

# **SERVICE CONVENIENCE OF ONLINE BANKING TOWARDS CUSTOMER LOYALTY**



**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

## SUPERVISOR APPROVAL

'We hereby admit that we have read this thesis and in our opinion this thesis meet the scope and quality for the purpose of awarding Bachelor Degree of Technology Management (Innovation Technology)'



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**SERVICE CONVENIENCE OF ONLINE BANKING  
TOWARDS CUSTOMER LOYALTY**

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**This report is submitted as part of the requirements for the award of the  
Bachelor Degree of Technology Management (Innovation Technology)**



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**JANUARY 2024**

## DECLARATION

“I hereby admit that this is my own work except for summary of excerpt of which I had mentioned the source.”

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## DEDICATION

This research is dedicated to my wonderful parents, who have been a tremendous source of motivation and support for me. I would also like to dedicate my friends who helped and taught me much.

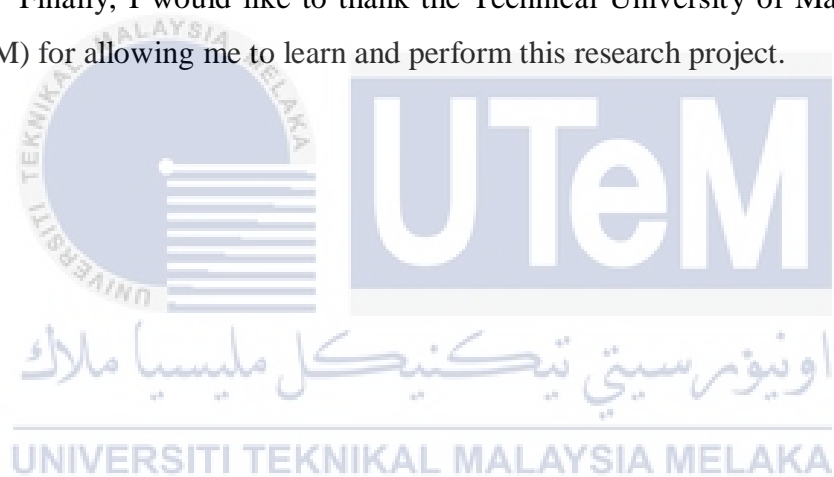


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## ABSTRACT

With the times change, technology has become more and more advanced. So, there is the emergence of online banking. The invention of online banking has brought a lot of benefits to humans, including helping people reduce time, energy and money consumption. People no longer need to go to neighbouring banks and may conduct all capital transactions through the Internet. Therefore, this research study is to investigate whether the service convenience of online banking will impact customer loyalty. This research study used a quantitative method, which is a survey questionnaire, to gather all the required data. The questionnaire for this study will use an online format such as Google Form to allow respondents to answer questions. The questionnaire in the Google Form will divide into three parts. The first part is about the respondents' demographic data, the second part is about the service convenience of online banking, and the last part will ask about the customer loyalty. The research focuses on a specific demographic group that lives in Malacca City, Melaka and has experience using online banking services. A sample size of 384 individuals participated in this study as part of the first phase of the research project. The pilot test has been used to measure the reliability and validity of the research. In this study, approximately 20 respondents were selected for the pilot test. The pilot test findings show the questionnaire exhibited a high degree of reliability. Multiple regression analysis and correlation analysis were used in this study to check for errors and analysed. Based on the findings, the service convenience of online banking greatly influences customer loyalty. It positively correlates with accessibility, usability, and flexibility toward customer loyalty. Among all the service convenience of online banking, flexibility contributes the most to customer loyalty. All the hypotheses for this research study were accepted. In a nutshell, accessibility, usability, and flexibility significantly impact the customer loyalty.

## ABSTRAK

Dengan perubahan zaman, teknologi telah menjadi semakin maju. Oleh itu, terdapat kemunculan perbankan dalam talian. Kemunculan perbankan dalam talian telah membawa banyak faedah kepada manusia, termasuk membantu orang ramai mengurangkan masa, tenaga dan penggunaan wang. Orang ramai tidak perlu lagi pergi ke institusi bank dan boleh menjalankan semua transaksi modal melalui Internet. Oleh itu, kajian ini adalah untuk menyiasat bahawa adakah kemudahan perkhidmatan perbankan dalam talian akan mempengaruhi kesetiaan pelanggan. Kajian ini telah menggunakan kaedah kuantitatif iaitu soal selidik tinjauan untuk mengumpulkan semua data yang diperlukan. Soal selidik untuk kajian ini akan menggunakan format dalam talian seperti Borang Google untuk membolehkan responden menjawab soalan. Soal selidik dalam Borang Google akan dibahagikan kepada tiga bahagian. Bahagian pertama adalah mengenai data demografi responden, bahagian kedua adalah mengenai kemudahan perkhidmatan perbankan dalam talian, dan bahagian terakhir akan bertanya tentang kesetiaan pelanggan. Populasi sasaran bagi kajian ini adalah mereka yang tinggal di Bandaraya Melaka dan mempunyai pengalaman menggunakan perkhidmatan perbankan dalam talian. Bagi peringkat awal kajian, saiz sampel sebanyak 384 responden telah digunakan. Ujian rintis telah digunakan untuk mengukur kebolehpercayaan dan kesahan instrumen kajian. Dalam kajian ini, lebih kurang 20 orang responden telah dipilih untuk ujian rintis. Dapatan ujian rintis menunjukkan soal selidik mempunyai tahap kebolehpercayaan yang tinggi. Analisis regresi berganda dan analisis korelasi juga digunakan dalam kajian ini untuk menyemak ralat dan dianalisis. Berdasarkan dapatan kajian, kemudahan perkhidmatan perbankan dalam talian banyak mempengaruhi kesetiaan pelanggan. Ia berkorelasi positif dengan kebolehcapaian, kebolehgunaan dan fleksibiliti terhadap kesetiaan pelanggan. Di antara semua kemudahan perkhidmatan perbankan dalam talian, fleksibiliti menyumbang paling banyak kepada kesetiaan pelanggan. Semua hipotesis untuk kajian penyelidikan ini telah diterima. Secara ringkasnya, kebolehcapaian, kebolehgunaan dan fleksibiliti memberi impak yang ketara kepada kesetiaan pelanggan.



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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of Study

According to Li et al. (2021), rapid development of technology makes bank customers become easier to establish intimate connections with banks. With the most advanced information technology, online banking can provide all services according to the needs of customers. Besides that, online banking makes people's lives more convenient, because banks use online banking to provide 24-hour banking services in order to bring convenience to customers. Therefore, the functions and convenience of online banking will increase customer satisfaction and loyalty to online banking (Sasono et al., 2021).

Yildirim and Varol (2019) said that security threats in online banking are a big problem for banks and users because new technologies always come out, and each has security flaws. Customers have started to distrust it due to cases of internet fraud and credit card theft. As a result, customer confidence in online banking has also declined. Apart from that, customers resist online banking services due to lack of awareness, security and technological challenges (Bhatt & Bhatt, 2016). If online banking is to be adopted, safety and security are the requirements of online banking services and systems in Malaysia.

Jebarajakirthy & Shankar (2021) pointed out that customers will be more willing to utilize the service of online banking and have a more positive attitude after understanding the benefits. Besides that, customers can make remote payments, transfer funds and view accounts at any time by utilizing online banking services. Simultaneously, banks have the ability to raise their income, reduce their expenses,



and enhance the quality of their services. According to Salem, Baidoun & Walsh (2019), if the process of use is simple and convenient, the number of people using online banking will rise. While online banking services can also satisfy banking transaction demands, this is not an exception.

## **1.2 Online Banking**

As technology advances and society progresses, commercial banks are no longer the only option for currency management. This is because of the emergence of online banking. It can be said to be a virtual bank counter on the Internet. People who use online banking can do many kinds of financial deals from anywhere and anytime. Since the increase of Internet use, one of the most innovative parts of the current economic expansion is online banking. HSBC Bank is one of the example that provide online banking services to the customer.

Besides that, online banking has 3A characteristics to deliver services to customers, that is, anytime, anywhere and in any way. As long as customers have account numbers and passwords, they can use online banking services to conduct transactions through the Internet. As a result, the client base can be expanded, high-quality customers can be drawn in and kept, and new revenue sources can be successfully harvested.

## **1.3 Customer**

A customer generally refers to a person who buys something or a person who requires a service. Customer groups include organizations and individuals, who are buyers and can also be said to be final consumers. In addition, customers also mean people who bring needs and demands to us. Both "the customer is God" and "the customer is always right" emphasise the significance of the customer in the current business world. Of course, the most important of these is customer cognitive loyalty.

Customers who are mentally loyal to a business are the key to its long-term success. Because only satisfied customers will opt to repurchase and recommend the product or service to others.

In this research, the customer groups that we will focus are those who choose to utilise online banking services. In the year 2021, the FDIC did a study showing that online banking is more popular among those aged 15 to 24. Nearly 75% of people in this age group say they primarily use online banking. However, only 15.3% of people aged 65 and older use online banking.

#### **1.4 Research Questions**

1. How much does the service convenience of online banking influence the customer loyalty?
2. Is there significant strengths between the service convenience of online banking and customer loyalty?
3. Which variable contributes the most in service convenience of online banking towards customer loyalty?

#### **1.5 Research Objectives**

1. To identify how much the service convenience of online banking will influence the customer loyalty.
2. To investigate the strength between the service convenience of online banking towards customer loyalty.
3. To validate which service convenience of online banking contributes the most to the customer loyalty.

## 1.6 Problem Statement

The convenience of online banking services has brought us many advantages. One of the most representative benefits is saving time. According to Rajasulochana (2022), the service convenience of online banking enables people to make payments anytime and anywhere. And when wanting to inquire about account details, people only need to use the user account name and password to easily log in to the account of the online banking systems to perform operations. This really helps people to save a lot of time. Besides that, people may also save their energy while using the service of online banking system. People no longer need to seek banking services from nearby banking institutions, and no longer need to spend any energy waiting for banking services. This is because people nowadays only need to use electronic devices and the Internet to conduct all transactions through the services of online banking. As a result, the service convenience of online banking systems may help people to save their energy.

Although the service convenience of online banking has brought many benefits to people, there are still some challenges that people need to face. The first is that people need to have a network or Internet to use online banking services to conduct transactions. Once there is no Internet, people can't do anything. The availability of the internet has a major impact (Salem, Baidoun & Walsh, 2019). Moreover, it is also difficult for some people who lack the knowledge of operating online banking to enjoy the convenience brought by online banking services. Some people will not be able to conduct banking transactions well through the Internet due to old age, financial problems or lack of learning opportunities.

This research paper will use quantitative method to collect relevant data. The research data will also be collected from the people who have used online banking services and live at Malacca City. It is hope that this research topic can be helpful to more people who want to know about online banking services. Let them let go of their vigilance and enjoy the convenience brought by online banking with peace of mind.

## 1.7 Significance of Research

I chose to do this research topic because I want to know more about the convenience that online banking services have brought to human beings. And whether these conveniences will increase people's cognitive loyalty and how the online banking service will make people more determined to use this service.

The beneficiaries of this research paper will be banks, customers and entrepreneurs. Banks will comprehend more thoroughly how the service convenience of online banking affects customer loyalty, so they will guarantee the quality of their services. This will also bring convenience to customers because their user experience may be enhanced at the same time. After understanding the link between the service convenience of online banking and customer loyalty, entrepreneurs may attract more consumers by adopting online banking services for their business.

## 1.8 Scope of Research

This research topic focuses on the service convenience of online banking, but it is impractical to cover all institutions and users of the online banking system. Therefore, this research will only include individuals from a single region, which are the people from Malacca City, Melaka.

It is also possible that there will be a poor response to the results of this survey. This is because some respondents will answer without understanding the question. Therefore, the people who answer this questionnaire must be people who understand and have used online banking services.

The information collected through the questionnaire is not comprehensive because it was collected in short amount of time. Thus, the information collected may not be representative of all persons.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

In this research, we will concentrate the online banking in the sector of service convenience towards customer loyalty. We will discuss service convenience under three elements, which are accessibility, usability and flexibility. The accessibility of online banking allows people to access the service with multilingual service, clear information, efficiency, and technical assistance. For usability, online banking services is always available, provide expert knowledge, stability and assistance in an emergency. Online banking services also provide flexibility to people with all day service, multi-platform, card control and mobile payment service. All this service convenience of online banking will greatly impact the customer loyalty. The establishment of strong customer loyalty relies on several key factors, including customer satisfaction, customer awareness, customer trust, and customer engagement.

#### 2.2 Service Convenience of Online Banking

Service convenience is to bring convenience to customers in terms of service, so that customers can feel satisfied when using the product or services. According to Pambudi, Widayanti & Edastama (2021), service convenience is an essential predictor of consumer behavior. Besides that, service convenience also can refer to the quality characteristics that measure the ease and convenience of access to the service. Therefore, the emergence of online banking has brought many service conveniences to the society and all people in the world. People find it easier and easier to use

financial services, especially online banking services, as the Internet keeps getting better and better. Tran and Le (2020) defined the connections between superiority, value, satisfaction, and personality purposes. Online banking services as a bank's delivery of data and operations to its clients over digital broadband or wireless routes. Online banking is occasionally used similarly to digital transactions or electronic transfers in the financial sector.

According to the research, both service convenience and service efficiency are major determinants of satisfaction. As what they said before, the standard of service is one of the most significant constructs and will bring a lot of convenience to customer. It also has been found to have a beneficial impact on customer retention and customer loyalty. According to Duarte, e Silva & Ferreira (2018), customers prefer services that help them to save their time and effort. This is because time and energy are considered intangible costs that are not measured in monetary terms that will impact the customer's spending habits (Shaw & Sergueeva, 2019). Therefore, services must be accompanied by convenience as a way for customers to reduce the time and effort consumed in using services, and also as a way to increase customer value. But because there are many factors that affect customer, service convenience is a major key to the customer behavior and customer loyalty (Roy et al., 2018). The research study will explore the service convenience of online banking, specifically focusing on its accessibility, usability, and flexibility.

### **2.2.1 Accessibility**

The ability of a person to recognise an immediate requirement is referred to as accessibility (Swan et al., 2020). Accessibility also refers to the process of rendering information, operations, or settings understandable, valuable, and useful for the greatest number of individuals that can be accommodated. Likewise, the capacity to bank at any time and from any location, as well as check accounts and access declarations, might be seen as accessibility. Accessibility can also described as the readability and comprehensibility of online banking service for customers. Making the service more accessible to customers will not only help those with disabilities but also increase their satisfaction which will lead them to recommend the services to others. Accessibility has criteria such as perceivable, usable and understandable.

According to Ivanova and Noh (2022), characteristics such as accessibility will be used as essential elements to motivate users to adopt mobile banking apps. Ability to transact at a chosen time was found to be the most essential aspect when evaluating the accessibility of online banking services. A lot of customers hope to be access the service that provide by the online banking more easily. This can help them save a lot of time, cost and energy. According to Kotni (2021), for quick banking transactions, the online banking services such as the website or apps must be accessible. Aside from that, the accessibility describes how these services provide customers with a valuable experience in accessing funds and using banking facilities and services. It shows whether customers feel that these services meet their needs and make banking easier. The value of the services provided by online banking is measured by the accessibility, usability, flexibility, reliability and recognition of services (Al-Nowaiser & Faleel, 2021). Therefore, banks must pay great attention to these characteristics. The most important of these is accessibility, because this service determines the convenience it brings to customers. Customers will become more prefer to online banking services if services become more user-friendly, usable, flexible and accessible.

### **2.2.1.1 Multilingual**

Greater economic mobility and population movement are the primary drivers of the broadening and multilingualism of nations (Graca et al., 2020). With the advent of the Internet age, many businesses of enterprises have begun to enter the international market. This faces a problem that not all people can understand the language provided by the service. According to Jain (2021), companies that value strong ties with customers are increasingly investing in multilingual customer service professionals. Multilingual customer service aims to include everyone by communicating in the language each customer prefers. When a service offers users the option to use customer service in multiple languages, it increases customer satisfaction and increases customer loyalty. Besides that, multilingual provided by online banking also can improve communication with customers, increase customer satisfaction and bring convenience to customers. The accessibility also may increases due to the multilingual customer services (Team, 2023). Therefore, the importance of multilingual adaptation for services is self-evident. As the process of internationalization unfolds, multilingual services will continue to be a necessity for businesses and organizations. Special

services like multilingualism have been used in the customer service of online banking. Multilingual customer service can help people from different countries and languages understand the content and operation of the online banking service more easily. So, multilingual customer service allows customers to choose the language they are familiar with to contact the customer service center for online banking services.

The provision of services in multiple languages has the potential to assist online banking services in appealing to a wider audience and making customers feel more accessible. Online banking services may provide multilingual customer service to the customer. With many cultures, there are sometimes trust issues, especially if customers do not feel fully fluent in the language being used. Therefore, providing customers with multiple languages can make customers more clear and understand the service. This automatically puts users in a comfort zone as they are able to navigate, understand and interact with online banking services. Moreover, customer service that provide multilingual also may help to avoid any misunderstandings and operational errors due to language barriers. This is because people of different ethnicities will be more familiar with their own language, so misunderstandings can be avoided. Aside from that, customers who can access customer service in their native language may feel more confidence in their abilities to use the service properly. Beyond that, multilingual assistance is customer service provided in multiple languages as part of the overall customer experience. This also contributes to increased customer convenience.

#### **2.2.1.2 Clear Information**

Accessibility is a crucial aspect of customer satisfaction and retention. Customers are strongly encouraged to do their banking transactions online due to the fast development of the Internet and the banking and financial services businesses. Online-banking provide customers the accessibility of information to the online banking services such as log in to their bank accounts and view the bank transaction history (Li et al., 2021). Information that helps all customers find material quickly is called clear information. Providing clear information can effectively help customers when they encounter problems. When customers are using a service, they want to use it right away and meet their immediate needs. Therefore, the information prepared by



the online banking service must be clear to the customer. Instead of calling or emailing when they need help, customers can navigate to the website knowledge base and access resources to help them solve problems themselves. This allows customers to obtain faster resolution. For example, online banking services can prepare some common and frequent questions and their correct answers to customers. When consumers have issues, the banking service usually has a frequently asked questions section on its platform. Comprehensive information such as frequently asked questions can assist customers in dealing with common difficulties without having to wait a long time (Mahendratmo & Ariyanti, 2019). In this way, when customers encounter problems while browsing banking services, they can easily solve the difficulties they encounter by simply clicking on the frequently asked questions. This undoubtedly brought them great convenience and may help them save a lot of time and energy.

Customer convenience pertains to the temporal and exertional demands associated with locating and acquiring service data. Made & Kurniawan (2021) stated that the provision of excellent services is a priority, by making it easier for the customers to get access to the information banking service. Therefore, latest online information about financial products and services can help customers save valuable time and avoid overcrowded venues, notably during COVID-19. This may leads customers to use online banking services and bring convenience to all customers. Moreover, the information provided by online banking services must be easy and clear for customers to understand. This will prevent customers from misinterpreting the information. The information also needs to be in the type of short and clear sentences. So, the customer can read the information easily and quickly locate what they require, then comprehend the best ways to utilize the online banking service. This may enable them to save significant amounts of time as well as effort.

### **2.2.1.3 Efficiency**

Efficiency means that when customers use the service, the server can provide the required service at the fastest speed. Efficiency also is an approach to management that was developed to improve customer satisfaction (Lee et al., 2019). This is because customers nowadays anticipate having their requests fulfilled in a timely manner that is both prompt and effective. They do not want to be burdened with the

responsibility of running a service for a whole day since it would cause them to lose faith in the amenities delivered by the online bank. Thus, the efficiency of online banking services is also the key to customer convenience. When customers use online services, the bank must ensure that the server is stable and there will be no downtime or service offline. If the online banking services are stable, any accidents and service interruptions will be avoided. For example, funds transfers and bill payments cannot be made. Reducing these problems can enable customers to always rely on online banking services and use them with more confidence. This may ensure that customers can operate the service and perform fund transactions or account inquiries within a short period of time.

Online banking services also can provide customer service such as live chat to assist customers. Due to the fact that live chat interactions are specialised and organised, it is an excellent choice for assistance and service for applications. One example would be offering consumers a vital interactive, frequently asked questions service. A lot of easy problems can be fixed with it, and more complicated issues can be helped in great depth. Live chat can help with virtually any issue regarding achieving a customer's wants. It also lets consumers get a solution right away. Live chat provided by online banking services may help customers with financial transactions, query resolution, and overall assistance. According to Rita, Oliveira & Farisa (2019), customers can contact online assistant via live chat to get additional information about the good or service they are looking for. This is because customers frequently ask for help using the live chat to complete certain transactions and tasks, irrespective of their prior technological expertise. In the event that a consumer has an issue with a prior transaction, they can utilize online banking communication tools such as a live chat with a bank professional to address the problem without having to visit the bank (Hossain et al., 2020). When customers encounter problems, it will bring great convenience to customers if the online bank professional can reply in a short time and help customers solve the problems.

#### 2.2.1.4 Technical Assistance

Online banking services can also help customers with technical assistance, such as provide telephone service and mail service. When customers have network issues and are unable to ask enquiries on the online customer service, they can contact the bank customer care to get answers and fix the issues. Telephone is the best medium when a customer has a question that needs an immediate answer. The mobile phone connects customers directly to professional bank representatives, who can fully solve the problems encountered by customers (Zhou et al., 2020). By making a phone call, both parties can hear each other's tone of voice, allowing the seriousness of the situation to be gauged. Because words have no temperature, some people will misunderstand the expression of some words and cause conflicts. According to Malloy (2023), conversations get more humanized over the phone. They add an element of empathy to a conversation, opening it up and calming it down. Therefore, making a phone call can be a great solution to a customer's problem, and it's one of the ways to create a delightful customer experience. HSBC Bank provide 24 hours hotline at 1300-88-1388 to their customer. Customer can call the hotline when encounter any problems.

However, some individuals simply feel apprehensive on the phone and avoid it whenever possible. Because they cannot locate an appropriate method of communication, these customers are frequently overlooked or have a negative experience. At this point, customers can choose to use the service of sending emails which will make them feel more comfortable to obtain consultation and assistance from banking professionals (Kitsios, Giatsidis & Kamariotou, 2021). Email is one of the most basic forms of customer service and may be more useful for communicating since it allows people to send not only words, but also documents, images, and even videos. This helps customers clarify their issues and immediately records the chat into a helpful discussion. Customers are permitted to say the point at once. Email service works most effectively for customer problems that don't need to be fixed immediately. Customers can bring up their concerns and get back to work, and once the service rep has found a solution, the customer can come back to the case. Therefore, customers can solve problems encountered in using online banking services while working. This allows customers to resolve their doubts and problems in an easy way. For example,

complaints@hsbc.com.my is the email address of HSBC Bank. Customers may send an email if they need any help.

### 2.2.2 Usability

Usability is a way to measure how a services can be used as simply as possible. Usability is a customer-centric concept. The focus of usability is to make the service conform to what buyers like and what they need. Usability in the service of online banking also allows customers to use the service without stress or frustration. In addition, usability can also allow customers to use the online banking service to maximize functionality with the least amount of effort. Usability and customer fulfilment in terms of system usability and acceptability are regarded as two crucial facets of customer satisfaction for the success of a service (Dianat et al., 2019). Thus, usability is the most significant aspects to look at when judging how well online banking services work. For customers, when they need to use a service, there is no more important metric than usability. The term usability can also be used to describe the proportion of a given period of time during which a given website service is usable to users. However, frustration is brought on by a good or service's poor usability. According to Mujinga, Eloff & Kroeze (2018), customers are less likely to like and revisit a service with poor usability. In rare instances, customers will choose not to utilise the goods or services provided by online banking. Hence, the usability of the systems for deliver online banking services is critical. Therefore, the usability of online banking services will significantly affect customers' loyalty to online banking services.

Additionally, usability also means that customers can learn to perform simple financial operations when using online banking services for the first time. Once customers have mastered how to operate online banking services, they can quickly carry out all financial operations. Usability also can refers to the memorability of the service. Li, Ma & DiPietro (2022) argued that the primary objectives of a service are to deliver high-quality care and give customers memorable experiences. When customers do not use the banking service temporarily, they can still remember how to use it when they operate the service again. This refers to the memorability in usability. Online banking system must ensure that the services provided can be used by customers, instead of constantly displaying service maintenance or system error

prompts. This is because server usability will affect whether customers use the online banking services. If the server is unstable and has frequent problems, the online banking service will lose the confidence and patience of customers. Gradually, customers will also choose to eliminate and not to utilize online banking services. Therefore, the usability of online banking services should be a way for customers to have a pleasant experience and help them save all time and effort.

#### **2.2.2.1 Availability**

Online banking services must ensure that customers can use the service at an appropriate and convenient time. Customers nowadays expect to be able to browse the banking services 24/7. Online banking services provide customers with 24/7 customer service will increase the customer satisfaction. Hameed (2021) claimed that people may access all the banking services such as bank transaction records and bank account information through the online banking system. People who travel a lot for work and have very busy jobs can benefit greatly from 24-hour banking services. They can even use online banking services after the working day as the service is available 24/7. According to Hossain et al. (2020), online banking that available 24-hour banking services is more convenience. With 24-hour online banking services, customers no longer need to visit any banking institution to conduct fund transactions. Customers can now check their accounts and obtain other financial services without physically visiting the bank. This will give bank customers the impression that online banking is advantageous and can boost efficiency.

Online banking services also provides 24-hour customer service, which facilitates channel management. With a 24-hour customer service line, many banking issues can be resolved over the phone after hours so they don't take up people's office hours. In addition, chatbots provided by online banking services also can provide 24 hours customer service. Virtual chat helpers, called chatbots, offer special ways to connect with customers and can be used to get customers involved. Many banks are currently adopting online services to establish relationships and communicate with customers (Hari, Iyer & Sampat, 2022). By increasing customer service, this technology is projected to dominate the banking business in the future. Online service

can also provide standard banking services and maintain a consistent attitude towards all customers.

#### **2.2.2.2 Expert Knowledge**

According to Stevens et al. (2018), customer service must provide expert response in a short time when customer encounter problems while using the service. When a consumer has a difficulty while using the server, the online banking service must guarantee that the user receives an expert response. Waiting times for customers should also be kept to a minimum while using online banking services. Only in this way can we secure the customer convenience, allowing customers to have more trust and continue to utilise online banking services. The age of intelligent technology has here. Chatbots were developed with the development of artificial intelligence (Nuruzzaman & Hussain, 2018). Chatbots are one type of customer service automatic reply, which means that without the help of human customer service, chatbots will automatically match the appropriate answers in the existing knowledge base or help guide, and then the system will send the matched answers to the questioning customers. The whole process can be completed in an instant, so it can bring great convenience to customers, enabling customers to get the expert information and answer in the shortest time, which can help save customers' time and energy.

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Banks have recently begun employing chatbots more often to provide 24/7 customer assistance. Nordheim, Folstad & Bjorkli (2019) identified chatbots are anticipated to play a significant role in online banking customer service. This is because chatbots can deliver specific and expert replies to all questions from customers in a short period of time. The efficiency, accuracy, and dependability with which chatbots can carry out preprogrammed tasks indicates that their technological prowess has the potential to improve customer service (Lajante, Tojib & Ho, 2023). As a result, timely responses and expert answer from the chatbot were deemed to be critical. For example, in the process of matching answers, chatbots provided by online banking can recognize customer query language and patterns, and immediately select the most highly matched and professional answers from the expert knowledge base. Moreover, if other customers have asked the same question before, chatbots with independent learning capabilities can first summarize the best solution, and then provide it to

customers who ask similar questions in the future. According to Agarwal & Dhingra (2023), a service's consistency and responsiveness have an influence on customer satisfaction, which is directly related to loyalty. Therefore, customer service is elevated through effective response times. Because customer service responsiveness refers to providing consumers with the exact assistance they require. Chatbots often use to answer the questions and help customer to overcome the problems. When customer faced problems, they can use chatbots to proceed the financial operation. This can help customer to get help in a short time. HSBC employs chatbots, such as Amy, to assist customers. Amy is proficient in English, Traditional Chinese, and Simplified Chinese, allowing her to interact with customers effectively. Amy can assist customers in obtaining immediate answers to frequently asked inquiries about the bank's services.

### **2.2.2.3 Stability**

According to Kaiser (2018), stability determines how reliable and usable an IT service is. Stability is necessary for banking services to function optimally for people. During times of change or uncertainty, stability tends to falter and may affect the operation of the online banking service. If a service's system is under control, it is considered to be stable. Customers may easily handle their funds anytime they need to without worrying about service disruptions because to its dependability. Service stability can ensure that customers can proceed smoothly when operating and using services to conduct financial transactions. When a system or service is unstable, customers may find it difficult to perform transactions or make payments, and worries about the security of their bank account data and funds may also start to surface (Mitham, 2023). Furthermore, the stability of online banking services can build customer confidence and dependence. The stability of service means that customers will not experience service interruption when conducting financial operations, which can effectively improve and help customers enjoy the convenience brought by online banking services. When customers conduct financial transactions such as fund transfers or bill payments, stable service ensures that customers can operate smoothly without spending a lot of time and energy waiting for service operations. Therefore, the stability of service brings the convenience of saving time and energy for customers.

Kasri et al. (2022) noticed that effective banking service is also associated with bank stability. So banks must ensure the stability of their services through a variety of methods such as maintain the service regularly. Online banking services will regularly maintained to ensure that the services can operate normally. If small problems are allowed to occur and not dealt with, the problems will become bigger and bigger over time until they affect the operation of online banking services. Online banking service downtime will have a great impact on customers and bring great distress to customers. Aside from that, website services of online banking also will maintain regularly. A website is a critical platform for online services, so its uptime is critical at all times. Over time, the website may face various technical issues which may affect its functionality and performance of online banking services. Therefore, regular maintenance of the website is a key factor to ensure its normal operation. Website maintenance ensure the security of the website services provided to customers. In this way, customers can use the website services of online banking with confidence. Website update content is also a kind of website maintenance, which can help the website keep the latest content, add new functions, and improve the user experience of the website. Website and app content updates are another sort of maintenance that may assist websites and applications in keeping up-to-date material, adding new features, and improving customer experience. Customers can utilise the new online banking capabilities in this manner. For example, mobile banking service applications now include additional features such as order meal service, spending summary and services for ordering movie tickets and bus tickets. It brings a lot of convenience to all customers.

#### **2.2.2.4 Emergency Assistance**

Advances in information and communication technology and the proliferation of Internet and mobile phone users have changed the way online banking services are delivered (Jebarajakirthy & Shankar, 2021). As a result, banks have employed several innovative channels to reach consumers. Assistance in an emergency is one of those adopted by banks. In order to ensure the convenience of customers, online banking services have also launched emergency options such as Customer Care Hotline. According to Scott & Jay (2023, April 14), The Customer Care Hotline can be a crucial support system for customers during emergencies, and it may also contribute to



building customer relationships and maintaining service quality. This customer service is available for anytime. When customers encounter any emergency, they can call to the hotline to seek help from the service personnel. This can help customers get help and perform service operations in a short time. In the corporate world, customers are seen as monarchs. Customer satisfaction and loyalty also depend on the service quality of online banking. Uzir et al. (2020) underlined that the quality of service from the perspective of customers and noted quality of service as an absolute fundamental aspect of service assurance. Therefore, the services provided by online banking must be easy for customers to use and access. Some customers will encounter some emergencies when using online banking services, such as funds in the account being stolen and transferred. At this time, they can use the emergency hotline provided by the bank service to obtain information and answers from professional bank personnel that can resolve the incident. In this way, they can get the solution to the problem in a short time. This helps them reduce unnecessary worries and annoyances, and brings them great convenience.

Online banking provides emergency services to bring great convenience to customers. When a customer encounters an emergency, such as suspecting that the bank account has been accessed by a stranger, the customer can choose to lock or freeze the account. Besides that, if someone is missing the banking card, they can also chose to freeze their card temporary until they found the card or report the card has been stolen. For example, HSBC Bank provide an emergency lock features to their customers. The card will then be locked until the customer unfreeze the card or reported the card has been stolen. This can prevent the funds in the account from being stolen by strangers, and protect the rights and interests of customers. If someone find the banking card after freeze the card they can use their mobile apps to unfreeze the card.

### **2.2.3 Flexibility**

Nowadays, the process of banking is simplified by the availability of the internet. Virtually all bank customers now have the flexible access to the services that allow them to monitor their bank accounts and complete financial transactions. Flexibility of the online banking service is also a feature that is important for customer

convenience (Raza et al., 2020). A flexible online banking service may respond swiftly to rapidly changing conditions. It can do this by fast transferring individuals with the talents it requires to where they are needed, as well as quickly and efficiently obtaining abilities. According to Luck (2023), getting flexible entails immediately understanding from customers what has to be changed or improved, how to best carry this out, and reintroducing these fresh concepts back into the customer interaction process. Flexible online banking services are just one of many ways to meet the need for convenience and instant information. Customers also will expect online banking services to be available and operational when they need them, and services that offer flexibility are more likely to have a loyal customer base. Therefore, a flexible server can help satisfy customers more easily when using online banking services.

Jebarajakirthy & Shankar (2021) defined that online banking services increase flexibility and personalize offerings. The Internet has simplified banking services and increased the flexibility of online banking services. Almost every bank's customers may access their bank account status and make online transfers. To keep the customer base and attract potential customers, banks will need to provide a flexible banking experience to the customer. This is because flexible online banking service will bring a lot of convenience to customers such as let them conduct their financial operation anytime and anywhere. Customers can use online banking to access a variety of services, including mobile banking, online payment and transfer capabilities, and bank account administration and queries. In general, the flexible of banking services allow customers to complete the operations they want in a short period of time and save their time and energy. Therefore, the flexibility of the online banking services will let customer feel more convenience to use the services and will become more loyal of the services of online banking.

#### **2.2.3.1 All Day**

Customers have the independence and flexibility of accessing financial services at any time of day or night with online banking. This is because online banking service provides 24-hours online service for all customers. Widanengsih (2021) stated that customers may make payments whenever they want and wherever they are because to the convenience of online banking. Customers prefer mobile banking over

conventional offline banking because it provides accessible features at any time and from any location (Al Amin et al., 2021). The 24-hour online banking service is convenient and fast. At any time, customers can manage their finances through online banking, and all transactions will be clear at a glance and have a panoramic view. Customers can also transfer money in the same city or remit money in different places. The 24-hour service makes the transfer of funds convenient and fast, which brings a lot of convenience to people.

Moreover, people no longer have to be concerned about missing banking hours and being unable to carry out financial transactions. Hossain et al. (2020) claimed that online banking is currently providing convenient 24-hour financial services. Because, with 24-hours online banking services, customer can transact funds or pay bills anytime and anywhere. The 24-hour service enables busy people to choose to operate funds during their breaks and after work. This will not disturb their work time, making it more convenient for them and bringing them great convenience. With a customer service line that is open all day, many banking problems can be fixed over the phone after hours so that they don't take up people's work time. Customers also can contact to the 24-hours hotline for assistance from service workers whenever they have an emergency. This speeds up the process through which consumers may execute service tasks and receive assistance. The 24-hour online banking service provides customers with a better service experience. Through the 24-hour service hotline, Internet Banking can provide customers with a sufficient communication platform and provide customers with a timely consulting service to help them deal with financial problems encountered when using the service.

### **2.2.3.2 Multi-Platform**

Financial services have continued to be on the cutting edge of digital transformation despite the passage of time and the advent of the internet. The conventional banking distribution model has been adapted to accommodate the new information technology (Rajaobelina et al., 2021). Customers nowadays can use online banking services through multiple methods, such as web platform mode and mobile platform mode. Websites are the most essential means for interaction and main gateway for customers seeking for online banking services. Customers can now handle

their current and time savings, cash, credit cards, and personal investments without leaving their homes as long as they log in to their bank accounts through the official bank website. Customers have the option of using the official homepage that is made available by online banking services in order to carry out their financial transactions. As long as there is a network, customers can browse the official website to log in and operate their online banking accounts for fund transfer or others inquiries. This flexible concept has the potential to make things more convenient for customers.

According to Thusi & Maduku (2020), the introduction of mobile banking, made possible by apps, has the potential to improve the banking experience for consumers of commercial banks significantly and to make banking procedures more straightforward. A mobile banking app is an application that bank customers may download and use on their mobile devices to carry out a variety of financial transactions (Hanif & Lallie, 2021). The mobile banking app has largely replaced older banking methods and established itself as the primary communication channel between financial institutions and their customers. When the customer has a mobile banking app, they can monitor their accounts, receive notifications when specific events occur, make speedy money transfers, and check their balances, all from the comfort of their smartphones. Other features of banking apps include the ability to pay bills, deposit checks, and withdraw cash. Due to the effectiveness of this service, they were able to reduce the amount of time and effort spent.

### **2.2.3.3 Card Control**

The rapid evolution of technology has facilitated enhanced connectivity between individuals with banks and their financial institutions via internet access and mobile devices. Online banking efficiently integrates all bank operations using the latest technology to deliver customer-centric services (Li et al., 2021). With the advancements in technology, people can now control their banking cards. The cashless debit card offers an alternative method for managing basic financial transactions (Tennant & Brody, 2020). So, customers can now activate and deactivate their banking cards through online websites and mobile apps. This can protect customers when they need help finding or misplacing their cards. The card control service is flexible because the banks provide it. After all, customers need to use mobile apps to deactivate their

cards. Flexibility improves customer satisfaction, engagement, and loyalty (Felix & Rembulan, 2023). Therefore, card control services may help customers feel more convenient because of their flexibility.

In modern times, banks allow customers to establish transaction notifications and alerts. Users are notified of each transaction, allowing them to track their expenses and quickly identify any unauthorized activity. This service also add the flexibility of the online banking services. Customers may also set spending limitations for their cards. Customers can establish limitations according to their own financial goals. Consequently, customers can handle their budgets. Moreover, some of the bank also offer mobile wallet to their customers. For example, HSBC potentially provides functionalities such as mobile wallets or digital card numbers, enabling customers to conduct payments without requiring real cards. This enhances the ease and flexibility of transaction methods. Thus, flexibility of online banking services may help them to conduct their financial activities anytime and anywhere (Widanengsih, 2021).

#### **2.2.3.4 Mobile Payment**

Pal et al. (2021) stated that mobile payment systems' success is largely due to how flexible customers can conduct transactions with them. This is because online banking services provide customers with mobile payments at anytime and anywhere. Customers nowadays can use mobile payment as a more affordable way to pay for goods, services, and data exchanges digitally via wireless technology (Humbani & Wiese, 2018). Due to the convenience that mobile payment offers, customers will feel more at ease and will be more ready to utilise it to perform transactions in their daily life. Online banking services had introduced a variety of mobile payment methods, including automatic payments, bill payments and bank transfers. According to Ivanova & Noh (2022), rapid financial services such as mobile payments and funds transfers are essential elements of transaction in online banking services. Customers use this services because they don't have to go to the bank in person and stand in line. This flexible payment method can make it easier for customers to manage their bank accounts and make payments, and it also brings them great convenience.

Besides that, the convenience and accessibility of mobile payment systems has made people an absolute need for everyday transactions. Mobile payment has grown in popularity and significance as a combination of technological innovation and payment technology that supports the payment process through mobile devices (Zhang et al., 2023). Mobile payments make it unnecessary or less necessary for customers to carry cash and credit cards, which makes them less likely to be stolen or lost. With mobile payment, customers only need to turn on their mobile phones and scan the QR code to pay. This allows them to complete the payment quickly and easily, saving them a lot of time. With mobile payment, every expenditure and income of customers can be clearly recorded and facilitate future inquiries. And some bank applications also help record customers' monthly expenses, so that customers can manage their money well and know whether their expenses exceed the budget.

Duitnow also is one of the mobile payment services. According to Ausmees (2022), DuitNow is a service that allows people to send money anytime, anywhere. DuitNow transfer offers a convenient and easy way to transfer the money instantly. Nowadays, people can transfer funds using any DuitNow ID, including mobile numbers, MyKad, or Passport numbers. This means that people just need to use the mobile phone number or NRIC number to operate their funds and transaction. Apart from that, individuals also have the option to make or receive payments through QR codes. Ananda et al. (2023) noted that as part of Malaysia's initiatives to promote cashless payments and advance the digital economy, the government launched DuitNow QR. Moreover, people can utilize DuitNow request, enabling them to request funds from their friends. With the DuitNow service, the usage of checks can also be greatly reduced. This is because people can now use the DuitNow service to make large money transactions without having to go to the nearest bank to cash a check. This undoubtedly brings a lot of convenience to people.

### 2.3 Customer Loyalty

The loyalty of a customer is directly linked to how involved and satisfied they are as a customer. Customer loyalty describes a continuous emotional relationship with the customer's establishment of a product or service. Besides that, customers' loyalty shows that customers are willing to repurchase and repeated purchase of the same product or service, which also represents the customer's confidence in the product or service. Yuen et al. (2023) stated that customer loyalty is crucial because it promotes continued service use even in the face of external changes or marketing initiatives that promote shifting behavior. A loyal customer will choose to purchase and utilize the same product or service over and over again. Some customers are loyal for the product or service because of its price and convenient. There is a solid and unbreakable connection between the standard of service, consumer fulfilment, and customer loyalty in all service enterprises. Consumer satisfaction significantly influences consumer loyalty to a firm. Consequently, they possess a relationship of mutual dependence.

Customer loyalty is very crucial and have important role for a service (Zhou et al., 2019). Loyal customers are brand champions and will advocate the brand and promote the products or services they trust to their relatives and friends. A loyal customer will choose to forgive the mistake. If they have any opinions on the product or service, they will also selflessly put forward to help the product and service to be better improved. Loyal customer represent their trust in a specific product or service, which also means that they will not buy or use products and services launched by the competitors. Customer loyalty and customer retention have a great relationship and correlation. Only when customers have loyalty to a product or service will they continue to purchase and use it. Loyalty is a mindset that encourages customers to interact with and buy from the same business. Meanwhile, retention rate is a statistic used to monitor customer loyalty and subsequent revenue. The method of retaining customers was created to serve existing customers more and gain more benefits from them. Good service can help retain customers and keep them loyal to the service and keep using it. Hence, the significance of customer loyalty cannot be overstated. The concept of customer loyalty is closely linked to factors such as customer satisfaction, customer awareness, customer trust, and customer engagement. There exists a

perpetual correlation amidst them. Therefore, enhancing customer loyalty in mobile banking is a crucial objective for banks. This can be accomplished by strengthening customers' trust in the service, delivering an excellent user experience, and executing an effective customer engagement strategy (Al-Dmour et al., 2019).

### **2.3.1 Customer Satisfaction**

The concept of satisfaction is a crucial factor in analysing the resilience of current customers or in appealing potential customers. Customer satisfaction is a moderating element influencing the relationship between service level and customer loyalty in different sectors. Customer satisfaction pertains to the emotional state of contentment experienced by a customer to interact with a particular product or service. This encompasses emotional well-being, meeting expectations, and satisfying needs (Varriale et al., 2023). The significance of customer satisfaction cannot be overstated in terms of service reputation and loyalty, particularly in uncertain markets where a service's reputation is heavily reliant on the satisfaction of its customers (Khan et al., 2022). Furthermore, Juanamasta et al. (2019) asserted that achieving customer satisfaction and loyalty is intricately connected to the quality of service rendered. Ensuring high-quality customer service is paramount in enhancing customer satisfaction. This is because they are the most valued possession of any corporation, and their input holds significant weight in moulding the establishment's reputation. Hence, the correlation between customer loyalty and service convenience is paramount in establishing sustainable customer satisfaction.

According to Lie et al. (2019), the elements of customer satisfaction encompass the item or service quality, pricing, ease of operations, and assistance for customers. The impact of service quality on satisfaction is also considered significant. Providing superior services creates a competitive impact, prompting companies to create techniques to enhance consumer satisfaction and build customer loyalty. The price factor is a crucial element that can impact customer satisfaction and yield economic advantages for customers. The price factor is frequently crucial in the buyer's decision-making when selecting specific services. The pricing factor also is a fundamental consideration for customers exhibiting repeat purchase intentions. Moreover,



enhancing customer satisfaction can be achieved significantly by providing high-quality services at a relatively lower cost.

### 2.3.2 Customer Trust

A strong correlation exists between trust and satisfaction within a relationship, with certain trust-related concepts even incorporating satisfaction as a constituent element. The association between satisfaction and trust is contingent upon what the customer thinks and how their expectations align with the product or service received. The higher the quality of service customers receive, the greater the level of trust perceived. According to Lie et al. (2019), trust is one of the most well-studied and validated structures, notably in consumer loyalty. Trust is necessary for all social connections to maintain and operate erratically. Trust can be defined as an individual's generic expectation that the word of another may be depended on. Customer trust is the ideas, opinions, emotions, or behaviors that arise when customers believe that a company can be relied on to operate in the most beneficial way when they give direct control. As a result, with trust in the brand, customers can join the loyalty set. This is because trust between customers and the service provider increases customer loyalty to a company. Customers are more likely to remain loyal if they feel trusted since trust is a more powerful feeling than satisfaction.

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Besides that, trust is crucial for establishing a long-term relationship between the customer and the company. Customer trust can be defined as the services a company offers to create lasting customer loyalty. Customer trust is also an idea that lets customers interact in a way that helps form a long-term connection. In order to secure customer loyalty, a company must establish trust with its customers. Bhat, Darzi & Parrey (2018) claimed that the level of customer loyalty is directly proportional to the level of customer trust. Therefore, a higher degree of customer trust results in more customer loyalty. Customers tend to establish their trust in a company based on their experience while purchasing a product or service. Therefore, customer trust persists to be a crucial element in building customer loyalty. Trust is also fundamental to the relationship between customers and the banks (Sitorus & Yustisia, 2018). In fact, trust can have a direct effect on a customer's decision to continue or terminate a relationship with a company. The significance of trust in shaping behavioral intentions is

established. For example, trust is crucial in facilitating a company's ability to cultivate and sustain customer loyalty. Hence, companies must strengthen customer trust in order to build strong customer loyalty.

### 2.3.3 Customer Engagement

The impact of customer engagement on customer loyalty is significant. A favorable customer experience is known to have a notable and affirmative impact on encouraging customer engagement (Roy, Gruner & Guo, 2022). According to Al-Dmour et al. (2019), customer engagement has a notable and affirmative influence on customer satisfaction and loyalty. A rise in product or service consumption and demand is a key metric for measuring the effectiveness of customer engagement (Islam et al., 2020). The positive connection established between a company and its customers through engagement will encourage loyalty and encouraging constant support of the company's goods or services. Engaged customers are more likely to be satisfied with their interaction and to sense a connection to the company. This results in enhanced customer loyalty. Customer engagement and their devotion are intricately interwoven. (Bansal & Pruthi, 2021). Engaged customers tend to exhibit higher levels of loyalty, while loyal supporters are more inclined to sustain their involvement. When consumers feel associated with a company and are pleased with overall perception, they will remain faithful and continue to make purchases in the future.

The engagement of customers is a fundamental aspect of achieving success in every company. Customers' degree of engagement and interaction towards a brand, product, or service. An engaged customer is highly probable to demonstrate brand loyalty, engage in repetitive purchases, and advocate the company to people. Moreover, customer engagement is the degree to which a consumer feels connected to a company and its goods or services (Barney & Biscobing, 2023). It is the level of passion that people feels while interacting with a company. It will be affected by variables like the value of the good or service, the standard of customer support, and the entire experience. Engagement with customers beyond a single purchase can satisfy them and get them to buy more. For great customer experiences, every time a customer interacts with a company needs to be at its best. Through cultivating customer engagement, businesses have the power to establish a devoted client base that will

continue to drive development and profitability for many years to come. As a result, the level of customer engagement will significantly influence customer loyalty.

#### **2.3.4 Customer Awareness**

Customers' awareness is important in shaping their loyalty to a brand or business. Customers must know the brand's presence and service quality before committing to it. Raising awareness needs effective marketing and communication strategies to ensure potential buyers are familiar with the brand and its products or services. Customer awareness is an essential component of a corporation's marketing and communication strategy. A well-planned awareness campaign promotes increased customer engagement and loyalty. Enhancing brand recognition can help grow customer awareness by increasing potential customers' knowledge, adoration, and reliance on the product or service. Customer awareness refers to customers' understanding of a brand before purchasing a product or service. Moreover, customers' awareness of a brand's goods and services is also a beginning point for engaging. When customers know the product or service, they are more likely to buy it. Customers may only engage in the product or service and have a more in-depth experience once they have purchased it. Therefore, customers may change their impression of a product or service and loyalty after engaging with it.

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Besides that, customer awareness that may be created before purchase is often called brand awareness. Customers will become aware of the availability of goods or services and make purchases as their popularity grows. Dilham, Sofiyah & Muda (2018) stated that the importance of raising awareness of a brand among customers and in the minds of marketers is twofold. The degree to which customers are informed about a brand's existence is now crucial in determining how that brand is perceived. Raising brand awareness has the potential to encourage deeper engagement with existing and potential customers, ultimately enhancing consumer satisfaction and loyalty (Bolander, 2020). Customer awareness also refers to the capacity of individuals to remember or identify a brand with enough specificity to facilitate a purchase (Armah & Attafuah, 2020). Hence, it is important that customer awareness will greatly impact the customer loyalty.

### 2.3.5 Customer Experience

According to Ertemel et al. (2021), satisfaction and loyalty can be fostered through positive customer experiences. Customers need to interact with services to experience satisfaction and build loyalty. Customers will only have feelings and profound experiences after accepting the convenience brought by the service. Besides that, customer experience is also crucial for online services. Customer loyalty reflects their attitude. Only a positive experience will foster customer loyalty and dependency on the service itself (Omoregie et al., 2019). Therefore, customer experience will be one of the factors that impact customer loyalty.

Moreover, advanced banking services may enhance customer experience (Makudza, 2020). Customer experience also represents what banking services bring to them. Therefore, the customer's engage with the service will bring them many different experiences. These experiences will also influence their loyalty to a service. A good experience will allow customers to share it with those around them, which will lead to more people participating in the service. If the experience customers receive is a good one, they will be more satisfied. This also means that their loyalty will also increase.

### 2.4 Research Framework

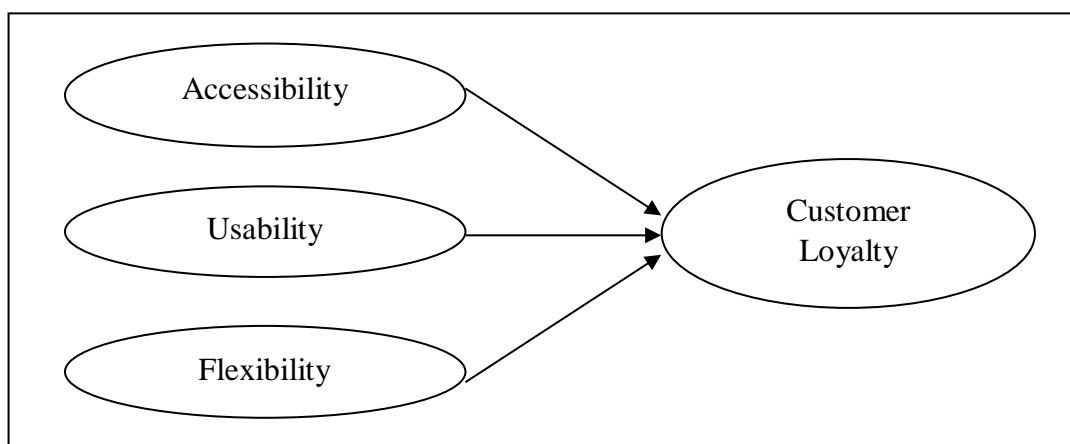


Figure 2.1 Research Framework

## 2.5 Research Hypothesis

- H<sub>1</sub>: Accessibility of online banking services will be positively associated to the customer loyalty.
- H<sub>2</sub>: Usability of online banking services will be positively associated to the customer loyalty.
- H<sub>3</sub>: Flexibility of online banking services will be positively associated to the customer loyalty.



## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

The research methods that will be used in this study are outlined in this section. This research study will use quantitative analysis to collect required data for research and discussion. Certain steps must be taken before quantitative analysis can be performed. The procedures and methods used will also be described in this study. Some research components may include research design, research location, research strategy, time horizon and data analysis techniques. Therefore, research methodology refers to a set of practices or approaches that deals with research methodology, research methods, and research design. This is a series of steps that must be followed to conduct this study. This research study will focus on the people live at Malacca with experience in online banking services. The survey questionnaire method such as Google Form also will be used in this research as it seeks to quantify specific variables and evaluate the hypothesis. The software that will be used to test the research objective and hypothesis in this research study is the SPSS Statistics software. This research study will use a few analyses, such as reliability, validity, correlation, and multiple regression analysis.

#### 3.2 Research Design

A research plan is the main idea behind the study of research methodologies and procedures an investigator uses to conduct an investigation. The method enables investigators to adjust research methodologies appropriate for the topic matter and set

up their investigations for effectiveness. The research design can also be said to be the general plan of action that combines each part of research cohesively and logically, assuring successful addressing of the research topic. This approach is referred to as the research design. According to Dannels (2018), the research design program is the foundational framework. This framework aims to incorporate all aspects of quantitative research to enhance validity, reduce unfairness, and optimize the adaptability of the findings.

One of the most crucial decisions in research design is selecting the appropriate research method, as it indicates how relevant data for the research will be acquired (Sileyew, 2019).

1. Identify the problem
2. Evaluate literature
3. Generate research question
4. Specify the research objective
5. Design theoretical framework
6. Create hypothesis
7. Set research design
8. Indicate population
9. Data collection and analysis
10. Report writing

### 3.3 Research Method

In academic discourse, "research" typically denotes an investigation to generate new knowledge or insights into a problem. In the meanwhile, "methodology" refers to the theoretical and analytical framework that supports the methods and techniques employed in a given field of study (Patel & Patel, 2019). Research methods refer to the various methodologies employed in conducting research. These tools are essential in the field and facilitate the gathering, categorizing, and evaluating data to arrive at informed conclusions. Using an appropriate research methodology makes it possible to persuade others that the findings are credible and the newly generated

knowledge is firmly grounded (Walliman, 2021). Therefore, research methodology is the systematic approach that researchers must follow to accomplish studies. The technique used in research is a systematic way to solve the research topic at hand. One could interpret it as the scientific study of research methodology. There exist three typical methodologies to perform research, namely quantitative, qualitative, and mixed methods. This research study will employ a quantitative research method.

### **3.3.1 Quantitative Research**

Quantitative methods will be utilized throughout this research study. According to Patel & Patel (2019), quantitative research is gathering information about a certain place's people, society, and economy. They are looked at from a scientific point of view. It relies mostly on first-hand information, such as surveys and questionnaires. Quantitative research typically entails a systematic and empirical exploration of phenomena utilizing statistical and mathematical techniques, as well as the analysis of numerical information (Basias & Pollalis, 2018). It is essential to analyze and process a great deal of quantitative data to validate hypotheses and test theories. Quantitative research involves the utilization of questionnaires comprising clear and straightforward questions that can be effortlessly quantifiable and comparable. Besides that, the quantitative research which enables the researcher to make generalizations and perform statistical analyses on massive data sets, will achieve more accurate and detailed information. Therefore, a more comprehensive and dependable understanding of the research topic matter may be obtained via quantitative research. For example, the quantitative methodology is applied to assess the correlation between the service convenience of online banking and customer loyalty. This is done to test a series of hypotheses formulated in this research's framework.



### **3.4 Location of Research**

The proposed research study is set to be conducted in Malacca City, Melaka. Participants in this research study will consist of individuals who have conducted their financial operations through online banking services and stay in Malacca City, Melaka. The reason that researcher choose to conduct this study at Malacca City is because Malacca City can to be said is the home for several banks and financial institution. It provides a suitable environment to conduct this study.

### **3.5 Research Strategy**

Research strategy is a systematic strategy used when executing research to resolve a specific issue. A research strategy is a comprehensive approach to conducting a research study. Moreover, research strategy pertains to the comprehensive approach for completing research and addressing the research inquiries that have been posited. A well-defined research strategy facilitates a researcher's ability to plan, execute, and monitor the research effectively.

#### **3.5.1 Survey Method**

The majority of research is founded upon primary data. Jain (2021) pointed out that surveys are appealing among beginners because of their ease of use and ability to reach more individuals online or by phone. Surveys are the most commonly used method for collecting primary data (Nayak & Narayan, 2019). The researcher usually seeks to record current occurrences using the survey research approach. The survey method will be utilized to obtain data for this research. The survey method is appropriate for data collection in this research study as it seeks to quantify specific variables and evaluate the hypothesis. The survey method can conduct data collection on a large scale, resulting in the generation of massive volumes of numerical data. Besides that, surveying is collecting and compiling information from a group of people to gain more opinions and information. The information or opinions gathered from a

sample are usually generalizations of the thinking of a large population. Hence, the survey methodology is appropriate for data collection in this research study.

### **3.5.2 Questionnaire Method**

According to Patel & Patel (2019), the technique used for gathering data across a huge region of the world is the questionnaire method. The questionnaire is a list of questions given to a population sample to collect specific information (Pandey & Pandey, 2021). Therefore, questionnaire method will be utilized to gather required information in this research study. The questionnaire will ask respondents about the convenience of online banking services and customer loyalty. The questionnaire results can let us know whether the service convenience of online banking will significantly impact customer loyalty. The questionnaire for this study will use an online format such as Google Form to allow respondents to answer questions. This study uses the online mode to collect questionnaires because of its convenience. Online questionnaires can help gather the required information quickly and reduce time consumption. The questionnaire in the Google Form will divide into three parts. The first part is the demographic. The demographic will ask about the respondent's profile, such as age, gender, religion, income and education. Next, the second part of the questionnaire will ask about the service convenience of online banking, such as its accessibility, usability and flexibility. The last part will ask about the customer trust, customer engagement, customer satisfaction and also customer awareness, which are important to customer loyalty.

### **3.5.3 Population and Sample**

A population is an assortment or bunch of things that are all the same. The term "population" refers to the totality of all the elements that share the features the sample aims to determine (Gupta & Gupta, 2022). The target population for this study is those who live in Malacca City, Melaka. Consequently, Krejcie and Morgan table exists in the world. It can aid in determining sample size so that investigators do not need to examine each sample individually. According to Bukhari (2021), Krejcie and Morgan table determines sample size formulas for categorical data types. The selection of this research study will focus on people that live in Malacca City, Melaka. The sampling

size for Malacca City is 453 904 people. Therefore, the questionnaire will concentrate on 384 participants from the sample population using the Krejcie and Morgan table. They are all Malacca residents who have utilized online banking services. The increasing demand for statistical samples in empirical research enhances the importance of developing efficient methods for determining sample size. This research aims to inquire whether the service convenience brought by online banking will impact customer loyalty.

#### **3.5.4 Pilot testing**

This research has undertaken a pilot test to evaluate the questionnaire's validity and reliability. According to Teresi et al. (2022), pilot test usually used to test the reliability and validity of the questionnaire. The significance of this is due to its contribution towards enhancing the reliability of survey questionnaires. It guarantees the transparency of the questions created and the relevance, comprehensiveness, and mutual exclusivity of response choices. Rajyaguru (2022) pointed that the outcomes of pilot testing may assist researchers in discovering real and possible issues that need to be addressed before starting a future study. A pilot study is the first step to be conducted in this study. A pilot study helps plan and revise the main study in this study. In addition to providing the main information for the study to calculate the sample size, it can also provide information for evaluating other aspects of the study, effectively helping researchers reduce energy consumption and expenses. In this study, a sample size of 20 respondents have been participated.

#### **3.6 Time Horizon**

The time horizon variable establishes the duration of the research study. Jansen (2023) stated that the time horizon refers to the number of locations for gathering data planned to be included. The temporal frameworks in future research typically pertain to durations under examination or a time scope of differing dimensions (Melnikovas, 2018). Longitudinal and cross-sectional studies are examples of time horizon phases.

### 3.6.1 Cross Sectional Studies

According to Wang & Cheng (2020), cross-sectional studies are different because they only collect essential data at one time. Cross-sectional studies don't include a temporal variable because all the data is collected simultaneously and mainly refers to the time of or close to the data collection (Kesmodel, 2018). Cross-sectional studies may use information from national databases on the whole population or a sample of the essential people. A relatively passive technique for establishing links between variables based on data can be used for a cross-sectional design. But in this research study, the cross-sectional studies data will be gathered from a population that lives in Malacca City and has used online banking services. This study selected cross-sectional respondents from the population relevant to the research question "the correlation between service convenience of online banking and customer loyalty". This research study may perform cross-sectional studies since the data will be gathered once and over a period of time to answer the research topic.

### 3.7 Data Analysis

In every investigation, analysing the data is the most essential part. Information is compressed by data analysis. One must analyse data to spot patterns, connections, or underlying structures to do this. Data analysis frequently requires a vast number of diverse stages, including the use of various command-line programs to the use of programming languages for the development of tables and charts (Molder et al., 2021). Data analysis is usually carried out after the required information has been collected. Researchers will simplify data into stories and interpret it to draw personal insights. Data analysis splits all big chunks of information into segments that help researchers test hypotheses, develop reasonable clarification, reveal evidence, and recognize patterns (Bhat, 2023). In this research study, IBM SPSS Statistics software will be used to generate data analysis.

### 3.7.1 Validity

The research's application is determined by its validity. It can be said that the validity is the degree to which an idea is precisely assessed in quantitative analysis. Validity also refers to how accurately a measure may be taken. Validity can be determined by comparing the results to proven hypotheses and other measurements of an identical idea. The validity of the research tool may be described as its applicability to the study topic or how correctly the tool assesses the issue. Hajjar (2018) said that the purpose of a construct validity test is to figure out how all of the test's parts connect to each other and which parts should stay in the scale. When research demonstrates high validity, it signifies that its findings correspond with basic features, characteristics, and changes in the physical or social realm. To test the validity of research's hypotheses and analyze its results, SPSS will be employed (Ong & Puteh, 2017).

### 3.7.2 Reliability

Reliability pertains to the extent of uniformity in the evaluation and the lack of incorrect information (Gidron, 2020). Reliable research is a study that produces comparable findings each time it is conducted with a similar population and using similar methodologies. The more similar the outcomes, the more reliable the research study. The questionnaire will be tested on reliability as part of this research study. Cronbach's Alpha will be utilized to determine how closely a set of variables are linked effectively. Moreover, Cronbach's Alpha is a statistical metric that assesses the reliability of numerous variables, tests, or evaluations. Cronbach's alpha is a dependability statistic where the coefficient may be anything from 0 to 1. In short, the greater the Cronbach's Alpha value, the greater the reliability (Bujang, Omar & Baharum, 2018).

Table 3.1 : Cronbach's Alpha Value

Cronbach's Alpha Value	Internal Consistency
>0.9	excellent
0.8~0.9	Very good
0.7~0.8	Good
0.6~0.7	Moderate
<0.6	poor

### 3.7.3 Normality Test

A normality test is a way to assess if the sample data came out of a regularly distributed demographic (within a certain tolerance). Several statistical evaluations, including the Student's t-test and one- and two-way ANOVA, need a regularly distributed sample size. Normality is an essential consideration when selecting on measurements of the centre of gravity and statistical approaches for analysing data. Various statistical evaluations need a level of normality inspect since data normalisation is an essential presumption in parametric evaluations. Skewness and kurtosis are the examples of normality test. Skewness is a metric for balance, or more accurately, for the normal distribution's insufficient alignment. The shape of the distribution has a positive skew or skewed to the right if the majority of the data is on the left and the right tail is longer. The pattern of distribution is left- or negatively-skewed if the peak is towards the right and the left tail is longer. However, kurtosis is a metric used to quantify how skewed a distribution's shape is. A shape that is almost normal is indicated by a kurtosis value approaching zero. A distribution that is more peaked than typical is indicated by a negative value, while a broader shape is indicated by a positive kurtosis.

### 3.7.4 Pearson Correlation

The quantitative data acquired through the survey questionnaire will be analyzed using correlation analysis in this study. This determines the association, substantial connections, and developments between two variables (Senthilnathan, 2019). There could be either a positive or negative association between two variables,

or even for there to be no connection at all. The statistical evaluation of the research topic can be carried out through an arrangement or series of analyses utilizing a common correlation test that yields a value known as "r." The r coefficient is expressed as a decimal number in procedure called the Pearson Correlation Coefficient (Akoglu, 2018). Pearson Correlation Analysis is performed in this research study to investigate the connection between the service convenience of online banking towards customer loyalty. The coefficient range may be applied to investigate the connection's strength between the two variables.

Table 3.2 : Pearson Correlation Value

Positive Value	Negative Value	Correlation
0.9~1.0	(-0.9~ -1.0)	Very high positive (negative) correlation
0.7~0.9	(-0.7~ -0.9)	High positive (negative) correlation
0.5~0.7	(-0.5~ -0.7)	Moderate positive (negative) correlation
0.3~0.5	(-0.3~ -0.5)	Low positive (negative) correlation
0.0~ 0.3	(0.0~ -0.3)	Negligible correlation

### 3.7.5 Multiple Regression Analysis

Regression analysis comprises a range of statistical techniques that estimate the associations between independent and dependent variables. When anticipating a quantitative response, linear regression may be a very helpful technique. The role of linear regression analysis is to estimate the value of a dependent variable from the established values of its independent variables (Kumari & Yadav, 2018). However, more complicated than simple linear regression is a method known as multiple regression. Multiple regression analysis may examine the correlation between multiple independent variables and a single dependent variable. (Kim & Oh, 2021). This modelling approach involves anticipating a dependent variable by utilizing one or more independent variables. Of all statistical methods, multiple regression analysis is the most often utilized. Using the calculation of the coefficient ( $R^2$ ), the multiple regression analysis approach evaluates the validity of the link between the independent

variables and a dependent variable. The statistical program SPSS may be utilized in this research study for investigating the multiple regression.

### 3.7.5.1 R-squared Value ( $R^2$ )

When completing multiple linear regression, the R-Squared ( $R^2$ ) value is typically provided (Karch, 2020). The reliability of a regression model may be measured by calculating its R-squared value (coefficient of determination). It demonstrates how the independent variable clarify the variation in the dependent variable. The R-squared is an indicator of statistics used to determine how much of the disparity in results can be attributed to a change in the independent variables. The R-squared statistic depicts the amount of the variability in the dependent variable can be accounted for by the linear model. R-squared values, varying from 0 to 1, are often presented as percentages spanning that range. A value of 0% denotes a framework that ignores any outliers from the mean of the answer variable. The regression model and the dependent variable may be predicted from its mean. 100% accuracy indicates a framework that fully describes the dispersion of the response variable around its mean. Kumari & Yadav (2018) mentioned that a perfect linear connection exists between x and y when  $R^2$  is greater than 1. Additionally, it implies that the change in x explains all of the variance in y. On the other hand, when  $R^2$  is between 0 and 1, the linear connection between x and y is less. It also suggests that changes in x may explain shifts in y. In a nutshell, a higher R-squared indicates that the regression model provides a more accurate match to the data.

### 3.7.5.2 F-value

The F-value is used in multiple regression to assess the general significance of the regression equation. It calculates the equation's clarified variance to an unknown variance proportion. On the other hand, the F-value is a numerical number derived from the F-statistic computation. It functions as the test statistic for the F-test and is compared with the f critical value to determine whether the regression equation is statistically significant (Kissell & Poserina, 2017). In regression analysis, there is no linear relationship in null hypothesis. At least one independent variable affects the dependent variable in the alternative hypothesis. The mean square for regression



and mean square for residuals must be divided to produce the F-value (Kumar, 2023). To establish the regression model's significance in hypothesis testing, the F-value must then be compared to the crucial F-value. If the calculated F-value surpasses the critical value, it is possible to disregard the null hypothesis. The statistical significance of the regression model is the reason behind this finding. On the other hand, if the outcome is lower than the critical value, it is impossible to reject the null hypothesis. Therefore, the F-value will be computed in this research study to assess the significance of the connection between service convenience of online banking and customer loyalty.

### 3.7.5.3 t-value

A t-value is a statistical measure that expresses the degree to which two groups' means change, and it is frequently employed in the context of hypothesis testing (Gerald, 2018). The t-value is the statistical procedure used to determine whether or not the difference is statistically significant. The t-value is a statistical method that applies the T-statistic, T-distribution values, and degrees of freedom to determine the significance of variations between two sample means. After that, the t-value will be compared to the critical value. If the t-value surpasses the critical value, the null hypothesis will be refused, and the alternative hypothesis will be considered (Al-Achi, 2019). If the value is below the specified limit, it is impossible to deny the null hypothesis. The t-value in this research study will be calculated by using SPSS software.

### 3.7.5.4 Beta value

Regression coefficients for standardised data are called beta values. When a standard deviation is added to the independent variable and all other independent variables remain same, the dependent variable rises overall by a particular percentage, or beta. The regression coefficient, represented by  $\beta$ , is the multiplicity of the change in x that is required to get the corresponding standard deviation in y, or the change in y for every unit increase in x. It illustrates the line's gradient, either upward or downward, in this manner.

### 3.7.5.5 Collinearity

Tests for collinearity evaluate the connections among every independent variable and each other variable. The Coefficients table will display the collinearity statistics. Collinearity statistics provide an assessment to each independent variable in order to quantify the link between many independent variables. The "tolerance" measures the percentage of variation in an independent that cannot be explained by the other independent variables. Variance inflation factor (VIF) scores should be closer to 1, while anything under 5 is acceptable and anything above 10 indicates strong collinearity.



## CHAPTER 4

### RESULT AND DISCUSSION

#### 4.1 Introduction

During the previous section, the researcher was responsible for designing and developing the survey questions and distributing them online to the respondents to gather the responses for the present investigation. Furthermore, the researcher will analyze the respondents' data and deliver the study outcomes in this chapter. The conclusions of the analysis that was carried out on the information obtained from the 384 survey questionnaires received will be presented in this chapter after the completion of the study. IBM's Statistical Package for the Social Sciences (SPSS) version 29 was utilized to carry out the investigation. This chapter aims to evaluate the relationship between the convenience of online banking services and customer loyalty. To do so, the researcher will discuss the respondents' demographic data, the results of the pilot test, the reliability test, the validity test, the Pearson Correlation Analysis, and the Multiple Linear Regression Analysis.

#### 4.2 Descriptive Analysis

The researcher utilized descriptive analysis to examine the demographic data of the respondents. The survey questionnaire was disseminated to the target respondents through online Google Forms. The result is that a total of 384 respondents have been collected. Using demographic profile analysis in the survey questionnaire, researchers evaluate and investigate how the service convenience of online banking contributes to the loyalty of customers. The demographic data of respondents was then described by generating the percent and frequency after using SPSS.

### 4.2.1 Respondents' Demographic Data

Table 4.1 displays the demographic information of the individuals who participated in the survey. This data was obtained via the use of the questionnaire that was included in the study. Among the demographic information provided by the respondents were their gender, age, race, and highest level of education. More than 384 individuals have responded to this survey by filling out the questionnaire.

Table 4.1 : Respondents' Demographic Data

	Characteristics	Frequency	Percent
Gender	Male	157	40.9
	Female	227	59.1
	Total	384	100
Age	Below 20 years	26	6.8
	21-40 years	333	86.7
	41-60 years	24	6.3
	Above 60 years	1	0.3
	Total	384	100
Race	Malay	105	27.3
	Chinese	224	58.3
	India	52	13.5
	Other	3	0.8
	Total	384	100
Highest Education Level	Secondary School	31	8.1
	Pre-university (STPM, A-level, or Matriculation)	53	13.8
	Tertiary (Diploma, Degree, Master, or PhD)	300	78.1
	Other	0	0
	Total	384	100

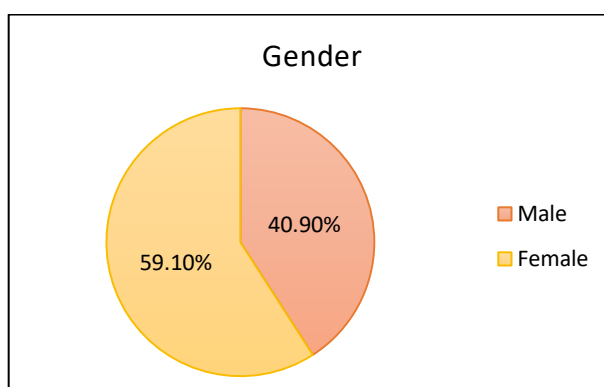


Figure 4.1 Gender

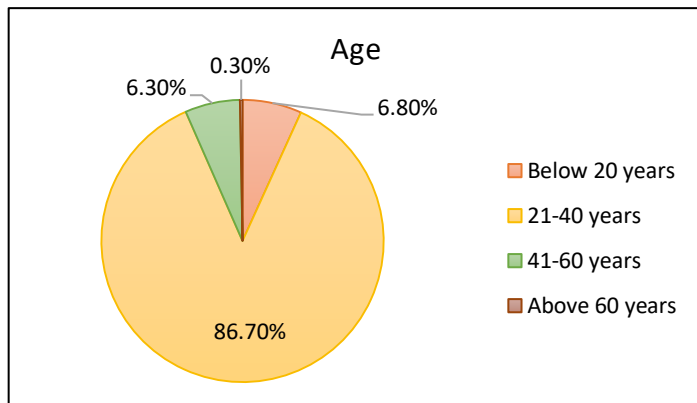


Figure 4.2 : Age

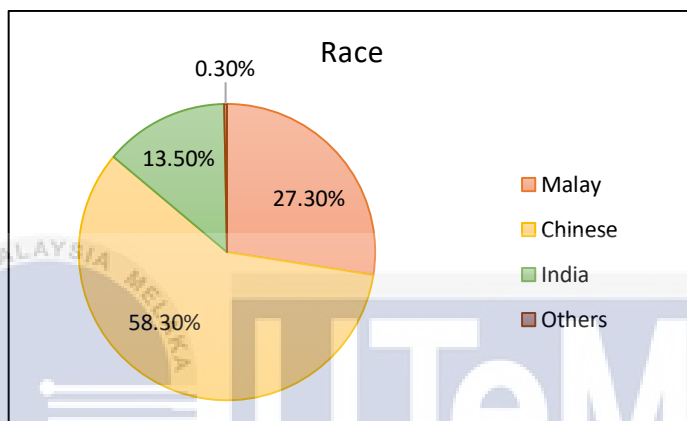


Figure 4.3 : Race

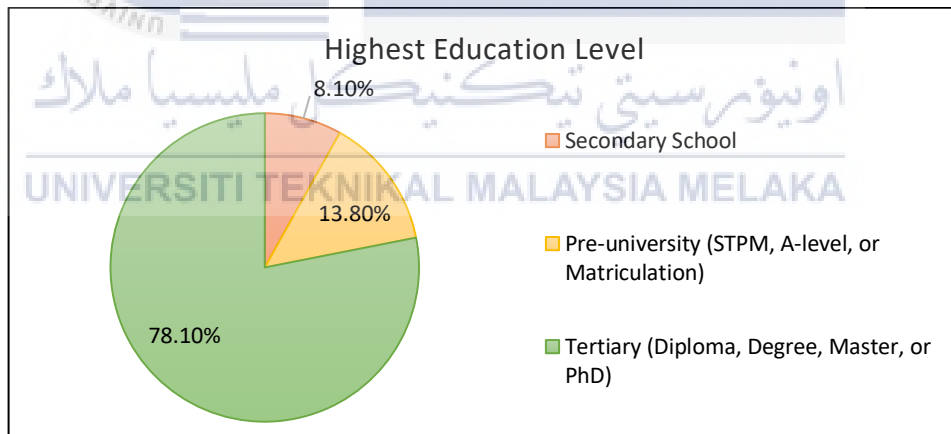


Figure 4.4 : Highest Education Level

Table 4.1 shows that the total amount of genders is 384 people. Among them, a total of 227 respondents (59.1%) involved in this study were female, while only 157 respondents (40.9%) were male. This means that females mainly filled in the survey form.

Among the 384 respondents, the age between 21-40 years reached the highest record, 86.7%. In contrast, only 0.3% of respondents are above 60 years old. Twenty-six people (6.8 %) who filled in the form are below 20 years old, and only 24 people (6.3%) are 41 to 60 years old.

In this survey, as many as 224 people (58.3%) were Chinese. The rest were 105 Malays (27.3%) and 52 Indians (13.5%). Among the remaining three people not mentioned, two are Arab, and one is from Iban.

Among the group of responders, there are as many as 300 people (78.1%) whose highest education level is at the tertiary level, followed by 53 people (13.8%) in the pre-university group and 31 people (8.1%) in the secondary school level.

#### 4.2.2 Variable Description

The table 4.2 below shows the descriptive statistics that discuss about the mean, standard deviation, skewness and the kurtosis for all the independent variables and dependent variable.

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Table 4.2 : Descriptive Statistics

Descriptive Statistics				
	Mean	Std. Deviation	Skewness	Kurtosis
<b>Accessibility</b>				
A1	4.54	0.653	-1.512	2.621
A2	4.35	0.688	-0.968	1.163
A3	4.29	0.845	-1.383	2.006
A4	4.42	0.707	-1.159	1.253
<b>Usability</b>				
U1	4.44	0.643	-1.007	1.231
U2	4.17	0.846	-1.215	1.802
U3	4.46	0.680	-1.223	1.562
U4	4.35	0.761	-1.261	1.828

Flexibility				
F1	4.44	0.717	-1.530	3.348
F2	4.48	0.617	-0.969	0.896
F3	4.43	0.635	-1.099	2.418
F4	4.51	0.621	-1.165	1.517
Customer Loyalty				
CL1	4.56	0.602	-1.450	3.583
CL2	4.48	0.621	-1.028	1.264
CL3	4.48	0.600	-0.831	0.477
CL4	4.48	0.626	-1.002	0.871
CL5	4.46	0.616	-0.943	1.189

The descriptive statistical analysis for the independent and dependent variables is presented in Table 4.2 above. Independent variables for Table 4.2 are Accessibility, Usability and Flexibility, while the Dependent variable is Customer Loyalty. CL1 under Customer Loyalty gain the highest mean value (4.56) among all the independent and dependent variables. In contrast, U2 under Usability earn the lowest mean value, 4.17. Among all the independent variables and dependent variable, the standard deviation of U2 under Usability was the highest (0.846), while CL3 under Customer Loyalty was the lowest (0.600).

The skewness values for all the independent and dependent variables range from -1 to -0.5. It indicates a negative skewness and is sometimes called a left-skewed distribution. The kurtosis value for all the independent variables and dependent variable are mostly lower than 3, excluded F1 under Flexibility and CL1 under Customer Loyalty. The kurtosis value for F1 and CL1 is higher than 3, which is 3.348 and 3.583. Therefore, F1 and CL1 indicate positive kurtosis.

### 4.3 Pilot Test

The first step that will be taken in this investigation is to carry out a pilot study. Pilot test usually used to test the reliability and validity of the survey questionnaire. The significance of this is due to its contribution towards enhancing the reliability of survey questionnaires. The transparency of the questions that are formed, as well as

the relevancy, comprehensiveness, and mutual exclusivity of the answer options, are all guaranteed by this action. In this study, approximately 20 respondents were selected for the pilot test. The researcher took a duration of two weeks to conduct the pilot test successfully.

#### 4.3.1 Reliability Test

A reliability analysis was conducted to determine whether the elements utilized in each variable were reliable enough to produce consistent results. As a result, Cronbach's Alpha was implemented. Table 4.3 shows Cronbach's Alpha value of the pilot test among 20 respondents.

Table 4.3 : Cronbach's Alpha For Pilot Test

Variables	Cronbach's Alpha	N of Items
IV1 Accessibility	0.726	4
IV2 Usability	0.766	4
IV3 Flexibility	0.740	4
DV Customer Loyalty	0.893	5

Table 4.3 above shows that Cronbach's Alpha value for all independent variables is in the range of 0.7 to 0.8, which means the internal consistency for the independent variable is good. Among the independents variables, Usability has the highest Cronbach's Alpha value which is 0.766. However, the Cronbach's Alpha value for Accessibility and Flexibility is 0.726 and 0.740.

Besides that, the internal consistency for the dependent variable is very good because Cronbach's Alpha value is 0.893. Hence, the questionnaire exhibited a high degree of reliability.



### 4.3.2 Validity Test

A construct validity test aims to determine the extent to which all of the test components are connected to one another and to determine which features should be retained in the scale. In this research study, there are 17 items that were included in the survey questionnaire and tested as valid for the pilot test. It means all of the test's parts connect to each other, and all aspects stay on the scale. The study displays a high level of validity, which indicates that its results coincide with fundamental aspects, characteristics, and changes in the social or physical domain.

### 4.4 Reliability Test

The reliability investigation provided an explanation of how well-being items assess the variables and how they positively correlate. The table 4.4 above shows the Cronbach's Alpha value getting from the 384 respondents.

Table 4.4 : Cronbach's Alpha

Variables	Cronbach's Alpha	N of Items
IV1 Accessibility	0.764	4
IV2 Usability	0.752	4
IV3 Flexibility	0.720	4
DV Customer Loyalty	0.779	5

The table shows that the Cronbach's Alpha value for all independent variables and dependent variable is in the range of 0.7 to 0.8. It means the data is acceptable and has a good internal consistency. The Cronbach's Alpha of Customer Loyalty reached the highest value (0.779), while the Flexibility reached the lowest value (0.720). In the meanwhile, the Cronbach's Alpha value for Accessibility and Usability is 0.764 and 0.752.

## 4.5 Pearson Correlation Analysis

Table 4.5 below shows the Pearson Correlation Analysis for all independent variables.

Table 4.5 : Pearson Correlation Analysis

	Correlation		
	Accessibility	Usability	Flexibility
Accessibility	1	0.714**	0.569**
Usability	0.714**	1	0.631**
Flexibility	0.569**	0.631**	1

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

Table 4.5 shows that the correlation between accessibility and usability reached the highest value which is 0.714. This means it has a high positive correlation. It also means the connection between accessibility and usability towards customer loyalty is high. Besides that, usability and flexibility also has a high positive correlation (0.631), while the correlation between accessibility and flexibility only has a moderate positive correlation (0.569).

## 4.6 Multiple Linear Regression Analysis

Multiple regression analysis investigates the relationship between numerous independent variables and a single dependent variable. The statistical software SPSS may be applied in this research study to explore multiple regression.

### 4.6.1 R-Squared

Table 4.6 displays the model summary, including the R-value and R-Square value. These values are useful for assessing the degree of accuracy of fit of a regression model to the data.

Table 4.6 : Model Summary For Multiple Regression Analysis

Model Summary		
Model	R	R-Square
1	0.738 <sup>a</sup>	0.544

a. Predictors:(Constant), Accessibility, Usability, Flexibility

The R-value is a metric that quantifies the accuracy of predicting a dependent variable. The R-value of 0.738, as shown in Table 4.6 above, suggests a high degree of prediction accuracy. The coefficient of determination (R-square) is 0.544, which means that all independent variables could explain 54.4% of the variation in the dependent variable.

#### 4.6.2 Anova Analysis (F-test)

The F-value in Table 4.7 depicts the association between independent variables and a dependent variable. F-value will be computed in this research study to assess the significance of the connection between the service convenience of online banking and customer loyalty. F-value checks if the entire regression model fits the data well.

Table 4.7 : Anova Analysis

Anova <sup>a</sup>				
Model		df	F	Sig
1	Regression	3	151.373	<0.001 <sup>b</sup>
	Residual	380		
	Total	383		

a. Dependent Variable: Customer Loyalty

b. Predictors: (Constant), Accessibility, Usability, Flexibility

Table 4.7 indicates that all independent variables have a strong statistical significance in predicting the dependent variable, with an F-value of 151.373 and a significant level of less than 0.001. With  $F(3, 380) = 151.373, p < 0.001$ , the regression model is a good data fit.

### 4.6.3 t-value, B value and Collinearity Statistics

Table 4.8 shows the beta value, t-value and p-value for the multiple linear regression analysis. It also shows the collinearity statistics.

Table 4.8 : Coefficients Table

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		t	Sig.	Collinearity Statistics
	B	Std. Error			
1 (Constant)	1.292	0.154	8.398	0.000	
Accessibility	0.112	0.041	2.765	0.006	2.142
Usability	0.254	0.043	5.899	0.000	2.406
Flexibility	0.358	0.043	8.374	0.000	1.745

a. Dependent Variable: Customer Loyalty

Based on Table 4.8, Accessibility, Usability, and Flexibility have a positive relationship towards Customer Loyalty. The linear equation was Customer Loyalty =  $1.292 + 0.112(\text{Accessibility}) + 0.254(\text{Usability}) + 0.358(\text{Flexibility})$ . Table 4.8 shows Flexibility has the most significant beta value (0.358), while Accessibility has the least significant beta value (0.112).

The p-value of all the independent variables is below the threshold of 0.05, which means Accessibility, Usability, and Flexibility strongly correlate with Customer Loyalty. Therefore, the p-value of Usability and Flexibility, which are  $p = 0.000$ , implies high significance. The value 0.006 of Accessibility also has a significant level.

Table 4.8 shows the variance inflation factor of the collinearity statistics for all independent variables is all below 10. The variance inflation factor for Accessibility is 2.142, for Usability is 2.406 and Flexibility is 1.745. This means there is no any redundant data for the independent variables and the dependent variable.

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.1 Introduction

Using the results from the previous chapter as a basis, this chapter will examine and explore those findings. In this chapter, the researcher will discuss on the research objectives and the hypothesis's testing results. This chapter will also discuss the research implications and the study's limitations. In addition to this, the researcher will provide recommendations on the research project. This chapter will also end with a conclusion.

#### 5.2 Conclusion On Research Objectives

RO1 : To identify how much the service convenience of online banking will influence the customer loyalty.

Accessibility, usability and flexibility are the services convenience of online banking. Based on Chapter 4, the F-value is 151.373 and the p-value is  $<0.001$ . This demonstrates that the framework has a statistically significant impact. It proves that the service convenience of online banking greatly influence the customer loyalty. Furthermore, the r-square value is 0.544, which means that the accessibility, usability and flexibility could explain 54.4% of the customer loyalty. This R-square value indicates a strong relationship between the service convenience of online banking and the customer loyalty. Most of the respondents with the ages 21 to 40 years agreed with the statement that the service convenience of online banking significantly impacts

customer loyalty. This is because people nowadays have a busy lifestyle and hope to have more comfort when accessing one service. Thus, the features of online banking such as Chatbots and all day services increase customer satisfaction and loyalty to online banking. Besides that, teenagers between 21 to 40 years old are now more likely to use technology products. The rapid development of technology makes it easier for bank customers to establish intimate connections with banks. With the most advanced information technology, online banking can provide all services according to customers' needs. Therefore, a strong relationship has appeared between the service convenience of online banking and customer loyalty.

RO2 : To investigate the strength between the service convenience of online banking towards customer loyalty.

In this research study, there are three service conveniences of online banking towards customer loyalty, which are accessibility, usability and flexibility. Table 4.5 shows that the correlation between Accessibility and Usability was the highest, 0.714. It shows that the Accessibility and Usability has a high positive correlation towards customer loyalty. However, the correlation value between Accessibility and Flexibility is 0.569. The correlation value for Usability and Flexibility is 0.631. This two correlation value is in the range from 0.5 to 0.7, which means that this two correlation has a moderate positive correlation towards customer loyalty. Therefore, accessibility, usability and flexibility of online banking has a positive relationship with the customer loyalty. Most of the respondents are female. Based on the demographic data, female respondents supported that all the independent variables of this study has a positives relationship with the dependent variable. They agree that the accessibility, usability and flexibility has a positive correlation towards the customer loyalty. This is because female have different roles and characteristics in their lifestyle. They play a role like a mother, a wife or even though an employee. They need to do a lot of things in a day such as household tasks and managing their work. Therefore, the convenience of online banking services play an important roles in their life. They hope the service can save their precious time and effort. All day services enables people to make payments anytime and anywhere. People nowadays are more prefer services that help them to save their time and effort. Therefore, the research objective two is supported.

RO3 : To validate which service convenience of online banking contributes the most to the customer loyalty.

Customer Loyalty = 1.292 + 0.112(Accessibility) + 0.254(Usability) + 0.358(Flexibility). Based on the linear equation, the beta value for Flexibility was the highest, 0.358. When it comes to customer loyalty, the variable that has the highest beta coefficient is the one that contributes the most. Therefore, it can be proven that Flexibility are the independent variable that contributes the most to the customer loyalty. The flexibility of online banking services is also an essential feature for customer convenience. Most respondents' highest education level is tertiary level. This means that the respondent have a higher education level and know that the flexibility of online banking services brings a lot of convenience to them. Flexibility significantly impacts the enhancement of customer fulfilment. People with the highest education, especially tertiary level, are more likely to use online platforms. The online platform gives them much flexibility, mainly while they utilize online banking services. Besides that, people with a higher education level will have good skills in time management. Therefore, the flexibility of online banking services may help them to conduct their financial activities anytime and anywhere. Multi-platform service allows people to conduct financial services and then improve the customer's banking experience and loyalty. Online banking services also provide customers with mobile payments at anytime and anywhere, make people become more flexible to use the service. Thus, flexibility of online banking services has contribute the most to the customer loyalty.

### 5.3 Hypothesis Testing

Table 5.1 : Hypothesis Testing Result

H <sub>1</sub> : Accessibility of online banking services will be positively associated to the customer loyalty.	Accepted
H <sub>2</sub> : Usability of online banking services will be positively associated to the customer loyalty.	Accepted
H <sub>3</sub> : Flexibility of online banking services will be positively associated to the customer loyalty.	Accepted

Table 4.8 shows that the significant value for Accessibility is 0.006, and the t-value is 2.765. The result is accepted because the significant value for Accessibility is less than the threshold 0.05. Therefore, it can be supported to say that the accessibility of online banking services is positively associated with customer loyalty. This is because accessibility such as multilingual will be used as essential elements to motivate users to adopt mobile banking apps and increase customer loyalty. H<sub>1</sub> is supported because online banking provide multilingual customer services such English, Malay and Chinese. Based on the findings, most of the respondents are Chinese. The findings show banking platforms that provide a user-friendly interface in Chinese enhance the level of acceptability among Chinese respondents, as they may feel more comfortable while using their mother tongue. Thus, accessibility is positively associated to the customer loyalty.

Besides that, the t-value for Usability is 5.899, and the significant value of usability towards online banking is 0.000. Thus, the hypothesis about the Usability of online banking services being positively associated with customer loyalty can also be accepted because the significant value is below the threshold of 0.05. Usability is the most important factors in evaluating the performance of online banking services. For customers, when they need to use a service, there is no more important metric than usability. The usability of online banking services should be a way for customers to have a pleasant experience and help them save all time and effort. Chatbots are anticipated to play a significant role in online banking customer service because



chatbots can deliver specific and expert replies to all questions from customers in a short period of time. A service's consistency and responsiveness have an influence on customer satisfaction, which is directly related to loyalty. Besides that, the findings show respondents strongly agreed with the statement that bank stability is also crucial for banking services. Stability determines how reliable and usable a service is. Stability is necessary for banking services to function optimally for people. Therefore, the hypothesis indicating a positive relationship between the usability of online banking services and customer loyalty is supported.

Furthermore, Flexibility likewise has a significant value that is lower than 0.05, which is 0.000, and the t-value is 8.374. As a result, hypothesis  $H_3$  may be accepted. Customer loyalty is significantly correlated with flexibility, which is a very favourable association. Based on the analysis of demographic data, respondents aged 21-40 have the highest acceptance of the hypothesis that flexibility is positively associated with customer loyalty. This is because individuals in this age group frequently experience significant life changes, including beginning a new job, buying property, or forming a family. Throughout these transitions, flexible online banking services can accommodate their emerging financial requirements. Thus, participants between the ages of 21 and 40 accepted the  $H_3$  hypothesis. Moreover, online banking is currently providing convenient 24-hour financial services. Online banking services also offer mobile payments to individuals at anytime and anywhere. Therefore, all-day services and mobile payment services make online banking services more flexible.

## **5.4 Research Implication**

### **5.4.1 Theoretical Implication**

The previous findings show that accessibility, usability, and flexibility will significantly impact customer loyalty. It has a positive correlation between the service convenience of online banking and customer loyalty. These results enhance the precision of the service convenience concept by outlining the exact role of these particular components within the framework of service convenience. It enhances the

theoretical knowledge of the elements that define convenience in the framework of online banking.

The result of this research study also shows the importance of accessibility, usability, and flexibility towards customer loyalty. These findings also contribute to the digital transformation concept. It's also about finding out what makes people satisfied with online services. With this knowledge, people may alter how businesses organize and operate in the digital world.

#### **5.4.2 Practical Implication**

The results of this research show that the accessibility of online banking will significantly impact customer loyalty. It also has a positive correlation between the accessibility of online banking services and customer loyalty. Banks must allocate resources toward developing solid technological platforms to provide dependable and accessible online banking services. This will improve the convenience of online banking services and allow more people to access them easily.

The findings shows that the usability has positive correlation towards the customer loyalty. Therefore, banks can invest in education programs so that more customers understand how to operate and use the services offered by online banking. Banks can also launch a series of videos to show how to use and operate online banking services.

#### **5.5 Limitation Of The Study**

One of the limitations of this study is that this study only focuses on the city of Malacca. The people in Malacca City only account for a small part of the population in Malaysia. This also means that this research report is for reference only because the opinions and views of people in Malacca City do not fully represent all people in Malaysia. Since the environment and life in each region are different, the research done only in Malacca City does not apply to others.

This study is complex to go into in-depth as the researcher only used questionnaires to collect data. Data collected through questionnaires alone does not allow for in-depth investigation. Sometimes, the information collected through questionnaires may need to be more accurate. This is because some people who fill out the questionnaire must understand the artistic conception expressed in the question. Beyond that, most questionnaires only provide specific answers for people to choose from. Therefore, the people who responded to the questionnaire could not fully express their thoughts. The particular answers provided in the questionnaire sometimes have nothing to do with what the respondent thinks, so they can only choose a solution that is closest to what they believe. Therefore, the questionnaire cannot fully express their inner thoughts.

## 5.6 Recommendation Of Research

The researcher may conduct the study at different places in Malaysia to get more information about this research topic. The outcome would be more accurate when generalising the findings to other populations in Malaysia. People in every region have different habits and ideas. Therefore, conducting research in the various areas will yield additional gains and results.

In preparation for the next study, the researcher may use mixed method, quantitative and qualitative approaches. Interviews and experiments are two examples of qualitative research methods, while survey questionnaire is one of the quantitative methods. The researcher can collect specific data and direct replies from respondents as a result of qualitative method. The researcher can include more explanation and discussion in the study report. This is because the data collected using the qualitative method can fully express the thoughts of the person who answered the interview. Their ideas are better than specific answers to the questionnaire. They can express their thoughts completely. However, the questionnaire may allow the researcher to receive input on time. Therefore, data collected using quantitative and qualitative methods will have higher credibility.

Last but not least, it is possible that the researcher may extend the amount of time allowed to carry out the future research investigation. The researcher may have a more in-depth comprehension of the study and a more thorough perspective on it. It is also possible for the researcher to monitor the shifts in customer opinions and have a deeper comprehension of the investigations being conducted.

## 5.7 Summary

The purpose that the researcher conducted this research study is to investigate how the convenience of using a banking service affects the customer loyalty. The researcher has succeeded in achieving all three research objectives and hypotheses. The study's results can be used to learn more about how the convenience of online banking leads to the customer loyalty. The findings enhance the theoretical knowledge that define convenience in the framework of online banking and also contribute to the digital transformation concept. As a user of online banking services, the researcher hopes the findings of this study may attract the banks' attention to enhance their service and guarantee the service quality to improve the customer satisfaction and customer loyalty.

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## APPENDIX A

PSM 1 Gantt Chart Table

Task	Week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Select research topic															
Modify research topic															
Topic confirmation															
Identify research questions															
Specify research objectives															
Chapter 1 preparation															
Literature review															
Chapter 2 preparation															
Design research framework															
Create hypothesis															
Set research methodology															
Chapter 3 preparation															
PPT and video presentation submission															
PSM 1 presentation															
PSM 1 correction															
PSM 1 report submission															

## APPENDIX B

PSM 2 Gantt Chart Table

Task	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Research framework correction																
Build questionnaire																
Questionnaire correction																
Distribute google form																
Data collection																
SPSS training																
Data analysis																
Chapter 4 preparation																
Chapter 5 preparation																
Refine chapter 4 and 5																
Final thesis draft submission																
Final thesis draft correction																
Full thesis report submission																
PPT and video presentation submission																
PSM 2 presentation																
Logbook submission																
E-thesis PSM 2 submission																

## APPENDIX C

## Krejcie &amp; Morgan Table

$N$	$S$	$N$	$S$	$N$	$S$
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.— $N$  is population size.  $S$  is sample size.

Source: Krejcie & Morgan, 1970



## APPENDIX D

### Google Form

A very good day to everyone, my name is Chia Cai En. I am one of the undergraduate student in Bachelor Degree of Technology Management (Innovation Technology) at Universiti Teknikal Malaysia Melaka (UTeM). I am now conducting my research paper about "Service Convenience of Online Banking towards Customer Loyalty."

This study is to investigate whether the service convenience of online banking will influence customer loyalty. Therefore, I would like to invite you to spend about 5 to 10 minutes to fill out this survey form. This questionnaire has divided into three parts. Part A asks about respondents' demographic profiles. Part B asks about the service convenience of online banking services, and Part C asks about customer loyalty.

Your participation is voluntary and your information will be kept confidential and used solely for research purposes. Thank you very much for your cooperation.

If there are any questions regarding this questionnaire please do not hesitate to contact me ([b062010238@student.utem.edu.my](mailto:b062010238@student.utem.edu.my)).

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Part A : Demographic Profile

1 Gender

- Male  
 Female

2 Age

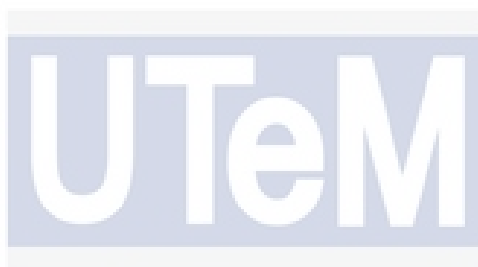
- Below 20 years  
 21-40 years  
 41-60 years  
 Above 60 years

3 Race

- Malay  
 Chinese  
 India  
 Other

4 Highest Education Level

- Secondary School  
 Pre-university (STPM, A-level, or Matriculation)  
 Tertiary (Diploma, Degree, Master, or PhD)



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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

<b>PART B : Service Convenience of Online Banking</b>
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This part is talking about the service convenience of online banking services.  
Please rate from 1 to 5 (1-Strongly Disagree, 2-Disagree, 3-Somewhat Agree, 4-Agree, 5-Strongly Agree).

Accessibility						
		1	2	3	4	5
1	I can choose my preferred language.					
2	FAQs provide clear information.					
3	I use live chat to resolve issues.					
4	Phone conversations are more practical.					

Usability						
		1	2	3	4	5
1	I can always check my account information.					
2	Chatbots provide expert answer.					
3	Bank stability is crucial for services.					
4	I can call the hotline for emergencies					

Flexibility						
		1	2	3	4	5
1	I can make transactions 24/7.					
2	I manage my bank account through mobile apps.					
3	I can establish a limit for my debit card.					
4	Fund transfers are easily completed.					

PART C : CUSTOMER LOYALTY
---------------------------

This part is talking about whether the service convenience may be a key factor in fostering customer loyalty.

Please rate from 1 to 5 (1-Strongly Disagree, 2-Disagree, 3-Somewhat Agree, 4-Agree, 5-Strongly Agree).

Customer Loyalty		1	2	3	4	5
1	I use online banking as long as it satisfies me.					
2	Loyalty increases when there is trust in the services.					
3	I will stay committed if it is useful.					
4	I'm loyal when aware of the convenience.					
5	I had a great experience using the services.					

- END OF QUESTION -

