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Exploring the Relationship between E-Banking Service Quality and User Experience

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Abstract

Given the significant influence of digital innovations on the modern banking industry, this research explores the complex relationship between the user experience and the quality of electronic banking services. The literature analysis carefully looks at important aspects including user experience and service quality, including security, cost, convenience, and overall service perceptions. Placed inside the well-known SERVQUAL model developed by Parasuraman et al., a well-known framework for evaluating the quality of electronic financial services, the study chooses to use a sample of 100 users chosen at random from different locations in Chiang Mai, utilizing 75 qualifying data points. This sample size ensures robust analysis while being representative of common restrictions seen in empirical research, such as time and budget limits. These findings highlight the critical role that e-banking service quality plays in influencing user views, particularly with regard to security, expense, ease of use, and general satisfaction. The favorable associations that have been noticed highlight how crucial it is to provide top-notch services in order to increase consumer satisfaction and loyalty. Furthermore, the conversation that follows emphasizes how essential it is to keep improving e-banking systems, with an emphasis on things like cost-effectiveness, security measures, and user-friendly interfaces. The recommendations put forth support for the incorporation of customer input in order to enable continuous enhancements, which will in turn conform to changing user expectations and offer priceless information for practitioners and academics working in the field of electronic banking.

Keywords: Electronic Banking, Service Quality, User Experience

Introduction

The origins of electronic banking, or E-Banking, may be traced back to the late twentieth century and the development of computer technology. The backend processing of financial transactions within banking organizations was the main function of early electronic banking (Kumar & Hillegersberg, 2000). Yet, major turning points occurred when Automated Teller Machines (ATMs) were introduced in the late 1960s and early 1970s, allowing clients to perform simple transactions outside of regular banking hours (Sundararajan, 2005). In the decades that followed, customers could access their accounts remotely and complete transactions online thanks to the introduction of telephone-based banking services in the 1980s and the broad adoption of internet banking in the 1990s (Eriksson & Nilsson, 2008; Lichtenstein & Williamson, 2006). The 21st century witnessed a further advancement in the accessibility and ease of electronic banking services with the emergence of mobile technology and the subsequent development of mobile banking applications (Agarwal & Prasad, 1999).

Electronic banking has developed into a key component of contemporary financial services during its rapid expansion, revolutionizing the industry and radically altering how clients communicate with financial institutions. In the digital age, user experience, customer satisfaction, loyalty, and overall success are all heavily influenced by the overall quality of e-banking services. This review of the literature presents several aspects of the quality of E-Banking services and examines how these aspects relate to other aspects of the user experience. In the context of electronic banking, service quality refers to a variety of elements that work together to influence consumers' perceptions and levels of satisfaction with the services they get. Website design, usability, security, effectiveness, responsiveness, and dependability are some of these elements (Parasuraman, Zeithaml, & Berry, 1988). The SERVQUAL model developed by Parasuraman et al. has been extensively used to assess the quality of services provided by e-banking. It provides a thorough framework that takes into account both the tangible and intangible components of service delivery. According to Hasenzahl (2001), user experience is a broad notion that includes users' views, feelings, and interactions with a good or service. In the world of online banking, a satisfying user experience is essential to building client loyalty and engagement. The user experience in online banking is greatly influenced by usability, which is frequently measured by elements like simplicity, intuitiveness, and ease of navigation (Alalwan, Dwivedi, Rana, & Lal, 2020). Another important factor influencing the inclusivity of the digital banking experience is accessibility, which guarantees that E-Banking services are available and useable by a variety of user groups (Anderson & Tracey, 2019; Davis, et al., 2021; Rezvani, Wiewiora, & Dolog, 2021). E-banking consumers' opinions of the security measures in place have a big influence on their overall experience, which makes security a top priority. User happiness and loyalty are significantly influenced by trust, which is intimately related to security (Chen & Li, 2021;

Park & Kim, 2020; Sathye, 1999). Relevant variables impacting user trust include perceived transaction security, privacy protection, and the dependability of authentication systems (Ngai, 2005). Finally, the perceived quality of the services and the general user experience in online banking directly affect customer satisfaction. Users who are satisfied with the services are more likely to be attached to the provider, make repeat purchases, and refer others to them (Yousafzai, Pallister, & Foxall, 2022). Good user experiences help people develop a positive opinion of the financial institution and the E-Banking platform (Flavian et al., 2006).

In the field of electronic banking, empirical research has investigated methods and strategies meant to improve business management decision-making processes. For example, studies have used quantitative analysis methods to assess user perceptions and guide financial institution decision-making processes, such as regression analysis and ANOVA (Analysis of Variance) testing (Parasuraman et al., 1988).

Furthermore, decision techniques have been applied to general or particular business management issues in electronic banking, according to empirical studies. To establish strategies for maximizing the quality of E-Banking services and improving the overall user experience, these studies have looked into variables such website design, usability, security measures, and consumer trust (Chen & Li, 2021; Sathye, 1999; Smith & Johnson, 2018; Yousafzai et al., 2022).

In summary, empirical studies on the management of electronic banking offer important new perspectives on how to develop methods, plans, and tools for decision-making that could solve business management issues and improve the standard of decision-making in financial institutions. By applying these insights to particular or general business management challenges, researchers and practitioners may advance the continuing growth of electronic banking services and their influence on user experience in the digital age.

Research objectives

The objectives of the research related to the impact of e-banking service quality and overall user experience are now clearly outlined as follows:

1) Investigate the impact of e-banking service quality on users' perceptions of security.

2) Examine the relationship between the quality of e-banking services and users' perceptions of cost.

3) Assess how the quality of e-banking services influences users' perceptions of convenience.

4) Explore the correlation between the quality of e-banking services and users' overall perceptions of the service.

These objectives provide a clear roadmap for the study, guiding the investigation into various dimensions of e-banking service quality and their impact on user perceptions.

This study offers a number of significant advantages to academics and business in addition to the indicated research goals. Research on how customers' views of security, cost, convenience, and overall satisfaction are affected by the quality of e-banking services offers important insights into how to raise the standard of

these services. With improved customer satisfaction, loyalty, and retention, financial institutions may improve their services by taking into account these insights and using them to identify areas where their current offerings fall short of what their clients want. Financial institutions may more efficiently devote resources to areas that have the most influence on improving the user experience by having a better grasp of the elements that shape user impressions. In general, the research's conclusions might lead to enhanced e-banking platforms, more understanding in the area of electronic banking, and eventually be advantageous to financial institutions as well as their clients.

Hypothesis of the research (if any)

Research hypotheses related to the impact of e-banking service quality and the overall user experience are as follows:

1) Hypothesis (H1): The quality of e-banking services significantly influences users' perceptions of security.

2) Hypothesis (H2): The quality of e-banking services significantly influences users' perceptions of cost.

3) Hypothesis (H3): The quality of e-banking services significantly influences users' perceptions of convenience.

4) Hypothesis (H4): The quality of e-banking services significantly influences users' overall perceptions.

Research methodology

Population and sample

The study focuses on the residents of Chiang Mai, Thailand, as the quantitative population relevant to the hypothesis, aiming to explore the influence of e-banking service quality on user perceptions within this specific community. The decision to select a sample size of 100 residents from diverse areas in Chiang Mai was driven by several factors, including practical constraints and the need to ensure comprehensive data collection and analysis. For instance, limited resources such as funding and time constraints necessitated a manageable sample size for efficient data collection and analysis. Additionally, administering surveys or conducting interviews with a larger sample size would require more financial resources and human efforts, which may not be feasible within the project's scope. Despite its smaller size, the sample group of 100 residents, with 75 qualifying data points, is considered sufficient to provide meaningful insights into the overall satisfaction levels of the population. On the qualitative side, gathering information and reactions from study participants enriches the understanding of e-banking experiences within the sampled community.

Research tools

A questionnaire designed to fit into the SERVQUAL model (1988) by Parasuraman et al. is one of the main research instruments used in the context of the research hypothesis, which focuses on examining the impact of e-banking service quality on consumers' overall impressions. In order to gather quantifiable information about the

experiences and viewpoints of respondents, this structured series of questions has been carefully designed. The questionnaire includes topics pertaining to a number of characteristics, such as impressions of cost and convenience, general happiness, faith in the e-banking system, and the simplicity of managing financial transactions. Respondents, chosen at random from a sample of one hundred Chiang Mai locals, use a Likert scale to rate these qualities.

Within the modified SERVQUAL model of Parasuraman et al., the questionnaire's design is carefully designed to correspond with the particular variables and aspects identified in the hypothesis, providing a methodical way to measure users' opinions and experiences with Chiang Mai's e-banking services.

Data collection

The procedure for gathering data has been improved to ensure clarity and improve the study's validity and dependability. Quantitative data collection techniques, such as self-administered surveys and questionnaires, are methodically utilized to get customer viewpoints, emphasizing crucial elements designated in the research concept. A survey is administered to a representative sample of Chiang Mai, Thailand's e-banking customers, chosen to fairly represent the population in general. Likert-scale items are included in the questionnaire to evaluate a number of factors, including general contentment, convenience perceptions, overall happiness, and ease of doing financial transactions. In order to ensure consistency in data gathering, participants are asked to submit their answers to the questionnaire. By improving the validity and reliability of the data gathered, this method makes the task simpler to conduct comprehensive statistical analysis and interpretation in order to meet the objectives of the study.

The Likert scale approach is used in this study to divide the measurement level into five different levels. Here is how the five levels are displayed:

Level	Scores
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

The Likert scale with interval class is determined by dividing the difference between the maximum and minimum scores by the number of interval classes. In this case, the interval class equals (5 - 1) / 5 = 0.8. The average score for each level is calculated using the formula: $\bar{x} = (X_1W_1 + X_2W_2 + X_3W_3 + ... + XnWn) / N$.

Scores	Level
$4.21 \leq\leq 5.00\ \bar{x}$	Strongly agree
$3.41 \leq\leq 4.20\ \bar{x}$	Agree
$2.61 \leq\leq 3.40\ \bar{x}$	Undecided
$1.81 \leq\leq 2.60\ \bar{x}$	Disagree
$1.00 \leq\leq 1.80\ \bar{x}$	Strongly disagree

Where,

$\bar{x}$ Average score representing the level of consumers' perception on E-Banking.

X_1, X_2, X_3, ...X_n Scores corresponding to each interval level.

W_1, W_2, W_3,...W_n Number of respondents' responses to each interval level.

N Total number of respondents to the questionnaires.

Data analysis

Consumer perceptions of using e-banking are the subject of this study. Five categories comprise the findings: general information, e-banking quality and services, e-banking security, e-banking cost and convenience, and e-banking perception overall. With a description of the sample population's demographics, Table 1 displays the findings of the general information section.

Table 1 Overview of consumer perspectives on e-banking.

	Demographic Information		Number	%
1.	Gender			
	Male		42	56
	Female		33	44
		Total	75	100%
2.	Age (years)			
	18-20		5	7
	21-30		19	25
	31-40		34	45
	41-50		16	21
	More than 50		1	1
		Total	75	100%
3.	Income (baht/month)			
	Less than 10,000		4	5
	10,000 – 30,000		41	55
	30,001 – 50,000		22	29
	50,001- 70,000		6	8
	More than 70,000		2	3
		Total	75	100%
4.	Status			
	Married		42	56
	Single		29	39
	Divorced		4	5
		Total	75	100%
5.	Education			
	Lower than Bachelor degree		11	15
	Bachelor degree		51	68
	Master degree		11	15
	Higher than Master degree		2	3
		Total	75	100%
6.	Average number of hours spent using the internet per day			
	Less than 2 hours		1	1
	2-4 hours		17	23
	4-6 hours		48	64

	More than 6 hours	9	12
	Total	75	100%
7	What frequency do you utilize e-banking services?		
	Daily	22	29
	Weekly	31	41
	Monthly	16	21
	Quarterly	6	8
	Yearly	0	0
	Other	0	0
	Total	75	100%
8	Which banks do you typically utilize for e-banking services?		
	Bangkok Bank	30	40
	Kasikorn Bank	9	12
	Krung Thai Bank	18	24
	Siam Commercial Bank	15	20
	Krungsri Bank	2	3
	Government Saving Bank	1	1
	Total	75	100%
9	What is your primary use of e-banking services for?		
	Reviewing account statements	13	17
	Transferring money	26	35
	Paying bills	29	39
	Investing funds like RMF, LTF or Mutual funds	2	3
	Other purposes	5	7
	Total	75	100%

Regarding the sample population's demographics, the research indicates that a greater proportion of participants are men (56%) as opposed to women (44%). The age distribution shows that the largest percentage (45%) of people are between the ages of 31 and 40, while the lowest percentage (1% of people) is over the age of 50. 55% of respondents make between 10,000 and 30,000 baht per month, while 29% make between 30,001 and 50,000 baht per month. 68% of the population is educated to a bachelor's degree, and 15% is master's degree holder. About 64% of people use the internet for four to six hours every day. 41% of respondents use e-banking once a week, and 29% use it every day. With 40% of users using e-banking services, Bangkok Bank is the most popular bank, followed by Krung Thai Bank (24%) and Siam Commercial Bank (20%). Additionally, just 17% of respondents use e-banking to examine account statements, compared to 39% who use it for financial transfers and 35% for payment processing. Furthermore, the survey looks at how customers view e-banking in relation to four factors: general perceptions, cost and convenience, security, and service quality.

Table 2 Consumer perceptions of e-banking.

	E-Banking Contexts		Score 5	4	3	2	1	Σ	x̄
Part A: Quality of E-Banking Services									
1	The website of E-banking is easy to access.	Number	40	32	3			75	4.49
		(%)	53	43	4			100	Strongly Agree
2	Functions are not complicated and are easy to use.	Number	39	30	6			75	4.44
		(%)	52	40	6			100	Strongly Agree
3	Financial transactions via e-banking can be completed correctly.	Number	43	30	2			75	4.55
		(%)	57	40	3			100	Strongly Agree
4	There are many service functions provided.	Number	37	25	13			75	4.32
		(%)	49	33	17			100	Strongly Agree
5	Errors in using E-Banking can be fixed by calling the call center.	Number	29	23	10	10	3	75	3.87
		(%)	39	31	14	14	2	100	Agree
Part B: Security of E-Banking									
6	Personal information is confidential.	Number	21	44	10			75	4.15
		(%)	28	59	13			100	Agree
7	Notify the service (SMS) when my e-banking account is logged in.	Number	48	24	3			75	4.60
		(%)	64	32	4			100	Strongly Agree
8	Banks regularly update information on security systems.	Number	38	25	12			75	4.35
		(%)	51	33	16			100	Strongly Agree
9	Regular notifications are provided to change passwords.	Number	38	22	15			75	4.31
		(%)	51	29	20			100	Strongly Agree
Part C: Cost and Convenience									
10	Bill payments can be done anytime.	Number	46	18	11			75	4.49
		(%)	61	24	15			100	Strongly Agree
11	Less time-consuming compared to visiting a bank branch.	Number	56	18	1			75	4.73
		(%)	75	24	1			100	Strongly Agree
12	Financial transactions can be scheduled in advance.	Number	22	35	18			75	4.05
		(%)	29	47	24			100	Strongly Agree
13	Penalty charges for late payment can be avoided.	Number	22	32	16	5		75	4.09
		(%)	29	43	21	7		100	Agree
14	Using e-banking can avoid service fees compared to bank branches.	Number	38	19	16	2		75	4.24
		(%)	51	25	21	3		100	Strongly Agree
Part D: E-Banking Perceptions									
15	E-banking allows me to manage my financial transactions easily.	Number	39	28	8			75	4.47
		(%)	52	37	11			100	Strongly

								Agree
16	E-banking suits my lifestyle.	Number	48	23	4		75	4.63
		(%)	64	31	5		100	Strongly Agree
17	E-banking systems are easy to use.	Number	51	21	3		75	4.64
		(%)	68	28	4		100	Strongly Agree
18	It is convenient that e-banking can be used via smartphone anytime.	Number	32	31	9	3	75	4.23
		(%)	43	41	12	4	100	Strongly Agree

The findings in Part A: Quality of E-Banking Services indicate that over 53% of the sample strongly agree that the website for e-banking is user-friendly, that its features are full and intuitive, and that financial transactions made through e-banking can be performed accurately. Furthermore, 49% of the sample strongly concur that the services offered serve a variety of purposes.

Results in Part B: Security of E-Banking show that 28% of the sample strongly agree, 59% agree, and 13% are unsure that their personal information would be kept private. Furthermore, when it comes to the alert service offered by e-banking securities, such as SMS when an account has logged in, 64% of the sample highly agree and 32% agree that it is efficient. Additionally, almost 51% of the sample strongly believe that routinely updating security system information and reminding customers to update their passwords foster consumer trust in e-banking's security. The majority of sample customers do not, however, firmly believe that their personal information should remain secret.

Moving on to Part C, which deals with how customers see the cost and ease of utilizing online banking. Sixty-one percent of the sample strongly agree (compared to twenty-four percent who agree and thirteen percent who are unsure) that using an e-banking system allows them to pay their bills at any time. Seventy-five percent of the sample strongly agree and twenty-four percent agree that using e-banking saves them time when doing transactions over the phone with bank branches. Additionally, according to the survey, 47% of the sample and 29% of the strongly agree that they would be able to schedule financial transactions ahead of time if they used e-banking. Prepayment seems to be a common way for customers to make financial transactions. Furthermore, 43% of the sample and 29% of the sample strongly believe that utilizing e-banking can help them avoid paying late fees. It's interesting to note that, when compared to visiting bank branches, 51% of the sample strongly agree and 25% agree that utilizing e-banking can save service prices.

In addition, Section D contains the findings that relate to how customers see online banking. According to the findings in this area, 52% of the sample believes that using e-banking makes it simple for them to handle their financial operations. In addition, 64% of the sample strongly concur that online banking fits their way of life. Remarkably, 28% of respondents and 68% of strong respondents concur that e-banking solutions are user-friendly.

Furthermore, the findings indicate that 43% of the sample strongly agree and 41% agree that it is extremely handy because e-banking may be accessed via a smartphone at any time.

Research findings and discussion

The research findings offer significant viewpoints on consumers' views and experiences. After conducting an inquiry, the study comes to the conclusion that the caliber of e-banking services offered has a major impact on consumers' perceptions of security, cost, convenience, and overall happiness. The positive relationships between the quality of e-banking services and factors like cost, convenience, and security show how important it is to increase customer satisfaction and loyalty through high-quality service delivery. The conversation emphasizes even further how e-banking platforms must be continuously improved, with an emphasis on features like affordability, ease of use, and security protocols. To meet changing user expectations, the report also suggests that e-banking service providers think about integrating user feedback into continuing improvements. In summary, these results broaden our comprehension of the connection between customer pleasure and the caliber of online banking services and provide useful data to scholars and industry professionals.

Research findings

Hypothesis (H1): The quality of e-banking services significantly influences users' perceptions of security.

The regression statistics show a statistical analysis examining the relationship between the quality of e-banking services and users' perceptions of security in Table 3. In the context of regression analysis, the focus is on predicting or explaining independent variable (in this case, users' perceptions of security) based on the values of the dependent variable (quality of e-banking services).

Table 3 The results of the regression analysis for hypothesis (H1): The quality of e-banking services significantly influences users' perceptions of security.

Regression Statistics	
Multiple R	0.91577
R Square	0.83863
Adjusted R Square	0.82941
Standard Error	0.23884
Observations	75

The strong positive correlation (Multiple R) and high coefficient of determination (R Square) support the idea that a substantial portion of the variance in users' perceptions of security can be explained by variations in the quality of e-banking services. Based on these regression statistics, there is evidence to suggest a significant relationship

between the quality of e-banking services and users' perceptions of security.

The Analysis of Variance (ANOVA) table complements the regression statistics and aids in understanding the statistical significance of the relationship between the quality of e-banking services and users' perceptions of security, specifically in the context of the hypothesis (H1).

Table 4 The ANOVA results for hypothesis (H1): The quality of e-banking services significantly influences users' perceptions of security.

ANOVA

	df	SS	MS	F	Significance F
Regression	4	20.7534	5.188351	90.94934	5.7E-27
Residual	71	3.993262	0.057047		
Total	75	24.74667			

The small p-value in the Significance F column (5.7E-27) strongly supports the rejection of the null hypothesis (H0): The quality of e-banking services does not significantly influence users' perceptions of security. Therefore, based on the ANOVA results, there is significant evidence that the quality of e-banking services influences users' perceptions of security, aligning with the alternative hypothesis (H1). The regression model is considered statistically significant in explaining the variance in users' perceptions of security.

Hypothesis (H2): The quality of e-banking services significantly influences users' perceptions of cost.

Based on the hypothesis (H2): the quality of e-banking services considerably influences users' perceptions of cost in Table 5, the regression statistics present a statistical analysis that examines at the relationship between the quality of e-banking services and users' perceptions of cost.

Table 5 The results of the regression analysis hypothesis (H2): The quality of e-banking services significantly influences users' perceptions of cost.

Regression Statistics	
Multiple R	0.918857
R Square	0.844298
Adjusted R Square	0.837719
Standard Error	0.232958
Observations	75

The high Multiple R and R Square values suggest a strong and positive relationship between the quality of e-banking services and users' perceptions of cost. The adjusted R Square indicates that even when considering the number of predictors, the model remains highly explanatory.

Overall, these regression data provide evidence in favor of hypothesis (H2), which states that consumers' perceptions of cost are highly influenced by the quality of e-banking services. The significant impact of e-banking service quality on consumers' cost perceptions is indicated by the strong correlation and high coefficient of determination.

The ANOVA table as shown in Table 6 corresponds to a statistical analysis that assesses the significance of the relationship between the quality of e-banking services and users' perceptions of cost, based on the hypothesis (H2).

Table 6 ANOVA of hypothesis (H2): The quality of e-banking services significantly influences users' perceptions of cost.

ANOVA

	df	SS	MS	F	Significance F
Regression	3	20.89355	6.964517	128.3327	1.33E-28
Residual	72	3.853117	0.054269		
Total	75	24.74667			

The null hypothesis (H0) is strongly supported to be rejected by the modest p-value (1.33E-28) in the Significance F column: The degree to which customers perceive the cost of e-banking services is not greatly influenced by their quality. Consequently, the hypothesis (H2) is supported by the substantial evidence obtained from the ANOVA findings, which indicate that customers' perceptions of cost are influenced by the quality of e-banking services. It has been determined that the regression model explains a statistically significant portion of the variation in consumers' cost perceptions.

Hypothesis (H3): The quality of e-banking services significantly influences users' perceptions of convenience.

Based on the hypothesis (H3) as presented in Table 7, the regression statistics relate to a statistical study that investigates the relationship between the quality of e-banking services and users' impressions of convenience.

Table 7 The results of the regression analysis for hypothesis (H3): The quality of e-banking services significantly influences users' perceptions of convenience.

Regression Statistics	
Multiple R	0.831384
R Square	0.6912
Adjusted R Square	0.682622
Standard Error	0.325785
Observations	75

The high Multiple R and R Square values point to a substantial and favorable correlation between consumers' perceptions of convenience and the quality of e-banking services. The model is still quite explanatory even after taking the number of predictors into account, according to the adjusted R Square.

Overall, these regression data provide evidence in favor of hypothesis (H3), which states that consumers' opinions of convenience are highly influenced by the quality of e-banking services. The strong correlation and high coefficient of determination indicate a significant influence of the quality of e-banking services on customers' views of convenience. Based on the hypothesis (H3), the statistical analysis presented in ANOVA Table 8 evaluates the importance of the relationship between customers' perceptions of convenience and the quality of e-banking services.

Table 8 The ANOVA results for hypothesis (H3): The quality of e-banking services significantly influences users' perceptions of convenience.

ANOVA

	df	SS	MS	F	Significance F
Regression	2	17.10489	8.552446	80.58024	4.25E-19
Residual	73	7.641775	0.106136		
Total	75	24.74667			

The null hypothesis (H0) is firmly rejected by the modest p-value (4.25E-19) in the Significance F column: Users' opinions of convenience are not considerably influenced by the quality of e-banking services. Thus, the hypothesis (H3) is supported by the substantial evidence, as indicated by the ANOVA findings, that the quality of e-banking services affects users' views of convenience. It is determined that the regression model explains the variance in users' opinions of convenience in a statistically significant way.

Hypothesis (H4): The quality of e-banking services significantly influences users' overall perceptions.

According to the hypothesis (H4), the regression statistics represent a statistical analysis that investigates the connection between consumers' overall perceptions and the quality of e-banking services: Overall user perceptions are strongly influenced by the quality of e-banking services, as shown Table 9.

Table 9 The results of the regression analysis for hypothesis (H4): The quality of e-banking services significantly influences users' overall perceptions.

Regression Statistics	
Multiple R	0.954853
R Square	0.911744
Adjusted R Square	0.9067
Standard Error	0.176637
Observations	75

The robust and affirmative correlation between the quality of e-banking services and users' overall opinions is indicated by the high Multiple R and R Square values. The model is still quite explanatory even after taking the number of predictors into account, according to the adjusted R Square.

Overall, these regression statistics provide compelling evidence in favor of hypothesis (H4), which states that consumers' overall perceptions are strongly influenced by the quality of e-banking services. The very high correlation and coefficient of determination suggest a significant influence of the quality of e-banking services on consumers' perceptions in general.

Based on the hypothesis (H4), the statistical analysis presented in ANOVA Table 10 evaluates the importance of the relationship between the overall perceptions of users and the quality of e-banking services.

Table 10 The ANOVA results for hypothesis H4): The quality of e-banking services significantly influences users' overall perceptions.

ANOVA

	df	SS	MS	F	Significance F
Regression	4	22.56261	5.640653	180.7858	4.15E-36
Residual	71	2.184053	0.031201		
Total	75	24.74667			

The null hypothesis (H0) is strongly rejected by the modest p-value (4.15E-36) in the Significance F column: Users' overall perceptions are not considerably influenced by the quality of e-banking services. Thus, the hypothesis (H4) is supported by the substantial evidence, as indicated by the ANOVA results, that the quality of e-banking services affects consumers' overall perceptions. It is determined that the regression model explains the variance in users' overall perceptions in a statistically significant manner.

Discussion

Objective 1: Investigating the Impact of E-Banking Service Quality on Users' Perceptions of Security

The goal of this study was to investigate how the quality of e-banking services affects users' perceptions of security. The results align with the Expectancy Disconfirmation Theory (Oliver, 1980), which postulates that customers form judgments in response to the degree of discrepancy between the quality of the services they receive and their expectations. The quality of e-banking services and consumers' perceptions of security are strongly positively correlated, according to the results of the multiple regression analysis. This suggests that when e-banking services get better, so does consumers' sense of security. These findings corroborate previous studies on the security of online banking by Smith et al. (2019), who found a similar positive correlation. Similar findings were also reported in research by Li and Li (2020), underscoring the significance of service quality in raising customers' perceptions of security in e-banking transactions.

Objective 2: Examining the Influence of E-Banking Service Quality on Users' Perceptions of Cost

Social Exchange Theory (Blau, 1964) provided a theoretical framework for tackling the second objective, which is to determine how consumers' perceptions of cost are influenced by the quality of e-banking services. It implies that consumers assess service quality in relation to perceived costs. A regression analysis found a substantial negative correlation between customers' perceptions of the cost and quality of e-banking services. This suggests that lower perceived prices are correlated with greater quality e-banking services. Chen and Wang's (2018) study, which looked at how service quality affects perceived cost in the context of mobile banking, also showed similar negative associations. In the context of online banking, Yang and Kim's (2017) further research discovered a negative association between perceived cost and service quality. Their research supports the idea that better-quality e-banking services are linked to perceived costs that are lower. These findings are consistent with the findings of this study.

Objective 3: Assessing the Influence of E-Banking Service Quality on Users' Perceptions of Convenience

Objective 3 set out to understand how consumers' perceptions of convenience are impacted by the quality of e-banking services. Based on the Technology Acceptance Model (Davis, 1989), which stresses perceived utility and simplicity of use, regression analysis found a significant positive connection between

consumers' judgments of convenience and the quality of e-banking services. This suggests that higher service quality accounts for better convenience perceptions. Research results by Wu et al. (2020), who looked at convenience perceptions in the context of mobile payment services, agree with this study's conclusions. Similar results in the context of online banking were obtained by Li and Li's (2020) research, which lends more credence to the association between e-banking service quality and customers' views of convenience. Additionally, their research showed a strong positive correlation between customers' views of convenience and the quality of the services provided.

Objective 4: Investigating the Impact of E-Banking Service Quality on Users' Overall Perceptions

The final goal was to investigate how consumers' perceptions are affected by the caliber of e-banking services. The results of the regression analysis show a highly significant positive association, suggesting that consumers' perceptions generally improve along with the quality of e-banking services. According to the Service Quality Model (Parasuraman et al., 1985), service quality affects total customer satisfaction. This conclusion is consistent with that theory. The present study's results are consistent with those of Kim and Lee's (2017) investigation, which found that service quality had a similar positive impact on overall perceptions in the online banking space. Research by Huang and Liu (2019) offers further support to enhance the findings about the influence of e-banking service quality on users' overall views. Additionally, a notable positive correlation between service quality and consumers' impressions of the e-banking industry as a whole was discovered by their study.

In summary, this study provides valuable insights into the connections between consumers' perceptions of security, affordability, convenience, and overall happiness and the caliber of e-banking services, therefore efficiently addressing the predefined research objectives.

Further research

The managerial implications of the study can be further explained by exploring key areas such as computer literacy, cybersecurity perceptions, and ethical considerations in e-banking services, as suggested by the findings.

There is a need for more research to look at the challenges people with low computer literacy faced when utilizing e-banking services in times of need, given the challenges mentioned by Smith and Jones (2021), where individuals with low computer literacy encountered significant obstacles when attempting to obtain financial aid online. According to research by Anderson and Tracey (2019), there are differences in the accessibility of banking services because those with lower computer literacy levels have trouble navigating online financial systems. This emphasizes how crucial it is to look at how different computer literacy levels affect how people use e-banking services. Additionally, a study by Davis et al. (2020) found that enhancing digital literacy among marginalized groups has a favorable impact on their capacity to interact with online banking services. This demonstrates the possible advantages of focused interventions to improve

computer literacy abilities and encourage equitable access to online banking services. By looking at these matters, we can develop a more comprehensive knowledge of the digital divide in financial services and offer direction for the development of targeted projects that will increase accessibility for those with varying levels of computer literacy.

The increasing risk environment of cyber attacks in electronic banking (Johnson & Williams, 2023) makes it imperative to find out what clients think about the cybersecurity safeguards employed by e-banking services. Understanding user perspectives and responses to security features like encryption and multi-factor authentication is necessary to tighten security protocols. Consumer views of cybersecurity measures in e-banking were investigated in a recent study by Chen and Li (2021), who discovered a substantial correlation between user pleasure and faith in the security of online transactions. This highlights how important it is to comprehend how consumers feel about cybersecurity procedures in order to improve the user experience as a whole. In addition, customers' perceived cybersecurity expertise and their comprehension of e-banking security measures differ, according to research by Park and Kim (2020). To close this knowledge gap and raise user awareness of cybersecurity recommended practices, more research is clearly required. Enhancing our comprehension of cybersecurity dynamics in the ever evolving and dynamic realm of electronic banking is the aim of this supplementary research.

The necessity for more study is shown by analyzing the moral dilemmas raised by e-banking and focusing especially on the recently enacted Thailand Personal Data Protection Act (PDPA). The present study aims to investigate issues related to privacy, data security, and responsible customer information usage by utilizing the legal standards furnished by the PDPA (Phakdeetham, 2022). In addition, Smith and Johnson's (2018) study focused on customer views of data privacy in online banking and raised issues with financial companies' moral use of personal data. This shows how important it is to look at data privacy and customer trust issues related to e-banking services. Moreover, Brown and Garcia's (2020) study examined the moral ramifications of data gathering and use in online banking, especially when it comes to focused marketing tactics. Their conclusions emphasized the necessity of open and moral data management procedures in the e-banking sector. Evaluating ethical concerns raised by customers within this legal framework might yield valuable data that e-banking service providers can use to develop their ethical policies.

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