The Impact of Self-Service Banking Quality on Customer Satisfaction: Evidence from ACLEDA Bank Plc.

Chanpov Ou, Evanuk Sarath, Muniroth Vorn, and Phorn Ngam

Corresponding Author. Email: chanpovou9999@gmail.com
ACLEDA INSTITUTE OF BUSINESS, Phnom Penh, Cambodia

ABSTRACT

Developments in information and communication technology are radically changing the way of business. The technological developments have resulted in new delivery banking products and services known as self-service banking. However, since it is a new service in Cambodia, it leads to practical issues, especially after experiencing the service. Hence, this research identifies and investigates the impact of self-service banking quality on customer satisfaction. The study integrated security and perceived benefits with a SERVQUAL model and used a questionnaire to collect data from 265 respondents who experienced using self-service banking. By using multiple regression analysis, the study found that tangibility, empathy, and perceived benefits were fully supported and significantly positively affected customer satisfaction, whereas reliability, responsiveness, and security did not influence customer satisfaction with self-service banking. The study showed results that Tangibility, Reliability, Responsiveness, Empathy, and Perceived Benefit influence customers' behavioral intention, so banks should focus on these factors to increase the level of self-service banking satisfaction. In order to fulfill customer satisfaction, banks should actively follow the trend of technology and renovation. Then the customers will come and spread their experience of using self-service banking.

Keywords: Self-service Banking, Customer Satisfaction, SERVQUAL Model, Security, Perceived Benefits

1. Introduction

Nowadays, almost all commercial public, private, or foreign national banks offer automated self-service banking services. As the products offered by the banks are more or less identical, banks are trying to have an edge over rivals on other parameters, which may enhance customer satisfaction and loyalty. Almost every bank is now using technology to deliver services to customers. With time automated banking services acceptance is increasing among bank customers, leading to the reduction in transactions through branches and the increase in transactions via automatic self-service modes in many banks.

Retail banks usually employ numerous self-service channels to reach customers, including Automated Teller Machines ATMs, Automated Telephone Banking, Web Banking, Short Message Service (SMS) Banking, and Kiosks. Notably, banks deploy several different channels to deliver their services to customers, and therefore these service channels play an essential role in consumer interactions with retail banks. Service organizations, including retail, are motivated by efficiency gains, flexibility, productivity, and improved corporate performance (Dabholkar, 1996). As cited by Madhusanka, (2018), it is necessary to understand the customer evaluation of these multiple service channels to improve the organizational status, especially in banks, and customer satisfaction in a dynamic competitive environment (Orel & Kara, 2014). Some customers prefer personal interaction with service personnel and other customers and are less than eager or could even resist using self-service banking. Self-service banking is viable for banks and other financial intermediaries because information processing is essential to their services (Charles, 2015).

Self-service banking has been offered by many banks in Cambodia; for instance, ACLEDA Bank Plc. provides an efficient delivery ecosystem across the Kingdom comprising ATMs, self-service banking outlets, cash deposit, cash withdrawal machines, virtual teller machines (to open accounts and print cards), and term deposit machines (for fixed deposits), all of these serve as a powerful catalyst for the next wave of growth (Phnom Penh Post, 2022).

To keep up to date with technology and meet customer satisfaction, ACLEDA Bank Plc. has successfully invented a new digital banking service called Self-Service Banking. It allows customers to perform and conduct transactions independently instead of getting directly to the bank. Even if self-service banking keeps up with technology, its usage could be improved. Since it is a new service in Cambodia, it leads to some practical issues, and more people need to learn about its existence. Hence, this study aims to illustrate the impact of self-service quality on customer satisfaction by getting evidence from ACLEDA Bank Plc.

The objective of this research study is to analyze the impact of self-service banking quality on customer satisfaction and apply a SERVQUAL Model to measure six hypotheses. The study

also aims to determine the impact of tangibility, reliability, responsiveness, empathy, security, and perceived benefits on customer satisfaction of self-service banking.

In addition, this study aims to gather evidence from the self-service banking of ACLEDA Bank in Cambodia. The study will also identify the impact of self-service banking quality on customer satisfaction. It focuses on some key factors such as tangibility, reliability, responsiveness, and perceived benefits. This study will significantly benefit Cambodia's banking industry by providing insights into how to enhance its self-service banking quality. Finally, this study will contribute to future research and the literature on self-service banking quality, particularly within the Cambodian context.

2. Literature Review

Definitions of self-service banking

Self-service banking is the use of self-service technologies in banking. Examples of self-service banking include banking by telephone and the Internet, EFTPOS (Electronic Funds Transfer at Point of Sale) terminals, automated teller machine, and other interactive kiosks (Sannes, 2001). The term 'self-service technologies' was first used by Meuter, (2000); they defined self-service technology as 'technological interfaces that enable customers to produce a service independent of direct service of employee involvement" (p.67-68).

Self-service banking refers to the banking service where the customers conduct such financial transactions as deposit and withdrawal, inquiry, transfer, bill payment, loans, currency exchange, and wealth management through self-service equipment. Campbell & Frei (2010) Instead of going into a branch, customers can control their finances 24/7 using the following self-service channels: ATMs—cellphone banking (on any cellphone) Meuter, (2000).

Self Service banking is an alternative for banks to cater to withdrawal and deposit of cash, besides over-the-counter transactions. The emergence of ATM and other new forms of banking have accelerated banks' requirement to dwell on service quality for customers' satisfaction and retaining loyalty. Adzmir & Taufik (2016) The introduction of self-service banking to the delivery of a service has led to the removal of the provider's personnel from the transaction and gave the customer more responsibilities to the customer to transact the service on their own. (ACLEDA Bank, 2021)

Self-service banking of ACLEDA Bank Plc.

ACLEDA Bank Plc is the largest bank in Cambodia, offering a wide range of financial and self-service banking products. Any self-service banking in ACLEDA Banking Plc. is established to support customers and provide the best service technologically. All ACLEDA

Bank branches have all self-service machines both in the city and province; it had 993 ATMs in Cambodia, including AIMs in the Branch and public place ATMs in 2021.

Self-service banking's technical and digital service has many functions and has been established since 2003. For machines, at ACLEDA, there are ATMs, ATM deposit machines, ATM POS machines, And Virtual Teller Machines. Customers can use all these machines anywhere and whatever they want 24/7.

ACLEDA ATM and deposit machines allow the operation of banking services via ACLEDA cards and other banks' cards at any time (24/7) safely and conveniently. ACLEDA POS is an electronic machine for use with ACLEDA cards or other banks' cards to pay for goods or services instead of cash safely and conveniently, and Term Deposit Machine is a Self Service Banking of ACLEDA Bank Plc. Providing customers with term deposit opening and certificate printing by themselves at all times, VIRTUAL Teller Machine can open a customer's bank account by themselves with Virtual Teller Machine (VTM) anytime and quickly (Key Industry, 2018).

SERVQUAL Model

SERVQUAL model is the service quality model used for measuring service quality and customer satisfaction. American marketing gurus Valarie Zeithaml, Leonard Berry, and Parasuraman suggested this SERVQUAL model in 1988 to analyze dimensions of service quality and perceptions of service quality. This elaborative model helps bridge the gap between customer expectations and needs. The current five dimensions of the SERVQUAL model are used to measure service quality. While the SERVQUAL model had ten dimensions, its simplified model - the RATER model, has five parameters under which the customer evaluation is measured. (Parasuraman, 1988). They are understood as service quality dimensions used to find out perceived service quality on the multiple-item scale. (Parasuraman, 1988). First, reliability is the ability of the firm to perform the service effectively and accurately. It measures whether the firm lived to its promises or not. Second, assurance depends on the employees of the firm. Their skill is to produce trust and credibility in the consumer's minds. It requires proper knowledge and dedication. The third is tangibility, which refers to physical facilities, equipment, personnel, and communication material. Empathy refers to the attention and priority the organization gives to the customers' needs and requests.

Moreover, responsiveness relates to the firm's ability and willingness to aid customers and provide apt service as promised. It was initially measured considering ten components - responsiveness, reliability, competence, access, courtesy, communication, credibility, security, customer understanding, and tangibles (Parasuraman, 1988). The SERVQUAL Model is primarily a qualitative analysis. If a satisfaction survey mainly depends on the transactions

between supplier and buyer, the observed quality is measured through generic environmental factors (Parasuraman et al., 1988).

SERVQUAL is a popular model for measuring service quality in the world. It was used in many types of research (Zhou, Hudson, & Hoa, 2007). The SERVQUAL model is initially designed for use in service firms and retailers. In reality, while most organizations will provide some form of customer service, only service industries are interested in understanding and measuring service quality. Therefore, SERVQUAL takes a broader service perspective beyond simple customer service. The most popular model for evaluating service quality is SERVQUAL, which has developed and has the attributes of tangibility, competency, courtesy, reliability, responsiveness, credibility, access, assurance, security, and understanding (Parasuraman, 1988). Some of these dimensions hugely positively affected customer satisfaction when using self-service banking. So, to find out the impact of self-service banking quality on customer satisfaction, SERVQUAL is the most suitable model for the present research study.

Conceptual framework of the study

Customer satisfaction

Customer satisfaction is one of the essential concepts in marketing studies (Jamal, 2004). It links processes culminating in purchasing with post-purchase phenomena such as attitude change, repeat purchase, and brand loyalty (Churchill Jr & Surprenant, 1982). Oliver (1980) explains that satisfaction arises when customers compare their perceived product/service performance with expectations.

Several varying definitions are proposed to clarify customer satisfaction. However, most definitions commonly compare post-product/service performance with pre-formed expectations. Oliver (1981) defines satisfaction as an emotional post-consumption evaluative judgment concerning a product or service. Similarly, Tse and Wilton (1988) defined customer satisfaction as a "consumer response to the evaluation of the perceived difference between expectations and the final result after consumption"(p.46). As cited by Claude (2022), satisfaction can also be described as the feedback of a post-purchase assessment of a specific service/product's quality and compared with the expectation of the prior-purchasing stage (Kotler & Keller, 2011).

In contrast, other researchers have observed that the impact practiced within the purchasing and consuming stage of the product/service may also affect the customer's judgments toward satisfaction (Homburg, 2006). Thus, customer satisfaction is a customer's feeling of pleasure or displeasure after he or she has distinguished the performance of a product/service for his or her expectancy (Keller & Lehmann, 2006). Consistent with these definitions, and in so far

as this study is concerned, customer satisfaction is the customer's attitude formulated in response to using any form of Self-Service Banking. This research study uses SERVQUAL Model to apply and construct the measurement of customer satisfaction as it is one of the most widely used methods for evaluating the personal elements of customer service quality.

Conceptual model and hypotheses

Tangibility

Tangibles are the appearance of physical facilities, equipment, personnel, and communication materials. (Parasuraman, Berry & Zeithaml 1991). This relates to the physical appearance of self-service banking. It appeals to the customer and is brightly lit at night. The surroundings are maintained clean by banks providing waste bins for litter generated from receipts (Parasuraman, 1988).

Customers will use the physical image of the service to assess quality. Tangibles are associated with the physical facilities, tools, and machines used to provide the service and representations of the services, such as statements, cards (debit and credit), speed, and efficiency of transactions (Parasuraman, 1985). Tangibility also defines as the degree to which a product or service portrays its clear concrete image and intangibility as the lack of physical evidence. Thus, cannibalizing services is a critical success path for services and industry (Reddy, 1993). The reliability dimension includes overdraft privileges (Agbor, 2011). Sultana & Das (2016) considered tangibles a distinct element, showing consistency across cultures.

H1: The tangibility of self-service banking has a significant positive effect on customer satisfaction.

Reliability

Reliability refers to the ability to deliver the expected standard at all times, how the organization handles customer services problems, performing the right services for the first time, providing services within the promised time, and maintaining error-free records. (Parasuraman, Berry & Zeithaml 1991). Reliability shows the ability to provide services accurately, on time, and credibly (Parasuraman et al., 1985). It measures whether the firm lived to its promises or not. This requires consistency in the implementation of services, respect for commitments, and keeping promises to customers. Parasuraman et al. (1985) stated that reliability means organizations perform a service correctly the first time. The ability to perform the promised service dependably and accurately. This relates to the ability to provide a service as customers expect in terms of speed (how quickly the transaction is performed), accuracy (how correct the transaction is in terms of money withdrawn), and if the equipment is operational 24 hours as expected—reliability of self-service banking which could inspire

customer satisfaction based on its promised and accuracy transaction provided. (Parasuraman, Berry & Zeithaml 1991).

H2: The reliability of self-service banking has a significant positive effect on customer satisfaction.

Responsiveness

According to Madu & Madu (2002), responsiveness is the readiness to support the bank's customers and deliver them a rapid service. This kind of service can be shaped into four forms. First, the self-service banking system can control and operate the service properly. Second, self-service banking can guide customers toward proceeding correctly in case of failing operations. Third, it can also cover a rapid solution for any possible transaction error. Finally, it can support the customer's questions with on-the-spot responses.

The willingness to help customers and to provide prompt service. It helps customers to get when they bring forward self-service banking complaints such as accounts being debited at the same time money has not been dispensed, cards being captured underpayment, lack of certain currency denominations, no receipts being issued, and situations where the e-banking is out of service for very long hours and at times days. (Parasuraman, Berry & Zeithaml 1991). This is another area that needs attention as customers feel the service is below their expectations. Similarly, responsiveness is the willingness to help customers and provide services quickly (Kotler, 2012).

H3: The responsiveness of self-service banking has a significant positive effect on customer satisfaction.

Empathy

Empathy is the caring and personalized attention the organization provides to its customers. Individual attention and convenient operating hours were the two primary elements that Parasuraman et al., 1991 included in their evaluation of empathy. The degree to which the customer feels empathy cause the customer to either accept or reject the service encounter. Empathy replaces access, communication, and understanding the customer in the original ten dimensions for evaluating service quality (Parasuraman et al., 1988). In addition, Parasuraman et al. (1985) indicated empathy: a willingness to care, providing personal attention to the customer to provide deep concern and specific service to each customer. In particular, prior research suggests that the facilities of self-service banking at the frontline' care for and attention to the customer engender customer satisfaction (Gorry & Westbrook, 2011; Tax et al., 1998) fostering alignment of feelings and thoughts between people and generating smooth, harmonious interactions (Bernieri, 1988; Gremler & Gwinner, 2008).

H4: The empathy of self-service banking has a significant positive effect on customer satisfaction.

Security

Park & Kim, (2008) define security as the ability of online shop in controlling and guarding the transaction data. Moreover, Park and Kim (2006) states that the security guarantees play an important role in establishing trust to reduce consumer concern about the misuse of personal data and transaction data that can be easily damaged. When the level of security can accept and meet the expectations of consumers, then consumer maybe willing to open their personal information and will buy with a secure feeling. Security protects a customer's personal information from suspicious electronic transaction uses. Security is an essential factor that is considered seriously by online customers because it is one of the main factors when they decide to buy online. Gremler & Gwinner (2008) The issue of security has an essential role in developing trust during online transactions using self-service banking. It helps customers become more confident about the transaction and finally feels satisfied. In this context, the security of individual customers' deposits (managing the liquidity of a commercial bank) and their payments is crucial. Security of customers' deposits is the critical factor of success for banks as this factor heavily influences customer acquisition, retention, or loss. For this reason, a commercial bank as a business unit must undertake such measures to ensure proper and efficient protection of customers' deposits (Park & Kim, 2008).

H5: The security of self-service banking significantly positively affects customer satisfaction.

Perceived benefits

Perceived benefits are also known as perceived usefulness. According to the Technology Acceptance Model (TAM), perceived usefulness is the degree to which a person believes using a particular system would enhance job performance. According to Davis (1989), perceived usefulness refers to consumers' perceptions regarding the outcome of the experience. Davis (1989) defined perceived usefulness as the individual's perception that using the new technology to enhance or improve her/his performance.

Similarly, Mathwick et al. (2002) defined perceived usefulness as the extent to which a person deems a particular system to boost his or her job performance. Perceived usefulness could be understood as people's judgment on whether their decision to use or implement a specific technology is advantageous for themselves (Tojib & Tsarenko, 2012; Stocchi et al., 2019; Wilson, 2019). According to Salihu (2019), suitable observation of self-service banking for customer satisfaction will make sense of the benefits of that service for conducting such transactions. To increase the adoption rate toward self-service quality, some certain reason was offered by Lee (2008), customers can gain great benefits from a wider range of financial

benefits, faster transaction speed, increased information transparency that can save time since self-service banking does not need a paper documents, the processing of which can give rise to errors and delays, and which also requires more personnel. Self-service banking helped customers to reduce waiting time and communicate with bank staff regarding on transaction detail. During the transaction, self-service banking allowed customers to control and monitor contractual performance at any time (Lee, 2008).

H6: The perceive benefit of self-service banking has a significant positive effect on customer satisfaction.

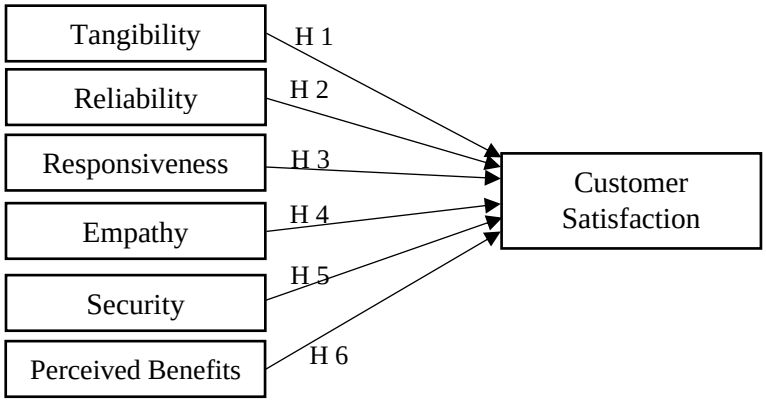

Figure 1: Conceptual model

Overall, this study employed the SERVQUAL Model to study the factors influencing customer satisfaction to adopt self-service banking in Cambodia. To set light on the study, the following six hypotheses have been proposed:

- H_1: The tangibility of self-service banking has a significant positive effect on customer satisfaction.
- H_2: The reliability of self-service banking has a significant positive effect on customer satisfaction.
- H_3: The responsiveness of self-service banking has a significant positive effect on customer satisfaction.
- H_4: The Empathy of self-service banking has a significant positive effect on customer satisfaction.
- H_5: The Security of self-service banking has a significant positive effect on customer satisfaction.
- H_6: The perceived benefit of self-service banking has a significant positive effect on customer satisfaction.

3. Method

Research design

This research study uses a quantitative method. Labaree (2009) defined quantitative methods as emphasizing objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys or by manipulating pre-existing statistical data using computational techniques. So, this study focused on researching some of the previous studies in the literature review to identify and construct measurements of the six hypotheses to create a questionnaire from each item. In order to answer the research question, the researcher developed the alignment of the research followed by data collection design, sampling design, and measurement questions.

Research area and target population

The study was conducted in Phnom Penh City and focused on students, employees, and stakeholders who experienced using self-service banking by using a survey questionnaire, which was sent through social media, such as Messenger, Facebook, and Telegram.

Sample size

The sample size was determined by formulas suggested by Green (1991) for determining the minimum of subjects required to conduct multiple regression analyses. The sample size was proposed:

$$N \geq 50 + 8P$$

Where: - N is a sample size
- P is the Number of predictors

Therefore, $N \geq 50 + 8(6)$

So as assuming result there were $N \geq 98$ respondents

Even though the calculated sample size was 98, the study attempted to collect at least 250 sample sizes. As a result, 265 respondents had participated in the study.

Research tools

In order to gather the data, the researcher collected survey questionnaires using Microsoft Forms. The questionnaire was designed into five sections which made respondents easy to understand when filling all their selection answers. The first section is an introduction part where the researcher introduces who they are or where they are from, especially either expressing the objective of conducting this survey along with the topic of the study. The second

section mainly asked about respondents' personal information, including gender, age, academic qualification, employment status, and the frequency of using self-service banking. In order to keep the respondent's privacy, the questionnaire did not ask for their name in the survey form. The third section measured the item of each independent variable by using a 7-point Likert scale in designing each questionnaire, while the fourth section used the same scales to measure customer satisfaction, which is the dependent variable in this study. The 7-point Likert scale was used because it reduced raters' error (Norng, 2022). In the last section, the researcher created a measurement question to ask respondents if they have any recommendation for improving self-service banking.

Table 1: Construct measurement of the seven variables

Constructs	Items	References
Tangibility	TAN 1: The environment of self-service Banking is clean. TAN 2: All facilities of self-service banking are modern.	(Parasuraman, 1985)
Reliability	R 1: Self-service banking provides a promised and accuracy transaction. R 2: Self-service banking provides customers a quick transaction (withdrawal, account management, money transaction in accordance with the new technology.	(Parasuraman, 1985)
Responsiveness	RES 1: All facilities of self-service banking are presentable & free from error. RES 2: Self-service banking is available 24/7 days.	(Mansoor, 2021) (Parasuraman ,1985)
Empathy	EMP 1: Self-service banking reduced customer waiting time & no more queues. EMP 2: The location of self-service banking is convenient.	(Parasuraman, 1985)
Security	SEC 1: Self-service banking provides security transaction. SEC 3: Self-service banking provides customer privacy.	(Parasuraman, 1985)
Perceived Benefit	PB 1: Self-service banking improves customer performance in making payment PB 2: Self-service banking allow customer to do self-check account balance and statement	(Bhattaherjee & Charles, 2014)
Customer Satisfaction	CS 2: I am satisfied with the service provided of self-service banking CS 4: I am satisfied with the security guard of self-service banking	(Nham, 2015)

Data collection

Since the study used a quantitative method, the researcher collected the data as all primary data that focused on responses from the targeted sample. The data collection was gathered from the survey questionnaire through Microsoft Forms. The survey form was sent to some respondents who were closer to the researcher's hand and trusted sources who could complete the survey and

provide back valuable data for analysis. Moreover, the survey form was distributed through many social media platforms to those who had experience using self-service banking. Besides collecting data by using social media, the researcher also obtained a permission by AIB forwarding the survey to AIB's students and staffs, ACLEDA Bank's staffs, and Management currently staying in Phnom Penh.

Data analysis method

In order to test the hypothesis, the study ran a multiple regression analysis by grouping Tangibility, Reliability, Responsiveness, Empathy, Security, and Perceived Benefit as the independent variables, while Customer Satisfaction was assigned as the dependent variable.

Reliability test

Reliability is the extent to which an instrument will produce consistent results on similar subjects under similar conditions and can be assimilated with the precision of a certain measurement (Ursachi, 2015). Cronbach's Alpha coefficient confirmed the reliability of the data to ensure the internal consistency reliability for item scales. As cited in Vuong, (2019), the indicator typically ranges between zero and one, and the rates for comparison are the Cronbach's Alpha index, which can be acceptable if it is equal to or above 0.7 (Giao, 2019). It classified that the constructed variables and factors are reliable to be implemented in this research (Nunnally, 1994).

Table 2: Reliability Test of Cronbach's Alpha on Each Variable

Nº	Item	Cronbach Alpha (n=265)
1	Customer Satisfaction	0.876
2	Tangibility	0.899
3	Reliability	0.915
4	Responsiveness	0.788
5	Empathy	0.844
6	Security	0.916
7	Perceived Benefit	0.939
	All variables	0.976

As shown in Table 2, each variable attains Cronbach Alpha value above 0.7 which indicates that these variables are statistically reliable with the lowest value at 0.788 for Responsiveness and highest value at 0.939 for Perceived Benefit. In addition, the combination of all variables statistically exceeds 0.9, which is considered excellent.

Ethical considerations

Ethical issues need to be considered during the formulation of the evaluation plan. Ethical considerations during evaluation include (Trochim, 2006):

- Respondents were fully informed about the evaluation being conducted.
- It was imperative that the evaluation process does not harm participants in any way (unintended or otherwise).
- Not deceive or target respondents' privacy.
- Making sure that all respondents volunteered and were not forced to do the thing.

4. Results

Demographics information

The data gathered from Microsoft Forms demonstrated that the gross sample of more than 311 respondents was collected. Unfortunately, the valid data were only 265. In Table 3, the results illustrated that among the 265 respondents, the accumulation of female respondents was 59% while male was 41%. Moreover, the highest selected age gap has shown that respondents who are 18-25 years old were at 42%, followed by the 27% of the aged 26-29 years old, while the remaining 19% is the aged 35-44 years old and 10% between 30-34 years old. 88% of the respondent were from Phnom Penh and 12% from the provinces. The researcher also asked about the background of respondents' academic qualifications, which illustrated that the highest data collected chiefly from bachelor's degrees, reaching 58%, 20% of master's degrees, 4% of associate degree while high school was only 1% and others 17%. In addition, 74% of the participants were from companies, banks, and schools, while 12% were business owners. In contrast, government officers and self-employed contributed 8% and 3%, respectively, while currently unemployed were 8%. Regarding the participants' income, the highest scale selected (46%) was between $191 - $499, followed by 40% between $500-$999, 8% between $1000-$1499, and 1% between $1500-$1999 and $2000 or above. Additionally, the frequency of the use of self-service banking in terms of daily use was 48%, used once a week at 34%, and used twice a week was 11% compared to the user using twice a month at 7%, Lastly, the 265 respondents were all experienced using ACLEDA self-service banking.

Table 3: Demographic information of the respondents

Item	Categories (N=265)	Frequency	Percentage
Gender	Female	156	59%
	Male	109	41%
Age	18-25 years old	109	42%
	26-29 years old	72	27%
	30-34 years old	27	10%

(to be continued)

Table 3: Demographic information of the respondents (continued)

Item	Categories (N=265)	Frequency	Percentage
Age	35-44 years old	51	19%
	45-54 years old	6	2%
	55 years old or over	0	0%
Current Address	Phnom Penh	233	88%
	Province	32	12%
Qualification	Master's Degree	54	20%
	Bachelor's Degree	154	58%
	Associate Degree	11	4%
	High School	2	1%
	Other	44	17%
Occupation	Company/ Bank / School employee	196	74%
	Business Owner	32	12%
	Government Officer	21	8%
	Self-employed	8	3%
	Currently unemployed	8	3%
Salary Range	Below $190	10	4%
	$191 - $499	123	46%
	$500 - $999	106	40%
	$1000 - $1499	22	8%
	$1500 - $1999	2	1%
	$2000 or above	2	1%
Frequency	Everyday	128	48%
	Once a week	90	34%
	Twice a week	30	11%
	Twice a month	17	7%
	Other	0	0%
Self-Service Banking	ACLEDA Bank	265	100%
	Other	0	0%

Level of agreement

The statistics in Table 4 illustrates the level of agreement of each variable. Table 4 includes the type of variable, minimum, maximum, mean, standard deviation (SD), and status of

agreement analysis. The mean of each variable ranges from the lowest one of 6.1509, which is the tangibility with a standard deviation of 0.85272, to the highest of 6.2472, which is a security with a standard deviation of 0.80024. Below is the seven-point rating scale and its classification. The table 4 illustrates the respondent's level of agreement on the measurement of each variable inspires customer to use self-service banking as a result, all items were stated as "Strongly Agree".

Table 4: Level of Agreement

Variable	Minimum	Maximum	Mean	Std. Deviation	Level of Agreement
Customer Satisfaction (CS)	1.00	7.00	6.2453	0.80141	Strongly Agree
Tangibility (TAN)	1.00	7.00	6.1509	0.85272	Strongly Agree
Reliability (REL)	1.00	7.00	6.1962	0.81602	Strongly Agree
Responsiveness (RES)	1.00	7.00	6.1774	0.80755	Strongly Agree
Empathy (EMP)	1.00	7.00	6.1906	0.83286	Strongly Agree
Security (SEC)	1.00	7.00	6.2472	0.80024	Strongly Agree
Perceived Benefit (PB)	1.00	7.00	6.2283	0.80702	Strongly Agree

*Note: Neutral: 3.58-4.42, Somewhat Agree: 4.43 – 5.28, Agree: 5.29 – 6.14, Strongly Agree: 6.15 – 7.00

Correlation analysis

Correlation analysis was used to test the correlation level and validity between all constructs, which brought seven constructs into testing in this research. According to Pearson (1926), the correlation's values range between –1 to +1, meaning that the closer the number in each variable reaches nearly +1, the stronger the correlation.

Table 5 showcased that all variables are significantly correlated at the significance level of 0.01 (2-tailed). The results also illustrated the positive correlations between variables, with the lowest of 0.756 of Reliability toward Customer Satisfaction and the highest of 0.909 of Security with Customer Satisfaction.

Table 5: Pearson Correlation Matrix

Variable	TAN	REL	RES	EMP	SEC	PB	CS
TAN	1						
REL	0.876**	1					
RES	0.853**	0.882**	1				
EMP	0.870**	0.842**	0.903**	1			
SEC	0.857**	0883**	0.886**	0.901**	1		
PB	0.841**	0.828**	0.873**	0.893**	0.909**	1	
CS	0.821**	0.756**	0.819**	0.852**	0.809**	0.824**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Linear regression analysis

Regression analysis is a statistical method for estimating the relationship between a dependent variable and one or more independent variables. In addition, it can be used to forecast an outcome variable and to measure the strength of the relationship between variables.

Significant test of model fitness

To find the overall significance of the variable, the model fits because the p-value was 0.000, so it rejected the null hypothesis. According to Sellke (2001), the null hypothesis is rejected when the p-value is between 0 and 0.05. Otherwise, it is true. At least, one independent variable influenced the dependent variable.

Table 6: Result of ANOVA of Model Fitness

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	130.100	6	21.683	141.783	0.000
	Residual	39.457	258	0.153		
	Total	169.557	264			

The ANOVA output was examined to check whether the proposed model was feasible. Table 6 showed that the overall model was significant (F = 141.783, p value = 0.000). The results showed that at least one or more independent variables statistically significantly impacted Customer Satisfaction (dependent variable).

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.876	0.767	0.762	0.391

a. Predictors: (Constant), PB, REL, TAN, RES, EMP, SEC

As shown in Table 7, the value of R is 0.876, and the R square is 0.767. Thus, the whole model explains the variability of the dependent variables around 76 %.

Regression analysis

Table 8 shows the Unstandardized Beta Coefficients representing each variable's contribution to the model. The Beta Coefficients and p-value showed the impact of the independent variables on the dependent variables. The higher the absolute value of beta coefficients, the stronger the effect. The table confirmed that Tangibility, Reliability, Responsiveness, Empathy, and Perceived Benefit significantly impact customer satisfaction. Their demonstrations are that Tangibility ($\beta = 0.295$, $p = 0.000$), Reliability ($\beta = -0.156$, $p = 0.045$), Responsiveness ($\beta = 0.179$, $p = 0.034$), Empathy ($\beta = 0.339$, $p = 0.000$), and Perceived Benefit ($\beta = 0.198$, $p = 0.014$)

have a significant effect on customer satisfaction. On the other hand, Security (β = 0.022, p = 0.814) does not have a significant effect on customer satisfaction.

Table 8: Regression of Self-Service Banking

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.825	0.196		4.212	0.000
	TAN	0.295	0.069	0.314	4.289	0.000
	REL	-0.156	0.078	-0.159	-2.013	0.045
	RES	0.179	0.084	0.180	2.129	0.034
	EMP	0.339	0.085	0.352	3.998	0.000
	SEC	0.022	0.092	0.022	0.236	0.814
	PB	0.198	0.081	0.200	2.462	0.014

Dependent Variable: CS

Hypothesis testing

Table 9 showcased the result from the tested hypotheses in the regression analysis which indicated that five hypotheses were supported (H1, H2, H3, H4, and H6) and H5 were not supported.

Table 9: Results of Hypothesis Testing

	Hypothesis	Sig.	Result
H1:	The tangibility of self-service banking has a significant positive effect on customer satisfaction	0.000	Supported
H2:	The reliability of self-service banking has a significant positive effect on customer satisfaction	0.045	Supported
H3:	The responsiveness of self-service banking has a significant positive effect on customer satisfaction	0.034	Supported
H4:	The Empathy of self-service banking has a significant positive effect on customer satisfaction	0.000	Supported
H5:	The Security of self-service banking has a significant positive effect on customer satisfaction	0.814	Not Supported
H6:	The perceived benefit of self-service banking has a significant positive effect on customer satisfaction	0.001	Supported

Discussions

The regression results indicated that Tangibility, Reliability, Responsiveness, Empathy, and Perceived Benefit had the positive effect on self-service banking. According to the previous study by Panda and Das (2014), Tangibility and Empathy are significant variables in influencing external

customer satisfaction. Perceived Benefit also significantly affects customer satisfaction (Khan , 2015). This study revealed that customers are interested in the physical appearance of self-service banking (Tangibility). In addition, self-service banking also reduces customer queues when they want to process the transaction by themselves. The customers can make payment quickly within a minute and more efficiently (Empathy). Likewise, the self-service allows customers to self-check their transactions through various things such as smartphones and other facilities (Perceived Benefit). Moreover, responsiveness and Reliability are also significant variables in influencing external customer satisfaction (Alan, 2016) and customer satisfaction toward the banking hall of ACLEDA Bank Plc. (Taing et al., 2021). However, Security do not significantly affect this study since the customer needs a better experience with the security of the self-service banking as it was far or at an uncrowded place. Therefore, self-service banking needs to be more secure to process the transaction.

5. Conclusion and implications

Conclusion

This study has attempted to study the effect of self-service banking quality on customer satisfaction. Self-service banking was not recent innovation; it has been popular among European and South American countries for years. As self-service banking keeps growing sustainably, it is also popular among ASEAN countries. Besides raising self-service banking in Cambodia, the researchers wanted to experiment with customer satisfaction toward self-service banking quality. This study aimed to identify customer satisfaction with self-service banking quality by adopting the SERVQUAL Model developed by Parasuraman et al. (1988). This study used a quantitative method to obtain primary data from 265 respondents living in Phnom Penh and used a structured questionnaire to collect primary data from customers of ACLEDA Bank Plc. in Phnom Penh, Cambodia. Regression results illustrated that Tangibility, Reliability, Responsiveness, Empathy, and Perceived Benefits were statistically significant and had an excellent ratio to customer satisfaction, while Security did not influence customer satisfaction with self-service banking.

Implications

Theoretical implications

This study used four dimensions of SERVQUAL model (Tangibility, Reliability, Responsiveness, and Empathy) to investigate the behavioral intention by including two more dimensions (Perceived Benefit and Security). It found significant influences on behavioral intention among those dimensions except Security. Thus, the SERVQUAL Model is worth adopting in the study on behavioral intention of Cambodian customers to use self-service banking.

Practical implications

This study's results showed that Tangibility, Reliability, Responsiveness, Empathy, and Perceived Benefit influence customers' behavioral intention, so banks should focus on these factors to increase the level of self-service banking satisfaction.

Recommendations

Several studies indicated that self-service banking has dominated the banking industry in the last ten years, but it still needs some improvement in order to grow further and to enhance customer satisfaction in living a normal lifestyle. Additionally, customers' tangibility and reliability can be the best way for bankers to fulfill their needs as they should be. Banks would like to get customers' satisfaction, but receiving complaints from them is what banks need to satisfy them. When things are going well, the number of complaints will decrease as customers' wish is the command. Lastly, to fulfill customer satisfaction, banks should actively follow the trend of technology and renovation. Then the customers will come and spread their experience of using it.

Limitations and suggestions for further research

The study positively contributed to the bank learning about factors affecting customer satisfaction regarding self-service banking quality. However, this study also has limitations. Based on the study, this research uses a quantitative method. However, future researchers should use qualitative, mixed methods, or another model besides using the SERVQUAL Model to make it more critical and broaden the effectiveness. The study focused on how self-service banking quality on customer satisfaction. However, some other factors can also affect customer satisfaction; thus, future researchers are recommended to consider different obstacles that impact customer satisfaction. Future researchers should also expand their research to different geographical areas, such as provinces and rural areas, to determine a larger sample size to offer more generalizable findings.

References

Agbor, J. M. (2011). *The Relationship between Customer Satisfaction and Service Quality: a study of three Service sectors in Umeå*.

Bernieri, F. J. (1988). Coordinated movement and rapport in teacher-student interactions. *Journal of Nonverbal Behavior*, *12*(2), 120–138.

Charles, K. K. S. (2015). Determinants of Self Service Banking Technology in Kenya. *International Journal of Management Technology*, *3*(1), 39–56.

Churchill Jr, G. A., & Surprenant, C. (1982). An investigation into the determinants of customer satisfaction. *Journal of Marketing Research*, *19*(4), 491–504.

Claude, M. J. (2022). Effect of Electronic Banking on Customer Satisfaction in Rwanda: Case of Bank of Kigali Headquarter. *Scholars Journal of Economics, Business and Management*, *1*, 14–29.

Dabholkar, P. A. (1996). Consumer evaluations of new technology-based self-service options: an investigation of alternative models of service quality. *International Journal of Research in Marketing*, *13*(1), 29–51.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, *13*(3), 319–339. https://doi.org/10.2307/249008

Giao, H. N. K., Vuong, B. N., & others. (2019). *Giáo Tri}nh Cao Học Phương Pháp Nghiên Cứu Trong Kinh Doanh Cập Nhật SmartPLS*.

Gorry, G. A., & Westbrook, R. A. (2011). Can you hear me now? Learning from customer stories. *Business Horizons*, *54*(6), 575–584.

Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate Behavioral Research*, *26*(3), 499–510.

Gremler, D. D., & Gwinner, K. P. (2008). Rapport-building behaviors used by retail employees. *Journal of Retailing*, *84*(3), 308–324.

Homburg, C., Koschate, N., & Hoyer, W. D. (2006). The role of cognition and affect in the formation of customer satisfaction: a dynamic perspective. *Journal of Marketing*, *70*(3), 21–31.

Jamal, A. (2004). Retail banking and customer behaviour: a study of self concept, satisfaction and technology usage. *The International Review of Retail, Distribution and Consumer Research*, *14*(3), 357–379.

JM Tharaka Madhusanka, T. P. (2018). *A comparative analysis of customer satisfaction on self service technology channels between state and private banks*.

Keller, K. L., & Lehmann, D. R. (2006). Brands and branding: Research findings and future priorities. *Marketing Science*, *25*(6), 740–759.

Kotler, P. (2012). *Kotler on marketing*. Simon and Schuster.

Labaree, R. V. (2009). *Research guides: Organizing your social sciences research paper: The research problem/question*.

Madu, C. N., & Madu, A. A. (2002). Dimensions of e-quality. *International Journal of Quality \& Reliability Management*, *19*(3), 246–258.

Mathwick, C., Malhotra, N. K., & Rigdon, E. (2002). The effect of dynamic retail experiences on experiential perceptions of value: an Internet and catalog comparison. *Journal of Retailing*, *78*(1), 51–60.

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-service technologies: understanding customer satisfaction with technology-based service encounters. *Journal of Marketing*, *64*(3), 50–64.

Norng, S. (2022). Factors Influencing Mobile Banking Adoption in Cambodia: The Structuring

of TAM, DIT, and Trust with TPB. *Asian Journal of Business Research Volume*, *12*(3).
Nunnally, J. C. (1994). The assessment of reliability. *Psychometric Theory*.
Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, *17*(4), 460–469.
Oliver, R. L. (1981). Measurement and evaluation of satisfaction processes in retail settings. *Journal of Retailing*.
Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, *67*(4), 420.
Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12–40.
Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, *49*(4), 41. https://doi.org/10.2307/1251430
Pearson, K. (1926). On the coefficient of racial likeness. *Biometrika*, 105–117.
Reddy, A. C., Buskirk, B. D., & Kaicker, A. (1993). Tangibilizing the intangibles: some strategies for services marketing. *Journal of Services Marketing*.
Salihu, A., Metin, H., Hajrizi, E., & Ahmeti, M. (2019). The effect of security and ease of use on reducing the problems/deficiencies of Electronic Banking Services. *IFAC-PapersOnLine*, *52*(25), 159–163.
Sannes, R. (2001). Self-service banking: value creation models and information exchange. *Informing Science*, *4*, 139.
Sellke, T., Bayarri, M. J., & Berger, J. O. (2001). Calibration of $ρ$ values for testing precise null hypotheses. *The American Statistician*, *55*(1), 62–71.
Stocchi, L., Michaelidou, N., & Micevski, M. (2019). Drivers and outcomes of branded mobile app usage intention. *Journal of Product & Brand Management*, *28*(1), 28–49.
Sultana, S., & Das, T. I. S. (2016). Measuring customer satisfaction through SERVQUAL model: A study on beauty parlors in Chittagong. *European Journal of Business and Management*, *8*(35), 97–108.
Taing, C., Duch, N., & Phoeun, M. (2021). The Impact of Digital Transformation on the Use of Banking Services. *AIB Research Series*, *1*.
Tax, S. S., Brown, S. W., & Chandrashekaran, M. (1998). Customer evaluations of service complaint experiences: implications for relationship marketing. *Journal of Marketing*, *62*(2), 60–76.
Tojib, D., & Tsarenko, Y. (2012). Post-adoption modeling of advanced mobile service use. *Journal of Business Research*, *65*(7), 922–928.
Trochim, W. M. K. (2006). An Evaluation Culture. *Research Methods Knowledge Base*.
Tse, D. K., & Wilton, P. C. (1988). Models of consumer satisfaction formation: An extension. *Journal of Marketing Research*, *25*(2), 204–212.
Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External

factors with indirect influence on reliability estimators. *Procedia Economics and Finance, 20*, 679–686.

Vuong, B. N., Hieu, V. T., & Trang, N. T. T. (2020). An empirical analysis of mobile banking adoption in Vietnam. *Gestão e Sociedade, 14*(37), 3365–3393.

Wilson, N. (2019). The impact of perceived usefulness and perceived ease-of-use toward repurchase intention in the Indonesian e-commerce industry. *Jurnal Manajemen Indonesia, 19*(3), 241–249.