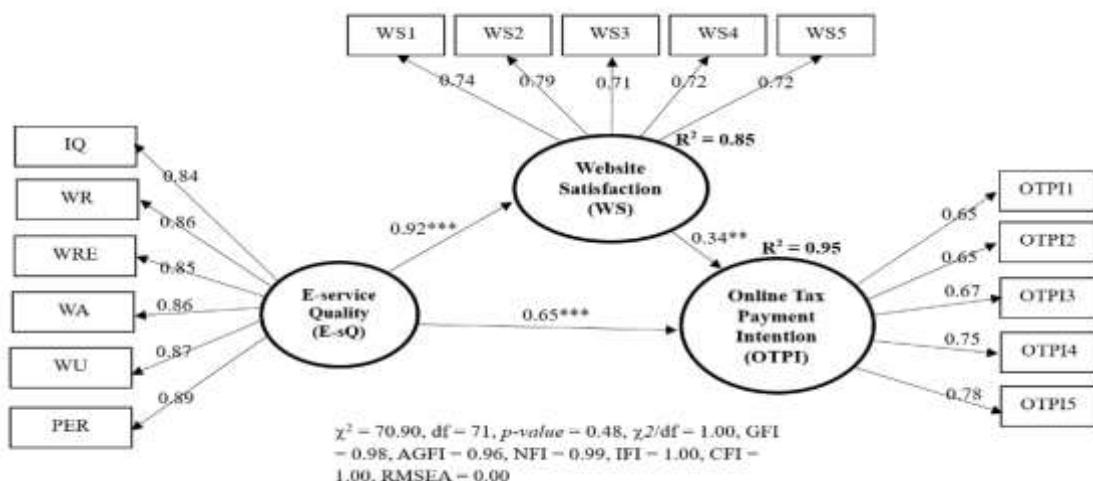
1.00, AGFI value equal to 0.98, RMR value equal to 0.01, RMSEA value equal to 0.04, CR value equal to 0.89 and AVE value equal to 0.61. Online tax payment intention (OTPI) has a  $\chi^2/df$  value of 2.61, a p-value of 0.11, a GFI value of 1.00, an AGFI value of 0.96, an RMR value of 0.01, an RMSEA value of 0.06, a CR value of 0.89, and an AVE value of 0.62. From the analysis, it was found that the RMSEA value of online tax payment intention is greater than 0.05, which is higher than the criteria set as it must be lower than or equal to 0.05, but Hair et al. (2014) stated that if the other indexes meet the specified conditions, then the model is consistent with the empirical data. The results of the analysis are detailed in Table 2.

**Table 2** Results of Confirmatory Factor Analysis of Latent Variables

Measure	$\chi^2/df$	p-value	GFI	AGFI	RMR	RMSEA	CR	AVE
Threshold	$\leq 3.0$	$\geq 0.05$	$\geq 0.90$	$\geq 0.90$	$\leq 0.05$	$\leq 0.05$	$\geq 0.70$	$\geq 0.50$
E-sQ	0.58	0.80	1.00	0.99	0.00	0.00	0.96	0.79
WS	1.59	0.21	1.00	0.98	0.01	0.04	08.9	0.61
OTPI	2.61	0.11	1.00	0.96	0.01	00.6	08.9	06.2

### 4.3 Analysis of influence among variables

From Figure 2, the causal factor model of E-Service Quality, Website Satisfaction and intention to pay taxes online of individual income earners in Muak Lek District, Saraburi Province showed that the results of the test found the overall harmony of the model. It was found that the  $\chi^2$  value was equal to 70.90, the df value was equal to 71, the  $\chi^2/df$  value was equal to 1.00, and the p-value was equal to 0.48. This shows that there is no statistical significance at the 0.05 level, GFI value equals 0.98, AGFI value is 0.96, NFI value is 0.99, IFI value is 1.00, CFI value is 1.00 and RMSEA value is 0.00. All values meet the conditions indicating that the research framework is consistent with the empirical data.



**Figure 2** Results of empirical data analysis of the research conceptual framework

The results of Structural Equation Analysis and total influence values found that e-service quality (E-sQ) has the greatest combined influence on online tax payment intentions of individual income earners (OTPI) (total influence = 0.97). It has a direct influence of 0.65 and an indirect influence of 0.32, followed by e-service quality (E-sQ) having a total influence on website satisfaction (WS) (total influence = 0.92) which is a direct influence equal to 0.92 at

the statistical significance level of 0.01. Website satisfaction (WS) has a combined influence on online tax payment intention (Total influence = 0.35) with a direct influence equal to 0.35 at the statistical significance level of 0.05. In addition, the results of the analysis of the Coefficient of Determination: R2 found that the model was accurate in predicting website satisfaction (WS) ( $R^2 = 0.85$ ) at a high level and it has a very high accuracy in predicting online tax payment intention (OTPI) ( $R^2 = 0.95$ ) (Hair et al. 2014), as shown in Table 3 and Figure 2.

**Table 3** Value of Direct Effect, Indirect Effect, and Total Effect

Dependent Variables	$R^2$	Effect Type	Independent Variable	
			E-service Quality	Website Satisfaction
Website Satisfaction	0.85	Direct Effect	0.92***	-
		Indirect Effect	-	-
		Total Effect	0.92***	-
Online Tax Payment Intention	0.95	Direct Effect	0.65***	0.35**
		Indirect Effect	0.32***	-
		Total Effect	0.97***	0.35**

\*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Path Coefficient analysis found that there is a direct positive relationship among e-service quality, website satisfaction, and online tax payment intention. It is followed by the quality of e-services and website satisfaction, and the quality of e-services and the intention to pay taxes online with a statistical significance of 0.01 for 3 paths and satisfaction with the website and intention to pay taxes online at a statistical significance of 0.05 for 1 path. The results of the hypothesis testing are shown in Table 4.

**Table 4** Hypothesis, Path Analysis, Path Coefficient, and Result

Hypothesis	Path analysis	Path Coefficient	Result
H1	E-sQ→WS	0.92***	Accepted
H2	E-sQ→OTPI	0.65***	Accepted
H3	WS→OTPI	0.35**	Accepted
H4	E-sQ→WS→OTPI	0.97***	Accepted

\*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

#### 4.4 Hypothesis Testing Results

From data analysis according to hypothesis 1, E-Service Quality has a direct influence on satisfaction with the E-filing website. It is found that E-Service Quality has a positive direct influence on satisfaction with the E-filing website at the statistically significant value of 0.01 which means that if individual income earners are aware of the quality of e-services, they will be more satisfied with the e-filing website. Therefore, it can be concluded that the quality of E-Services has a direct influence on satisfaction with the website. Therefore, **Hypothesis 1 is accepted**. As for the results of testing hypothesis 2, the quality of E-Services has a direct influence on the intention to pay taxes online. It was found that e-service quality

has a positive direct influence on online tax payment intention at a statistical significance level of 0.01. This means that if individual income earners are aware of the quality of e-services, it will result in an increased willingness of individual income earners to pay taxes online through the E-filing website. Therefore, **Hypothesis 2 is accepted**. The results of testing Hypothesis 3, satisfaction with the E-filing website has a direct influence on the intention to pay taxes online, it is found that satisfaction with the E-filing website has a positive direct influence on the intention to pay taxes online at the statistical significance value of 0.05 which means that if individual income earners are satisfied with the E-filing website, it will result in an increased willingness to pay taxes online. Therefore, **Hypothesis 3 is accepted**. Finally, the results of testing Hypothesis 4: E-service quality has an indirect influence on online tax payment intention through satisfaction with E-filing websites.

It was found that e-service quality has a positive indirect influence on online tax payment intention through satisfaction with e-filing websites at the statistical significance level of 0.01. This means that if individual income earners are aware of the quality of the e-services and are satisfied with the E-filing website, it will result in the individual income earners being more willing to pay taxes online through the E-filing website. Therefore, **Hypothesis 4 is accepted**. See Table 4 for the explanation.

## 5. Discussion and Implications

### 5.1 Discussion of Findings

For the research on the causal relationship between the quality of e-services and satisfaction with e-filing websites that affect the intention to pay taxes online of individual income earners in Muak Lek District, Saraburi Province, the results can be summarized and discussed as follows.

E-service quality directly influences satisfaction with the E-filing website. Key factors of e-service quality include the Information Quality on the website, Website responsiveness, Website Usability, Website Assurance, Website reliability, and personalized service, all of which result in citizens being satisfied with the E-filing website. This is consistent with the research of Hardiyanto and Firdaus (2021), which found that information quality, website quality, electronic service quality, system quality, and all dimensions of website quality are related to user satisfaction. Saleem and colleagues (2022) found that website quality variables such as system quality, information quality, and service quality affect consumers' intention to purchase products or services online in e-commerce businesses. Pushparaja and colleagues (2021) found that e-service quality is positively related to customer satisfaction. Additionally, Rita et al. (2019) found that trust is a crucial factor for customers in deciding whether to order products from online stores, and previous studies confirm that e-service quality has a positive influence on satisfaction (e.g., Pereira et al., 2017; Pham et al., 2023). According to the research of Kitapci and colleagues (2014), customer satisfaction and customer trust are the direct outcomes of overall electronic service quality. The outcome of this study confirmed that electronic service quality has a positive impact on customer satisfaction. In addition, most of the past research on e-service quality found that customer satisfaction is the main factor affecting e-service quality. This supports the hypothesis based on the research framework that there is a significant relationship between electronic service quality and customer satisfaction. It has been shown that improved e-service quality results in increased

customer satisfaction. Prior findings for e-services of government agencies were supported by Pham and colleagues (2023), who identified the critical factors of e-government service which are five factors: ease of interaction, compliance, citizen care, security and privacy, and reliability. Therefore, the findings from this research indicate that the quality of e-services is related to satisfaction with the e-filing website of individual taxpayers in using online tax payment services.

The results of the analysis of e-service quality have a direct influence on online tax payment intention. It can be explained that the quality variables of e-services include Information Quality, Website reliability, Website responsiveness, Website Assurance, Website Usability and providing personalized services affect the intention of paying taxes online for individual income earners. This is consistent with Li and Shang's (2020) research, which found that service quality is a key factor of value creation and the perceived value of services depends on whether government systems promote efficiency, increasing citizens' perceptions of the value of e-services. Moreover, the perceived benefits of using e-government services as part of the e-service quality component also demonstrate users' continued intention to purchase or usage of repeated services when comparing traditional government services with e-government services. This is because e-government services provide many benefits in the case of public services such as greater accuracy, agility, and flexibility and the efficiency gained from providing electronic government services also facilitates and encourages service users to intend to use them continuously (Alruwaie et al., 2020). Mao and colleagues (2023) stated that satisfaction is a positive emotional state experienced by service users after using the services. It is an overall evaluation of the service to see how well it can meet needs (Loh et al., 2022). Satisfaction is, therefore, an important driving force that stimulates service users' continued intention and makes them more willing to use e-government services. Oladimeji and colleagues (2023) found that the beliefs developed throughout the process of interaction and interaction between users of e-government services are the main factors that cause user satisfaction after using E-government websites or services. Online users' satisfaction is influenced by the attractiveness, trustworthiness, and desire to use the services of a website. The level of confidence citizens has in using a website directly affects their satisfaction. Similarly, online service user satisfaction will affect repeat purchase intentions. Nookhao and Kiattisin (2023) found that users' satisfaction with e-government arises from the evaluation of relevant citizens' utilization of e-government services to see whether they meet their expectations arising from their perceptions of the value and quality of service. Satisfaction is the strongest forecaster of repeat service intentions, and there is a relationship between continuous service use and satisfaction. It also supports the impression that citizen satisfaction directly encourages continued use intentions of e-government and indirectly increases citizens' reuse intentions through satisfaction with government services as well.

Satisfaction with e-filing websites has a direct influence on online tax payment intentions, which is consistent with Kotler and Armstrong's (2012) study that customer satisfaction is crucial to future purchasing behavior. Purchase intention reflects an individual's willingness to buy a company's products based on past experiences. Satisfied customers are more likely to increase their service usage and future engagement (Henkel et al., 2006). Customer satisfaction and intention to use the product or service can be increased by service providers offering superior service quality. When customers are pleased with the service they

receive, they will come back to use the service again. Multiple studies have discovered evidence of a positive relationship between repurchase intentions and customer satisfaction (Pham & Ahammad, 2017). Satisfaction results from a comparison between what is expected and what is received. It is the result of evaluation called attitude. If the evaluation results meet expectations, consumers or users will feel satisfied and have a good attitude toward using the services. This will result in positive behavior such as loyalty and intention to use the service in the future. As for satisfaction, arising from using e-government services and having a positive experience resulting from efficient and effective website services, this will affect the intention to use the service and the intention to continue using the service (Nookhao & Kiattisin, 2023). Veeramootoo and colleagues (2018) discovered that satisfaction with using the e-government service system lead to in citizens being willing to use the e-filing system. Technology acceptance behavior and continued service use behavior will change with experience, which may influence whether or not usage will increase or decrease in the future and this affects the intention to continue using e-filing (Santhanamery & Ramayah, 2018). Koenderink (2013) explains that expected benefits and perceived ease of use are very important to citizens' willingness to transact online with government websites. Moreover, a high level of risk perception will result in a low level of intention to use electronic services. The factors that influence the intention to conduct online transactions with e-government are service quality, which is trust, benefits, ease of use and risk perception. Singh and colleagues (2022) recommend that a citizen-centered strategy for accessing e-services should be designed so that people can access public services. Taking into account the needs and interests of citizens, the government should offer services that can be tailored to the needs of the individuals being served, which will make service users more satisfied and, at the same time reduce costs. People now expect governments to provide services that are more transparent, accessible, and responsive. Zahid et al., (2022) found that e-government is increasingly necessary at the global level because e-government is considered a valuable tool to provide important, fast and timely public services. In addition, the intention of the company's users also affects the feat of the e-government service and indicates that the intention to use the service occurs after the user is satisfied with the service. Perceived results that are higher than expected from service use have a positive and significant effect on service intention.

The results of the analysis of e-service quality indirectly influence the online tax payment intention from satisfaction with the E-filing website, which can be described as 6 e-service quality aspects: information quality; website reliability, website assurance, website usability, website responsiveness, and providing personalized services affect the intention to pay taxes online through satisfaction with the E-filing website of individual income earners. This aligns with Nookhao and Kiattisin (2023) who examined factors influencing behavioral intention to use e-government services from the standpoint of citizens. It was found that the important factors in creating acceptance of e-government include perceptions of privacy, perceptions of security, and trust in government. As for the purpose of using e-government services, it arises from the quality of e-government services in three aspects: data quality, system quality, and service quality. Moreover, Xiong and colleagues (2022) examined the factors predicting mobile government service continuance by using a two-stage structural equation modeling-artificial neural network approach. They found that the quality of the service system had the most significant influence on behavioral intentions. If citizens perceive

the quality of the system they use, they will be more likely to use e-government services because citizens will perceive the quality of the system when the system is accessible, convenient, reliable, and available. Wang and Teo (2020) found that citizens' satisfaction comes from the components of system quality, service quality, and information quality. This aligns with Veeramootoo et al.'s (2018) research that said service quality has a strong effect on citizens' satisfaction with using e-government services. Service quality happens when people obtain quick feedback, compassion, reliability, and understanding. Chen and colleagues (2015) also discovered that information quality is crucial to satisfaction and service intention. If the quality of the information is highly accurate, it results in people being satisfied and having higher intentions to use the service. Citizens are conscious of information quality when e-government services provide information that is up-to-date, accurate, adequate, and related to their needs. Moreover, citizen satisfaction affects their intention to use e-government services. Alruwaie et al.'s (2020) findings found that citizen satisfaction with e-government services leads to their intention to use those services. This is consistent with the research of Veeramootoo and colleagues (2018) who discovered that citizens are content with the use of e-filing government service systems, resulting in increased usage behavior. Chen and colleagues (2015) stated that perceived usefulness is important for behavioral intentions. This is because both urban and rural citizens recognize the benefits of e-government services, such as reducing costs, reducing time, and increasing transaction efficiency. Therefore, they adopt technology and change behavior in accordance with the technology acceptance model theory described.

## 5.2 Theoretical Implication

The study found that the quality of government e-services consists of six characteristics: Information quality on the website, Website reliability, Website responsiveness, Website assurance, Website usability, and personalized services that affect satisfaction with the E-filing website and intention to pay taxes online among individual income earners. This study uses the Technology Acceptance Model (TAM) along with the Theory of Reasoned Action (TRA) to explain consumer behavior based on individual intentions. The results from the study are aligned with the results of Pham et al., (2023). This study inspected the causal relationship between each aspect of e-service quality and found that all six e-service quality characteristics of the Revenue Department have a positive relationship with satisfaction with E-filing websites and intention to pay taxes online among individual income earners. These results were compared with previous studies on e-commerce service quality, e-government service quality, and e-service quality. Table 5 shows the relative comparison. In particular, regarding commercial service quality, Morsi (2023) suggests that six e-service quality characteristics are information quality, Usability, responsiveness, reliability, safety, and personalized service, which affect customer satisfaction. Tran and Vu (2019) and Rahmania et al. (2023) stated that there are five elements of E-service Quality: website design, Reliability, responsiveness, trust, and personalized service that influence customer satisfaction and purchase intentions. Therefore, these studies provide empirical evidence of the statistical significance and real influence of e-service quality on customer satisfaction.

Table 5 also shows that in the context of e-government, Pham and colleagues (2023) identified five e-government service qualities: ease of interaction, need fulfillment, security and privacy, citizen care, and trustworthiness have a positive influence on customer perceived

value. Nulhusna and colleagues (2017) suggest that the quality of e-government services should consist of quality systems, quality information, and quality services, which will affect the willingness to use the service continuously. The order of influence of these factors is ease of use, maintenance, product portfolio, reliability and safety. Nookhao and Kiattisin (2023) suggest that e-service quality including information quality, system quality, and service quality is related to citizen satisfaction. Information quality, system quality, service quality, perceived utility and personal ability in computers are related to the intention to use e-government services. Therefore, these studies show empirical evidence of statistical significance and real influence of e-service quality on citizens' or citizens' intention to use the service.

**Table 5** E-service quality and their impact on website satisfaction and online tax payment intention in different research finding

E-commerce Setting	E-government Setting	E-service Quality Setting (This study)
e-SERVQ → Customer Satisfaction (Yes) - (Morsi, 2023)	E-government Quality Service → Citizen Satisfaction (Yes) - (Pham et al., 2023)	E-service Quality → Website Satisfaction (Yes)
E-service Quality → Repurchase Intention (Yes) (Rahmania et al., 2023)	E-government Quality → Continual use intention (Yes) – (Nulhusna et al., 2017).	E-service Quality → Online Tax Payment Intention (Yes)
Website Satisfaction → Online Tax Payment Intention (Yes) – (Lestari & Ellyawati, 2019)	Citizen Satisfaction → Behavioral Intention (Yes) – (Nookhao & Kiattisin, 2023)	Website Satisfaction → Online Tax Payment Intention (Yes)
Online Service Quality → Customer Satisfaction → Behavioral Intention (Yes) – (Tran & Vu, 2019)	Service Quality → Satisfaction → Intention to use (Yes) – (Biswas & Roy, 2020).	E-service Quality → Website Satisfaction → Online Tax Payment Intention (Yes)

This study, conducted in Muak Lek District, Saraburi, Thailand, provides theoretical insights applicable to broader e-government contexts in both developing and developed countries. It identifies six key dimensions of e-service quality—information quality, reliability, responsiveness, assurance, usability, and personalization—as critical for effective service delivery across various sectors, not just tax filing. These dimensions are relevant to platforms such as online healthcare, business licensing, and social welfare services. The study establishes a causal relationship where e-service quality influences citizen satisfaction, which in turn affects their intention to use the services. This model can guide the development of user-centered digital services globally, especially in regions like Southeast Asia, Africa, and Latin America, where digital government services are still evolving. The research also contributes to the broader discourse on public sector digital service quality by emphasizing the mediating role of satisfaction between service quality and behavioral intention. As governments move toward digital-first strategies for efficiency and transparency, understanding and meeting citizens' expectations—such as personalization and responsiveness—will be crucial. These findings are relevant to any government-to-citizen (G2C) digital interaction and can help enhance user satisfaction, trust, and long-term engagement in various public service platforms.

In summary, while the empirical data was collected from Saraburi, Thailand, the underlying theoretical framework and the identified causal relationships are highly adaptable

to other e-government settings. Whether applied in Thailand's other provinces, across ASEAN countries, or in the broader context of developing nations undertaking e-government initiatives, this study's findings contribute to the theoretical understanding of how e-service quality drives satisfaction and intention to use. This contributes to the global body of knowledge on e-government service adoption and digital governance, offering practical pathways for enhancing user-centered service delivery in the public sector worldwide.

### **5.3 Managerial Implications**

The quality of e-services provided through the E-filing website of the Revenue Department, Ministry of Finance consists of six critical elements: information quality, website reliability, website responsiveness, website assurance, website usability, and personalized services. These components have a statistically and positive significant relationship between satisfaction with E-filing websites and the intention to pay taxes online. To enhance both satisfaction and intention, E-filing website designers, system developers, and responsible government agencies should work together to continuously develop and refine these features to better meet user expectations and create a seamless experience. First, the website's information quality should be kept current and aligned with users' needs, ensuring all tax-related information, procedural guidelines, and legal updates are provided in a timely, accurate, and user-friendly manner. All essential content should be presented clearly, comprehensively, and in language that is easy for taxpayers to understand, regardless of their familiarity with taxation processes. Inaccurate, outdated, or overly complex information may discourage users and erode their confidence in the system. Second, website reliability is another essential feature, requiring that all online tax payments be processed accurately and securely. Immediate confirmation messages via email or SMS should be sent to users once their transactions are completed, providing clear records and reassurance. The website itself must be stable and capable of handling high traffic, particularly during tax filing deadlines, to prevent crashes or service interruptions. In cases where errors occur, obtaining assistance from knowledgeable and responsive staff should be convenient, ensuring users can resolve problems quickly without unnecessary frustration. Third, website responsiveness is closely linked to user satisfaction. Each time users engage with the website, they should receive automatic confirmations and real-time updates on the progress of their transactions. In addition, the website should feature an accessible and efficient complaint management system that ensures all user-reported problems are tracked, addressed, and resolved in a timely manner. Service users who face difficulties during transactions should feel confident that their issues will be taken seriously and handled with care and urgency, reinforcing trust in the system. Forth, website assurance plays a critical role in building confidence among taxpayers. The website must be designed with strict attention to security and privacy, ensuring that personal and financial data is fully protected. Security policies should be transparent and easily accessible to users, and the platform should undergo regular audits and certifications from credible third-party organizations to demonstrate compliance with recognized security standards. Fifth, the website's usability must also be prioritized. Users should be able to navigate the site intuitively, with clear, step-by-step instructions guiding them through the tax filing and payment process. Screens and forms should load quickly and present information in a logical, organized way that reduces confusion. The interface design should be user-friendly, catering to users with varying levels of digital literacy, and provide options for assistance at every step. Finally, personalization can further enhance

user satisfaction by tailoring the online filing experience to individual taxpayers' needs. The website could provide customized dashboards where users can view their filing history, receive personalized filing reminders, and access tailored tax-saving tips based on their specific income and tax profiles. It is equally important to display clear policies regarding how users' personal information will be stored, used, and protected, reassuring taxpayers that their rights and privacy are respected at all times. Beyond technical development, the Revenue Department and related agencies should actively promote awareness and confidence in the E-filing system through targeted campaigns and educational programs. These campaigns should emphasize the convenience, security, and benefits of filing taxes online, addressing any lingering concerns taxpayers may have. Outreach efforts can leverage multiple channels, including social media, local government offices, and community events, ensuring the message reaches all segments of the population, especially first-time users and those less familiar with technology.

#### **5.4 Limitations and Future Research**

The study of the causal relationship between the quality of e-services and satisfaction with e-filing websites that affect the intention to pay taxes online of individual income earners, Muak Lek District, Saraburi Province, found that there were four limitations: First, this research collected data from a limited population and sample group at the district level, although there were sufficient numbers for data analysis. Therefore, the study should be expanded to include a larger population and sample, such as at the provincial, regional, or national levels. Second, there are only three variables used in this study. Other variables that are expected to influence the use of the E-filing website's e-services should be taken into account, such as interaction, benefit, cost or government performance, etc. Third, this study focused on only users of personal income tax payments via E-filing websites. Therefore, in the future, research should be expanded related to e-government in other areas such as medicine and health, household utilities or transportation services, etc. Forth, while this study offers a valuable understanding of the research question, the findings should be taken with caution due to the possibility of self-selection bias. The data collected from the online survey may not be fully representative of the broader population, which could affect the generalizability of the results. Future studies could consider utilizing random sampling techniques or offering incentives to encourage participation from a more diverse pool of respondents to mitigate this bias. Additionally, researchers could cross-check their results with data from other sources to validate their findings. Lastly, the tool used to collect data is a questionnaire. Although it was developed and adapted from past research published in reliable databases, the questions are used as a measure in the international context. Therefore, measurement tools or measures that are relevant to the Thai context should be developed by using qualitative research methods such as interviews and focus groups or mixed methods research as tools to make the research results more accurate, precise, comprehensive, and clear.

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