EXAMINING THE FACTORS INFLUENCING THE CONSUMER RETENTION IN MAYBANK'S ELECTRONIC BANKING SERVICES

CHANG CHIA QI
CHEE YONG ER
DYLAN CH'NG SENG HUAN
GOH YONG DIAN

BACHELOR OF BUSINESS ADMINISTRATION (HONS) BANKING AND FINANCE

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF BANKING AND RISK MANAGEMENT

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BY

CHANG CHIA QI
CHEE YONG ER
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GOH YONG DIAN

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

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Name of Student:	Student ID:	Signature:
1. CHANG CHIA QI	19ABB01753	ChiaQi
2. CHEE YONG ER	19ABB03926	YongEr
3. DYLAN CH'NG SENG HUAN	20ABB01354	Dylan
4. GOH YONG DIAN	19ABB03426	YongDian

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LIST OF ABBREVIATIONS

ANOVA   Analysis of variance

APAC   Asia Pacific

ATM   Automated Teller Machine

BNM   Bank Negara Malaysia

CBE   Commercial Bank of Ethiopia

CR   Customer retention

CSS   Customer service and support

DV   Dependent variable

EBSQ   E-banking service quality

FPX   Financial Process Exchange

IBG   Interbank GIRO

ICT   Information and communication technology

IV   Independent variables

MLR   Multiple linear regression

PBC   Perceived behavioral control

PDPA   Personal Data Protection Statement

PS   Privacy and security

R   Coefficient of correlation

REL   Reliability

RES   Responsiveness

SOP	Standard operating procedures
SPSS	Statistical Package for Social Sciences
SQ	Service quality
TPB	Theory of planned behavior
TRA	Theory of reasoned action
VIF	Variance inflation factor
WD	Web design

LIST OF APPENDICES

PREFACE

In this research, we will test the factors influencing consumer retention in Maybank's electronic banking services. The COVID-19 pandemic is closely related to the research study, as a catalyst to accelerate the development and usage of electronic banking systems in Malaysia. The research project has focused on the Malaysian bank in context, and Maybank is a good object of research with a strong loyal customer base and high transaction volume. Their customers are our target respondents for this study context, the user from Malaysia who used Maybank2u online banking services. This research works provides a selection of the contributions for future researchers, bankers, and banking institutions. Our research can be persuasive support for future researchers' studies in this field to make a similar study. In addition, bankers can take advantage of the research results on those factors that increase banks' reputation to raise customer loyalty, while the results can bring benefits to the banking institution through their features when offering e-banking services.

ABSTRACT

The COVID-19 pandemic outbreak has significantly impacted the banking institution, especially accelerated the development and usage of electronic banking system. Due to the convenience of electronic banking, users of electronic banking have increased significantly, but there are also customer groups who refuse to adapt to the electronic banking system. Hence, this research is to examine the relationship between the six independent variables which included reliability, privacy and security, web design, customer services and support, responsiveness, service quality, and the dependent variable, customers retention in e-banking services in Malaysia. 300 online questionnaires were distributed to our targeted respondents which are Maybank2u users who reside in Malaysia. In this study, the data were analyzed using several analysis technics including descriptive analysis, reliability test, and collinearity statistics. The result shows that the reliability, privacy and security, web design, customer services and support, and service quality have significant impact on customer retention in e-banking services, whereas the responsiveness has insignificant impact on customer retention in e-banking services. Lastly, the limitations of this study and its recommendation has been discussed.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

In chapter 1, we will discuss the background of e-banking and how it is related to customer loyalty. The problem statement, research objective and research questions are then described.

1.1 Research Background

1.1.1 History of e-banking in Malaysia

Starting point of e-banking was after the independence of Malaysia in 1957, as the evolution process was due to the gradual deregulation of the financial sector starting in the 1970s (Lee & Chew-Ging, 2017). In the 1980s, the first automated teller machine (ATM) was brought into Malaysia. Followed by telebanking and PC banking in the late 1990s. The next step in the evolution of the service delivery mechanism through the internet is known as Internet banking (Sulaiman et al., 2005).

The services of e-banking provided in Malaysia are conducted through electronic devices such as telephones, personal computers, the Internet, or ATM. The innovative technology-based mechanisms establish new delivery channels, which are internet and mobile banking to improve product and service delivery while increasing access to banking services (Bank Negara Malaysia, 2004). Therefore, the banking institutions in Malaysia possessed a higher level of technology and a better business process. In modern times, banking institutions provide a variety of services through electronic banking platforms. More customers are familiar with Internet banking and the use of

the internet for their daily activities, as the electronic medium of banking provides users with convenient access to banking.

1.1.2 Development of E-banking

In 1981, Automated Teller Machine (ATM) were launched, which is considered the first and most visible form in the emerging electronic banking in Malaysia (Guru et al., 2001). The ATM was created to take away the constraints of time and geographical location while providing a more economical way that substitutes physical branches to provide basic service which extended beyond office hours. The ATM eliminated the need for staff to perform some routine functions such as withdrawal of cash and transfer of funds over the counter (Sulaiman et al., 2005).

In the early 1990s with the introduction of telebanking, the financial services of the branch are delivered through telecommunication devices like the telephone (Guru et al., 2001). The retail banking transaction can be done over an automated phone answering system of the bank such as a touch-tone telephone or voice recognition capability.

Effective June 1, 2000, internet banking allows the customer of a locally owned commercial bank to carry out financial transactions through its banking proprietary software, which is browser-based (Bank Negara Malaysia, n.d.). Besides, Maybank was the first bank to offer internet banking services in Malaysia on June 15, 2000 (Sudha et al., 2007). A personal computer that complies with Internet requirements can be used to perform the services of internet banking (Drigă & Isac, 2014).

Mobile banking has been available in Malaysia since 2006 and has become an important service as an increasing number of people use mobile phones (Daud et al., 2011). Besides, mobile banking provides the customer with fast and convenient ways of accessing common banking transactions and

account information via proprietary banking software on their mobile phone. The condition for enjoying the features of mobile banking is that customers need a mobile phone with mobile telecommunications network coverage.

However, the infrastructure provided by internet banking today includes the main services such Interbank GIRO (IBG) system, Financial Process Exchange (FPX), etc. The IBG system is designed to assist with the electronic presentation and payment of bills. Moreover, the FPX offered a real-time payment service which is also a component of internet banking that offers an immediate, 24-hour daily, inter-bank electronic fund transfer service via the internet. It is a secure online payment solution for fund transfer instantly within multi-banks across Malaysia through mobile devices and web browsers.

1.1.3 The usage of e-banking in Malaysia

During movement control order, bank branches in Malaysia including Maybank, Hong Leong Bank, HSBC Bank, Citibank, and Bank Islam are forced to reduce operating hour or close temporarily to ensure standard operating procedures (SOP) (Khoo, 2020). The pandemic has restricted most physical activities, consumers have less choices but to adopt e-banking system to fulfill their needs for banking services. Suhaidi (2021) mentioned that Asia Pacific (APAC) has obtained the result where 90% of Malaysian consumers use digital banking at least once per month in year 2021 as compared to 62% in year 2017. Therefore, the overall adoption level of e-banking system in Malaysia accelerated due to the COVID-19 pandemic outbreak.

Table 1.1

Payment Channels

Transaction Volume and Value *(during the period)*

Mil/RM mil	Mobile Banking[3]		Internet Banking[4]					
	Volume	Value	Volume			Value		
			Total	Individual	Corporate	Total	Individual	Corporate
2019	489.8	203,845.4	1,173.5	862.4	311.2	8,197,951.2	836,846.0	7,361,105.2
2020	935.7	458,877.6	1,540.6	1,162.1	378.5	8,857,998.0	1,060,871.3	7,797,126.6
2021	1,475.0	799,714.5	2,030.0	1,583.5	446.5	10,302,930.4	1,169,835.6	9,133,094.8

Bank Negara Malaysia (n.d.). Payment systems in Malaysia.

Table 1.1 indicates that the transaction volume and value for both individual and corporate has a significant increase in choosing mobile banking and internet banking for their payment channels from the year 2019 to year 2021. The increase of adoption in e-banking not only in terms of corporations but individual users have also increased as well. This is due to the reason that people nowadays tend to avoid physical activities since the COVID-19 pandemic still spreading, therefore, people tend to complete their transactions through the online banking system, use online transfers when ordering food delivery, buy essentials through online to avoid physical contact with people, etc.

Table 1.2

Transaction Volume and Value *(during the period)*

Mil/RM bil	Interbank GIRO		FPX		JomPAY	
	Volume	Value	Volume	Value	Volume	Value
2019	202.9	1,126.0	174.2	89.8	41.9	25.5
2020	264.5	1,184.1	367.2	138.5	52.8	32.4
2021	351.4	1,392.3	638.5	219.8	69.2	38.7

Bank Negara Malaysia (n.d.). Payment systems in Malaysia.

As 'contactless' payment methods are preferable by the majority of people and businesses in Malaysia due to the fear of infection from cash notes, the trend has been boosting significantly after the COVID-19 pandemic outbreak (The impact of COVID-19 on Malaysia's looming digital banking revolution, 2020). According to the data provided by Bank Negara Malaysia (BNM) as shown in Table 1.2, it clearly showed that the transaction volume and value of Interbank GIRO and FPX has substantially growth from the year 2019 to year 2021. BNM annual report in year 2021 highlights that

contactless payment and online payment remained as preferred method by customers, while the usage of cheques has decreased steadily (Bank Negara Malaysia, 2021).

Table 1.3

Internet Banking

Million	Number of Subscribers			Penetration to population (%)
	Total	Individual	Corporate	
2019	31.8	30.5	1.4	97.6
2020	36.7	35.1	1.6	112.5
2021	40.0	38.1	1.9	122.4
May-22	41.5	39.5	2.0	126.8

Bank Negara Malaysia (n.d.). Payment systems in Malaysia.

Table 1.4

Mobile Banking

000	Number of subscribers	Penetration rate (%)	
		To population	To mobile subscribers
2019	17,230.2	52.9	38.6
2020	20,199.1	61.8	46.2
2021	23,828.2	72.9	50.5
May-22	25,301.3	77.4	n.a.

Bank Negara Malaysia (n.d.). Payment systems in Malaysia.

Table 1.3 and 1.4 showed the penetration rate of population and the subscribers' number of internet banking and mobile banking from the year 2019 to May 2022. The number of subscribers for both internet banking and mobile banking has increased significantly between the year 2019 to 2022. The total number of subscribers of internet banking from 2019 to May 2022 has risen by 30.5% with a difference of 9.7 million. The same goes for the subscribers' number of mobile banking, the total number of subscribers increased 46.8% from 2019 to May 2022. Generally, it can be said that the overall adoption level of internet banking and mobile banking has increased noticeably. Meanwhile, the penetration rate to population of mobile banking is also on the rise although it is lower than the penetration rate of internet banking.

1.1.4 Acceptance level of e-banking in Malaysia

As there is technical knowledge, capable devices, and internet to access e-banking services, it might not be accepted by every group of people in Malaysia. Teenagers would prefer digital payments compared to other modes due to the ease of transaction process, various rewards, and other bonus incentives (Are teens rising stars in the digital payments space? Find out, 2021). Moreover, teenagers are helping parents handle online transactions since their parents are unfamiliar with the e-banking system.

People aged 18-24 are most likely to bank online

Those aged 18-24 in Malaysia are most likely to say they have a digital bank account, with 20% having an active service.

Digital-only banking: by age

Age	Percentage
18-24	20%
25-34	14%
35-44	12%
45-54	14%
55-64	12%
65+	6%

Source: Finder's Digital Banking Report · Embed

finder

Figure 1.1. Digital Only Banking Adoption. Adapted from Laycock, R. (2022).

According to Laycock (2022), the statistic result as showed in Figure 1.1 indicates that the group of people in Malaysia which have the highest probability to having a digital bank account is the group of people between 18 to 24 years old, followed by the age between 25 to 34 years old, while the group which having lowest usage is age above 65 years old. Besides, PWC report has obtained the result where age 18 to 39 are having stronger interest in virtual banking compared to other age group (PwC Malaysia, 2019).

	Country	2022	2027 (forecast)
	The percentage of adults with a digital only bank account in 2022 and the percentage that will have one by 2027		
	Q Search in table		
1	Brazil	43%	57%
2	India	26%	46%
3	Ireland	22%	34%
4	Singapore	21%	35%
5	Hong Kong	20%	32%
6	United Arab Emirates	19%	41%
7	Mexico	17%	41%
8	Spain	17%	31%
9	South Africa	15%	31%
10	Germany	14%	24%
11	Portugal	14%	32%
12	Malaysia	13%	28%
13	The Philippines	13%	33%
14	United States	8%	15%

Source: Finder | Neobank adoption • Embed — **finder**

Figure 1.2. Digital Only Banking Adoption. Adapted from Laycock, R. (2022).

However, the statistics of Digital Only Banking Adoption 2022 as shown in Figure 1.2 also revealed that the percentage of adults having a digital bank account in the year 2022 is considered low compared to other countries in this data. The forecasted data for the year 2027 indicates that the majority of countries will be having at least 30% of adult will have a digital bank account, yet the forecasted percentage of Malaysia only has 28% in the year 2027. Therefore, it could be said that the overall acceptance level among adults in Malaysia still remains at a low level. Hassanuddin (2012) stated that the user's trustworthiness toward security and privacy level while using e-banking significantly affected the acceptance level of the e-banking system. Malaysia should continuously modify and enhance the security and privacy level to gain trust from users toward Malaysia's e-banking system.

1.2 Problem Statement

The widespread COVID-19 virus significantly affected the entire world from every aspect. During COVID-19 pandemic, the usage of technology, such as e-banking, might grow rapidly as it is not only designed to be more convenient for customers but also to control the transmission of COVID-19 virus (Indrasari, et al., 2022).

Therefore, many of the banks' customers become e-banking users during pandemic to reduce contact with others. However, as the increase usage in e-banking for transaction, there are also a portion of banks' customers who insist to attend to bank physically to complete their payment or transaction especially for old citizen. Therefore, it will be a challenge for banks to retain their customers to further use on e-banking.

Maybank2u is one of the e-banking in Malaysia that has a huge number of users and usage when compared to other banks which provide e-banking services. The volume of transactions remains on the rise both before and after the COVID-19 pandemic outbreak. The pandemic accelerates the usage of e-banking services, M2U results in a higher transaction volume in the year 2020. Digital banking boost (2021) stated that Maybank recorded a substantial rise in its digital banking transactions, the total transaction volume through Maybank2u in the year 2020 jumped 110% reaching 10 million transactions. With a strong loyal customer base and high transaction volume, Maybank2u is one of the good objects for researchers to identify the key to success in maintaining customer loyalty of Malaysia's electronic banking services. Therefore, this study analyzes customer loyalty by analyzing various aspects of the main concerns in Maybank2u users, including reliability, website design, privacy and security, customer service and support, responsiveness, and service quality.

Reliability is one of the significant aspects to study when evaluating service quality (Mansur, et al., 2022). Consumers would believe the service provided can be reliable to fulfill their demands (Indrasari, et al., 2022). It is therefore important that customers can rely on e-banking services when they need help with needs such as transaction needs, especially during the COVID-19 pandemic where customers are facing difficulties when they have transaction needs as many activities are restricted. Banks must actively provide help to customers and ensure their problems can be solved immediately. According to Haq and Awan (2020), reliability in e-banking is vital as customers' response is crucial. Bank has to maintain its reliability consistently to strengthen the positive impression of customers to retain them.

Privacy and security show the extent that the personal information and financial transaction of e-banking users share on the platform is safe and confidential (Indrasari et al., 2022). The widespread use of mobile technology as well as e-banking, many doubts are raised about the privacy of personal information and the security of financial transactions on the e-banking platform provided by service providers. The risk of financial losses caused by mobile hacking that misuses the customers' information and data by the third party could be the reason that customers are reluctant to trust them and use e-banking (Chigori et al., 2020). This is the main concern for customers to stay and continues as e-banking users since banks are unable to ensure security and safety conditions as stated in the e-banking privacy policy.

Responsiveness is one of the significant variables that can be utilized to measure the service quality offered by a bank. According to Sharma (2018), it refers to services provided by banks in order to meet customers' needs, manage customers' problems, deal with customers' complaints and so on. Bank can take some actions to increase the customers' satisfaction to retain customers such as bank can have quick response handle complaints from customers, prompt sending of transaction slips, and so on. This is because quick response of bank will be able to increase customers' loyalty and satisfaction and eventually raise customers' retention (Raza et al., 2020). In other words, the satisfaction of customers corresponds to how fast the bank can deal with customers' matters.

The quality of services customers perceive in e-banking is different from the quality of services in the past. During the COVID-19 pandemic, advances in information technology and the increased use of the internet influenced the method of service delivery from the banks and financial institutions in Malaysia. Banks should evaluate e-banking based on the service quality perceived by the customers in an online environment to retain customers. The reason is each customer is different from each other and each customer evaluates that service differently, so the employee should pay special attention to identifying unsatisfied customers, reduce customer losses and negative word of the mouth whilst retaining existing customers to be loyal to the bank (Bashir et al., 2020). The loyal customer will continuously

use a service that they think has a good quality service that can provide benefits or help their work.

Customer service and support is one of the important parts of e-banking. Banks act as customers' intermediary's agent, so their services and support are the most important dimensions. If the bank did not provide the services and support that customer satisfy, it might lose their customer (Rahi, Abd Ghani, & Alnaser, 2017). Then, lack of personal relationships will also be one of the problems that customers are concerned about when using e-banking. It is because in-person banking relationships are able to support customers to craft a business account which tailor to their specific requirements. Furthermore, customers only can use their phone or network to contact the bank and complete their transaction on e-banking during the COVID-19 pandemic, so it is hard for banks to maintain the relationship with customer same as traditional bank. Therefore, if e-banking cannot fulfil the specific needs of customers it might reduce customer satisfaction with their services (Khandelwal, 2013).

Website design can be defined in the form of color, display, function, or graphics that represent the bank image and have various interactive features that can help their customer when doing their transaction online. It will be better if the bank provides a website that can be understood easily for their customer to solve their issue and transaction online (Indrasari et al., 2022). For instance, a convenient user interface can let customers find the function easily and complete their transaction in a brief time. Thus, if the bank website design is not attractive enough or difficult to use, it will cause customer satisfaction to decrease and lose their customers in the future. This is because customers will be highly satisfied when the website is simple to use, and the interactive experience is enhanced (Wolfinbarger & Gilly, 2003).

1.3 Research Objective

1.3.1 General Research Objective

To determine those variables which promote customer loyalty in e-banking services in Malaysia.

1.3.2 Specific Research Objective

a) To examine the relationship between reliability and customers loyalty in e-banking services in Malaysia.

b) To examine the relationship between privacy and security and customers loyalty in e-banking services in Malaysia.

c) To examine the relationship between web design and customers loyalty in e-banking services in Malaysia.

d) To examine the relationship between customer services and support and customers loyalty in e-banking services in Malaysia.

e) To examine the relationship between responsiveness and customers loyalty in e-banking services in Malaysia.

f) To examine the relationship between service quality and customers loyalty in e-banking services in Malaysia.

1.4 Research Question

1.4.1 General Research Question

The following study aims to attain the research objective to study the factors enhancing customer loyalty in Malaysia's e-banking services.

1.4.2 Specific Research Question

a) Does the reliability of e-banking affect the loyalty of customers?

b) Does the privacy and security of e-banking affect the loyalty of customers?

c) Does the web design of e-banking affect the loyalty of customers?

d) Does the customer services and support of e-banking affect the loyalty of customers?

e) Does the responsiveness of e-banking affect the loyalty of customers?

f) Does the service quality of e-banking affect the loyalty of customers?

1.5 Significance of study

First off, one of the benefits of this study is that it will make it much easier for future researchers to investigate the issue of how to increase customer loyalty in Malaysian e-banking. Future researchers can use the findings of the study to enhance their own research or reporting. This study also provides the researchers with knowledge and insight to aid in the development and investigation of more data on how to enhance customers loyalty in e-banking services in Malaysia. Other than that, by offering suggestions, the data on the relationship among the characteristics of e-banking and customer loyalty to use e-banking might serve as a guide for such studies in the future.

Furthermore, this study aims to provide bankers with valuable information to increase customer loyalty toward e-banking services in Malaysia. Bankers in Malaysia were able to adapt their business models based on our research and come up with strategies to effectively increase customer loyalty to e-banking services. Customer satisfaction plays an important role in a business as it can affect reputation and competitiveness in the market. Therefore, bankers can gain various advantages if they are successful in increasing customer loyalty.

Lastly, the contributions of this study are also aimed to help banking institutions operate in a more efficient and effective way to target the potential aspect of

improvement of customer loyalty in a more accurate way. The management of banking institutions would carry out the restructure planning to ensure the right manners in doing the right things to maximize profitability level. Thus, the banking institutions can identify the potentials mistakes before it causes negative effect to the banking operation, and further damage their reputation in the banking industry of Malaysia.

1.6 Chapter Layout

Chapter 1

Chapter 1 will consist of the research background and the problem statement of e-banking. Besides, the researchers will also prepare specific research objectives and research questions. In addition, noteworthy research will be covered in detail.

Chapter 2

Chapter 2 will consist of the literature review and conceptual framework from the perspective of previous researchers who have written in the related research field. This chapter will also discuss the conceptual framework that has been proposed and how to develop hypotheses.

Chapter 3

Chapter 3 will consist of the research methodology which includes research design and research process. Then, sampling design, data collection method, and data analysis techniques will also be covered. This study makes use of primary data, and this chapter will run a pilot test.

Chapter 4

Chapter 4 will consist of the data analysis that we collected from the survey. All these data are used for running several tests to show the relationship between the independent variable and dependent variable and see whether positive relationship or negative relationship is.

Chapter 5

Chapter 5 will consist of the conclusion of our research. It will outline the shortcomings of our study and offer suggestions for further investigation on the subject related to ours.

1.7 Summary

In general, the background of e-banking research, the problem statement, the research objective, and the research question will be introduced in this chapter. Other than that, it also discusses the importance of our research and provides a chapter layout.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

In Chapter 2, the research will explore previous studies related to the scope of consumer electronic banking service retention. This chapter begins with a review of the literature on related past research, followed by a review of the theoretical models developed by previous researchers. In this study, a detailed explanation of the theory that supports the variables is adopted. Moreover, the relationship between each of the independent variables and the dependent variable will be graphically illustrated in the proposed theoretical model while making hypotheses about each relationship.

2.1 Review of the Literature

2.1.1 Relationship between Reliability and Customer Retention

Reliability is a key factor in determining whether customers will respond favorably to e-banking services. According to the research conducted by Shankar and Jebarajakirthy (2019), the result shows that the relationship between reliability and consumer satisfaction on using e-banking is significant. Authors believe that customers that engage in e-banking frequently tend to carefully consider the information provided about e-banking providers and their services compared to low-engagement customers as high-engagement customers will evaluate the information on e-banking provider and services provided properly.

Furthermore, Das and Ravi (2021) have mentioned in the finding that the satisfaction of e-banking users is significantly correlated with reliability. From the study, authors found that since majority of young people own internet-connected gadgets such as smartphones as well as laptops and most of them prefer not to visit the bank physically, hence, they will pay less attention to reliability issues. Therefore, it is advised that banks create more appealing websites to boost satisfaction of customers.

Moreover, research of Beshir and Zelamen (2020) indicate that there is an insignificant relationship between reliability and customer satisfaction. This study's main shortcoming was the relatively small sample size used, which made it difficult to draw reliable results. At the same time, bank branches operating in urban and rural areas were not compared in terms of the quality of their e-banking services. Not only that, but the analysis of the qualitative aspect of e-service quality in this study was rather limited.

In addition, Hammoud et al. (2018) found that customers satisfaction is significantly impacted by reliability of services provided. This is because people must be able to rely on the e-banking service's consistent delivery. The authors have mentioned that the research is conducted by distributing survey among customers of bank in Lebanese intended to determine how the quality of e-banking services affected customer satisfaction in the Lebanese banking industry as no research has been done in the Lebanese banking industry. It is recommended to pursue this research and look for ways to improve "e-banking" service reliability, especially in the Middle East.

Lastly, there is a positive and significant correlation between reliability and satisfaction of e-customers (Raza et al., 2020). This finding suggests that by upholding reliability, Internet banking can enhance customer satisfaction levels since the more accurate and trustworthy the information, the more satisfied the customers are with the service. The authors have pointed out the limitation of this study where it includes a second-order element and

might be omitting some additional factors that could affect a customer's e-loyalty. Therefore, prospective study may include additional factors such as incentives or product qualities in their investigation.

2.1.2 Relationship between Privacy and Security and Customer Retention

Security may be described as a protection to ensure customer safety and prevent hacker violations of clients' privacy. However, the importance of privacy is also a major issue for the clients who always seek out financial and personal safety information while using internet banking to complete financial activities.

Das and Ravi (2021) have conducted research to identify which aspect of the e-banking service's quality may have the biggest influence on the level of customer satisfaction. Other than that, it was said that customers are prepared to switch from conventional banking to e-banking due to the security and privacy provided by the websites of the individual banks. Additionally, this study pointed out that privacy and security have positive and significant impacts on customer satisfaction in e-banking services. This study also provides some recommendations on e-banking privacy and security. The banks should ensure that no unauthorized party gets access to the private data that clients provide on e-banking platforms. Banks should also offer secure, one-of-a-kind individual identification numbers and continuously send login and transaction notifications to increase the security of financial transactions.

Konalingam et al. (2017) had conducted research that was purposed to suggest and experimentally evaluate a comprehensive strategy for boosting bank customer loyalty using e-banking techniques. The author stated that a key aspect influencing consumers' motivation to embrace e-banking transaction systems is privacy and security. Thus, the choice and trust of

customers in e-banking would also be greatly influenced by how the banks would handle any security problems that may arise during online banking. It also mentioned that customer loyalty was significantly and positively impacted by privacy and security. Therefore, keeping customer information secure and private will make the customer more satisfied and finally loyal to the bank. Other than that, this study also included its limitation which is it was limited to the commercial banks in the Sri Lanka city of Jaffna. Therefore, this study must be expanded to include commercial banks in other regions of the nation to better generalize its findings.

Shankar and Kumari (2016) have conducted a study in India to investigate variables influencing Indian customers' adoption of e-banking and determine the main influences on adoption intention in relation to mobile banking. The study mentioned that one of the major issues in e-banking is security and privacy. Thus, the bank should provide secure online services and build trust with their consumers. This will improve customer happiness and service and enhance their loyalty when they are using e-banking. The authors also stated that customers are more intentionally to have confidence toward online banking service providers if they assure a secure transaction and maintain the privacy level of information. Therefore, the level of customer loyalty will be positively affected when the customer is not provided with good e-banking security from the bank. The limitation of this study is the respondents are not given the opportunity to express their own opinions when closed-ended questions with the questionnaire makes use of a Likert scale. The degree of change in consumer adoption behavior in India may have been measured using another statistical model, such as an exponential or polynomial regression model.

Furthermore, Hammoud et al. (2018) have conducted a study in Lebanon to investigate how the Lebanese banking industry's e-banking service quality affects customer satisfaction. The authors mentioned that e-banking depends on the technology methods of information sharing between customers and suppliers instead of face-to-face interaction. It is because

when the customers and service providers do not have face-to-face interaction, there will exist certain privacy and security concerns while conducting financial transactions on e-banking websites. Other than that, this study also shows that there is a significant and positive relationship between privacy and security and customer satisfaction.

Besides, Shankar and Jebarajakirthy (2019) have conducted a study which major goal is to suggest and experimentally evaluate a thorough moderated mediated mechanism for boosting user loyalty to e-banking systems using E-banking service quality (EBSQ) practices. The authors stated that customers are more likely to trust and remain loyal to e-banking service providers if they provide a safe platform of e-banking to carry out financial transactions and maintain the privacy of personal information given by customers through the platform. This study's findings are consistent with those of other researchers in that there is a strong correlation between customer loyalty and privacy and security. Besides, there are a limitation existed in this study which are only limited to Indian e-banking. Nevertheless, customer perceptions of service quality evaluation are a phenomenon that varies by culture. Therefore, this study must be reproduced using e-banking to generalize our findings users more accurately from other nations.

2.1.3 Relationship between Website Design and Customer Retention

Website design defined as the e-banking website that consist of the various elements of display, graphics, or colour, and the users be in touch with the navigation to deal with the detailed information, and process transaction.

The study by Konalingam et al. (2017) aims to suggest and empirically investigate a comprehensive method for boosting banking user loyalty through the e-banking's practices. The result indicates that website layout

and content positively and significantly influence customer loyalty. Bank with an attractive design guides the customers to better engage in e-banking service. The future study is suggested to incorporate with commercial banks in country's other part. Moreover, this study can be further improved by adding in other independent variables which have a significant impact on customer loyalty. Future researchers can investigate mediator and moderator's effects which might build a comprehensive model.

Das and Ravi (2021) carry out the study to identify the service quality dimensions and indicate the implication of variables which will influence the satisfaction of customer. They found out that website design has a significant and positive impact on customer satisfaction in the services of e-banking. The authors suggested that the future researcher be able to expand the sample size and take into consideration to investigate the perception-based on demographic data.

Gill et al. (2021) carried out a study investigate the five commercial private banks of Pakistan on the customers' trust and loyalty through a structural equation modeling technique. The finding of the study pointed out that website design and customer loyalty in e-banking services are mediated by trust. The variable of website design indicates a significant and positive effect indirectly on customer loyalty. The authors mentioned that future research may include the population from another sector rather than only the banking sector to have results that are generalized.

According to Haq and Awan (2020), they had conducted a study in Pakistan to empirically investigate the impact of e-banking service quality towards the e-banking loyalty via a mediated effect of e-banking satisfaction. In a similar result to the studies, the researchers provided empirical support for the significantly positive impact of website design on e-banking loyalty. The connection between e-banking website design and e-banking loyalty was proved as partially mediated by e-banking loyalty indirectly. The limitation of this study is the issue from the accessibility of respondents and constraint

of time; hence the target is limited to the e-banking sector of Pakistan.
Besides, the authors recommend the combination of strategic management
theories should consider the studies of relation between EBSQ.

However, some researchers got the opposite result from their studies.
Shankar and Jebarajakirthy (2019) aim to study a thorough moderated
mediated mechanism to promote customer loyalty regarding the platform of
e-banking through the practices of EBSQ. The findings showed that one of
the factors from EBSQ dimensions which was website design does not bring
significant effect to customer loyalty on e-banking directly and indirectly.
The future researcher can conduct similar studies in other countries to better
gather more results from e-banking users of other countries outside of India.
In addition, future studies suggested targeting two different customer groups,
for instance, age groups or income earnings to make result comparisons and
analyses. The comparative results will let banks and financial service
providers have insightful information to create EBSQ practices for specific
customer segments.

2.1.4 Relationship between Customer Service and Support and Customer Retention

Indrasari et al. (2022) has conduct research to examine factors affecting
satisfaction and loyalty of e-banking user during COVID-19 pandemic, and
pointed out that customer service and assistance has a negative and
insignificant effect toward satisfaction of electronic banking users. The
authors stated that some problems of e-banking users can be solved by the
navigation assistance on the website and application design. They think that
the indirect impact of customer service and assistance on e-banking
satisfaction may be overlooked as customers' problem are not adequately
addressed. This study has limited in its data collection, which is collect by
using online questionnaire, the authors suggest to use combined data-

gathering method which include questionnaire and interview in the future research.

Shankar and Jebarajakirthy (2019) had conducted research in India to study a comprehensive adjustment mechanism to improve customer loyalty of electronic banking platform through ESBQ practice. This study found that customer service and support had no critical impact on e-banking loyalty. When consumer involvement increases, there is a decline in mediation effects between customer service and support with electronic banking loyalty. The authors consider the reason as there are only a minority of people will to experience troubles in using electronic banking services due to the widely used of e-banking nowadays. The authors suggested to replicate the research with other countries' e-banking users to better recapitulate the findings and suggest that longitudinal data be used for this study.

Moreover, Haq and Awan (2020) carried out a study investigating three domestic banks of Pakistan to examine the impact of e-banking service on the service quality of e-banking through a mediating influence of e-banking satisfaction. The study has proved that there is an insignificant relationship between customer service and support with e-banking satisfaction. The authors believed that the indirect effect of customer service and support on e-banking satisfaction may be because of customer service and support departments do not fully address customers' problems. Artificial intelligence or information and communication technology (ICT) may not solve the customer's problem because the structured response contains only limited information. The authors encourage considering data from multiple countries and verify the relationship between e-banking customer satisfaction and initial trust in further research.

However, there are some researches show a significant relationship between customer service and support with e-banking loyalty. Ullah (2021) conducted research to examine customer loyalty's impact on EBSQ

dimensions with customer trust as a mediation role. The result from this study indicated customer service and support have a statistically important effect on customer loyalty toward the banking fields. Customers will become loyal to the banks if they get hassle-free service from the banks. The suggestion by author to the future research is expand the scope in the sample size of respondents and involve more Malaysia commercial banks to prove the validity of practical views.

Furthermore, Rahi et al. (2017) has obtained a similar result with Ullah (2021) where there is a positive relationship between customer service and support with e-banking loyalty. The result shows that customer service significantly affects the adoption of banking and banks' brand loyalty. In addition, the number of internet banking users will increase by improving electronic customer service. The authors have conducted research that aims to examine electronic customer service as the major dimension of e-service quality with the adoption of online banking and banks' brand loyalty. The research has reached out to online banking users in major Pakistani cities.

2.1.5 Relationship between Responsiveness with Customer Retention

Responsiveness is one of the most important factors that affect customer loyalty on e-banking. According to Sharma (2018), the term "responsiveness" relates to the representative services provided to customers to meet their needs, manage their queries, resolve complaints, and the others.

Sharma (2018) has conducted a study to examine the effects of online banking service quality on customer satisfaction and customer attitude in the Jaipur District to add new information to the field. The author mentioned that a great responsiveness from the e-banking system can increase customer satisfaction in using online banking transaction finally to retain the customer

in the future. As a result, this study unequivocally demonstrates that responsiveness and customer loyalty are significantly correlated. The study's limitations, however, stem from the fact that only 200 people in the Jaipur District of Tamil Nadu were included in the sample size and that e-banking is not widely accepted in rural areas.

Moreover, Hammoud et al. (2018) have conducted a study in Lebanon to investigate how the Lebanese banking industry's e-banking service quality affects customer satisfaction. According to the authors, responsiveness is the ability to help bank customers and offer them prompt service. There are four different ways to provide these services. First, the service could be properly managed and run by the e-banking system. Second, clients may be advised to proceed appropriately via e-banking channels if any operations are unsuccessful. Third, it might also offer a speedy resolution to any potential problem with e-banking transactions. Finally, it might give customers who need assistance right away. This study also pointed out that there is a significant and positive relationship between responsiveness and customer satisfaction. Furthermore, the definition of "reliability" may vary among nations and even within the same area, necessitating a thorough examination of this concept and others in various cultural settings.

Furthermore, Raza et al. (2020) have conducted a study to investigate the elements of service quality in online banking and how they affect e-customer loyalty and satisfaction. The authors also stated that responsiveness may hold customers' attention, and quick response times can increase customer loyalty. Therefore, when the customer complaints or questions are answered quickly from the e-banking system, it will make the customer more likely to retain due to their demand is satisfied at time. This study acknowledged that there is a positive and strong correlation between responsiveness and customer satisfaction in e-banking system. Thus, banks frequently respond positively to their customers and provide the services to meet their needs. When the level of responsiveness is high, the probability of customer loyalty will also increase and go higher significantly.

Beshir and Zelalem (2020) have conducted a study to determine how Commercial Bank of Ethiopia (CBE) customers' satisfaction and loyalty were impacted by the following e-banking service quality factors: efficiency, dependability, responsiveness, product variety, ease of use, cost, and privacy. The authors mentioned that responsiveness is a crucial component for a bank's ability to draw in new customers and enjoy long-term success. For instance, the bank can retain their customers through provided a great responsiveness in e-banking system. Besides, this study also shows that there is a positive and significant relationship between responsiveness and customer satisfaction.

Sharma et al. (2020) have conducted research to assess how the quality of the e-banking service affects customer satisfaction. The authors mentioned that customers might be pleased with one or more aspects of the quality of the services at once. There are nine dimensions created to synthesize the numerous variables and responsiveness is one of them. This study also proves that responsiveness has a significant effect on customer satisfaction. Other than that, there are some remarks from the authors. For instance, the important factor influencing the service quality must be identified by the bank. The banks or service providers can spot problems with the services being provided. The bank can plan and develop a strategy for improving service quality to better serve their customers.

2.1.6 Relationship between Service Quality and Customer Retention

Bashir et al. (2020) carried out a study that aims to investigate the quality of service and customer satisfaction in Bangladesh's electronic banking sector with taking customer perceived value as the mediating role. The outcomes of the study showed a positive relationship between service quality and customer satisfaction. Banks should provide better service quality to retain

the customers including provide 24/7 service. If the bank lacks quality service, customers will not remain loyal to the bank. The limitation of this study is that background research is difficult to generalize, as there are fewer people willing to investigate customer perceived value and the existing context in Bangladesh. The future studies could use other methods and contextual changes.

Prasadh and Arun (2019) has obtained a positive result with their study. The study's purpose is to investigate how customer satisfaction affects the relationship between service quality and customer loyalty in e-banking services. The results show that service quality positively affects customer loyalty through customer satisfaction. This study was limited to examine only three factors which are customer loyalty, customer satisfaction and service quality, other important variables may be added to the research model. Moreover, the future study is suggested to incorporate other electronic services to better generalize.

Nustini and Fadhila (2020) examine the impact on consumptive behavior of the Moslem students from the Faculty of Economics Universitas Islam Indonesia and factors that influence the e-banking usage. The study proved that service quality has a positive impact on e-banking usage. A better service quality provided by banks can significantly increase the use of e-banking services. The authors pointed out the service quality has a positive impact to the usage of e-banking as people will tend to opt for a good quality of service that can benefits them. The findings of this research can become a remind for educators in Faculty of Economics Universitas Islam Indonesia to afford students with better understanding regarding religious values and financial literacy. The further research is expected to increase number of samples and prolong the object.

Sasono et al. (2021) conducted research to investigate the mediation role of e-satisfaction in the e-service quality impact on the e-loyalty of customer in Indonesia's private bank. The findings show the e-service quality has a

positive impact on e-loyalty of college students as users of internet banking
in Indonesia. In addition, the positive influence also indicates that the
increase in e-service quality will raise the e-satisfaction of college students
as users of internet banking in Indonesia. The authors suggest future
researcher to explore more variables that will influence e-loyalty. Another
limitation of this study is this study only analyzes college students, so it may
not be generalized to other industries.

However, there are one research that showed service quality has no direct
effect on customer satisfaction in e-banking services. Tamaruddin et al.
(2020) had carried out the research that aims to analyze the impact of service
quality and other variables on customer loyalty towards Indonesia's Islamic
banks e-banking services through customer satisfaction. The results show
that service quality has no direct impact on customer satisfaction with e-
banking services. The service quality may not directly affect customer
satisfaction as bank offices are not functioning properly during the COVID-
19 pandemic, thus affecting the quality of service to customers. The future
research is encouraged to include more samples to describe the population
of the study, as well as including other variables, and renewable theories.

2.2 Review of the Methodology Framework

2.2.1 Statistical Package for Social Sciences (SPSS)

Statistical Package for Social Sciences (SPSS) is a set of software that is
heavily utilized by researchers to analyze complex data sets and produce
useful information. Ullah (2021) mentioned that SPSS could assist the
researcher to attain the desired objectives by providing the required
information to the researcher. The SPSS includes various analyzing methods

including but not limited to multiple linear regression, model summary, discriminant of validity, analysis of variance, and Pearson.

2.2.1.1 Multiple Linear Regression

A statistical method called multiple regression, commonly referred to as multiple linear regression, is utlized to examine the connection between a dependent variable and several independent variables (Tranmer et al., 2020). According to Konalingam et al. (2017), the MLR analysis was performed on their study to identify the important Effects of e-banking procedures and their relevance to consumer loyalty. Other than that, Jo and Ma (2018) are also used the multiple linear regression in their research because while correlation analysis was employed to examine the link between the customers' overall happiness and loyalty intentions, it aids in estimating the influence or effect of one variable on another one. Besides, Sleimi et al. (2018) stated that multiple linear regression was used to examine the effects of the independent variable, e-banking service quality, on the dependent variable, customer satisfaction, to evaluate the objectives of the current study. Furthermore, there are some researchers who used the multiple linear regression model to investigate the impact of the independent variable on customer loyalty (Sameer & Enas, 2019; Altobishi et al., 2018; Indrasari et al., 2022). There are some benefits for used the multiple linear regression model in the study of Weedmark (2018) which are being able to assess how one or more predictor factors affect the criteria value compared to each other and the capacity to spot outliers or abnormalities. Sharma (2018) also mentioned that the multiple linear regression analysis can lead to a better understanding of how customer satisfaction is affected by the e-banking service quality dimension.

2.2.1.2 Analysis of variance (ANOVA)

Singh et al. (2020) used the ANOVA to measure the fitness of the overall model as well as investigate the statistical association between the dependent variable and a dimension.

2.3 Theory of Planned Behavior (TPB)

Ajzen (1991) states that the theory of reasoned action (TRA) has an extension model which is called TPB where it will be applied for circumstances in which people lack full control over their behavior. According to the TPB, a third antecedent to the theory known as perceived behavioral control (PBC), also affects behavioral intentions and actual behaviour in addition to attitude and subjective norm. Through behavioral intentions, perceived behavioral control can have an impact on behaviour both directly and indirectly (Nasri & Charfeddine, 2012). Firstly, an individual's attitude toward the activity, which describes how positively or negatively an individual sees the behavior in question. Next, the subjective norm refers to the perceived social pressure to engage in the behavior or not. This paper is conducted to analyze whether the reliability, privacy and security, web design, customer service and support, responsiveness as well as service quality will bring impact to the intention of e-banking users to retain on using e-banking services in Malaysia.

Schematic Representation of Ajzen's Theory of Planned Behavior
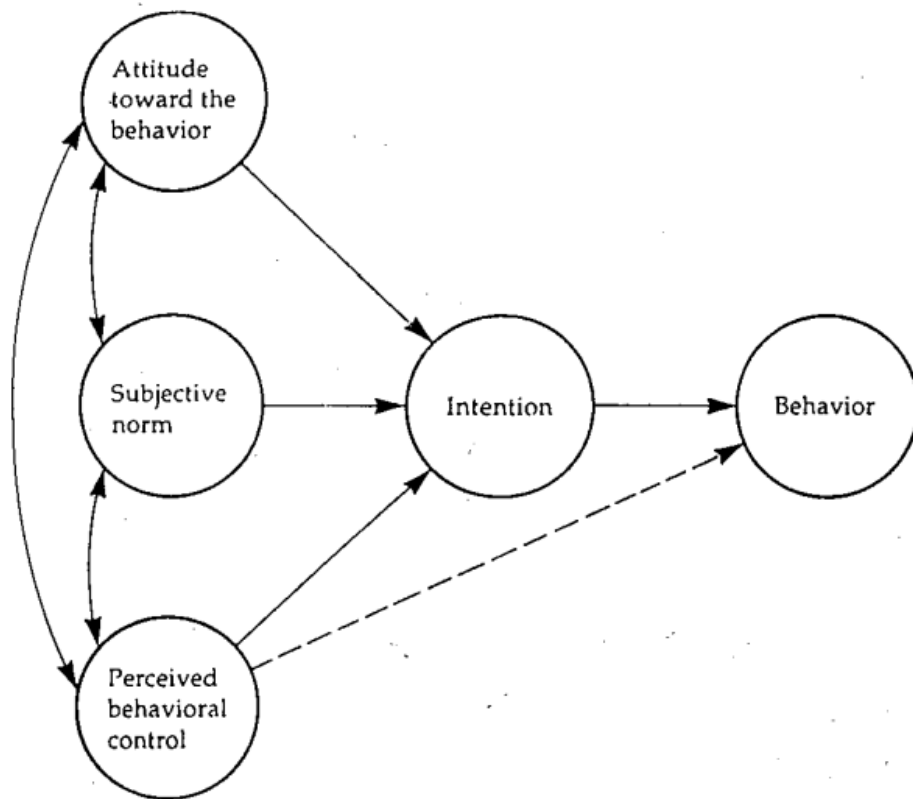
Figure 2.1. Theory of Planned Behavior. Adapted from Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American journal of health promotion*, *11*(2), 87-98.

2.4 Proposed theoretical model

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┌─────────────────────────────────────────────────────────────┐
│                                                             │
│   Independent Variables              Dependent Variable     │
│                                                             │
│   ┌──────────────────────┐                                  │
│   │     Reliability      │                                  │
│   └──────────────────────┘                                  │
│   ┌──────────────────────┐                                  │
│   │ Privacy and Security │                                  │
│   └──────────────────────┘                                  │
│   ┌──────────────────────┐          ┌────────────────────┐  │
│   │     Web Design       │          │ Customer Retention │  │
│   └──────────────────────┘          └────────────────────┘  │
│   ┌──────────────────────┐                                  │
│   │ Customer Service and │                                  │
│   │       Support        │                                  │
│   └──────────────────────┘                                  │
│   ┌──────────────────────┐                                  │
│   │   Responsiveness     │                                  │
│   └──────────────────────┘                                  │
│   ┌──────────────────────┐                                  │
│   │   Service Quality    │                                  │
│   └──────────────────────┘                                  │
│                                                             │
└─────────────────────────────────────────────────────────────┘
```
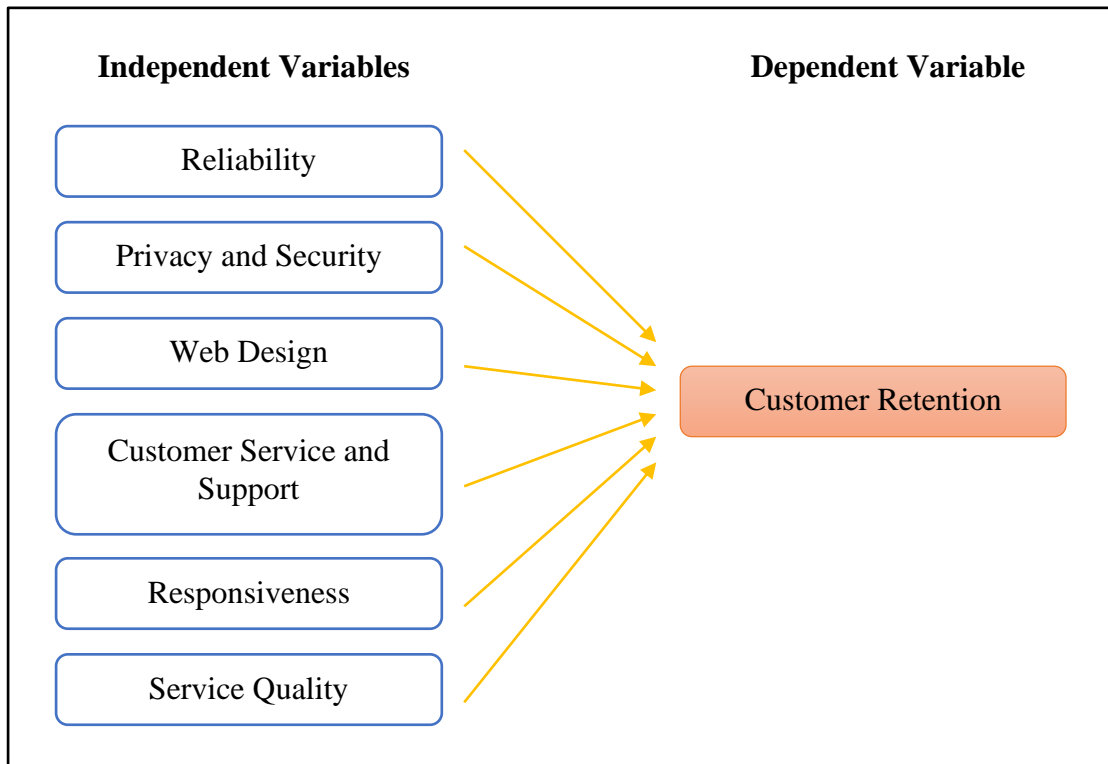
2.5 Hypotheses Development

2.5.1 Reliability

H_0: There is no significant relationship between reliability and consumer retention.

H_1: There is a significant relationship between reliability and consumer retention.

Indrasari et al. (2022) pointed out that there is higher user satisfaction in using the services of e-banking if the e-banking services are reliable. The increase in reliable service has a positive impact on the bank as customers will become loyal and behave positively to the bank (Ullah, 2021). Raza et

al. (2020) mentioned that internet banking is able to enhance the customers' satisfaction level by maintaining reliability. Therefore, if the bank did not provide reliable e-banking services, customers might lose their loyalty to the bank, and switch to other banks' e-banking services.

2.5.2 Privacy and Security

H_0: There is no significant relationship between privacy and security and consumer retention.

H_1: There is a significant relationship between privacy and security and consumer retention.

According to Shankar and Jebarajakirthy (2019), there are certain privacy and security concerns due to the lack of face-to-face interactions between clients and service providers while utilizing e-banking websites for financial transactions. Besides, from the research of Konalingam et al. (2017), privacy and security are one of the motivations to engage the customer in using the e-banking services. Furthermore, there are the study show that privacy & security positively affect customer loyalty on using e-banking services (Hammoud et al., 2018; Indrasari et al., 2022; Ahmed et al., 2021). Based on the above study, we can conclude that privacy and security is hypothesized to have significant relationship with consumer retention on e-banking.

2.5.3 Website Design

H_0: There is no significant relationship between website design and consumer retention.

H_1: There is a significant relationship between website design and consumer retention.

Customers' retention toward electronic banking services is affected by the website design (Indrasari et al., 2022). According to Indrasari et al. (2022), the better the e-banking services' website design, the higher the customer loyalty to using e-banking services. Besides, study from Kajenthiran et al. (2017) highlights that banks having attractive layout of screen and simple design makes customers easy to engage in e-banking services. In the light of Ullah (2021), reliable information through website design gives a positive influence on the performance of the banks as website design is one of the forms of advertisement of the banks.

2.5.4 Customer Service and Support

H_0: There is no significant relationship between customer service and support and consumer retention.

H_1: There is a significant relationship between customer service and support and consumer retention.

According to Rahi et al. (2017), customer service has been proven to be the most important factor of success in an online environment. Ullah (2021) points out that banking institutions act as intermediaries' function to service and support consumers' needs and issue on e-banking services features and innovative products. Whenever a customer needs an inquiry, they don't have to worry because they could reach the bank's customer service to solve it. Therefore, if the bank provides more good services and supports to their customers, they will have a positive and favorable perception, thus enriching the customer relationship to further become loyal customers of the bank.

2.5.5 Responsiveness

H_0 : There is no significant relationship between responsiveness and consumer retention.

H_1 : There is a significant relationship between responsiveness and consumer retention.

Beshir and Zelalem (2020) mentioned that the customer is not willingness to use e-banking services is due to the responsiveness of e-banking services. Besides, Raza et al. (2020) also said that response time will maintaining consumer attention and providing quick service can boost customer satisfaction which led to customer loyalty. Furthermore, there are studies that show that responsiveness positively affects customer loyalty on using the e-banking services (Hammoud et al., 2018; Sharma et al., 2020; Sharma, 2018). Based on the above research, we can conclude that responsiveness is hypothesized to have significant relationship with customer loyalty on e-banking.

2.5.6 Service Quality

H_0 : There is no significant relationship between service quality and consumer retention.

H_1: There is a significant relationship between service quality and consumer retention.

The research of Nustini and Fadhillah (2020) showed that service quality has a relationship with customer satisfaction, at the meantime further fosters customer loyalty. The service quality of banking institutions can enhance

customer loyalty if the products and services are provided according to the expectations of customers (Tamaruddin et al., 2020). Therefore, the better the quality of the service, the higher the usage of e-banking service which also indicates an increase in customer loyalty.

2.6 Summary

In short, the study that has been effectively conducted in the past is the main topic of this chapter. It will provide better understanding and insight into the e-banking services based on these findings. Other than that, the theory and literature review served as the foundation for the hypotheses. The methodologies used in this study will be covered and discussed in the following chapter.

CHAPTER 3: METHODOLOGY

3.0 Introduction

The approach that used in this study was employed to carry out this study will be described in this chapter. Thus, it will cover the study's research design, data collection method, sampling strategy, research instrument, and data processing and analysis.

3.1 Research Design

Research design refers to the general approach you select to mix and investigate several study components in a suitable and logical method, to ensure that you can effectively address the research topic. There are two different sorts of research designs, the qualitative research method and the quantitative research method. In our study, quantitative research is applied.

Research that uses quantitative methods involves gathering and analysing numerical data. It differs from qualitative research in that it may also be used to calculate averages, make predictions, examine relationships, and disseminate findings to a larger audience (Bhandari, 2022).

Besides, Dudovskiy (2016) claims that gathering data is one of the crucial steps that must be taken to finish the research. Data collection is a procedure that gathers the necessary information to determine the answer to a research issue. Additionally, it was emphasized that there are two categories of data collection methods: primary data and secondary data. In this research, primary data method is adopted.

Primary data is a category of information that has never been collected previously to address a problem. This data can be collected through interviews, questionnaires,

experiments, and direct observation. Sleimi et al. (2018) mention the independent and dependent variables can be measured by obtaining the primary data needed and providing an interpretive analysis of the data to understand the wider picture. In this study, a questionnaire will be conducted as part of the data collection process.

3.2 Data Collection Method

Online questionnaires are utilized to collect participants' survey data in Malaysia who use Maybank2u. The distributed questionnaire serves as an instrument, containing the key questions that assess the e-banking customer's response and aiming to collect primary data from the e-banking customer.

Respondents who reside in Malaysia and are using Maybank2u are invited to participate in research. The online questionnaire will be sent out to respondents using the targeted sampling approach. After collecting 300 online questionnaires from the respondent, we will key in the data into Excel and run the SPSS analysis.

3.3 Sampling Design

It is the process of gathering data from respondents for statistical analysis. It included target population, sampling method, and sampling size in our study.

3.3.1 Target Population

In accordance with the study's objectives, the target respondents for this study were individuals from Malaysia who used Maybank2u online banking.

3.3.2 Sampling Technique

Targeted sampling was chosen as the sampling method since our study's target population is Maybank2u users from the entire Malaysian population. Furthermore, we used an online questionnaire to collect data from all Malaysians who used Maybank2u. For instance, we issue Google forms to collect data online.

3.3.3 Sampling Size

We will distribute the online questionnaire and must receive at least 300 responses from the respondents.

3.4 Research Instrument

3.4.1 Questionnaire Design

This research questionnaire begins with a cover page that contains a brief introduction about our research questionnaire. The questionnaire distributed has received ethical approval from the UTAR SERC, showing that they have followed the acknowledged ethical guidelines for legitimate research studies. An application for ethical clearance is crucial for every research project conducted whenever the research involves human participants or elevates ethical concerns. The purpose of ethical review is to protect both researchers and participants. Participants have the right to know who has access to their personal information and what is being done with it. The Personal Data Protection Statement (PDPA) page follows on which respondents acknowledge that their personal information will only be processed.

Moreover, this questionnaire consists of seven sections, where Section A is about the demographic information and the remaining sections are about each independent variable, which are reliability, privacy and security, responsiveness, service quality, customer services and support, as well as web design. Section A contains five questions, and each of the independent variables has six questions in the questionnaire. Moreover, the questionnaire contains a combination of multiple resources from prior research. The questionnaire design is shown in Appendix 3.1.

3.4.2 Construct Measurement

The questions of questionnaire are all used 5-point Likert scale which is a scale that allow responders specify their agreement level from 1 to 5. For example, 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree. It is simple to understand for both respondent and researcher, and respondents have choices to indicate their agreement level instead of only agree and disagree.

3.5 Data Processing

We will analyse the data we collected using the SPSS software.

3.5.1 Data Checking

To ensure that respondents fill out the questionnaire, researchers will conduct data checking. The objective of data checking is to ensure whether the questionnaire is valid or reliability. If the questionnaire is filled out incorrectly or by an unqualified respondent, it will be void.

3.5.2 Data Editing

To detect and amend the data error in the questionnaire, researchers will conduct data editing. The objective of data editing is to ensure the result for the questionnaire is accurate. Therefore, data editing is a useful method to prevent erroneous data that will skew the results of the research. Besides, Researchers remove or exclude questionnaires with missing data or information as part of the data cleaning and data filter process. The objective of data cleaning is to ensure the result for this study is valid and trustworthy.

3.5.3 Data Transcribing

Data transcribing is the procedure of researcher's key in the data from the questionnaire into excel and importing it into SPSS. The objective of data transcribing is to guarantee complete accuracy and prevent carelessness when researchers key in data.

3.6 Data Analysis

3.6.1 Cronbach's Alpha

It is an internal consistency measurement that is used to calculate a measure of how closely related a group of things are to one another (Russo & Stol, 2021). It is also one of the methods used most frequently to gauge how strong consistency is. When employing the Likert scale, Cronbach's alpha analysis must be done because it will improve the reliability of the research variables. If the alpha coefficient is larger, the measuring scale will be more accurate (see Appendix 3.2) (Clow & James, 2013). According to Sekaran and Bougie (2016), the Cronbach alpha states that the minimum acceptable range in reliability should fall between 0.60 to 0.70. Then, the range between

0.70 to 0.90 is considered a good reliability. However, when the range is between 0.80 and 0.90, strong and excellent reliability is attained. Appendix 3.2 in the appendix shows the scale of Cronbach's alpha and what the value means to.

3.6.2 Multiple Linear Regression (MLR)

Multiple linear regression is suitable to apply when two or more variables are present and needs to understand the relationship between the explanatory variables and response variable. It is an extended version of simple linear regression as it includes more than one explanatory variable (Tranmer et al., 2020). The assumptions of multiple linear regression are assumed that the dependent and independent variables are having a linear relationship and assume there is no major correlation between independent variables.

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where

Y_i = Customer loyalty

X_1 = Reliability

X_2 = Privacy and Security

X_3 = Responsiveness

X_4 = Service Quality

X_5 = Customer service and support

X_6 = Website design

ε = Error term

In our research, the customer loyalty is dependent variable, and reliability, privacy and security, responsiveness, service quality, customer service and support, and website design is the independent variables.

3.6.3 Collinearity Statistics

A variance inflation factor (VIF) measure multicollinearity amount in regression analysis among the independent variables (IV). The variance inflation factor can calculate how much multicollinearity has inflated the variance of a regression coefficient. VIF play an important role in multiple regression analysis as multicollinearity will cause a deduction on statistical significance of IV's. If VIF below 10, it indicates there is no multicollinearity problem.

3.7 Pilot Test Result

Table 3.1:

Reliability Test

	Cronbach's Alpha	No. of items
Dependent Variable:		
Customer Retention	0.915	6
Independent Variables:		
Reliability	0.861	6
Privacy and Security	0.906	6
Responsiveness	0.880	6
Service Quality	0.859	6
Customer Services and Support	0.921	6
Web Design	0.863	6

Source: Develop from this research.

The reliability test was conducted using 30 sets of questionnaires. The pilot test output shows that all the variables are greater than minimum acceptable range (0.60). Customer retention, privacy and security as well as customer services and supports are greater than 0.90 which indicates strong reliability. Meanwhile, the Cronbach's alpha of reliability, responsiveness, service quality and web design fall between 0.80-0.90 which denotes very good. Hence, we can conclude that the research variables are reliable.

3.8 Summary

The primary data gathered from the questionnaire was analysed using the data analysis methods mentioned above. From the pilot test, the value of Cronbach's alpha for each of the variables is above 0.7, which indicates the result is acceptable and having a good reliability. The research's research questions, and hypothesis statements will be addressed in the following chapter by presenting and interpreting the SPSS software's results.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

To conduct the data analysis in this chapter, 300 questionnaires will be gathered from all users of Maybank2u. We will analyze all the variables using the SPSS software and explain further in chapter 4.

4.1 Descriptive Analysis

4.1.1 Gender

Table 4.1:

Gender

Gender	Number	Percentage
Male	142	47.33%
Female	158	52.67%

Figure 4.1:

Gender
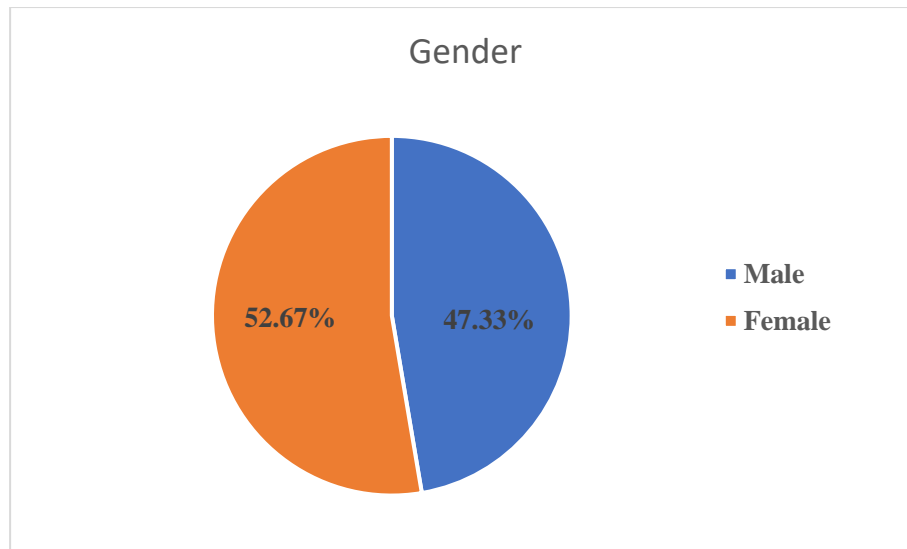
Table 4.1 and Figure 4.1 represent the ratio of gender in the survey. A total of 300 respondents took part in the survey. There are 158 female respondents, which took up 52.67% of all respondents, with 142 male respondents accounting for the remaining 47.33%.

4.1.2 Age

Table 4.2:

Age

Age	Number	Percentage
18-35	154	51.33%
36-45	76	25.33%
46-59	37	12.33%
60 & above	33	11.00%

Figure 4.2:

Age

Age
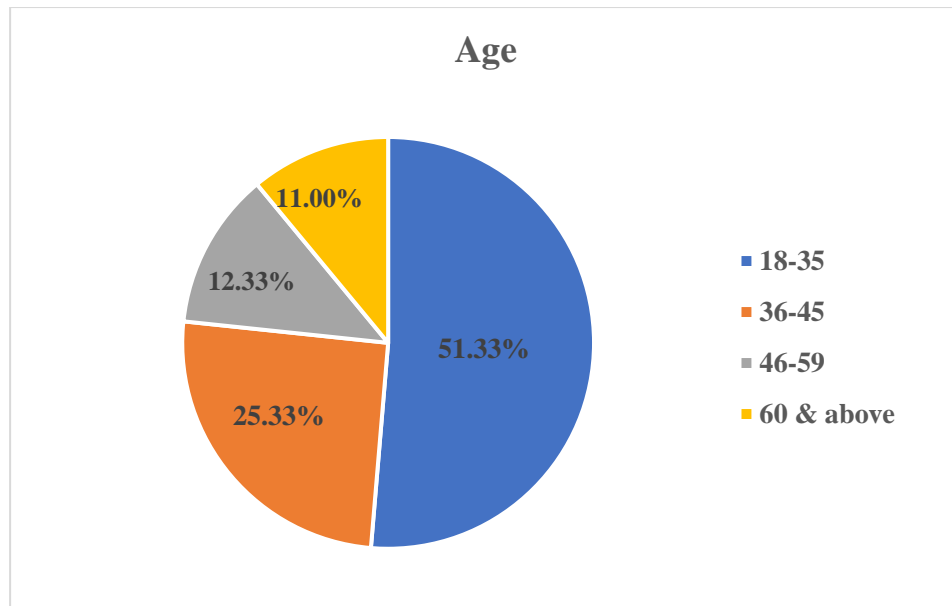
Table 4.2 and Figure 4.2 represent the age categories of respondents. Among the four age groups of the survey, the most popular age range is 18 to 35 years old, which consists of 154 respondents for 51.33%. The second highest in the categories is 25.33% for 76 respondents in the 36 to 45 years old. Next, 12.33% of the respondents or 37 respondents are in the age range of 46 to 59 years old, while ages 60 and over are represented by a total of 33 respondents, or 11%.

4.1.3 Education Level

Table 4.3:

Education Level

Education Level	Frequency	Percentage
SPM / O Level	49	16.33%
Foundation / Diploma / STPM / A Level / Matriculation	63	21%
Bachelor's Degree	162	54%

Master's Degree	26	8.67%

Figure 4.3:

Education Level

Education Level

- SPM / O Level — 16.33%
- Foundation / Diploma / STPM / A Level / Matriculation — 21.00%
- Bachelor's Degree — 54.00%
- Master's Degree — 8.67%
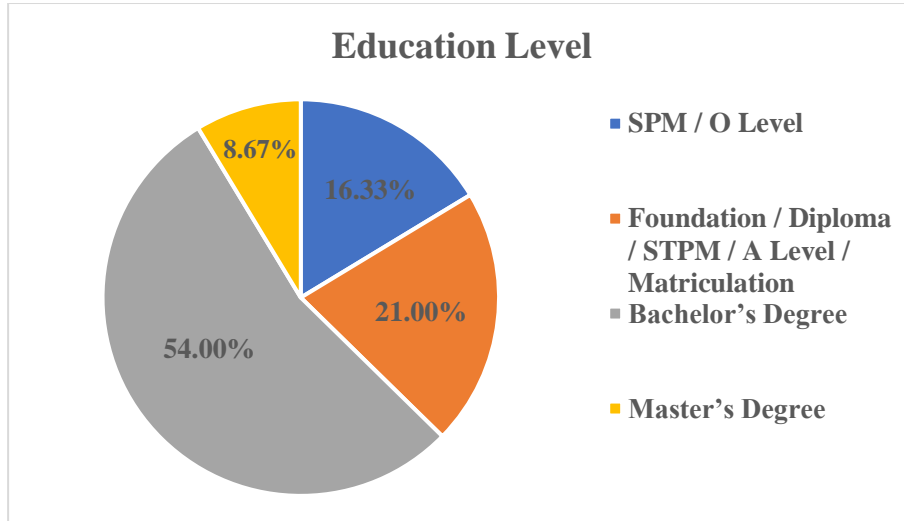
According to Table 4.3 above, the highest percentage of respondents have a bachelor's degree, with 54% (162 respondents). The second highest percentage is at the level of foundation, diploma, STPM, A-level, or matriculation level, with 21% comprising of 63 respondents. The SPM/O-Level certificate holder came in third with 16.33% (49 respondents), followed by the master's degree with 8.67% (26 respondents).

4.1.4 Monthly Income

Table 4.4:

Monthly Income

Monthly Income	Frequency	Percentage
<RM2,500	85	28.33%
RM2,501 to RM4,000	83	27.67%
RM4,001 to RM6,000	84	28%

>RM6,000	48	16%

Figure 4.4:

Monthly Income
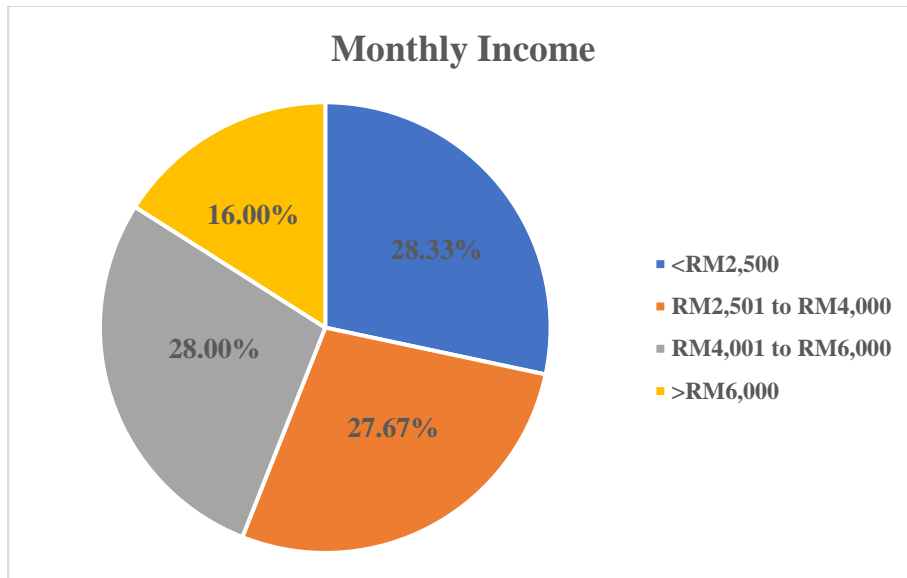
According to Figure 4.4, the monthly income of most of the respondents falls under the income level range of less than RM2,500, which is 85 respondents, or 28.33%. The level range of RM4,001-RM6,000 was followed by 84 respondents, accounting for up to 28% of the total. Followed by the category RM2,501–RM4,000, which consists of 83 respondents and covers 27.67%. Finally, the group with the fewest respondents, comprising only 16% of all respondents, falls within the monthly income level range of RM6,000 and above, with 48 respondents.

4.2 Reliability Test

4.2.1 Cronbach's Alpha

Table 4.5:

Result of Cronbach's Alpha

Variables	No of item	Cronbach's Alpha	Reliability Level
Customer Retention	6	0.920	Excellent
Reliability	6	0.928	Excellent
Privacy & Security	6	0.955	Excellent
Responsiveness	6	0.931	Excellent
Service Quality	6	0.928	Excellent
Customer Service & Support	6	0.935	Excellent
Web Design	6	0.939	Excellent

Source: Developed of the Research

Based on our research, the highest value for Cronbach's alpha is Privacy and Security, which with result of 0.955. Therefore, it showed that privacy and security is the most reliable variable among all the variables. On the other hand, customer retention has the lowest value of 0.928 among all the variables. Besides, reliability, responsiveness, service quality, customer service and support, and web design have values of 0.928, 0.931, 0.928, 0.935, and 0.939, respectively. In overall, all the variables obtain a value of more than 0.9 which means they all are having excellent reliability levels.

4.3 Multiple Linear Regression

Table 4.6:

Model Summary

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.93	0.875	0.872	0.27394

Source: Developed for the research

a. Dependent Variable: CR

b. Predictors: (Constant), WD, PS, CSS, RES, REL, SQ

The coefficient of correlation (R) is 0.935, as shown in Table 4.6, indicating that independent variables are strongly correlated with the dependent variable in a positive relationship (see Appendix 3.3). R square, also called the coefficient of determination (R2), is equal to 0.875. The value of 0.875 means that 87.5% of the variation in customer retention can be explained by the six independent variables.

Table 4.7:

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	153.962	6	25.660	341.932	<0.001
	Residual	21.988	293	0.075		
	Total	175.950	299			

Source: Developed for the research

a. Dependent Variable: CR

b. Predictors: (Constant), WD, PS, CSS, RES, REL, SQ

Table 4.7 indicates that the F value is 341.932. The larger the F value, the more likely it is that the variation associated with the independent variable is real and not due to chance. In addition, the p value (Sig.) is <0.001, which is smaller than the

alpha value of 0.10 (p < 0.10), which means statistically significant, so dependent variable is likely to be significantly affected by the independent variables.

Table 4.8:

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Supported/ Not Supported
		B	Std. Error	Beta			
1	(Constant)	.208	.088		2.381	.018	-
	REL	.495	.044	.541	11.287	<.001	Supported
	PS	-.061	.031	-.074	-1.999	.047	Supported
	RES	.032	.048	.030	.655	.513	Not Supported
	SQ	.404	.059	.385	6.889	<.001	Supported
	CSS	-.097	.052	-0.93	-1.881	.061	Supported
	WD	.160	.044	.172	3.636	<.001	Supported

Source: Developed for the research

a. Dependent Variable: CR

According to Table 4.8, the significance levels of REL (p = <0.001), PS (p = 0.047), SQ (p = <0.001), CSS (p = <0.061) and WD (p = <0.001) are lower than the alpha value of 0.10, which indicates that these variables are significantly affecting the CR. They are the important factors that influence consumer retention in Maybank's electronic banking services. In addition, because the significance level of RES (p =

0.513) is higher than the alpha value of 0.10, it has been found that this factor is not significantly associated with consumer retention.

4.4 Collinearity Statistics

4.4.1 Variance Inflation Factor (VIF)

Table 4.9:

Result of VIF test

Variables	VIF
Reliability (REL)	5.386
Privacy and Security (PS)	3.244
Responsiveness (RES)	5.020
Service and Quality (SQ)	7.339
Customer Service and Support (CSS)	5.776
Web Design (WD)	5.239

Sources: Develop from research

According to Table 4.9, it shows that variance inflation factor (VIF) of each independent variable is lower than 10 which indicates there is no correlation between independent variables. Therefore, there is no multicollinearity problem exist.

4.5 Conclusion

In chapter 4, the obtained data from 300 respondents are used to do for the descriptive analysis, Cronbach's alpha, multiple linear regression, and collinearity statistics. The data analysis has been completed by adapting SPSS test. In the following chapter, the outcomes' findings will be further addressed.

CHAPTER 5: CONCLUSION AND IMPLICATIONS

5.0 Introduction

The major of finding, implications of study, limitations of study and recommendations for future researcher will be discussed in this chapter based on the result obtained in Chapter 4.

5.1 Discussion of Major Finding

5.1.1 Reliability

Table 5.1:

Summary of hypothesis testing – Reliability

Independent variable	Hypothesis	Reject H_0
Reliability	H_0: There is no significant relationship between reliability and customer retention.	$\alpha = 0.10$ P-value = <0.001(<0.10) There is a significant relationship.

Table 5.2:

Summary of past studies – Reliability

Independent Variable	Past studies		
	Significant		Insignificant
	Positive	Negative	
Reliability	Shankar and Jebarajakirthy (2019)	-	Beshir and Zelamen (2020)
	Das and Ravi (2021)	-	-
	Hammoud et al. (2018)	-	-
	Raza et al. (2020)	-	-

	Indrasari, Nadjmie & Endri. (2022).	-	-
	Sameer & Enas. (2019)	-	-
	Sleimi, Karam & Qubbaj. (2018)	-	-

The H_0 of reliability has been rejected as the p-value (0.001) is lower than the alpha value (0.10). This result indicates a significant and positive relationship between reliability and customer retention. This agreed by the study of Shankar and Jebarajakirthy (2019), Das and Ravi (2021), Hammoud et al. (2018), Raza et al. (2020), Indrasari, Nadjmie & Endri. (2022)., Sameer & Enas. (2019), Sleimi, Karam & Qubbaj. (2018). Das and Ravi (2021) claimed that promised services should be offered by the bank to satisfy the e-banking users' reliability concerns. The satisfaction of e-banking users will increase as the more reliable the information, the higher the customer satisfaction with the service (Raza et al., 2020). However, this result was not agreed by Beshir and Zelamen (2020) as they make a conclusion where there is no significant relationship between reliability and customer satisfaction. The insignificant result may be caused by the bank chosen is different. Since Beshir and Zelamen (2020) has targeted Commercial Bank of Ethiopia (CBE) in Bahir Dar, which is different country with Maybank, thus, the study might not be applicable to Malaysia because of the cultural difference, and different needs and attitudes. In contrast, our targeted group is Maybank2u online banking users in Malaysia which majority agreed that reliability is one of the important factors which will significantly impact the customer retention level.

5.1.2 Privacy and security

Table 5.3:

Summary of hypothesis testing – Privacy and Security

Independent variable	Hypothesis	Reject H_0

Privacy and Security	H_0: There is no significant relationship between privacy and security and customer retention.	$\alpha = 0.10$ P-value = 0.047 (<0.10) There is a significant relationship.

Table 5.4:

Summary of past studies – Privacy and Security

Independent Variable	Past studies		
	Significant		Insignificant
	Positive	Negative	
Privacy and Security	Das and Ravi (2021)	-	-
	Konalingam et al. (2017)	-	-
	Hammoud et al. (2018)	-	-
	Shankar and Jebarajakirthy (2019)	-	-
	Ahmed et al. (2021)	-	-

For privacy and security, the result indicates that customer retention and privacy and security have a significant relationship as H_0 has been rejected due to the p-value (0.047) is smaller than the alpha (0.10). The result obtained is in line with the past studies by Das and Ravi (2021), Konalingam et al. (2017), Hammoud et al. (2018), Shankar and Jebarajakirthy (2019), and Ahmed et al. (2021). When utilizing electronic banking, customers are concerned about the security level of their financial transactions and personal information. Hence, the study also suggests that banks should make sure that customers' private information is not disclosed to any third parties (Das and Ravi, 2021). Konalingam et al. (2017) also stated that customers will end up being loyal to the bank if the bank manages to protect the privacy and confidentiality of customer information. The COVID-19 pandemic has accelerated the adoption of e-banking while also increasing awareness of the level of privacy and security in the e-banking system. Hence, the data collected by this study indicated the importance of privacy and security level as it will significantly affect customer retention level.

5.1.3 Responsiveness

Table 5.5:
Summary of hypothesis testing – Responsiveness

Independent variable	Hypothesis	Do not reject H_0
Responsiveness	H_0: There is no significant relationship between responsiveness and customer retention.	$\alpha = 0.10$ P-value = 0.513 (>0.10) There is no significant relationship.

Table 5.6:
Summary of past studies – Responsiveness

Independent Variable	Past studies		
	Significant		Insignificant
	Positive	Negative	
	Sharma (2018)	-	Sleimi et al. (2018)
	Hammoud et al. (2018)	-	-
Responsiveness	Raza et al. (2020)	-	-
	Beshir and Zelamen (2020)	-	-
	Sharma et al. (2020)	-	-

According to the results, there is no significant relationship between responsiveness and consumer retention, with a p-value of 0.513 (more than α = 0.10). As a result, the alternative hypothesis of responsiveness was rejected. This result in fact contradicts earlier research by Sharma (2018), Hammoud et al. (2018), Raza et al. (2020), Beshir and Zelamen (2020), and Sharma et al. (2020). Those researchers indicate that responsiveness is a significant factor that affects customer retention. According to Raza et al. (2020), responsiveness can keep customers' attention, and quick reaction times can boost customer loyalty. In contrast, the result is aligned with the past research of Sleimi et al. (2018). The researchers discovered there is no significant relationship between responsiveness and customer satisfaction.

5.1.4 Services Quality

Table 5.7:
Summary of hypothesis testing – Services Quality

Independent variable	Hypothesis	Reject H_0
Services Quality	H_0: There is no significant relationship between service quality and customer retention.	$\alpha = 0.10$ P-value = <.001 (<0.10) There is a significant relationship.

Table 5.8:
Summary of past studies – Services Quality

Independent Variable	Past studies		
	Significant		Insignificant
	Positive	Negative	
Services Quality	Bashir et al. (2020)	-	Indrasari et al. (2022)
	Prasadh and Arun (2019)	-	-
	Nustini and Fadhila (2020)	-	-
	Sasono et al. (2021)	-	-

In this research, the findings show that service quality has a p-value of <0.001 (less than $\alpha = 0.10$), indicating that it has a significant relationship with consumer retention. Similar findings were obtained by Bashir et al. (2020), Prasadh and Arun (2019), Nustini and Fadhila (2020), as well as Sasono et al. (2021). According to Nustini and Fadhila (2020), people will prefer to choose a bank's e-banking services with a good quality service that are beneficial to them. Bashir et al. (2020) also stated that customers will not retain a bank that provides poor service quality. However, this result did not align with the finding of Indrasari et al. (2022). The insignificant result could be attributed to the fact that the research was conducted empirically during the COVID-19 pandemic, when banking offices were not operating

as usual, and thus customer satisfaction was not directly affected by the quality of services.

5.1.5 Customer Service & Support

Table 5.9:
Summary of hypothesis testing – Customer Service & Support

Independent Variable	Hypothesis	Reject H_0
Customer Service & Support	H_0 : There is not significant relationship between customer service & support and customer retention	$\alpha = 0.10$ P-value = 0.061 (<0.10) There is a significant relationship.

Table 5.10:
Summary of Past Studies – Customer Service & Support

Independent Variable	Past Studies		
	Significant		Insignificant
	Positive	Negative	
Customer Service & Support	Ullah (2021)	Indrasari et al. (2022)	Haq and Awan (2020)
	Rahi et al. (2017)	Shankar and Jebarajakirthy (2019)	-

Based on the findings that we generated from SPSS, we find that customer service & support has influenced consumers' retention of Maybank's electronic banking services. In other words, it showed that the customers who took part in the survey believed customer service & support might be regarded as a crucial component in forming their consumers' retention towards Maybank's electronic banking services. Other than that, the result also showed that customer service & support has affected the customer retention of Maybank's electronic banking services positively because the p-value (0.061) is smaller than the significance level 0.10. Therefore, reject the null hypothesis and conclude that there is a significant relationship between customer service & support and customer retention. On the other hand, there is previous research by Ullah (2021), Rahi et al. (2017) was consistent with and in support of this result. In essence, this demonstrates

that customer service & support will have an impact on consumers' willingness to continue using Maybank's electronic banking services. However, this result was not agreed by Indrasari et al. (2022), Shankar and Jebarajakirthy (2019), and Haq and Awan (2020). They concluded that customer service & support did not have a significant relationship with customer retention.

5.1.6 Web Designs

Table 5.11:

Summary of hypothesis testing – Web Designs

Independent Variable	Hypothesis	Reject H_0
Web Designs	H_0 : There is not significant relationship between Web Designs and Customer Retention	$\alpha = 0.10$ P-value = <0.001 (<0.10) There is a significant relationship.

Table 5.12:

Summary of past studies – Web Designs

Independent Variable	Past Studies		
	Significant		Insignificant
	Positive	Negative	
Web Designs	Konalingam et al. (2017)	Haq and Awan (2020)	Shankar and Jebarajakirthy (2019)
	Das & Ravi. (2021)	-	-
	Indrasari et al. (2022)	-	-
	Sharma (2018)	-	-
	Gill et al. (2021)	-	-
	Ullah (2021)	-	-

The results that we generated from SPSS indicate that web designs have a significant relationship with the consumers' retention of Maybank's electronic banking services. Based on the questionnaire that we collected, it shows that web designs will influence the customer retentions of Maybank's

electronic banking services. The obtained results show that this association is positive because the p-value (P= <0.001) meet the criteria of less than 0.10, respectively. This finding, which is consistent with those of Konalingam et al. (2017), Das & Ravi. (2021), Indrasari et al. (2022), as well as Sharma (2018), demonstrated that web designs should be considered as one of the factors that will affect the customer's retention of Maybank's electronic banking services. However, Haq and Awan (2020), and Shankar and Jebarajakirthy (2019) concluded that there is insignificant or negative relationship between Web Designs and customer retention. According to Haq and Awan (2020), the reason for the relationship is insignificant because of their hectic schedules, people typically pay little attention to website design, making the findings novel.

5.2 Implications of study

The purpose of this study is to determine the relationship between the dependent variable (DV), customer retention (CR) and independent variables (IVs) which are reliability (REL), privacy and security (PS), responsiveness (RES), service quality (SQ), customer service and support (CSS) as well as web design (WD). Chapter 4's findings indicate that there is an insignificant relationship between CR and RES but significant relationship between the remaining IVs.

Firstly, this research can be a reference for future researchers to figure out variables that will affect customer retention in Malaysia's electronic banking services. The only variable which has an insignificant relationship between CR is RES. Therefore, it is advised that future scholars investigate other variables. The significant variables can be a support for future researchers' study to make the study more persuasive.

Furthermore, this study provides bankers a clear path to retain customers. All the IVs except RES are significant, which indicates that bankers should put more effort

into those features to increase banks' reputation and eventually raise customer loyalty. This is because it indicates that customers' loyalty will be affected by those features. Therefore, customers will only retain when they are satisfied with the services provided.

Lastly, banking institutions will also benefit from this research as they are the providers of electronic banking services. Banking institution should be familiar with the features that able to bring advantages for them when offering e-banking services such as REL, PS, SQ, CSS and WD which denotes that these IVs are significantly affecting customers retention in Malaysia's electronic banking services.

5.3 Limitation of the study

The main limitation of the study is that it examines solely on a particular bank, which may not be representative of all banks or financial institutions. This study only analyzes the data collected from Maybank users; thus, it limits the generalizability of the findings and may not be applicable to other banks with different structures, policies, and customer demographics. Therefore, the findings of the study should be interpreted with caution and should not be generalized to other banks without further investigation.

The population using Maybank2u reached a total of 10 million users in 2020. According to the sample size table's guidelines, only 300 questionnaires were distributed in this study. In comparison, 300 questionnaires only constitute a small sample size. The limitation of a small sample size is that it can limit the generalizability of the study findings to a larger population. The result might lead to biased or inaccurate conclusions because the 300 respondents might not be representative of the population. In addition, the research result may not have enough statistical power to identify the significant differences among variables.

Thirdly, this study solely paid attention to the six criteria of reliability, privacy & security, responsiveness, service quality, customer services & support, and web designs that influence customers' retention towards Maybank2u e-banking services. Although not examined in this study, there may be more factors that affect customer retention in Maybank's electronic banking services. Therefore, it is possible that there aren't enough independent variables in this study to fully explore consumers' retention of Maybank's electronic banking services.

5.4 Recommendation

To resolve the limited scope issue, a possible solution could be to expand the research to include multiple banks in the same market to ensure that the findings are more representative and generalizable. This limitation could be addressed by conducting similar studies across multiple banks to see if the findings are consistent or by selecting a more diverse sample of banks to increase the generalizability of the research.

Besides, the recommendation for future researchers is to increase the sample size whenever possible. They can distribute more survey forms across the country because larger sample sizes yield greater precision while reducing the risk of bias or errors. In order to accurately represent the large population, they must calculate the appropriate sample size while taking resource constraints and practical limitations into consideration.

Thirdly, it is advised that the researchers continue to broaden the research framework by including new variables to strengthen the research study and produce more accurate results. In more detail, in addition to reliability, privacy & security, responsiveness, service quality, customer services & support, and web designs, there may be some more factor that have an impact on customers' retentions to use Maybank's electronic banking services. Consider including factors like perceived risk, accessibility, awareness, and credibility in the research study since these can

have a big impact on the results and produce data that is more accurate and trustworthy.

5.5 Conclusion

Concisely, all the determinants have a positive effect toward customer retention except RES. Future researchers are encouraged to explore new determinants that would influence customer retention on electronic banking services. This study manages to provide recommendations to future researchers, bankers, and banking institutions.

References

Ahmed, R. R., Streimikiene, D., Channar, Z. A., Soomro, R. H., & Streimikis, J.
(2021). E-Banking Customer Satisfaction and Loyalty: Evidence from
Serial Mediation through Modified ES-QUAL Model and Second-Order
PLS-SEM. *Engineering Economics*, *32*(5), 407-
421. https://doi.org/10.5755/j01.ee.32.5.28997

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and
human decision processes, 50*(2), 179-211. https://doi.org/10.1016/0749-
5978(91)90020-T

Altobishi, T., Erboz, G., & Podruzsik, S. (2018). E-Banking effects on customer
satisfaction: The survey on clients in Jordan Banking Sector. *International
Journal of Marketing Studies*, *10*(2), 151-161.
https://doi.org/10.5539/ijms.v10n2p151

Are teens rising stars in the digital payments space? Find out. (2021). ETBFSI.
https://bfsi.economictimes.indiatimes.com/news/fintech/are-teens-rising-
stars-in-the-digital-payments-space-find-out/86089209

Bank Negara Malaysia (2004), Governor's Speech at the Official Launch of The
Financial Process Exchange (FPX), Speech by Governor of Bank Negara
Malaysia, Tan Sri Dato' Sri Dr. Zeti Akhtar Aziz at Mutiara Hotel, Kuala
Lumpur, 28 October, https://www.bnm.gov.my/-/governor-s-speech-at-the-
official-launch-of-the-financial-process-exchange-fpx-

Bank Negara Malaysia (2004a), Governor's Keynote Address at the Malaysian
Banking Summit 2004: Towards World-Class Banking - Efficient, Effective
and Resilient Banking System, Speech by Governor of Bank Negara

Malaysia, Tan Sri Dato' Sri Dr. Zeti Akhtar Aziz at Nikko Hotel Kuala Lumpur, 14 May, https://www.bnm.gov.my/-/governor-s-keynote-address-at-the-malaysian-banking-summit-2004-towards-world-class-banking-efficient-effective-and-resilient-banking-system-

Bank Negara Malaysia. (2021). *Annual report 2021.* https://www.bnm.gov.my/documents/20124/6458991/ar2021_en_book.pdf

Bank Negara Malaysia. (n.d.) Payment systems in Malaysia. https://www.bnm.gov.my/documents/20124/73168/EMEAP_redbook.pdf

Bashir, M. A., Ali, M. H., Wai, L. M., Hossain, M. I., & Rahaman, M. S. (2020). Mediating effect of customer perceived value on the relationship between service quality and customer satisfaction of E-Banking in Bangladesh. *International Journal of Advanced Science and Technology*, *29*(2), 3590-3606. http://sersc.org/journals/index.php/IJAST/article/view/33104

Beshir, E., & Zelalem, B. (2020). The effect of e-banking service quality on customer's satisfaction and loyalty. *The Strategic Journal of Business & Change Management*, *7*(3), 818-832. https://bit.ly/3GToXIC

Bhandari, P. (2022, November 24). *What Is Quantitative Research? | Definition, Uses & Methods.* Scribbr. Retrieved April 17, 2023, from https://www.scribbr.com/methodology/quantitative-research/

Chigori, D., Viljoen, K., Ford, M., & Cilliers, L. (2020). Mobile phone banking: A comparative analysis of e-service quality and customer loyalty of banking applications and Unstructured Supplementary Service Data services. *Journal of Economic and Financial Sciences*, *13*(1), 11. https://doi.org/10.4102/jef.v13i1.471

Clow, K. E., & James, K. E. (2013). *Essentials of marketing research: Putting research into practice.* SAGE publications. https://doi.org/10.4135/9781483384726

Das, S. A., & Ravi, N. (2021). A study on the impact of e-banking service quality on customer satisfaction. *Asian Journal of Economics, Finance and Management*, 48-56. https://bit.ly/3MRuaV5

Daud, N. M., Kassim, N. E. M., Said, W. S. R. W. M., Noor, M. M. M. (2011). Determining critical success factors of mobile banking adoption in Malaysia. *Australian Journal of Basic and Applied Sciences*, *5*(9), 252-265. https://bit.ly/40xssM9

Digital banking boost. (2021, February 20). Digital banking boost. *The Star.* https://www.thestar.com.my/business/business-news/2021/02/20/digital-banking-boost

Drigă, I., & Isac, C. (2014). E-banking services–features, challenges and benefits. *Annals of the university of Petrosani. Economics*, *14*, 49-58. https://bit.ly/3A4e8jk

Dudovskiy, J. (2016). *Data Collection Methods*. Business Research Methodology. https://research-methodology.net/research-methods/data-collection/

Frost, J. (2019). Regression analysis: An intuitive guide for using and interpreting linear models. Statisics By Jim Publishing. https://bit.ly/3KO1KsH

Gill, A. A., Ansari, R. H., Akram, K., & Tufail, M. W. (2021). Application of cognitive motivational relational theory to examine the influence of e-banking quality factors on customer loyalty. *Journal of Accounting and*

Finance in Emerging Economies, *7*(1), 241-249. https://doi.org/10.26710/jafee.v7i1.1608

Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American journal of health promotion*, *11*(2), 87-98. https://doi.org/10.4278/0890-1171-11.2.87

Guru, B. K., Vaithilingam, S., Ismail, N., & Prasad, R. (2001). Electronic banking in Malaysia: A note on evolution of services and consumer reactions. Electronic Banking: The Ultimate Guide to Business and Technology of Online Banking, 135-147. http://dx.doi.org/10.1007/978-3-322-86627-1_15

Hammoud, J., Bizri, R. M., & El Baba, I. (2018). The impact of e-banking service quality on customer satisfaction: Evidence from the Lebanese banking sector. *Sage Open*, *8*(3), 2158244018790633. https://doi.org/10.1177/2158244018790633

Haq, I. U., & Awan, T. M. (2020). Impact of e-banking service quality on e-loyalty in pandemic times through interplay of e-satisfaction. *Vilakshan-XIMB Journal of Management*, *17*(1/2), 39-55. https://doi.org/10.1108/XJM-07-2020-0039

Hassanuddin, N.A., Abdullah, Z., Mansor, N., & Hassan, N. (2012). Acceptance towards the Use of Internet Banking Services of Cooperative Bank. https://bit.ly/40lS3r0

Indrasari, A., Nadjmie, N., & Endri, E. (2022). Determinants of satisfaction and loyalty of e-banking users during the COVID-19 pandemic. *International Journal of Data and Network Science*, *6*(2), 497-508. 10.5267/j.ijdns.2021.12.004

Jo, A., & Mo, A. (2018). Factors influencing customer satisfaction and loyalty to internet banking services among undergraduates of a Nigerian university. *Journal of Internet Banking and Commerce*, *23*(1), 1-21. https://bit.ly/41ySM9m

Khandelwal, S. (2013). E Banking: Factors of Adoption in India. *Journal Impact Factor*, *4*(2), 01-08. https://bit.ly/3A4dimG

Khoo, S. S. (2020). COVID-19 and Malaysian Banking Industry: Problems Faced by Bank Marketing and Strategies to Promote Services and Bank Brands. SSRN Electronic Journal. 10.2139/ssrn.3653889. http://dx.doi.org/10.2139/ssrn.3653889

Konalingam, K., Ratnam, U., Sivapalan, A., & Naveen, M. (2017). „Enhancing Customer Loyalty Through E-Banking Practices ". *University of Jaffna, Sri Lanka, str*, *45*. 10.5296/bms.v8i2.12054

Laycock, R. (2022). *Digital Only Banking Adoption 2022*. Finder. https://www.finder.com/my/digital-banking-statistics

Lee, C., & Chew-Ging, L. (2017). The evolution of development planning in Malaysia. *Journal of Southeast Asian Economies*, 436-461. https://bit.ly/3UInhaO

Mansur, S., Yuliawati, E., Saragih, N., Daniel, R., Susilo, A., & Endri, E. (2022). PUBLIC PERCEPTION ON THE QUALITY OF ONE STOP PUBLIC SERVICE MALL. Journal of Management Information & Decision Sciences, 25. https://bit.ly/418LglP

Mukaka, M. M. (2012). A guide to appropriate use of correlation coefficient in medical research. *Malawi medical journal*, *24*(3), 69-71. https://www.ajol.info/index.php/mmj/article/view/81576

Nustini, Y., & Fadhillah, N. (2020). Factors that Influence the Use of e-Banking and the Effect on Consumptivism. *Review of Integrative Business and Economics Research*, *9*, 330-345. https://bit.ly/43DUTL0

Prasadh, R. R., & Arun, C. J. (2019). Mediating Effects of Customer Satisfaction in the Relationship between Service Quality and Customer Loyalty in E-Banking Services. *Indian Journal of Economics & Business*, *18*(2), 487-504. https://bit.ly/43EaUR4

PwC Malaysia. (2019). *Virtual banking: Malaysian customers take charge*. https://www.pwc.com/my/en/assets/workshops/2019/virtual-banking-malaysian-customers-take-charge-report.pdf

Rahi, S., Abd Ghani, M., & Alnaser, F. M. (2017). The influence of e-customer services and perceived value on brand loyalty of banks and internet banking adoption: a structural equation model (SEM). *The Journal of Internet Banking and Commerce, 22*(1), 1-18. https://bit.ly/3KMK28K

Raza, S. A., Umer, A., Qureshi, M. A., & Dahri, A. S. (2020). Internet banking service quality, e-customer satisfaction and loyalty: the modified e-SERVQUAL model. *The TQM Journal*. https://doi.org/10.1108/TQM-02-2020-0019

Russo, D., & Stol, K. J. (2021). PLS-SEM for Software Engineering Research: An Introduction and Survey. ACM Comput. Surv., 54(4), 1-38. https://doi.org/10.1145/3447580

Sameer, I. & Enas, A. (2019). Exploratory Study of Implementing E- Banking on Customer Satisfaction: Evidence from bank of Maldives. 10.13140/RG.2.2.20792.49922

Sasono, I., Jubaedi, A. D., Novitasari, D., Wiyono, N., Riyanto, R., Oktabrianto, O., Jainuri, J., & Waruwu, H. (2021). The Impact of E-Service Quality and Satisfaction on Customer Loyalty: Empirical Evidence from Internet Banking Users in Indonesia. Journal of Asian Finance, Economics and Business. https://doi.org/10.13106/jafeb.2021.vol8.no4.0465

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.). West Sussex, United Kingdom: John Wiley & Sons. https://www.uts.cw/sites/default/files/webform/pdf-research-methods-for-business-a-skill-building-approach-uma-sekaran-roger-bougie-pdf-download-free-book-c991c9a.pdf

Shankar, A., & Jebarajakirthy, C. (2019). The influence of e-banking service quality on customer loyalty: A moderated mediation approach. *International Journal of Bank Marketing*. https://doi.org/10.1108/IJBM-03-2018-0063

Shankar, A., & Kumari, P. (2016). Factors affecting mobile banking adoption behavior in India. *The Journal of Internet Banking and Commerce*, *21*(1). https://bit.ly/2L3724y

Sharma, J., Singh, J., & Singh, A. (2020). Impact of E-Banking Service Quality on Customer Satisfaction. *Int. J. Recent Technol. Eng*, *8*(5), 2296-2300. 10.35940/ijrte.E5841.018520

Sharma, N. (2018). Analysis of Customer Satisfaction towards E-Banking Services with Special Reference to Jaipur District. *International journal of economic perspectives*, *12*(1), 20-35. https://bit.ly/3KFzh8i

Sleimi, M. T., Karam, A. A., & Qubbaj, I. S. (2018). The impact of e-banking services quality on customers satisfaction moderated by customer trust: survey on Arab Bank in Amman, Jordan. 10.5281/zenodo.1405450

Sudha, R., Thiagarajan, A. S., & Seetharaman, A. (2007). The security concern on
Internet banking adoption among Malaysian Banking Customers. *Pakistan
journal of biological sciences: PJBS*, *10*(1), 102-106.
10.3923/pjbs.2007.102.106

Suhaidi, N. (2021). *Digital banking preference accelerates in APAC*. The
Malaysian Reserve. https://themalaysianreserve.com/2021/09/27/digital-
banking-preference-accelerates-in-apac/

Sulaiman, A., CH, L., & Wee, A. (2005). Prospects and Challenges of E-banking
in Malaysia. *The Electronic Journal of Information Systems in Developing
Countries*, *22*(1), 1-11. http://dx.doi.org/10.1002/j.1681-
4835.2005.tb00139.x

Tamaruddin, T., Firdaus, A., & Endri, E. (2020). Customer satisfaction mediates
the effect of self service technology on customer loyalty in of islamic bank
E-banking services in indonesia. *ILTIZAM Journal of Shariah Economics
Research*, *4*(2), 1-15. https://doi.org/10.30631/iltizam.v4i2.596

The impact of COVID-19 on Malaysia's looming digital banking revolution. (2020).
Business Today. https://www.businesstoday.com.my/2020/04/20/the-
impact-of-covid-19-on-malaysias-looming-digital-banking-revolution/

Tranmer, M., Murphy, J., Elliot, M., & Pampaka, M. (2020). Multiple linear
regression: Cathie Marsh Institute Working
Paper. https://hummedia.manchester.ac.uk/institutes/cmist/archive-
publications/working-papers/2020/multiple-linear-regression.pdf

Ullah, N. (2021). The Influence Of E-Banking Service Quality on Customer
Loyalty: A Moderated Mediation Approach. https://bit.ly/41fHAyx

Weedmark, D. (2018). *The Advantages & Disadvantages of a Multiple Regression Model*. Retrieved from SCIENCING: https://sciencing.com/advantages-disadvantages-multiple-regression-model-12070171.html

Wolfinbarger, M. & Gilly, M.C. (2003), eTailQ: dimensionalizing, measuring and predicting etail quality. *Journal of Retailing, 79*(3), 183-198. https://doi.org/10.1016/S0022-4359(03)00034-4

APPENDICES

Appendix 1.1: Summary table of literature review

Variables	Author	Result	Expected Result
Privacy & Security	Shankar & Jebarajakirthy (2019)	Positive and Significant Relationship	Positive Relationship
	Konalingam et al. (2017)	Positive and Significant Relationship	
	Chigori et al. (2020)	Significant Relationship	
	Altobishi et al. (2018)	No Statistical Relationship	
	Haq & Awan. (2020)	Insignificant Relationship	
	Das & Ravi. (2021)	Significant Relationship	
	Hammoud et al. (2018).	Positive Relationship	
	Indrasari et al. (2022)	Positive and Significant Relationship	
	Ahmed et al. (2021)	Positive and Significant Relationship	
Reliability	Shankar & Jebarajakirthy. (2019)	Positive and Significant Relationship	Positive Relationship
	Das & Ravi. (2021)	Significant Relationship	
	Indrasari et al. (2022)	Positive and Significant Relationship	
	Beshir, & Zelalem. (2020).	Insignificant Relationship	
	Sharma & Singh. (2020).	Insignificant Relationship	
	Hammoud et al. (2018).	Significant Relationship	
	Haq & Awan. (2020)	Insignificant Relationship	
	Sameer & Enas. (2019)	Positive and Significant Relationship	

	Sleimi, Karam & Qubbaj. (2018)	Positive and Significant Relationship	
	Ullah. (2021).	Significant Relationship	
	Raza et al. (2020).	Positive and Significant Relationship	
Web Design	Konalingam et al. (2017)	Positive and Significant Relationship	Positive Relationship
	Das & Ravi. (2021)	Significant Relationship	
	Indrasari et al. (2022)	Positive and Significant Relationship	
	Sharma. (2018)	Positive and Significant Relationship	
	Gill et al. (2021)	Significant Relationship	
	Haq & Awan. (2020)	Negative Relationship	
	Shankar & Jebarajakirthy. (2019)	Insignificant Relationship	
	Ullah. (2021)	Significant Relationship	
Customer Services & Support	Haq & Awan (2020)	Insignificant Relationship	Negative Relationship
	Indrasari et al. (2022)	Negative and insignificant Relationship	
	Shankar & Jebarajakirthy (2021)	Insignificant Relationship	
	Ullah (2021)	Significant Relationship	
Responsiveness	Beshir & Zelalem (2020)	Positive and Significant Relationship	Positive Relationship
	Sharma et al. (2020)	Significant Relationship	
	Sharma (2018)	Positive Relationship	
	Sleimi et al. (2018)	Insignificant Relationship	

	Hammoud et al. (2018)	Positive and Significant Relationship	
	Raza et al. (2020)	Positive and Significant Relationship	
	Jo & Mo (2018)	Significant Relationship	
Service Quality	Abil Das & Nima Ravi. (2021)	Significant Relationship	Positive Relationship
	Bashir & Ali (2019)	Positive Relationship	
	Prasadh & Arun (2019)	Positive Relationship	
	Tamaruddin et al. (2020)	Significant Relationship	
	Nustini & Fadhillah (2020)	Positive Relationship	
	Sasono et al. (2021)	Positive and Significant Relationship	

Appendix 2.1: Questionnaire

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Dear Sir/Madam,

We are students from the Faculty of Business and Finance, at Universiti Tunku Abdul Rahman (UTAR). Currently, we are conducting research for final year project entitled "Examining the Factors Influencing the Consumer Electronic Banking Services Retention in Malaysia" under the supervision of Assistant Professor Dr William Choo Keng Soon (chooks@utar.edu.my). This study is approved by the UTAR Scientific and Ethical Review Committee and the reference number for the approval document is U/SERC/192/2022.

The questionnaire consists of seven sections, there are sections A, B, C, D, E, F, G and H. You are required to complete all the sections of this questionnaire. The questionnaires will take approximately 12 minutes to complete.

There are no predictable physical or non-physical risks from your participation in this final year project. On top of that, you may not receive direct benefits from being part of this final year project. Nevertheless, your participation will help us get more information about the selected variables in the understanding of enhancing customer loyalty in Malaysia's electronic banking services.

Participation in this final year project is completely voluntary and there is no negative consequence if you decided not to participate. Your responses are anonymous, and all your information will be kept confidential. The information given by participants will be completely used for academic purposes. I greatly appreciate your participation in this final year project. If you have any questions regarding this research project, you may contact me at chiaqi18@1utar.my

Name of Student	Student ID
Chang Chia Qi	19ABB01753
Chee Yong Er	19ABB03926
Dylan Ch'ng Seng Huan	20ABB01354
Goh Yong Dian	19ABB03426

Faculty of Business and Finance

Universiti Tunku Abdul Rahman

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

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1. The purposes for which your personal data may be used are inclusive but not limited to:-
   - For assessment of any application to UTAR
   - For processing any benefits and services
   - For communication purposes
   - For advertorial and news
   - For general administration and record purposes
   - For enhancing the value of education
   - For educational and related purposes consequential to UTAR
   - For the purpose of our corporate governance
   - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in

respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at chiaqi18@1utar.my.

Acknowledgment of Notice

[   ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.

[   ] I disagree, my personal data will not be processed.

Section A: Demographic Information

Please choose the correct answer.

1. Gender
   o Male
   o Female

2. Age
   o 18 – 35
   o 31 – 45
   o 46 – 59
   o 60 & above

3. Education level
   o SPM / O Level
   o Foundation / Diploma / STPM / A Level / Matriculation
   o Bachelor's degree
   o Master's Degree
   o Other:

4. Monthly income
   o < RM2,500
   o RM2,501 to RM4,000
   o RM4,001 to RM6,000
   o >RM6,000

5. Do you use Maybank2u?
   o Yes
   o No

Section B: Customer Retention (CR)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions	Scale

CR1	I recommend e-banking to people who seek my opinion.	1	2	3	4	5
CR2	I have positive things to say to other people about e-banking.	1	2	3	4	5
CR3	The e-banking services offered meet my needs and expectation.	1	2	3	4	5
CR4	I will use e-banking regularly in the future.	1	2	3	4	5
CR5	This bank is my first choice for my needs in e-banking services.	1	2	3	4	5
CR6	I will continue to use e-banking services in the future.	1	2	3	4	5

Section C: Reliability (REL)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		Scale				
REL1	I can perform my banking transaction via the e-banking platform.	1	2	3	4	5
REL2	E-banking websites provide me with the information's regards to the usage and feature.	1	2	3	4	5
REL3	I am confident with e-banking services.	1	2	3	4	5
REL4	I feel I save more time when using e-banking services.	1	2	3	4	5
REL5	E-banking services are more reliable than traditional banking services.	1	2	3	4	5
REL6	E-banking services channel is constantly operational.	1	2	3	4	5

Section D: Privacy and Security (PS)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		Scale				
PS1	I feel protected in disclosing sensitive data for my e-banking transactions.	1	2	3	4	5
PS2	I believe e-banking website has applied advanced multi-level authentication and behavior analysis to avoid unauthorized access to my account.	1	2	3	4	5
PS3	My personal information is never disclosed through e-banking without my permission.	1	2	3	4	5
PS4	I am satisfied with the security system of e-banking.	1	2	3	4	5
PS5	I believe none of the personal information that I provide in e-banking will be sold to anyone.	1	2	3	4	5
PS6	I believe that my personal information that I provide in e-banking will not be disclosed to bank's customers, former customers, website visitors, former staff, except when permitted or mandated by law.	1	2	3	4	5

Section E: Responsiveness (RES)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		Scale				
RES1	E-banking provides prompt e-banking service.	1	2	3	4	5
RES2	E-Banking always delivers its services around the clock.	1	2	3	4	5
RES3	E-Banking responsiveness to customer requests.	1	2	3	4	5
RES4	E-Banking availability to assist customers.	1	2	3	4	5
RES5	E-banking availability of customer service personnel for dealing with customer complaints.	1	2	3	4	5
RES6	E-banking informs customers when services will be performed.	1	2	3	4	5

Section F: Service Quality (SQ)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		Scale				
SQ1	E-banking services are different from traditional banking services.	1	2	3	4	5
SQ2	E-banking services fulfill customers' daily banking transactions	1	2	3	4	5
SQ3	E-banking services are satisfactory.	1	2	3	4	5
SQ4	The ability of E-banking services to guide customers to resolve problems.	1	2	3	4	5
SQ5	The quality of e-banking services provided is well supported.	1	2	3	4	5
SQ6	Customer feedback is available on the e-banking platform.	1	2	3	4	5

Section G: Customer Services and Support (CSS)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		Scale				
CSS1	Customer service personnel are available at any time.	1	2	3	4	5
CSS2	Customer service personnel know well the e-banking services.	1	2	3	4	5
CSS3	Customer service personnel are helpful in assisting with the inquiry and troubleshooting.	1	2	3	4	5
CSS4	Customer service personnel provide sufficient financial information.	1	2	3	4	5
CSS5	Customer services in e-banking are consistent standards.	1	2	3	4	5

CSS6	Customer service personnel recommend customers use the latest features of e-banking services	1	2	3	4	5

Section H: Web Design (WD)

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Questions		**Scale**				
WD1	The e-banking website is user-friendly.	1	2	3	4	5
WD2	E-banking website provide me with information that is well organized and understandable.	1	2	3	4	5
WD3	When using the E-banking service, no login issues, slowness, or connectivity problems are encountered.	1	2	3	4	5
WD4	There are no banner advertisements or pop-ups on the e-banking website.	1	2	3	4	5
WD5	The web pages are simple to navigate.	1	2	3	4	5
WD6	The information on e-banking website is complete and always up to date.	1	2	3	4	5

Appendix 3.1: Sources of Questionnaire

Section B: Customer Retention (CR)		Original Content	Sources
CR1	I recommend e-banking to people who seek my opinion.	I recommend this bank to anyone who seeks my advice.	Prasadh, R. R. (2018)
CR2	I have positive things to say to other people about e-banking.	I would like to say positive things about e-banking to other people.	Shankar & Jebarajakirthy (2019)
CR3	The e-banking services offered meet my needs and expectation.	-	Developed in research.
CR4	I will use e-banking regularly in the future.	-	Developed in research.
CR5	This bank is my first choice for my needs in e-banking services.	I consider this bank the first choice for my e-banking service needs.	Prasadh, R. R. (2018)
CR6	I will continue to use e-banking services in the future.	I intend to continue using the online banking.	Raza et al. (2020)

Section C: Reliability (REL)		Original Content	Sources
REL1	I can perform my banking transaction via	-	Developed in research.

	the e-banking platform.		
REL2	E-banking websites provide me with the information's regards to the usage and feature.	-	Developed in research.
REL3	I am confident with e-banking services.	E-banking services is reliable and dependable.	Hammoud et al. (2018)
REL4	I feel I save more time when using e-banking services.	-	Developed in research.
REL5	E-banking services are more reliable than traditional banking services.	I prefer using e-banking services instead of visiting the branch for doing my transactions.	Hammoud et al. (2018)
REL6	E-banking services channel is constantly operational.	I have always found e-banking services channels in working order.	Hammoud et al. (2018)

Section D: Privacy and Security (PS)		Original Content	Sources
PS1	I feel protected in disclosing sensitive data for my e-banking transactions.	-	Developed in research.
PS2	I believe e-banking website has applied	-	Developed in research.

		Original Content	Sources
	advanced multi-level authentication and behavior access analysis to avoid unauthorized to my account.		
PS3	My personal information is never disclosed through e-banking without my permission.	-	Developed in research.
PS4	I am satisfied with the security system of e-banking.	I am satisfied with the security system.	Poon (2008)
PS5	I believe none of the personal information that I provide in e-banking will be sold to anyone.	-	Developed in research.
PS6	I believe that my personal information that I provide in e-banking will not be disclosed to bank's customers, former customers, website visitors, former staff, except when permitted or mandated by law.	-	Developed in research.

Section E: Responsiveness (RES)	Original Content	Sources

RES1	E-Banking provides prompt e-banking service.	I think the online banking gives prompt service.	Raza et al. (2020)
RES2	E-Banking always delivers its services around the clock.	E-Banking services are available 24/7.	Hammoud et al. (2018)
RES3	E-Banking responsiveness to customer requests.	E-Banking services respond immediately to clients' requests.	Hammoud et al. (2018)
RES4	E-Banking availability to assist customers.	-	Developed in research.
RES5	E-banking availability of customer service personnel for dealing with customer complaints.	Bank deals respectfully with customer complaints about electronic service.	Hammoud et al. (2018)
RES6	E-banking informs customers when services will be performed.	The online banking should inform customers exactly when services will be performed.	Raza et al. (2020)

Section F: Service Quality (SQ)		Original Content	Sources
SQ1	E-banking services are different from traditional banking services.	-	Developed in research.
SQ2	E-banking services fulfill customers' daily banking transactions	I am satisfied with the transaction processing via E-Banking services.	Hammoud et al. (2018)

SQ3	E-banking services are satisfactory.	I am satisfied with the bank's e-services quality.	Hammoud et al. (2018)
SQ4	The ability of E-banking services to guide customers to resolve problems.	-	Developed in research.
SQ5	The quality of e-banking services provided is well supported.	-	Developed in research.
SQ6	Customer feedback is available on the e-banking platform.	-	Developed in research.

Section G: Customer Services and Support (CSS)		Original Content	Sources
CSS1	Customer service personnel are available at any time.	E-banking customer care team can be accessed at any time (24/7 operating hours)	Shankar and Jebarajakirthy (2019)
CSS2	Customer service personnel know well the e-banking services.	Customer service personnel are knowledgeable of e-banking services during COVID-19.	Haq and Awan (2020)
CSS3	Customer service personnel are helpful in assisting with the inquiry and troubleshooting.	-	Developed in research.

CSS4	Customer service personnel provide sufficient financial information.	-	Developed in research.
CSS5	Customer services in e-banking are consistent standards.	-	Developed in research.
CSS6	Customer service personnel recommend customers use the latest features of e-banking services	Do your bank employee helps to use all the latest features of e-banking services?	Ullah (2021)

Section H: Web Design (WD)	Original Content	Sources
WD1	The e-banking website is user-friendly.	The e-banking website is easy to use	Shankar and Jebarajakirthy (2019)
WD2	E-banking website provide me with information that is well organized and understandable.	The e-banking website is well organized.	Shankar and Jebarajakirthy (2019)
WD3	When using the E-banking service, no login issues, slowness, or connectivity problems are encountered.	Do you not feel log-in, lagging and connectivity issue while using E-banking service of your bank?	Ullah (2021)
WD4	There are no banner advertisements or pop-ups on the e-banking website.	The website does not contain too many pop-ups and banner advertisement that	Vinayes and Jindal (2011)

		make it difficult for me to look on the webpage.	
WD5	The web pages are simple to navigate.	Navigation and management of e-banking services are easy.	Liébana-Cabanillas et al. (2013)
WD6	The information on e-banking website is complete and always up to date.	The bank's website has complete and up-to-date information.	Prasadh (2018)

Appendix 3.2: Measuring Scale of Reliability Test for Cronbach's Alpha

Reliability Test

Cronbach's Alpha	Consistency
Above 0.90	Strong
0.80-0.90	Very Good
0.70-0.80	Satisfaction
0.60-0.70	Acceptable
Below 0.60	Unacceptable
Negative Value	Error

From Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill for business: A skill building approach* (7th ed.). West Sussex, United Kingdom: John Wiley & Sons Ltd.

Appendix 3.3: Rule of Thumb for Interpreting the Size of a Correlation Coefficient

Size of Correlation	Interpretation
0.90 to 1.00 (-0.90 to -1.00)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (-0.00 to -0.30)	Negligible correlation

From Mukaka, M. M. (2012). A guide to appropriate use of correlation coefficient in medical research. *Malawi medical journal*, *24*(3), 69-71.

Appendix 4.1: Certification letter from UTAR

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)

Wholly owned by UTAR Education Foundation (200201010564(578227-M))

Faculty of Business and Finance
Jalan Universiti, Bandar Barat, 31900 Kampar, Perak
Phone: 05-468-8888
https://fbf.utar.edu.my/

19th August 2022

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their Bachelor of Business Administration (Honours) Banking and Finance program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:

Name of Student	Student ID
Chang Chia Qi	19ABB01753
Chee Yong Er	19ABB03926
Dylan Ch'Ng Seng Huan	20ABB01354
Goh Yong Dian	19ABB03426

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

……………………………….

Mr Chong Tun Pin
Head of Department
Faculty of Business and Finance
Email: chongtp@utar.edu.my