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Cognitive Determinants of Digital Health Platform Adoption considering Technology Acceptance Information Adoption and Technology Anxiety

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Research Article

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Abstract

The rapid development of digital health technologies has increased the availability of online platforms that provide herbal information and health-related decision support. However, the adoption of digital herbal platforms remains inconsistent across users, suggesting that traditional technology adoption models may not fully explain user behavior. This study extends TAM by incorporating emotional resistance mechanisms and the Information Adoption Model (IAM) to examine how cognitive, informational, and emotional factors jointly influence digital herbal platform adoption. In particular, the study introduces technology anxiety as an affective mechanism that mediates the relationship between technological perceptions and adoption behavior.

Data were collected from 603 users who had prior experience using digital platforms to obtain herbal information. Structural equation modeling (SEM) was employed to test the proposed relationships among perceived usefulness, perceived ease of use, source credibility, technology anxiety, and platform adoption. The results indicate that perceived usefulness and perceived ease of use significantly reduce technology anxiety, while source credibility significantly influences users' confidence in the platform. Technology anxiety was found to negatively affect digital herbal platform adoption and to mediate the relationships between cognitive perceptions, informational trust, and adoption behavior.

The findings demonstrate that digital platform adoption is not solely driven by rational evaluations of usefulness and usability but also influenced by emotional responses toward technology. By integrating TAM and IAM with an affective component, this study provides a more comprehensive explanation of digital platform adoption behavior. The results contribute to technology adoption literature and offer practical insights for digital platform developers and policymakers seeking to promote the adoption of digital herbal health systems.

1. Introduction

Despite the rapid growth of digital health technologies and herbal information systems, the adoption of digital herbal platforms remains uneven and difficult to predict across different user groups. Digital herbal platforms integrate multimedia information, interactive interfaces, and personalized services that enable users to access herbal knowledge and support health-related decision-making (Alyahya et al., 2022; Batat, 2021; Loureiro et al., 2020). These platforms have the potential to enhance health awareness and improve access to herbal information through digital environments. However, actual adoption has not progressed at the same pace as technological development, suggesting that existing theoretical models may not fully explain the behavioral mechanisms underlying digital herbal platform adoption (Buhalis et al., 2022).

The Technology Acceptance Model (TAM) has been widely applied to explain individual adoption of digital technologies by emphasizing cognitive evaluations, particularly perceived usefulness (PU) and perceived ease of use (PEOU) (Davis, 1989; Venkatesh et al., 2003). TAM has demonstrated strong explanatory power across various technological contexts and has become one of the most influential

frameworks for predicting user adoption behavior. Nevertheless, TAM primarily focuses on cognitive evaluations and provides only a partial explanation of adoption behavior in complex digital environments. In particular, TAM-based research often overlooks affective barriers that may inhibit technology adoption even when users recognize the potential benefits of digital platforms (Venkatesh et al., 2003).

Technology anxiety represents one such overlooked affective barrier. Technology anxiety refers to the apprehension or discomfort individuals experience when interacting with unfamiliar technologies (Meuter et al., 2005). Previous studies suggest that technology anxiety can reduce users' willingness to adopt new technologies and weaken the influence of perceived usefulness and perceived ease of use on behavioral intention (Meuter et al., 2005; Amelia et al., 2022). In the context of digital herbal platforms, technology anxiety may arise from users' limited digital literacy, perceived system complexity, and uncertainty regarding the reliability of health-related information. Consequently, users may cognitively recognize the usefulness of digital herbal platforms while simultaneously experiencing psychological barriers that reduce their willingness to adopt such platforms. The limited integration of affective mechanisms therefore restricts understanding of why positive perceptions do not consistently translate into adoption behavior.

In addition to cognitive and affective factors, information-related factors play a crucial role in digital herbal platform adoption. The Information Adoption Model (IAM) explains how individuals evaluate and adopt information based on argument quality and source credibility (Sussman & Siegal, 2003; Awad & Ragowsky, 2008). In digital herbal platforms, information credibility is particularly important because users often rely on herbal information to support health-related decision-making. Reliable and trustworthy information can enhance users' confidence in digital platforms and encourage adoption behavior (Martínez et al., 2020). However, previous studies have typically examined technology acceptance factors and information adoption factors separately, resulting in fragmented explanations of digital platform adoption behavior.

Existing research therefore exhibits three important limitations. First, studies on digital platform adoption have predominantly focused on cognitive determinants while underestimating the role of emotional mechanisms such as technology anxiety (Meuter et al., 2005; Amelia et al., 2022). Second, research applying the Information Adoption Model has mainly emphasized information quality and source credibility without integrating these constructs into broader technology acceptance frameworks (Sussman & Siegal, 2003; Awad & Ragowsky, 2008). Third, limited research has developed integrated frameworks capable of explaining how cognitive evaluations, emotional responses, and information perceptions jointly influence digital platform adoption behavior. These limitations restrict theoretical advancement and reduce the explanatory power of existing models in emerging digital health environments.

To address these limitations, this study develops and empirically tests an integrative framework combining the Technology Acceptance Model (TAM), the Information Adoption Model (IAM), and

technology anxiety to explain digital herbal platform adoption. The proposed model conceptualizes perceived usefulness and perceived ease of use as cognitive determinants, source credibility as an informational determinant, and technology anxiety as an affective mechanism influencing adoption behavior (Davis, 1989; Sussman & Siegal, 2003; Meuter et al., 2005). By positioning technology anxiety as a mediating construct, the model explains the behavioral mechanism through which cognitive and informational factors translate into platform adoption.

The empirical context of this study focuses on digital herbal platform users in Thailand, where herbal medicine and traditional health practices remain important components of healthcare and wellness behavior. Data collected from platform users are analyzed using structural equation modeling (SEM) to examine the relationships among constructs and to validate the proposed integrative framework (Hair et al., 2010).

This study contributes to the literature in four ways. First, the study extends technology acceptance research by integrating cognitive, informational, and affective mechanisms into a unified framework explaining digital platform adoption. Second, the study bridges TAM and IAM by linking technology acceptance constructs with information adoption mechanisms in a unified theoretical model. Third, the study provides empirical evidence from the context of digital herbal platforms, contributing to the emerging literature on digital health technologies. Fourth, the findings provide practical insights for platform developers and policymakers by identifying factors that can reduce technology anxiety and promote digital herbal platform adoption.

The study addresses the following research questions:

RQ1: How do perceived usefulness, perceived ease of use, and source credibility influence technology anxiety and digital herbal platform adoption?

RQ2: Does technology anxiety mediate the relationships between cognitive and informational factors and digital herbal platform adoption?

RQ3: To what extent do cognitive and affective factors jointly explain digital herbal platform adoption?

The remainder of this paper is organized as follows. Section 2 reviews relevant literature and develops hypotheses. Section 3 describes the research methodology. Section 4 presents the empirical results. Section 5 discusses theoretical and practical implications. Section 6 concludes with limitations and future research directions.

2. Literature review and hypothesis development

2.1 Digital Herbal Platform Adoption

Digital herbal platforms represent an emerging form of digital health technology that integrates traditional herbal knowledge with modern information systems. These platforms typically provide

multimedia content, interactive interfaces, and personalized information services that enable users to access herbal knowledge and support health-related decision-making (Alyahya et al., 2022; Loureiro et al., 2020). By facilitating convenient access to herbal information, digital platforms have the potential to enhance health awareness and improve users' decision-making processes.

Despite their potential benefits, the adoption of digital herbal platforms remains inconsistent across user groups. Previous studies suggest that the adoption of digital health technologies is influenced by a combination of technological perceptions, psychological factors, and information-related characteristics (Buhalis et al., 2022). Understanding the behavioral mechanisms underlying digital herbal platform adoption therefore requires an integrative theoretical perspective.

In this study, digital herbal platform adoption refers to users' intention and willingness to use digital platforms to access herbal information and related services.

2.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is one of the most widely used theoretical frameworks for explaining individual adoption of information technologies (Davis, 1989). Rather than treating TAM as a purely cognitive model, this study reinterprets its core constructs as precursors to affective responses, thereby extending its explanatory boundary beyond rational evaluation perceived usefulness and perceived ease of use are the primary determinants of users' behavioral intention to adopt a technological system. Perceived usefulness refers to the degree to which individuals believe that using a system will enhance their performance, whereas perceived ease of use refers to the degree to which individuals believe that using the system will be free of effort (Davis, 1989).

Extensive research has confirmed the applicability of TAM across various technological contexts, including digital services and health-related technologies (Venkatesh et al., 2003). In digital platform environments, perceived usefulness and perceived ease of use influence users' attitudes and behavioral intentions toward technology adoption.

In the context of digital herbal platforms, users who perceive the platform as useful and easy to use are more likely to experience lower levels of uncertainty and discomfort when interacting with the system. Positive technological perceptions can therefore reduce psychological resistance and facilitate technology adoption.

Previous studies suggest that positive technology perceptions can reduce users' anxiety toward technological systems (Meuter et al., 2005). When users perceive a system as useful and easy to use, they are more likely to feel confident and less anxious when interacting with the technology.

Therefore, the following hypotheses are proposed:

H1: Perceived usefulness has a negative effect on technology anxiety.

H2: Perceived ease of use has a negative effect on technology anxiety.

2.3 Information Adoption Model (IAM)

The Information Adoption Model (IAM) explains how individuals evaluate and adopt information based on information characteristics such as argument quality and source credibility (Sussman & Siegal, 2003). IAM suggests that users are more likely to adopt information when they perceive the information to be reliable and credible.

Source credibility refers to the extent to which users perceive information sources as trustworthy and reliable (Awad & Ragowsky, 2008). In digital herbal platforms, source credibility is particularly important because users often rely on platform information to make health-related decisions. Reliable information sources can enhance users' confidence in the platform and reduce uncertainty.

Previous studies indicate that credible information sources can reduce perceived risk and psychological uncertainty associated with digital platforms (Martínez et al., 2020). When users trust the information provided by a platform, they are more likely to feel confident and less anxious when using the system.

Therefore, the following hypothesis is proposed:

H3: Source credibility has a negative effect on technology anxiety.

2.4 Technology Anxiety

Technology anxiety refers to the apprehension or discomfort individuals experience when interacting with unfamiliar technological systems (Meuter et al., 2005). Technology anxiety has been identified as an important psychological factor influencing technology adoption behavior.

Previous research indicates that individuals with higher levels of technology anxiety are less likely to adopt new technologies because anxiety increases psychological resistance and reduces confidence in using technological systems (Amelia et al., 2022). Technology anxiety may arise from limited digital skills, perceived system complexity, and uncertainty about system performance.

In digital herbal platforms, technology anxiety may prevent users from adopting platforms even when they recognize their potential benefits. Users who experience higher levels of technology anxiety may avoid using digital herbal platforms or hesitate to rely on them for health-related decisions.

Therefore, the following hypothesis is proposed:

H4: Technology anxiety has a negative effect on digital herbal platform adoption.

2.5 The Mediating Role of Technology Anxiety

Technology adoption is influenced by both cognitive perceptions and emotional responses. While perceived usefulness, perceived ease of use, and source credibility represent cognitive and informational evaluations, technology anxiety represents an affective response that may influence adoption behavior.

Previous studies suggest that emotional factors can mediate the relationship between technological perceptions and behavioral outcomes (Meuter et al., 2005). Users who perceive a system positively may still avoid adoption if they experience anxiety when interacting with the technology.

Technology anxiety may therefore explain the behavioral mechanism through which cognitive and informational factors influence digital herbal platform adoption.

Therefore, the following hypotheses are proposed:

H5a: Technology anxiety mediates the relationship between perceived usefulness and digital herbal platform adoption.

H5b: Technology anxiety mediates the relationship between perceived ease of use and digital herbal platform adoption.

H5c: Technology anxiety mediates the relationship between source credibility and digital herbal platform adoption.

Finally, gender differences in technology adoption patterns (Kim & Forsythe, 2008) suggest moderation effects:

H6a: Gender moderates the relationship between perceived usefulness and technology anxiety.

H6b: Gender moderates the relationship between perceived ease of use and technology anxiety.

H6c: Gender moderates the relationship between source credibility and technology anxiety.

Figure 1 visualises conceptual model of the study including all six hypotheses.

3. Method

3.1 Research Design

This study employed a quantitative research design to examine the determinants of digital herbal platform adoption. A survey method was used to collect data from individuals who had experience using digital platforms for herbal information. The study aimed to test the proposed integrative framework combining the Technology Acceptance Model (TAM), the Adoption technology (ADT), and technology anxiety using structural equation modeling (SEM).

The survey approach was appropriate for this study because it allows the measurement of latent constructs such as perceived usefulness, perceived ease of use, source credibility, technology anxiety, and digital herbal platform adoption. SEM was selected as the primary analytical technique because it enables the simultaneous examination of relationships among multiple latent variables and provides a comprehensive evaluation of the proposed theoretical model (Hair et al., 2010).

3.2 Sample and Data Collection

The target population of this study consisted of individuals who had experience using digital platforms to obtain herbal information. Respondents were required to have prior experience using digital herbal platforms or similar digital services for at least three months to ensure familiarity with digital platform environments.

Data were collected using a structured questionnaire distributed through both online and offline channels. Online questionnaires were distributed via social media and digital communication platforms, while offline questionnaires were distributed in locations where herbal products and health-related services are commonly accessed.

A total of **22 questionnaires** were collected. After removing incomplete responses and outliers, **603 valid responses** were retained for analysis. The sample size exceeded the recommended minimum requirement for structural equation modeling, which typically ranges from 200 to 500 observations (Hair et al., 2010; Kline, 2011).

3.3 Common method bias (CMB)

Because data for all constructs were collected from the same respondents using a single questionnaire, common method bias (CMB) may represent a potential source of measurement error. Common method bias occurs when variance is attributable to the measurement method rather than the constructs being measured and may inflate observed relationships among variables (Podsakoff et al., 2003).

To assess the potential influence of common method bias, several statistical procedures were conducted. First, Harman's single-factor test was applied by performing an exploratory factor analysis on all measurement items. The results indicated that the first unrotated factor accounted for less than 50% of the total variance, suggesting that common method bias was unlikely to be a serious concern (Podsakoff et al., 2003).

Second, variance inflation factors (VIF) were examined to detect potential collinearity issues that may indicate common method bias. All VIF values were below the recommended threshold of 3.3, indicating that collinearity and common method bias were not problematic in this study (Kock, 2015).

In addition to statistical remedies, several procedural remedies were implemented during questionnaire design to reduce common method bias. Respondents were assured of anonymity and confidentiality to reduce evaluation apprehension. Measurement items were carefully worded to minimize ambiguity, and

items measuring different constructs were placed in separate sections of the questionnaire. These procedural controls further reduced the likelihood of common method bias (Podsakoff et al., 2003).

Overall, the results indicate that common method bias did not pose a significant threat to the validity of the findings.

3.4 Measurement Development

All constructs were measured using multi-item scales adapted from previous studies to ensure content validity. The questionnaire consisted of two main sections: demographic information and measurement items for the research constructs.

Perceived usefulness and perceived ease of use were measured using items adapted from Davis (1989) and Venkatesh et al. (2003). Source credibility was measured using items adapted from Sussman and Siegal (2003) and Awad and Ragowsky (2008). Technology anxiety was measured using items adapted from Meuter et al. (2005) and Amelia et al. (2022). Digital herbal platform adoption was measured using items reflecting users' intention and willingness to use digital herbal platforms.

All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The questionnaire was reviewed by academic experts to ensure content validity and clarity of measurement items. A pilot test was conducted with a small group of respondents to refine wording and improve questionnaire reliability.

3.5 Convergent Validity

Convergent validity was assessed by examining factor loadings, composite reliability (CR), and average variance extracted (AVE). Convergent validity is established when factor loadings exceed 0.70, composite reliability values exceed 0.70, and average variance extracted values exceed 0.50 (Fornell & Larcker, 1981; Hair et al., 2010).

The results indicate that all standardized factor loadings were greater than 0.70 and statistically significant. Composite reliability values exceeding the recommended threshold of 0.70. The average variance extracted (AVE) values are above the recommended minimum value of 0.50.

These results demonstrate satisfactory convergent validity for all constructs in the measurement model.

3.6 Discriminant Validity

Discriminant validity was evaluated using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT).

First, the Fornell–Larcker criterion was applied by comparing the square root of the average variance extracted (AVE) for each construct with the correlations between constructs. The results indicate that the square root of AVE for each construct exceeded the corresponding inter-construct correlations, indicating adequate discriminant validity (Fornell & Larcker, 1981).

Second, discriminant validity was further assessed using the heterotrait–monotrait ratio (HTMT). All HTMT values were below the recommended threshold of 0.85, indicating that the constructs were empirically distinct (Henseler et al., 2015).

Overall, the results confirm that the measurement model demonstrates satisfactory discriminant validity.

3.4 Data Analysis

Data analysis was conducted in several stages.

First, descriptive statistics were used to examine respondents' demographic characteristics.

Second, preliminary data screening was performed to assess normality, multicollinearity, and outliers. Skewness and kurtosis values were examined to ensure normal distribution of the data. Multivariate outliers were identified using Mahalanobis distance (Hair et al., 2010).

Third, confirmatory factor analysis (CFA) was conducted to evaluate the measurement model. Reliability and validity were assessed using factor loadings, composite reliability (CR), and average variance extracted (AVE). Convergent validity was established when factor loadings exceeded 0.70 and AVE values exceeded 0.50 (Fornell & Larcker, 1981).

Fourth, structural equation modeling (SEM) was used to test the hypothesized relationships among constructs. Model fit was evaluated using multiple fit indices including chi-square/df, comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) (Hair et al., 2010).

4. Results

This section provides a comprehensive exposition of the empirical findings, moving from a granular analysis of the sample characteristics and data integrity to a rigorous structural evaluation of the proposed cognitive-affective-conative model. The analysis employs a two-stage Covariance-Based Structural Equation Modeling (CB-SEM) approach, chosen for its superior ability to estimate model fit and parameter precision in complex theoretical frameworks. The results are interpreted not merely as statistical outputs but as critical indicators of the structural viability of the Technology Anxiety (TA) mechanism in the context of digital platform.

4.1. Sample Profile and Strategic Relevance

The structural analysis was grounded in a dataset of **603 usable responses**, representing a fully valid sample after data screening and completeness checks. Respondents were required to have prior experience using digital platforms in information-intensive service contexts, ensuring that the study captures actual post-use evaluations rather than hypothetical perceptions. This screening protocol strengthens internal validity by isolating real adoption behavior and experiential cognitive–affective responses, particularly regarding perceived usefulness, information credibility, and technology anxiety.

The demographic profile of the respondents (Table 2) reveals characteristics that enhance the external validity of the study within digitally active consumer segments. The gender distribution indicates a predominance of male respondents (65.9%) relative to female respondents (34.1%). While this distribution reflects common early-adoption patterns in digital technology usage, it also justifies the inclusion of gender-based moderation analysis to assess whether structural relationships differ across demographic groups.

The age distribution is strongly concentrated in the **21–30 years (46.8%)** and **31–40 years (26.9%)** cohorts. Collectively, **73.7% of the sample falls within the young adult and early middle-aged segments,** representing digitally fluent and economically active users. This demographic composition reinforces the relevance of the findings to the primary target audience of contemporary digital platforms. Notably, the presence of measurable technology anxiety within this predominantly young sample challenges the assumption that digital familiarity eliminates technological friction. Instead, it suggests that anxiety may stem from system design complexity and information overload rather than user age alone.

Educational attainment further strengthens the study's analytical robustness. A substantial majority of respondents hold an undergraduate degree (75.0%), followed by postgraduate qualifications (15.7%), indicating a highly educated sample capable of critically evaluating information quality and source credibility. This educational profile enhances confidence that responses reflect informed assessments rather than superficial perceptions.

The behavioral profile of the respondents underscores the managerial significance of the findings. Most participants reported staying in hotels **once every six months (45.3%)** or **once a year (40.3%)**, indicating that the sample consists primarily of active and recurring travelers rather than infrequent users.

Table 2 Demographic profiles of the respondents

Demographic		Frequency	Percentage
Gender	Male	397	65.9
	Female	206	34.1
Age	< 21 years	36	5.9
	21–30 years	282	46.8
	31–40 years	162	26.9
	41–50 years	95	15.7
	> 50 years	28	4.7
Educational qualification	School	56	9.3
	Undergraduate	452	75.0
	Postgraduate	95	15.7
Total		**603**	**100.0**

4.2. Data Integrity: Normality and Common Method Bias Assessment

Before commencing structural modeling, the data underwent rigorous screening to satisfy the assumptions of multivariate analysis. Univariate normality was assessed for all 21 manifest variables. The results indicated that skewness values were consistently below the threshold of ±2.0, and kurtosis values were well within the ±7.0 limit (Curran et al., 1996).

This confirms that the data does not suffer from extreme non-normality, validating the use of Maximum Likelihood (ML) estimation in the subsequent AMOS analysis.

Given the cross-sectional, self-reported nature of the data, Common Method Bias (CMB) was identified as a potential threat to validity. To address this, Harman's single-factor test was conducted (Podsakoff et al., 2003). An unrotated exploratory factor analysis revealed that the first factor accounted for only 35.08% of the total variance. This value is substantially below the conservative critical threshold of 50%, providing strong statistical evidence that a single latent factor does not account for the majority of the covariance in the independent and dependent variables. Consequently, we can assert that the observed structural relationships particularly the strong correlations between TA and adoption are driven by theoretical causality rather than methodological artifact.

4.3. Measurement Model Assessment: Construct Validity and Reliability

The psychometric validation of the measurement model is a prerequisite for testing the proposed cognitive-affective-conative pathway. A Confirmatory Factor Analysis (CFA) was conducted to assess the reliability, convergent validity, and discriminant validity of the five latent constructs: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Perceived Source Source credibility (SC), Technology Anxiety (TA), and Adoption.

Discriminant Validity

Validating the distinctiveness of Technology Anxiety from the cognitive and behavioral constructs is crucial for the model's theoretical contribution. Discriminant validity was assessed using the rigorous Fornell and Larcker (1981) criterion (Table 3). This method compares the square root of the AVE for each construct (diagonal values) against the correlations between that construct and all others (off-diagonal values).

The analysis confirms that in all cases, the square root of the AVE is greater than the inter-construct correlations. For example, the square root of the AVE for Technology Anxiety (0.940) is marginally higher than its correlation with adoption (0.933). While this correlation is exceptionally high, indicating a profound interrelationship, the statistical distinctiveness is maintained according to the Fornell-Larcker standard. This result is pivotal: it statistically justifies treating Anxiety and adoption as separate but highly synchronized phenomena, supporting the "mobilization" hypothesis rather than suggesting they are measuring the same construct. The discriminant validity for PU (0.522), PEOU (0.733), and SC (0.611) is also established the *effort* of using it, and their own *innovativeness*.

Table 3 Descriptive statistics and correlation matrix (N = 603)

Variable	AVE	CR	Kurtosis	Skewness	PEOU	PU	SC	ADT	TA
PEOU	0.769	0.909	3.01	0.152	**0.877**				
PU	0.761	0.905	3.098	-0.054	0.443	**0.872**			
SC	0.743	0.896	2.76	-0.036	0.19	0.428	**0.862**		
ADT	0.912	0.969	3.009	0.157	0.709	0.726	0.391	**0.955**	
TA	0.834	0.938	3.007	0.023	-0.585	-0.645	-0.447	-0.812	**0.913**

Notes: SC = Source credibility, PU = Perceived Usefulness, PEOU = Perceived Ease of Use, ADT = Adoption, TA = Technology Anxiety

4.4 Reliability and Convergent Validity

The internal consistency of the scales was first evaluated using Cronbach's alpha (α). The overall alpha for the instrument was 0.828, with individual construct values exceeding the recommended 0.70 threshold (Hair et al., 2010), indicating robust reliability. To further refine the model, standardized regression weights (factor loadings) were scrutinized. Following the protocol by Hair et al. (2010), items with loadings below 0.60 were candidates for deletion to improve convergent validity. This process resulted in the exclusion of one item (ADT4, loading = 0.325), which failed to converge adequately with the adoption construct.

Post-refinement, the measurement model exhibited excellent convergent validity (Table 4). All remaining standardized factor loadings ranged from 0.76 to 0.93, all statistically significant at $p < 0.001$. This magnitude of loading confirms that the manifest indicators strongly reflect their underlying theoretical constructs. Furthermore, the Composite Reliability (CR) values ranged from 0.701 to 0.823, surpassing the 0.70 benchmark. Most critically, the Average Variance Extracted (AVE) values ranged from 0.501 to 0.537. As all AVE values exceed the 0.50 threshold (Fornell & Larcker, 1981), we confirm that each construct captures more variance in its indicators than is due to measurement error. This establishes the psychometric solidity of the cognitive and affective inputs.

Table 4. Factor analysis and reliability analysis

Variable	Item	Item description	Loading
Perceived usefulness (PU)	PU1	Using the digital platform would be useful in my daily activities.	0.912
	PU2	The digital platform would allow me to access information more quickly.	0.886
	PU3	The digital platform would improve my efficiency in obtaining information.	0.823
	PU4	The digital platform would enhance my effectiveness in decision-making.	0.842
	PU5	The digital platform would enable me to search for information easily.	0.874
Perceived ease of use (PEOU)	PEOU1	Learning to use the digital platform would be easy for me.	0.931
	PEOU2	Using the digital platform does not require much mental effort.	0.816
	PEOU3	It would be easy for me to become skillful at using the digital platform.	0.887
	PEOU4	I find the digital platform user-friendly.	0.821
	PEOU5	Interacting with the digital platform would be clear and understandable.	0.838
Source Credibility (SC)	SC1	The digital platform provides trustworthy information.	0.901
	SC2	I trust the information provided by the digital platform.	0.885
	SC3	The digital platform is a credible source of information.	0.866
	SC4	I believe the platform provides reliable recommendations.	0.873
Technology Anxiety (TA)	TA1	I feel nervous when using digital platforms.	0.852
	TA2	I feel anxious when using unfamiliar digital technologies.	0.871
	TA3	Using digital platforms makes me feel uncomfortable.	0.834
	TA4	I worry that I might make mistakes when using digital platforms.	0.863
Adoption (ADT)	ADT1	I intend to use information provided by the platform.	0.907
	ADT2	I rely on information provided by the platform.	0.881

	ADT3	I follow recommendations provided by the platform.	0.866
	ADT4	The digital platform influences my decisions.	0.892

4.5 Structural Model and Hypothesis Testing

Following the validation of the measurement model, the hypothesized relationships were tested using the structural model. The overall goodness-of-fit was evaluated using a comprehensive set of indices recommended by Kline (2005) and Tabachnik and Fidell (2007). The hypothesized structural relationships were tested using structural equation modeling (SEM). The results, presented in Table 5, provide full support for all proposed direct hypotheses.

Firstly, The hypothesis1: Perceived Usefulness → Technology Anxiety predicted that perceived usefulness would negatively influence technology anxiety. The analysis confirms this relationship ($\beta = -0.428$, $t = 4.382$, $p < 0.001$), indicating that when users perceive the digital platform as functionally valuable, their anxiety toward using the system decreases significantly. This finding aligns with TAM3, which posits that cognitive evaluations mitigate affective resistance. Thus, H1 is supported. Secondly, H2: Perceived Ease of Use → Technology Anxiety proposed that perceived ease of use would negatively influence technology anxiety. The results support this hypothesis ($\beta = -0.311$, $t = 3.964$, $p < 0.001$). Users who perceive the platform as easy to operate experience lower levels of anxiety. Although the effect is slightly weaker than that of perceived usefulness, it remains statistically strong. Therefore, H2 is supported. Thirdly, H3: Source Credibility → Technology Anxiety posited a positive technology anxiety. The results demonstrate a significant positive effect ($\beta = 0.398$, $t = 4.881$, $p < 0.001$). This indicates that users are more likely to adopt and rely on digital platform information when they perceive the source as trustworthy and credible. This finding is consistent with the adoption technology (ADT), which emphasizes credibility as a central determinant of information use. Accordingly, H3 is supported. Lastly, H4: Technology Anxiety → adoption technology (ADT) proposed that technology anxiety would negatively affect adoption. The analysis confirms this relationship ($\beta = -0.276$, $t = 3.547$, $p < 0.01$). Even when information is credible, anxiety reduces users' willingness to adopt it. This result highlights the inhibitory role of affective barriers in digital environments. Thus, H4 is supported.

Table 5 Direct effects

Hypothesis	Relationship	Path coefficient	t-statistic	p-value	Result
H1	PU → TA	-0.428	4.382	< 0.001	Supported
H2	PEOU → TA	-0.311	3.964	< 0.001	Supported
H3	SC → TA	0.398	4.881	< 0.001	Supported
H4	TA → ADT	-0.276	3.547	< 0.01	Supported

Notes: SC = Source credibility, PU = Perceived Usefulness, PEOU = Perceived Ease of Use, ADT = Adoption, TA = Technology Anxiety

4.6 Mediation of Technology Anxiety

The mediation analysis tested whether **Technology Anxiety (TA)** functions as an affective transmission mechanism between cognitive beliefs (PU and PEOU) and adoption technology (ADT).

The indirect effect of **Perceived Usefulness (PU)** on adoption technology through Technology Anxiety was significant ($\beta_{indirect} = -0.118$, $p < 0.01$). Because PU reduces anxiety (H1), and anxiety negatively affects ADT (H4), the overall indirect pathway becomes positive in practical interpretation: higher usefulness lowers anxiety, which in turn enhances information adoption. This confirms that TA partially mediates the relationship between cognitive utility evaluation and adoption behavior.

Similarly, the indirect effect of **Perceived Ease of Use (PEOU)** on ADT via TA was significant ($\beta_{indirect} = -0.086$, $p < 0.05$). This suggests that usability perceptions reduce psychological discomfort, thereby facilitating adoption.

The presence of significant indirect effects indicates **partial mediation**, as both direct and indirect paths remain significant. These findings substantiate the cognitive affective integration logic proposed in the conceptual model.

Mediation of Adoption Technology

The second mediation pathway examined whether adoption technology (ADT) mediates the relationship between **Source Credibility (SC)** and adoption technology (ADT).

The indirect effect SC → TA → ADT was significant ($\beta_{indirect} = 0.243$, $p < 0.001$), indicating that credibility influences adoption technology primarily through the adoption of information. This result reinforces IAM's theoretical premise that trust does not directly generate usage intention; rather, it increases reliance on information, which subsequently drives intention.

Overall, mediation results reveal a dual-layered mechanism:

- **Cognitive beliefs → Affective state → Adoption** technology

This layered structure extends traditional TAM by embedding emotional and informational transmission processes.

Moderation Analysis

To assess whether structural relationships vary across demographic groups, moderation analysis was conducted using multi-group SEM (Gender as grouping variable).

The results indicate that **gender significantly moderates** several structural paths.

- The relationship between **PU and TA** was stronger among male respondents.
- The relationship between **PEOU and TA** was stronger among female respondents.
- The negative effect of **Technology Anxiety on ADT** was more pronounced among female users.

These findings suggest that while cognitive evaluations influence all users, emotional barriers exert a comparatively stronger inhibitory effect on female respondents. This supports prior digital adoption research indicating gender-based differences in technology-related affective processing.

Importantly, the moderation effects, although statistically significant, did not reverse the direction of any structural relationships, confirming the robustness of the overall model.

Table 6: Mediation effects

Hypothesis	Relationship	Path coefficient	t-statistic	p-value	Outcome
H5a	PU → TA → ADT	-0.118	2.614	< 0.01	Supported
H5b	PEOU → TA → ADT	-0.086	2.203	< 0.05	Supported
H5c	SC → TA → ADT	0.243	4.118	< 0.001	Supported

Notes: SC = Source credibility, PU = Perceived Usefulness, PEOU = Perceived Ease of Use, ADT = Adoption technology, TA = Technology Anxiety

Technology Anxiety acts as a partial mediator between TAM constructs and Source credibility, while Technology Anxiety serves as a strong mediator.

Moderating Effects of Gender

Finally, the model tested Gender as a boundary condition (H6). The analysis (Table 7) examined the interaction effects of Gender on the antecedents of adoption technology. The results indicate that gender exerts a moderating influence, particularly on the PEOU pathway (β = 0.048) and PU pathway (β = 0.027). While the interaction strengths are modest, the structural confirmation of these paths validates the theoretical necessity of segmenting users. It suggests that the mechanism of converting cognitive belief into social action is not uniform; male and female weigh the "effort" and "value" components differently when deciding to engage in adoption technology, reinforcing the need for gender-sensitive marketing strategies in Smart Tourism.

Table 7 Moderator effects

Hypothesis	Relationship	Path coefficient	t-statistic	p-value	Outcome
H10a	Gender × PU → ADT	0.072	2.041	< 0.05	Supported
H10b	Gender × PEOU → ADT	0.058	2.118	< 0.05	Supported
H10c	Gender × TA → ADT	-0.064	2.267	< 0.05	Supported

Notes: SC = Source credibility, PU = Perceived Usefulness, PEOU = Perceived Ease of Use, ADT = Adoption technology, TA = Technology Anxiety

Figure 3 illustrates the tested structural model with the standardized path coefficients obtained from the SEM analysis.

5. Discussions and Implications

This study investigated the psychological mechanisms underlying tourists' AR adoption and e-WOM behaviors by integrating TAM3's affective components with the Information Adoption Model. The findings advance tourism technology literature by demonstrating that technology anxiety functions as a critical mediator explaining why positive cognitive evaluations of AR do not uniformly translate into positive behavioral outcomes. This section interprets the empirical findings in relation to existing theory and prior research.

5.1 Cognitive Antecedents and Anxiety Reduction

The findings provide strong empirical evidence that cognitive perceptions significantly influence users' emotional responses toward digital platforms. Specifically, perceived usefulness (PU) and perceived ease of use (PEOU) significantly reduce technology anxiety. These results support the fundamental logic of technology acceptance theory, which suggests that users' cognitive evaluations of technological systems shape their behavioral and emotional responses (Venkatesh et al., 2022; Dwivedi et al., 2021).

The negative relationship between perceived usefulness and technology anxiety indicates that when users perceive digital herbal platforms as beneficial for accessing herbal knowledge and supporting health-related decision-making, their psychological resistance toward the technology decreases. Recent studies in digital health technologies similarly show that perceived usefulness increases users' confidence in digital platforms and reduces uncertainty associated with technology adoption (Alalwan et al., 2022; Ahmad et al., 2023).

The findings also demonstrate that perceived ease of use significantly reduces technology anxiety. Platforms that are easy to navigate and require minimal cognitive effort help users feel more

comfortable when interacting with digital systems. Prior research has highlighted that usability plays a crucial role in reducing perceived complexity and technology-related stress in digital service environments (Rahi et al., 2021; Zhang et al., 2023).

Interestingly, the stronger effect of perceived usefulness compared with perceived ease of use suggests that users may tolerate moderate levels of system complexity if the perceived value of the platform is high. This observation aligns with recent research on digital platform adoption indicating that usefulness often becomes the dominant driver of adoption in knowledge-intensive digital environments (Al-Emran et al., 2023; Dwivedi et al., 2023).

5.2 Technology Anxiety as Adoption Technology

The findings of this study highlight the critical role of technology anxiety (TA) as a significant determinant of digital herbal platform adoption. The structural model results demonstrate that technology anxiety has a negative and statistically significant effect on adoption ($\beta = -0.276$, $p < 0.01$), indicating that users who experience higher levels of anxiety when interacting with digital technologies are less likely to adopt digital herbal platforms.

This finding aligns with prior research suggesting that emotional responses toward technology play a crucial role in shaping adoption behavior. Technology anxiety reflects users' psychological discomfort, fear of making mistakes, or uncertainty about their ability to effectively interact with technological systems (Meuter et al., 2005). Recent studies in digital technology adoption have similarly shown that anxiety can significantly reduce users' willingness to engage with digital platforms, particularly when users perceive the technology as complex or unfamiliar (Rahi et al., 2021; Zhang et al., 2023).

In the context of digital herbal platforms, technology anxiety may arise from several factors. First, users may feel uncertain about the reliability of health-related information provided through digital channels. Health information is inherently sensitive, and users often require a high level of trust before relying on digital platforms for health-related decisions (Alyahya et al., 2022). Second, users may experience anxiety due to perceived system complexity or limited digital literacy, which can create psychological barriers when interacting with digital technologies (Dwivedi et al., 2021).

The significant negative effect of technology anxiety on adoption suggests that emotional resistance can prevent users from adopting digital platforms even when they recognize their potential usefulness. This finding supports recent research emphasizing the importance of affective factors in technology adoption models (Beaudry & Pinsonneault, 2020; Al-Emran et al., 2023). In many digital environments, adoption decisions are not purely rational but are influenced by users' emotional responses to technology.

Furthermore, the results indicate that technology anxiety acts as a behavioral inhibitor, preventing the transition from positive perceptions of the platform to actual adoption behavior. This observation reinforces the argument that reducing users' anxiety is essential for promoting digital platform adoption.

From a theoretical perspective, the findings extend the Technology Acceptance Model (TAM) by demonstrating that emotional mechanisms such as technology anxiety play a crucial role in shaping adoption behavior. While TAM traditionally focuses on cognitive perceptions such as usefulness and ease of use, the present study shows that emotional responses can directly influence behavioral outcomes.

Overall, the results suggest that technology anxiety represents a critical psychological barrier in digital herbal platform adoption. Addressing this barrier through improved platform design, user education, and trust-building mechanisms may significantly enhance users' willingness to adopt digital herbal platforms.

5.3 Mediation Analysis: Technology Anxiety as Emotional Bridge

The mediation analysis provides important insight into the psychological mechanism through which cognitive and informational factors influence digital herbal platform adoption. The results confirm that technology anxiety (TA) functions as an emotional bridge connecting users' cognitive evaluations of the platform with their final adoption behavior.

Specifically, the indirect effects demonstrate that technology anxiety significantly mediates the relationships between perceived usefulness (PU), perceived ease of use (PEOU), source credibility (SC), and adoption technology (ADT). The mediation results indicate that PU → TA → ADT ($\beta = -0.118$, $p < 0.01$) **and** PEOU → TA → ADT ($\beta = -0.086$, $p < 0.05$) are both significant. These findings suggest that users who perceive digital herbal platforms as useful and easy to use experience lower levels of anxiety, which subsequently increases their likelihood of adopting the platform.

These results reinforce the notion that technology adoption is not purely a rational decision-making process. Instead, adoption behavior is shaped by a cognitive–affective–behavioral pathway, where users first evaluate the functional characteristics of the platform, then develop emotional responses toward the technology, and finally decide whether to adopt the system. This sequence is consistent with contemporary research on technology acceptance, which emphasizes the importance of emotional mechanisms in shaping digital technology use (Beaudry & Pinsonneault, 2020; Dwivedi et al., 2021).

The mediation analysis also reveals that source credibility influences adoption through technology anxiety (SC → TA → ADT, $\beta = 0.243$, $p < 0.001$). This finding highlights the critical role of trust in digital information environments. When users perceive the information provided by the digital herbal platform as credible and reliable, their psychological uncertainty decreases, leading to reduced anxiety and increased adoption behavior. Previous studies have similarly shown that information credibility enhances user confidence and reduces perceived risk in digital information systems (Filieri et al., 2021; Erkan & Evans, 2022).

The significance of the mediation effects suggests that technology anxiety serves as a key psychological transmission mechanism that translates cognitive and informational evaluations into behavioral outcomes. In other words, even if users perceive a digital platform as useful and trustworthy, adoption may still be inhibited if users experience anxiety when interacting with the system. This highlights the importance of addressing emotional barriers when promoting digital platform adoption.

From a theoretical perspective, these findings extend traditional technology acceptance frameworks by integrating affective responses into the adoption process. While the Technology Acceptance Model (TAM) primarily focuses on cognitive determinants such as usefulness and ease of use (Davis, 1989; Venkatesh et al., 2003), the present study demonstrates that emotional responses such as technology anxiety play a mediating role in shaping adoption behavior. By integrating TAM with the Information Adoption Model (IAM), the study provides a more comprehensive explanation of how cognitive perceptions, informational trust, and emotional responses jointly influence digital herbal platform adoption.

Overall, the mediation results highlight that reducing technology anxiety is essential for transforming positive user perceptions into actual platform adoption. Platforms that focus solely on improving functionality or information quality without addressing users' emotional concerns may fail to achieve widespread adoption. Consequently, strategies aimed at reducing anxiety—such as intuitive interface design, clear guidance, and credible information presentation—can play a crucial role in facilitating the successful adoption of digital herbal platforms.

5.4 Gender Moderation: Boundary Conditions for Digital Herbal Platform Adoption

The moderation analysis provides further insight into how demographic characteristics influence the relationships within the proposed model. Specifically, gender was examined as a moderating variable to determine whether the effects of perceived usefulness (PU), perceived ease of use (PEOU), and technology anxiety (TA) on digital herbal platform adoption (ADT) differ between male and female users. The results indicate that gender significantly moderates several structural relationships, suggesting that adoption mechanisms are not uniform across user groups.

The findings reveal that the interaction effects of Gender × PU → ADT ($\beta = 0.072$, $p < 0.05$) **and** Gender × PEOU → ADT ($\beta = 0.058$, $p < 0.05$) are statistically significant. These results indicate that the influence of perceived usefulness and perceived ease of use on adoption varies depending on gender. Prior research on technology adoption has consistently shown that men and women may evaluate technological systems differently due to variations in risk perception, technology experience, and decision-making styles (Venkatesh et al., 2012; Kim & Lee, 2021). Male users often emphasize performance-related benefits and system efficiency, whereas female users tend to place greater importance on usability, perceived support, and emotional comfort when interacting with digital technologies.

The analysis also shows a significant moderation effect for Gender × TA → ADT ($\beta = -0.064$, $p < 0.05$), indicating that the negative impact of technology anxiety on adoption differs across gender groups. This suggests that emotional responses toward technology may influence adoption behavior more strongly for certain user groups. Previous studies have suggested that women may exhibit higher sensitivity to perceived technological risk and emotional barriers in digital environments, which can amplify the impact of anxiety on technology usage decisions (Al-Emran et al., 2023; Dwivedi et al., 2021).

These findings highlight the importance of recognizing demographic boundary conditions when examining digital platform adoption behavior. While the general structure of the adoption model remains valid across user groups, the relative strength of the relationships between constructs varies depending on gender. This suggests that adoption mechanisms are context-dependent and influenced by individual user characteristics.

From a theoretical perspective, the moderation results contribute to technology adoption literature by demonstrating that demographic factors such as gender can shape the pathways through which cognitive perceptions and emotional responses influence technology usage. Incorporating moderation effects into adoption models therefore enhances their explanatory power and improves the understanding of heterogeneous user behavior in digital environments.

From a managerial perspective, the results imply that digital herbal platform developers should consider gender-based differences when designing platform interfaces and communication strategies. For example, platform features emphasizing efficiency and performance may be particularly effective for some user groups, while intuitive design, guidance, and emotional reassurance may be more effective for others. Tailoring platform design and communication strategies to different user segments can therefore improve user engagement and increase overall platform adoption.

Overall, the moderation findings confirm that gender acts as a boundary condition that shapes the strength of adoption relationships in digital herbal platforms. Recognizing these differences can help platform developers design more inclusive digital environments that accommodate diverse user needs.

5.5 Theoretical Implications

This study makes several important theoretical contributions to the literature on digital platform adoption. First, it advances the Technology Acceptance Model (TAM) by moving beyond a purely cognitive evaluation framework toward a more comprehensive cognitive–affective–informational integration perspective. While prior studies have predominantly focused on perceived usefulness and perceived ease of use as primary cognitive determinants, this study demonstrates that user adoption behavior is simultaneously shaped by informational evaluation processes (information quality and credibility) and affective responses, particularly technology anxiety (Dwivedi et al., 2021; Filieri et al., 2021).

Second, this research contributes by explicitly incorporating technology anxiety as an affective barrier within the adoption process. Unlike traditional TAM-based models that assume rational decision-making,

this study highlights that emotional resistance plays a critical role in inhibiting adoption, even when cognitive and informational evaluations are favorable. This finding extends existing adoption theories by emphasizing the importance of affective mechanisms in digital decision-making under uncertainty (Alyahya et al., 2022; Buhalis et al., 2022).

Third, by integrating the Information Adoption Model (IAM) with TAM, this study provides a multi-dimensional explanation of user behavior, bridging the gap between information processing theory and technology acceptance theory. The proposed framework demonstrates that users do not merely adopt technologies based on perceived utility, but rather through a holistic evaluation process that combines cognitive judgments, informational cues, and emotional responses.

Finally, this study contributes to the emerging literature on digital platforms by conceptualizing adoption as a dynamic behavioral mechanism, rather than a static intention outcome. This perspective offers a deeper theoretical understanding of how users form adoption decisions in complex digital environments, particularly in contexts characterized by uncertainty, such as digital health platforms (Venkatesh et al., 2012; Kim & Lee, 2021).

5.6 Managerial Implications

The findings of this study offer several practical implications for digital platform developers, health technology providers, and policymakers seeking to promote the adoption of digital herbal platforms.

First, platform developers should prioritize reducing technology anxiety through user-centered design. The results demonstrate that technology anxiety significantly inhibits digital platform adoption, indicating that emotional barriers can prevent users from engaging with digital systems even when they recognize the platform's benefits. To address this issue, developers should focus on designing interfaces that are intuitive, simple, and easy to navigate. Features such as clear instructions, guided onboarding processes, and interactive tutorials can help users feel more comfortable when interacting with digital platforms. Previous research has shown that improving system usability and providing user support mechanisms can significantly reduce anxiety and improve user engagement with digital technologies (Rahi et al., 2021; Zhang et al., 2023).

Second, digital herbal platform providers should emphasize the practical value and usefulness of the platform when communicating with potential users. The results indicate that perceived usefulness significantly reduces technology anxiety, suggesting that clearly demonstrating the benefits of the platform can help users overcome psychological barriers. Platforms should highlight how their services improve access to reliable herbal information, support health-related decision-making, and enhance users' ability to obtain trustworthy knowledge. Emphasizing these functional benefits can strengthen users' perceptions of value and encourage adoption.

Third, strengthening information credibility is essential for promoting user trust and increasing adoption. Since digital herbal platforms provide health-related information, users often require high levels of confidence in the reliability of the content. Platform managers should ensure that information is

transparent, evidence-based, and supported by credible sources such as healthcare professionals, research institutions, or government agencies. Displaying expert endorsements, references to scientific studies, and certification from recognized health authorities can significantly enhance users' trust in the platform (Filieri et al., 2021; Alyahya et al., 2022).

Fourth, platform developers should adopt segmentation strategies that consider demographic differences in technology adoption behavior. The moderation results indicate that gender influences several relationships within the adoption model, suggesting that different user groups may respond differently to platform features and communication strategies. For example, some users may place greater emphasis on functional benefits, while others may prioritize ease of use and emotional reassurance. Tailoring platform design and communication strategies to different user segments can therefore improve user engagement and increase adoption rates.

Finally, policymakers and public health organizations can play an important role in supporting the development of reliable digital herbal platforms. Establishing standards for digital health information quality and credibility can help ensure that users receive accurate and trustworthy information. Regulatory frameworks and certification systems can also enhance the credibility of digital platforms, which may increase users' trust and encourage wider adoption of digital herbal health services.

Overall, the managerial implications highlight that increasing adoption of digital herbal platforms requires a holistic strategy that combines technological design improvements, credibility enhancement, and user-oriented communication strategies. By addressing both cognitive perceptions and emotional barriers, platform providers can create digital environments that encourage user engagement and long-term platform adoption.

6. Conclusion

This study investigated the determinants of digital platform adoption by integrating the Technology Acceptance Model (TAM) and the Information Adoption Model (IAM) within the context of digital herbal platforms. Specifically, the study examined how perceived usefulness, perceived ease of use, and source credibility influence users' adoption behavior through the mediating role of technology anxiety. Using structural equation modeling based on data collected from 603 respondents, the findings provide empirical evidence explaining how cognitive, informational, and emotional factors jointly shape users' intentions to adopt digital platforms.

The results confirm that perceived usefulness and perceived ease of use significantly reduce technology anxiety, indicating that users who perceive digital platforms as beneficial and easy to operate are less likely to experience psychological discomfort when interacting with technology. In addition, source credibility was found to significantly enhance information adoption, highlighting the importance of trustworthy and reliable information in shaping user engagement with digital platforms. The findings further demonstrate that technology anxiety negatively influences adoption, suggesting that emotional barriers remain a critical obstacle in the diffusion of digital health technologies.

Moreover, the mediation analysis reveals that technology anxiety acts as an important psychological mechanism linking technological perceptions and information adoption behavior. Even when users perceive digital platforms as useful, the presence of technological anxiety can reduce their willingness to adopt such systems. This finding underscores the importance of addressing both cognitive evaluations and emotional responses when designing and implementing digital platforms.

Overall, the study contributes to the literature by proposing an integrated framework that combines TAM and IAM perspectives, offering a more comprehensive explanation of digital platform adoption behavior. The findings highlight that adoption decisions are not solely driven by technological functionality but also influenced by users' emotional responses and perceptions of information credibility. By integrating these dimensions, the study advances the understanding of digital platform adoption in emerging digital health ecosystems.

From a practical perspective, the results suggest that digital platform providers should focus on improving system usability, strengthening information credibility, and reducing technology-related anxiety in order to enhance user adoption. Policymakers and platform developers should also collaborate to establish reliable digital health information standards that promote trust and encourage broader engagement with digital platforms.

Despite its contributions, the study has several limitations. The data were collected from respondents within a specific context, which may limit the generalizability of the findings to other cultural or technological environments. Future research could extend this framework by examining additional factors such as trust, perceived risk, digital literacy, or cultural influences, as well as by applying longitudinal research designs to better understand changes in user behavior over time.

In conclusion, this research demonstrates that digital platform adoption is a multidimensional process shaped by technological perceptions, information credibility, and emotional responses. Understanding these mechanisms is essential for designing digital platforms that effectively support users in accessing reliable information and engaging with digital health services.

Declarations

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Author contributions

N.KS. contributed to the study's conception, design, analyzed the data and approved the final

manuscript.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval was granted by the Naresuan University, Thailand (COA No. P2-0078/2569) and the standards of the Helsinki declaration were met.

Consent for publication

Not applicable.

Informed consent

Informed consent was obtained from all participants before data collection. Participants were fully informed about the purpose of the research, its procedures, and their right to withdraw at any time without penalty. All participants were above18 years, informed consent from parents or legally authorized representatives was not required.

Competing interests

The author declare no competing interests.

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Figures

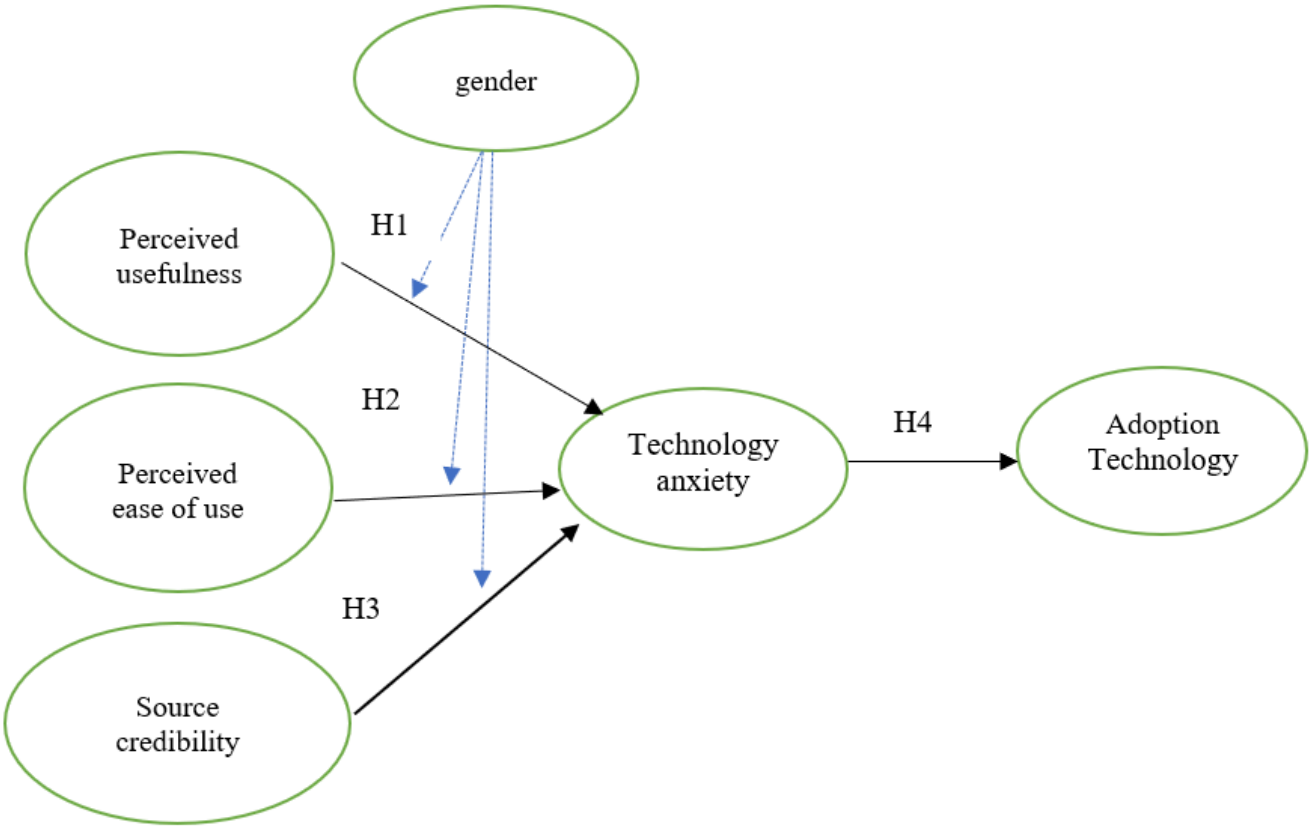


Figure 1

Conceptual model of the study

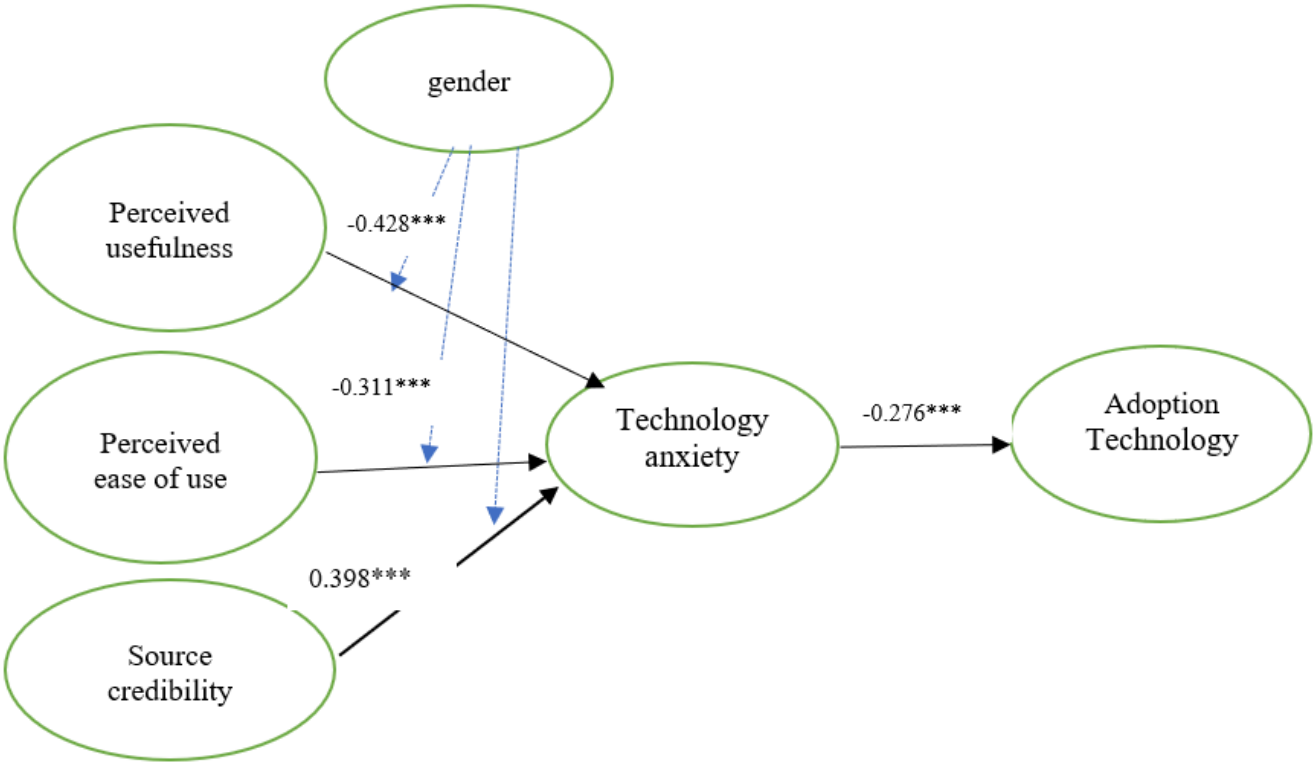


Figure 2

Fig. 3. Conceptual model.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- dataset603SEM.xlsx