Mobile Banking App Features: It's Impact on Continuous Utilization and Loyalty

Nor Aidawati Binti Kasbani

Research Project Submitted in Partial Fulfillment of the Requirements

for the Degree of Master in Management

Universiti Tun Abdul Razak

June 2023

DECLARATION

The author hereby declares that this project paper is the original study undertaken by her unless stated otherwise due to acknowledgment has been specified to references quoted in the bibliography. The views and analyses in this study are that of author's based on the reference made; and this does not constitute an individual to use this study as technical tool for investment.

Signature : *Aida Kasbani*

Name : Nor Aidawati Binti Kasbani

Date : 24 June 2023

ACKNOWLEDGEMENT

I would like to extend my sincere appreciation by recognizing Prof. Dr. Roland Xavier Siri, my supervisor for research project reporting, for his amazing direction, tenderness, and patience. In addition, I would want to take this opportunity to thank and appreciate each and every faculty member that taught me during my journey in MIM programme.

It is a delightful experience to have pursuing the course of MIM programme in UNIRAZAK. The line of lecturers and expertise are highly proficient of imparting knowledge to us wholeheartedly. Not to mention Prof. Dr. Benjamin Chan, our Graduate School of Business Dean, for being one of the best which has consistently determined to ensure first-class MIM curriculum is delivered in preparation to provide the best qualified and talented instructors especially in School of Business.

Importantly, my highest appreciation to my own circle around friends and family, especially my wonderful mother and amazing spouse, as well as two lovely children for the continuous moral support throughout the MIM journey as the significant pillar for me to went through the entire MIM program successfully.

Finally, greatest gratitude to all colleagues in all the courses for their encouragement and continuous support for me to have accomplish entire program coursework and projects.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Abstract of the project paper submitted to the Senate of Universiti Tun Abdul Razak in partial fulfilment of the requirements for the Master in Management.

Mobile Banking App Features: It’s Impact on Continuous Utilization and Loyalty

By
Nor Aidawati Kasbani

June 2023

Many businesses now interact with their customers through m-banking solutions. Mobile banking is a term used to describe a popular technique for giving users accessible, local banking alternatives. Mobile banking has been covered in a number of articles due to its significance to both banks and clients. Given that this paper is descriptive and offers an assessment of the present, the data was collected using a survey that included a range of important characteristics of the chosen population. This study seeks to close the knowledge gap on the association between current mobile banking app features and its impact towards continuous app utilization and loyalty, particularly Malaysian public. Users' decisions to switch to mobile banking app are influenced by a number of factors, including their level of "emotional connection,"(EC) "transaction pleasure,"(TP) " ease of use,"(EU) “trustworthiness,"(T) "service, system, and information quality," (SSIQ) "banking reliance," (BR). The hypothesis is divided into its fundamental components, and the link between all of these aspects is determined as part of the investigation into the model. The level of pleasure experienced with newly suggested app feature enhancements by customers will serve as the mediator to achieve continuous utilization and loyalty. Quantitative method is being focus on this study with the Statistical Package for the Social Sciences (SPSS) software are used to carry out a straightforward linear regression procedure. It is learned in this study that the variables have strong relevance in retaining utilization, loyalty and customer retention to remain competitive in mobile banking app and in banking industry specifically. Customer satisfaction fundamentals in this study are highly influence customers for a decision making to continue utilize and remain loyal with an enhance app features existence as a mediator with a significant outcome.

Keywords: *mobile banking technology, banking technology, financial institution banking, transaction convenience, mobile banking, mobile apps, app features*.

CHAPTER 1

INTRODUCTION

1.0 Introduction

In this chapter, will formulate a research hypothesis, offer some background, and draw attention to certain challenges that are particular to the area under examination. A user of mobile banking can carry out financial transactions via their mobile device, which might be an Android or iOS mobile device with mobile banking app installed. Mobile banking provides consumers with practically every function that is normally offered via a local branch, including the ability to deposit funds, transfer funds, pay bills, transfer money internationally, and invest. The kind of banking transactions that may be completed online differ from institution to institution in banking industry. Customers of mobile banking are able to apply for credit cards and establish new accounts using the focused Mobile Banking App. Mobile banking serves as a medium for financial institutions to acquire consumers, optimize earnings, and boost customer convenience with a single click, regardless of where the customers are located. The ability to conduct banking transactions outside of normal business hours, along with the fact that mobile banking can be browse from anywhere and has quickly become the customer's preferred method, are all advantages offered by mobile banking (Sohail and Shaikh, 2008).

This made it easier for people to utilize mobile banking since the system has always been available to them whenever consumer need it. As a result, more people are likely to embrace and keep using the mobile banking app, making it a preference over the conventional banking system. In addition, Bank Negara Malaysia (BNM) also places emphasis on ensuring the usability of mobile banking to meet the needs and wants of banking customers these days.

Efforts are strongly encouraged to reduce the problem in mobile banking to be dealt with more effectively. (Financial Stability and Payment System Report, 2010). The market penetration of smart mobile devices has significantly expanded in recent years. Devices are becoming more common in daily life and in organizations, and smartphones come with built-in Android and iOS software. “Tablets are easy to carry and nearly always available when compared to laptop computers. Tablets also have longer battery lives (Accumulate, 2015)”. As a result of these aspects, individuals are increasingly beginning to utilize them in instead of, or in addition to, laptop computers. As mobile devices continue to become increasingly widespread as a platform, businesses, and notably financial institutions, are showing a growing interest in making investments via agile concepts.

Among the opportunities that are open and can be explored by financial institutions, one of them is, by increasing customer loyalty and increasing efforts to reach a wider customer base. Among other things, in increasing results or returns, focus on a more careful study of customer data or introducing something newer and fresher app features, for example, a new platform with a more minimal design and more beneficial functionality feature to existing customers and new customers which impactful to individual’s financial management.

1.1 Background

Businesses now provide their products and services via mobile applications and websites in a variety of industries, including banking as well as the administration of investments and savings. The invention of mobile banking and payment systems has had a greater influence on people's day-to-day lives than any other development that has occurred in recent times. The use of the web to conduct banking activities, such as money transfers, payments, transactions, and other services,

has resulted in a simplification of these formerly complex activities. Despite the fact that more customers are using mobile banking services on a daily basis, there are still many individuals who do not make consistent use of mobile banking and stay committed to a particular banking app**.** "The maturation of mobile network technology has necessitated the creation of infrastructure for the secure processing of mobile payments. Consumers may feel safe using mobile banking at any time, from any location (Agency, 2012)".

Mobile technology is sometimes considered to be cutting-edge, cutting-competition software since it enables internet business transactions to be carried out in a more convenient and profitable manner. These days, a lot of individuals use their mobile phones to complete monetary activities, such as paying bills and many other expenses. "We now communicate differently, conduct commerce when buying and selling things and services, and acquire knowledge in different ways as a result of the widespread adoption and usage of mobile technology (Allua, 2009)". Time and location are not barriers as such a mobile App develops in a supportive and highly safe environment.

Customers can conduct mobile banking transactions whenever and wherever, as a consequence to the secure infrastructure and rapid development of mobile technology. Mobile banking is the concept of doing financial transactions directly or indirectly using a mobile device over a cellular connection or wireless connection. "Many studies were conducted to see how people feel about mobile banking before it became a widely used service (Accumulate, 2015)". According to Jack Flynn, (2023) estimates that there will be 4.9 billion internet users globally in 2023. That represents 62% of the whole world's population. There were 268 million additional smartphone users worldwide between 2021 and 2022. In 2022, there were 6.65 billion smartphone users worldwide, up from 6.38 billion at the start of 2021.

That represents an annual rise of 4%. From 2016 to 2021, mobile usage as a percentage of all internet usage rose from 43.7% to 55%. In actuality, the proportion of mobile devices used to access the internet in the first quarter of 2015 was just 31.16 percent of laptops and other devices. While, as of the beginning of 2022, mobile devices currently account for the bulk of internet consumption (55%). According to estimates, 72.6% of smartphone owners worldwide will only use own devices to access the internet by 2025. This indicates that by 2025, more than 1.3 billion individuals will use smartphones to access the internet globally.

Smartphones and other mobile devices have grown to be extremely popular and extensively utilized throughout the years, joining the internet in this development. Overall, several patterns seem to point to the rise of mobile internet usage as the new standard. With this, mobile banking is seen as an encouragement platform to access mobile banking and further improve the perception of financial institutions. "Customers in the banking sector now mainly conduct business through mobile devices, such as smartphones, applications and tablets (BankID, 2014)".

These mobile-first customers are being more valued by the world's leading financial institutions. As an illustration, Banking in Malaysia is an example of a financial institution that communicates with its customers primarily via the use of mobile devices App. Malaysian financial institutions are now able to offer their consumers with the complete spectrum of banking services as well as commodities by means of a mobile application. Customers are able to submit applications for new accounts or loans via mobile app in their cellphones. By using this banking strategy, the bank is able to deliver improved service to its customers around the clock and in all of their different locations. Additional capabilities of mobile banking include the ability to pay bills, make online purchases, transfer cash, overseas transfers, linking to Tabung Haji service and access investment accounts such as ASNB, and many other features.

Numerous individuals embrace mobile banking nowadays since it is straightforward and convenient to open an account, make a payment and fund transfers, make purchases using a mobile device, and utilize a variety of other banking-related functions without having an effort to be physically visited a banking branch. Mobile banking has sprung onto the scene in the most recent decades, becoming a widespread practice. As per Bank Negara Malaysia statistic below, since the lockdown in 2020 as a consequence of Covid-19 pandemic, there has also been massive incremental and a rise in the total number of transactions in the financial sector that were performed by means of mobile banking.

Transaction Volume and Value *(during the period)*

	ATM				Mobile Banking[3]		Internet Banking[4]					
	Financial Transactions[1]		Cash Withdrawals[2]		Volume	Value	Volume			Value		
Million mil	Volume	Value	Volume	Value			Total	Individual	Corporate	Total	Individual	Corporate
2019	74.9	74,442.1	845.9	427,781.7	489.8	203,845.4	1,173.5	862.4	311.2	8,197,951.2	836,846.0	7,361,105.2
2020	59.8	56,024.4	766.7	377,338.5	935.7	458,877.6	1,540.6	1,162.1	378.5	8,857,998.0	1,060,871.3	7,797,126.6
2021	56.1	57,992.5	779.6	386,333.0	1,475.0	799,714.5	2,030.0	1,583.5	446.5	10,302,930.4	1,169,835.6	9,133,094.8
2022	49.9	61,449.7	798.5	404,735.3	1,666.6	1,141,407.5	2,089.8	1,582.9	507.0	11,750,716.9	1,150,680.7	10,600,036.1
Jan-Apr 2023	16.3	20,827.0	263.0	146,150.8	548.7	422,038.6	773.3	595.6	177.7	4,006,285.8	404,321.2	3,601,964.6

Table 1 : Transaction Summary by Payment Channels in comparison
Source : Bank Negara Malaysia

Despite this surge, mobile banking is being swamped by a fraud and security difficulties. There have been instances in which the customer's account has been hacked, resulting in the loss of their money without the customer's knowledge. Customers who use mobile banking applications, which are now offered by a significant number of financial institutions, have a responsibility to ensure that the applications are kept up to date so that customers do not leave themselves vulnerable to potential risks including but not limited to distributed denial of service assaults, phishing, spoofing, skimming, and corporate account takeovers. In this study, will be focusing on mobile banking App as scope of study and Malaysian public as the population make up the survey data.

Payment Channels

Transaction Volume and Value *(during the period)*

	ATM				Mobile Banking[3]		Internet Banking[4]					
	Financial Transactions[1]		Cash Withdrawals[2]		Volume	Value	Volume			Value		
MMRM mil	Volume	Value	Volume	Value			Total	Individual	Corporate	Total	Individual	Corporate
Jan-19	6.3	6,025.2	73.8	39,005.7	31.7	13,039.5	91.3	67.8	23.5	722,241.6	71,378.1	650,863.5
Feb-19	5.6	6,811.5	65.5	33,054.4	29.9	11,816.0	79.3	58.6	20.7	528,666.0	58,892.4	469,773.7
Mar-19	6.7	7,990.7	75.0	37,538.8	35.6	14,400.3	94.1	70.2	23.9	665,399.5	69,888.8	595,510.7
Apr-19	6.5	6,150.9	73.0	35,725.5	34.0	14,731.7	93.0	68.5	24.6	694,547.6	71,465.2	623,082.4
May-19	6.7	6,358.2	71.6	38,268.6	38.6	16,148.9	101.6	74.2	27.4	668,561.4	70,740.9	597,820.4
Jun-19	5.8	5,546.4	64.8	33,167.4	35.2	14,910.9	86.9	63.7	23.2	592,019.7	61,326.2	530,693.5
Jul-19	6.6	7,107.3	69.3	34,771.7	41.9	17,563.9	101.4	74.3	27.1	692,059.4	72,926.6	619,132.8
Aug-19	6.5	5,993.5	70.4	35,467.7	44.0	17,903.8	100.7	73.9	26.8	731,651.5	70,369.7	661,281.8
Sep-19	6.2	5,774.8	68.9	33,648.1	45.3	18,868.7	99.3	72.9	26.4	673,233.3	66,737.9	606,495.5
Oct-19	6.2	5,714.7	72.1	35,630.9	49.8	20,524.5	108.1	79.4	28.6	715,963.2	74,909.7	641,053.5
Nov-19	5.8	5,427.3	68.8	33,936.1	49.5	20,641.8	106.3	77.3	29.0	725,846.2	72,496.1	653,350.1
Dec-19	6.0	5,541.7	72.7	37,566.9	54.3	23,295.6	111.6	81.6	30.0	787,761.7	75,714.4	712,047.3
Jan-20	5.7	5,617.6	72.5	38,047.7	56.2	26,225.6	109.5	80.6	28.9	772,360.7	76,690.6	695,670.1
Feb-20	5.4	5,078.2	65.3	31,659.3	53.6	24,142.4	104.1	75.5	28.6	662,475.0	69,830.7	592,644.2
Mar-20	5.0	4,540.3	58.7	27,975.6	61.0	26,022.7	111.7	83.1	28.6	750,320.2	75,746.1	674,574.0
Apr-20	4.0	3,056.5	40.1	19,258.1	69.3	23,766.9	119.8	92.5	27.3	671,567.7	71,064.8	600,502.8
May-20	4.7	3,858.7	57.9	29,765.4	86.2	33,437.9	137.9	107.1	30.8	598,561.8	77,706.5	520,855.3
Jun-20	4.7	4,388.3	61.9	30,886.8	77.4	36,112.5	127.7	97.0	30.7	728,854.5	88,596.5	640,258.0
Jul-20	5.1	5,042.9	71.0	35,394.5	82.1	40,446.5	136.3	102.5	33.8	810,101.5	107,212.4	702,889.0
Aug-20	5.0	4,905.5	69.0	33,313.1	82.0	43,006.6	131.1	99.4	31.8	741,090.1	105,673.5	635,416.6
Sep-20	4.9	4,734.7	68.1	32,482.1	84.0	44,268.6	132.1	97.9	34.2	776,934.8	91,624.8	685,310.0
Oct-20	5.2	5,082.9	70.0	33,611.2	93.3	50,686.5	140.7	107.0	33.7	775,051.0	96,526.8	678,524.2
Nov-20	5.1	4,720.6	64.8	30,799.8	93.6	52,529.7	142.0	108.0	34.0	732,795.8	96,077.2	636,718.6
Dec-20	5.0	4,998.2	69.5	34,144.9	96.7	58,231.8	147.7	111.5	36.1	837,885.0	104,121.3	733,763.7
Jan-21	5.4	5,230.7	71.5	36,996.7	110.0	62,876.4	155.3	122.7	32.6	810,437.0	102,524.2	707,912.8
Feb-21	4.9	4,695.7	65.0	32,844.3	107.7	58,911.8	153.3	120.0	33.3	737,428.5	97,131.7	640,296.8
Mar-21	5.3	5,824.3	74.3	38,147.5	118.5	68,518.9	165.1	128.4	36.7	930,985.1	110,602.4	820,382.7
Apr-21	4.9	5,026.1	69.5	34,696.0	114.7	63,979.1	160.5	123.6	36.9	856,972.2	100,013.2	756,959.0
May-21	4.9	4,931.8	67.0	34,342.9	125.8	64,110.8	166.2	130.5	35.8	783,281.3	97,510.6	685,770.7
Jun-21	4.2	4,278.3	50.9	24,172.4	119.2	59,549.9	162.4	127.9	34.5	860,614.5	90,373.9	770,240.6
Jul-21	4.5	4,343.0	56.1	26,065.2	125.2	63,824.8	171.4	135.2	36.3	802,291.4	92,660.5	709,631.0
Aug-21	4.2	4,029.2	56.6	27,010.6	131.3	60,814.3	177.7	141.1	36.6	760,293.4	89,538.5	670,754.9
Sep-21	4.2	4,517.8	62.8	30,139.3	132.7	68,071.3	180.4	142.0	38.4	889,368.3	94,936.1	794,432.2
Oct-21	4.5	5,008.9	68.7	33,818.2	131.6	72,465.3	180.0	139.5	40.6	861,163.5	97,734.8	763,428.7
Nov-21	4.2	4,781.5	67.0	32,574.6	125.0	74,672.2	175.1	133.7	41.3	938,851.7	95,153.7	843,698.0
Dec-21	4.9	5,325.1	71.4	35,525.2	133.4	81,919.7	182.5	139.0	43.5	1,071,243.4	101,656.1	969,587.4
Jan-22	4.4	5,344.9	71.0	36,949.5	132.2	83,400.9	177.3	135.3	42.0	1,002,560.7	102,544.1	900,016.5
Feb-22	3.7	4,233.9	54.8	26,458.1	114.9	76,819.9	154.3	118.6	35.7	771,644.7	85,103.9	686,540.7
Mar-22	4.3	5,244.8	65.1	32,514.8	136.1	93,486.0	176.1	129.6	46.5	1,053,206.3	100,950.2	952,256.1
Apr-22	4.5	5,651.5	72.3	42,901.0	157.3	101,506.4	186.7	140.8	45.9	1,033,128.4	102,801.1	930,327.3
May-22	4.2	5,106.1	64.1	34,814.5	143.0	92,004.5	171.0	133.5	37.5	877,413.6	93,516.2	783,897.4
Jun-22	4.1	5,280.7	65.8	33,075.6	138.0	93,163.7	167.9	126.6	41.3	961,269.0	92,290.3	868,978.7
Jul-22	4.1	4,966.2	67.3	33,341.9	140.7	91,809.8	170.2	128.7	41.4	897,185.6	93,455.2	803,730.5
Aug-22	4.1	5,122.5	66.2	32,486.5	142.6	97,189.3	171.3	128.7	42.7	952,921.4	95,731.0	857,190.4
Sep-22	4.1	5,057.3	67.0	32,314.1	140.6	103,768.9	169.6	126.1	43.5	1,071,930.0	91,618.3	980,311.8
Oct-22	4.1	4,974.1	67.6	32,990.3	143.6	98,319.6	175.3	132.8	42.5	1,004,925.2	92,398.8	912,526.5
Nov-22	4.0	4,949.6	66.9	31,721.6	135.2	97,166.5	178.9	136.6	42.3	1,017,199.3	95,436.8	921,762.5
Dec-22	4.3	5,518.1	70.4	35,167.3	142.4	112,770.0	191.2	145.5	45.6	1,107,332.7	104,834.9	1,002,497.8
Jan-23	4.3	5,431.8	69.6	35,809.3	143.2	107,978.5	195.4	150.2	45.2	1,057,325.4	104,788.9	952,536.5
Feb-23	3.8	4,854.9	59.9	28,986.2	126.2	95,693.7	181.7	139.9	41.8	917,150.8	94,565.3	822,585.5
Mar-23	4.3	5,485.9	66.7	33,827.4	141.1	113,799.4	197.5	150.6	46.9	1,095,313.0	106,586.2	988,726.8
Apr-23	4.0	5,054.4	66.8	47,528.0	138.2	104,567.0	198.7	154.9	43.8	936,496.6	98,380.9	838,115.7

Table 1.1 : Transaction Volume detail and Value by Payment Channels in comparison
Source : Bank Negara Malaysia

1.2 Problem Statement

The impact of mobile banking from consumer views may have been minimal despite the fact that it is currently the main and important services that banks provide to their customers. Even though recent advancements in technology and the proliferation of applications has led to a greater focus being placed on mobile devices, the mobile web, and mobile commerce, resulted mobile banking has developed into a significant delivery platform. This is the case despite the fact that mobile banking can be accessed through a variety of mobile devices. Based on Shaikh and Kerjaluoto, this is as a result of the advent of mobile banking has evolved into a substantial delivery channel (2014). Apparently, in the opinion of Shaikh (2014), "mobile banking allows customers to complete transactions using either a personal digital assistant or a cell phone, depending on their preferred way of communication." This service benefits the financial institutions that provide it on the present market as well as the end users who use it.

Previous studies have explored the positive effects of mobile banking and outlined its key features for enhancing the banking experience for mobile users' interaction with financial services.

These researches concluded that "e-banking services have advanced across many electronic streams, making it possible to just supply several types of additional value for customers" (Alsheikh, 2012). The mobile banking features that give customers of financial institutions a better banking experience were also included in this research. Another study discovered that using mobile banking to pay bills increases convenience and productivity. Time can be saved and quick responses to unanticipated service needs are made possible by the service's availability anytime and wherever (Barnes, 2003).

Customers can conduct financial transactions at any time and from any place, and mobile banking makes it possible for them to use banking services by way of mobile devices in an easy and practical method. Additionally, customers can conduct financial transactions without being limited by time or place. Some people consider mobile banking to be a significant step forward in technological development. The value of creative characteristics has also been shown via study conducted by academics. Several researches concluded that consumers' perspectives about innovations had an effect on their preferences towards the usage of information services that were based on the internet. A variety of features of inventions are described under the innovation diffusion hypothesis as having the potential to affect people's decisions towards their adoption. It is necessary to have both of internet and devices, in order to part of the said phenomenon for effectively using an application (app), the advance of mobile banking will be determined by the availability of these elements. Mobile banking is a banking service that can be browse through a mobile device (Bernard, 2000).

In introducing new and available products, mobile banking is seen as an effective and convenient platform, resulted a number of banks in China and the US experienced a sharp rise in demand for their services. However, because there were no face-to-face interactions, these institutions encountered significant challenges. Even if trust was a vital component of the system, the absence of participation and understanding of mobile banking increased the risk of ambiguity and anonymity in financial transactions. Customers, on the other hand, are left wondering whether or not customers can place their trust in the bank given the lack of certainty surrounding the situation.

The main focus is the sub-market within Malaysia, with statistical data from various sources will be further emphasized for the study interest of the subject. 91.7 percent of Malaysia's population, as of 2012, had access to the Internet, according the Organisation for Economic Co-operation and Development (OECD). Additionally, Malaysia is among the nations that heavily rely on the

Internet for online services due to its highly developed telecommunications and broadband connections. According to Statista Research Department, In Malaysia, 28.4 million individuals have internet connectivity in 2020. By 2025, this number is anticipated to increase to over 30 million.

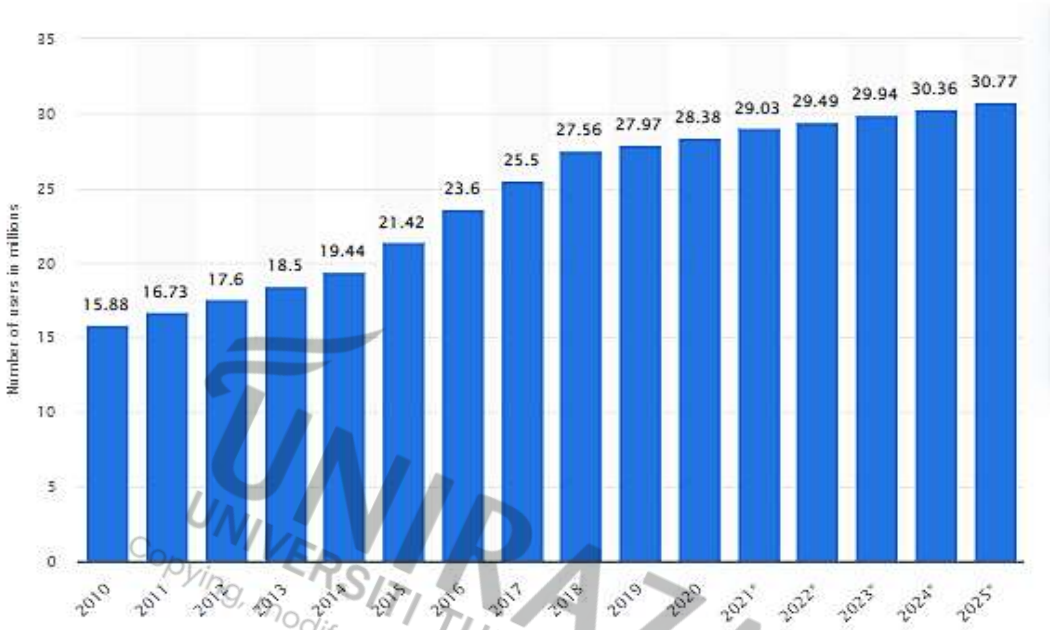


Figure 1 : Malaysia: Number of Internet Users 2010-2025

Mobile banking is likely to have an increasingly noticeable impact, making it a topic worth researching for both existing firms and start-ups. Since mobile banking is developing and gaining popularity more quickly than online banking, it is giving financial institutions an essential platform to improve the level of customer service in a way that is effective and efficient (Bloch, 1986). As stated by Barnes and Corbitt that several factors, such as existent banking channels, market circumstances, and client insights, influence how widely mobile banking services are used and adopted. While the current endeavor is related to a learning centered on these difficulties, it is primarily focused on a field where researchers have contributed relatively less (Chen, 2013).

The investigation's main focus will be the significance of the online banking app from the viewpoint of the users, with a special focus on Malaysia (Handelsbanken, 2015).

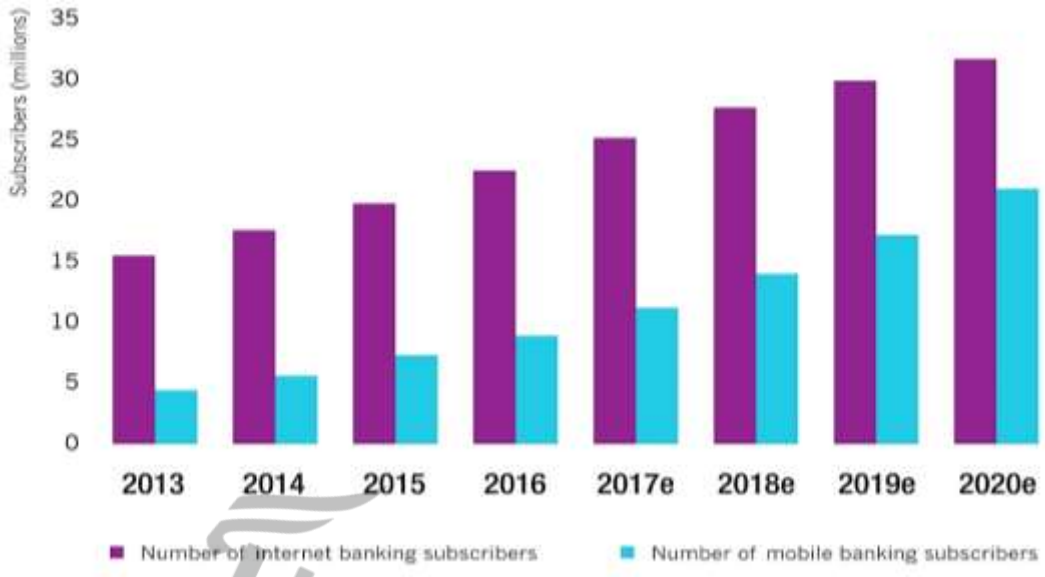


Figure 2 : Mobile Banking Users' Adoption Rate in Malaysia vs Internet Banking Users 2013 to 2016

Source: Asian Banker Research

In reference to Mallat, Rossi, and Tuunainen (2004), the client is the driving force behind this research because client are the ones who decide on a new technology adoption and incorporate it into their daily lives (Nordea, 2015). More importantly, research on mobile banking is scarce overall, and especially in Malaysia. And this is true even though, as was said, Malaysia has one of the highest internet accessibilities and use rates in the world, as documented by Bank Negara Malaysia. In addition, as shown in the table below, the number of mobile banking subscribers has increased since 2019.

Mobile Banking

000	Number of subscribers	Penetration rate (%)	
		To population	To mobile subscribers
2019	17,230.2	52.9	38.6
2020	20,199.1	61.8	46.2
2021	23,828.2	72.9	50.5
Sep-22	26,888.1	82.2	n.a.

Table 2: Mobile Banking Subscribers 2019 – Sept 2022

Source: Bank Negara Malaysia

1.3 Research Objectives

Given the small sample size and data not up to date is a constraint of existing research in this area. This study will examine pertinent studies and concepts to establish the significance of mobile banking App features from the perspective of users after the app has been adopted, based on six independent variable of satisfactory levels and an enhance app features as a mediator to determine impact and correlation on dependent variable of continuous utilization and loyalty. The study aims to investigate such as time spend on mobile banking app, investigate is the current MB adopted is a complete choice while meeting customers expectation and the type of preference of an enhance mobile banking app. On the other hand, the complete aim of the study is to nurture the continuous utilization and loyalty towards mobile banking app based on the data and findings.

1.4 Research Questions

The following is an outline of the research question that will be investigated as part of this study.In order to come up with a solution for the problem that has been brought up in the study, it is vital to take into consideration the following fundamental questions throughout this process:

1. What is the typical amount of time that customers spend using the app?
2. What are the needs of customers could be satisfied by the mobile banking?
3. How is mobile banking a complete choice for customers?
4. How exactly will the mobile banking app beneficial from more enhance app features being added to it?

This research objective is similarly to discover possible new app features that could potentially be incorporated in the mobile banking service research focus that is currently being conducted among Malaysian population. The questionnaire's items were adapted from previously created and tested measures and appropriately changed to make them applicable to this study particularly.

1.5 The Significance of the Research

It is interesting in gaining more knowledge about a sector of mobile banking that is entirely centered on the requirements of its end users. This study's overarching objective is to examine the importance of mobile banking app features, from the point of the fact that the banking sector as a whole has been subject to a change globally as a result of advances in technical capability.

The number of financial institutions offering online banking has increased significantly recently, rising from 1,200 in 1998 to 15,485 in 2004, directly as a result of the expansion of electronic services (Bryman, 2011). But from 18% in 1999 to 51.3% in 2004, it raised the proportion of bank customers who transacted electronically (Bloch, 2009). As a result of the rapid changes that have occurred in both the local and global environment, Malaysian banks have reacted by implementing innovative technologies to improve their ability to serve customers and by increasing the number of people can be reach online, particularly through mobile devices. As a consequence of this, the

banking sector has evolved into a vital component of the acceleration of the nation's economic growth and a component of the environment's level of sturdiness in Malaysia.

The Malaysian banking industry, as was described in the beginning of this article, is crucial for promoting growth in all industries and contributing to economic stability in the nation. As a result, banks in Malaysia are continually searching for fresh approaches to provide their customers with better services while spending less money (Dineshwar, 2013). According to the changes made as an outcome of the technology-driven expansion of the service, which will help achieve the goals that consumers have in mind when obtaining mobile banking service.

Financial institutions can better focus their efforts and achieve results that benefit both parties if players have a better understanding of the adoption processes that clients go through for new technology like these (Findahl, 2013). When financial institutions have a greater understanding of the essential factors associated with banking services, and how those factors influence online satisfaction, which will have a stronger ability to adjust the product offerings that banking players could provide.

By using technology more effectively, the financial institutions will be able to better match the genuine demands of their clients. To be more precise, the effect will be beneficial to the mobile banking app development, allowing it to strengthen the expansion of its app features to better serve the target market, which would, in turn, raise customer satisfactory and happiness level, which contributes to continuous usage and loyalty in long term. To be more explicit, this research will contribute in the service enhancement to improve constancy of mobile banking, in this research as online banking services including the formation of enhanced app features.

This will have an influence on increase of loyalty and utilization expectantly to mobile banking app customers as a whole.

1.6 Delimitation

It is feasible that the findings of this research are only relevant to the target market of the mentioned mobile banking customers and specifically Malaysian banking customers. This is due to the fact that the empirical data used in this study are based only on the existing market for the mentioned mobile banking. The breadth of the investigation is being narrowed by imposing this constraint on it. Access to and utilization of online banking services in Malaysia are among the highest, leading scholars to infer that mobile banking clients, would be an intriguing market to study.

It is a fascinating marketplace subject to examine, as there are numerous mobile payment solution providers that are available to the general public, and the number of these companies is always expanding, making it an industry with a significant competitive edge. Despite being aware of the existing Malaysian mobile payment solution service, the research is highly concentrated just on mobile banking because this software has been the basis for the development of all other mobile payment solutions that have come after it (Findahl, 2013). Literature review on the technological acceptance model will not be assess since there has already been a significant amount of research done in this field and the theory does not really have any bearing on the research that is currently being conducted. The primary emphasis of this investigation is on what comes about following the adoption of mobile banking what is the independent variables contribution and correlation towards continuous utilization and loyalty.

1.7 Organization of the Study

There are three (5) sections to this research.

Chapter one of the study consists of the general introduction which includes; the background of the study, the problem statement, the research objective, the investigation questions, significance of the research, limitations of study, and the organization of the study.

The second chapter is the literature review, which assesses the works of other researchers on the topic, their methods, as well as the researcher's own findings and opinion, which are included. The content is around benefits of mobile banking adoption, limitation and drawbacks of mobile banking. The conceptual model proposal and the purpose of this research is also entailing the details and its summary.

Chapter three for Research Methodology. In this section, will discuss the study method as well as the overall design of the study. Discussions on how the data is acquired, analyzed, and integrated come after an explanation of the study design, research selection technique, and research experiment approach that comes first. In addition to that, it details the procedures that were utilized to determine the reliability and validity of the research data.

In Chapter 4, Data Analysis and Results: summarizes the findings of the quantitative analysis's collected information. This section presents the outcomes from the statistical analysis used to examine the hypotheses as well as the results from the quantitative data analysis related to the study conceptual frameworks.

In final Chapter 5, discussion of the main results and the relevant conceptual model of the hypothesis in the conclusion and recommendations. Additionally, it covers the research's academic

findings and theoretical contributions before providing proof that a sufficient number of independent variables influence app usage and loyalty while enhancing app features which mediate the dependent variables. The study's limitations are additionally disclosed, and potential areas for further exploration are recommended.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

Since there are a member of a global network and are among the most active commercial entities, financial institutions can provide better terms to customers who want to use online banking services. The Internet and mobile applications (often referred to as "apps") have made this business, along with many others, the most effective delivery channel for the selling of banking products and services to customers (Internetstatistik, 2014).

For the reason of this, an increase in competitiveness within the banking sector is really engaging, as well as an increase in the level of expectation held by banking customers. In this chapter, will include review of the research done on mobile banking that was done previously.

2.1 Theoretical Foundation

Consumers can access their bank accounts through mobile banking using a mobile device, such as a cell phone, smartphone, or personal digital assistant, according to Lakkanen and Kiviniemi (PDA). The roots of traditional banking channels laid by telephone and online banking are built upon by mobile banking (Laukkanen, 2007b). Mobile banking is designed with the possibility of offering customers extra advantages. It is not constrained by space or time and possesses qualities that require less effort. According to Khan and Khan (2012), mobile banking enables users to access their accounts virtually from anywhere, which isn't always possible with online banking, even on a PC (Khan, 2012). Over the past three decades, financial institutions have made it their responsibility to satisfy their consumers' growing desire for convenience. Due to the present focus on mobile computing, wireless Web connectivity, and mobile commerce, mobile banking has

become a key distribution channel (Shaikh & Karjaluoto, 2014). (Shaikh, 2014). Customers who use mobile banking, which offers financial dealing and portfolio management services, can carry out any form of financial activity while on the go, from transferring money between accounts and monitoring their balance to a more complex financial transaction.

Due to this, mobile banking is fast gaining acceptance worldwide. As a result, retail banks are operating very differently now, with minimal fees for financial institution and better ease for their clients (Lin, 2013). This is supported assertions that mobile banking is fast growing (Laukkanen, 2007b). As a result, users are increasingly choosing mobile banking over traditional banking as the preferred way to check on financial records, conduct transactions, and find out about new product and facilities simply remotely from the mobile devices in their possession.

Because of this, customers are now able to make full use of mobile banking. The use of mobile phones and tablets to carry out banking transactions or access financial information has not been claimed to be as widespread as could be expected on a massive level, regardless of the benefits of mobile banking and the aforementioned high speed of expansion (Nordea, 2015). This is still the case despite mobile banking's increasing adoption and tracking customer satisfaction will encourage more people to utilize mobile banking apps and ultimately will increase reliability, continuous utilization and loyalty.

2.1.1 Benefits of Mobile Banking Adoption

Customers frequently complained about the bank's hours and about the lengthy wait periods that have experienced (SEB, 2015). However, this viewpoint might change depending on the situation or the media being engaged. Since are not specific to the app itself, it may be acknowledged as the main benefits of mobile banking. The greatest benefit of mobile banking, in the view of its consumers, is how simple it is to use. The process of carrying out a transaction or using a service provided by a financial institution has historically required a lot of time and labour, but with the development of this technology and in nations that have not yet adopted it, this has drastically changed and FI's is now adopting Agile methodology which the fastest goes out to market will always remain competitive. The widespread adoption of this new technology has eliminated the need for regular bank visits and saves effort of visiting. This implied that the financial institution would be able to accommodate the customer's demands for services at their convenience.

It is more cost-effective for the bank to serve customers' needs when customers can make deposits, withdrawals, and other transactions via their mobile device rather than going to a branch. Based on this shift in demand, fewer branches and more integration are anticipated. Those who lack access to traditional financial institutions or are geographically separated may nonetheless manage their accounts via (Nordea, 2015). Laukkanen mentions another benefit as effectiveness (2007). If customers feel that mobile banking will allow them to "efficiently utilize the time available," customers are more inclined to use it. These benefits are comparable to how simple things are (Laukkanen, 2007b).

Suoranta (2003) asserts that clients who are also early users of technology will understand the benefits of mobile banking better. Someone who has used a smartphone or tablet before will more immediately recognize its benefits and will feel more at ease and confident using it. Previous

research has shown that “regardless of whether consumers have a favorable opinion of the underlying technology, the convenience of mobile banking is related to the fact that it is simple to understand and use (Society, 2012)”. Despite extensive published ongoing discussions, the security and privacy of Internet access, many people continue to believe that mobile banking is more secure than online banking. First off, contrary to common logic, some of the security holes in mobile devices work as safeguards. Furthermore, unlike to malware for smartphones, desktop computer malware has existed for decades (Statista, 2014).

2.1.2 Limitations and Drawbacks of Mobile Banking

Consumers are apprehensive about mobile banking because customers worry about identity theft, hacking, and other types of privacy invasion, according to Al-sheikh and Bojai (2014). One drawback of mobile banking is that some customers might think it's risky or has some limitations. When the risk was assessed in terms of the overall security and dependability of the services offered, research conducted by Suoranta in 2003 found that "Members are not in fact so seriously concerned about the risk of conducting banking over wireless." The major disadvantage of mobile banking has less of an impact now than it did when the technology first became widely accessible. Even a few years ago, a situation like this would not have been conceivable (Swedbank, 2015).

The constraints or problems in designing mobile banking applications are a result of the diverse capabilities of mobile devices in use today. The proliferation of screen sizes, user interface (UI) advancements, and OS versions makes it challenging to accommodate all devices. Consequently, there are several disadvantages and difficulties linked with the mobile banking applications. The lack of compatibility with different mobile devices is a significant concern, as highlighted by the Mobile Marketing Association in 2009. Laukkanen's assessment that "the small screen and limited

data make it exceedingly difficult to utilize the device" emphasizes the difficulty of using the device for money transmission (Laukkanen, 2007b).

The technology that makes mobile banking (MB) possible has the potential to improve not only the quality of life of consumers but also the ability of financial institutions to compete in their respective marketplaces. In their article from 1985, Elwork and Gutkin analyzed the implications that computers will have not only for society but also for the sciences. Even if computers have become more sophisticated over the course of the previous three decades, there are still a great many technological issues that need to be investigated. These obstacles include the differences that exist between nations worldwide (Tavakol, 2011).

2.2 Mobile Banking (MB) adoption Empirical Research

Mobile banking (MB) technology has the potential to improve people's quality of life while also increasing the efficiency of financial organizations. Consumers may conduct financial transactions at any time and from any location. Consumptive behavior does not significantly affect how savings are managed, which implies that regardless of how much or little customers consume, their savings balance and management will remain unaffected. The good quality of mobile banking services allows consumers to manage an effective and good savings management, which has a substantial impact on the management of financial.

Elizabeth Ubam, Irwandi Hipiny, Hamimah Ujir (2021), in their research seeks to carry out a need's assessment for UI/UX design for Malaysian elders using a mobile banking app. Its discussed on the requirements of senior users must be taken into account while creating the UI/UX. The recommended elements must be incorporated into the final design, i.e., fast loading time, security, and senior friendly UI elements.

Maja Iskandar1, Hartoyo Hartoyo, Irman Hermadi (2019), in their findings that the behavioral intention is significantly positive influenced by the variables of observability, performance expectancy, hedonic motivation and facilitating conditions. The price value and perceive risk factors have a significant negative effect. It is further affirmed that makes the appearance of mobile banking more accommodating of user and application interactions (user interface/UI) and able to accommodate the experience of users who have used mobile banking applications (user experience/UX). The designed UI/UX has appropriate and simple design features but still focuses on banking transaction activities and user experience and controls the application of multimedia. This include by increasing the ability to access mobile banking applications that can accommodate bandwidth availability. Collaboration with communication service providers can be an alternative solution.

Hamid, K., Iqbal, M. W., Muhammad, H. A. B., Fuzail, Z., Ghafoor, Z. T., & Ahmad, S. (2022), it is very important to consider user satisfaction and trust in mobile banking applications for future development of mobile banking apps interfaces. As many users use mobile banking apps to perform transactions, developers use modes concepts to improve them and their interfaces, just like any other application software and provide the facility of customization.

Selamet Riyadi and Dita Ayu Pritami (2018), in a research titled the impact of financial literacy, consumptive behavior and mobile banking services on savings management, the findings argued that financial literacy does not have a significant influence on savings management, this is due to the fact that even though students understand financial literacy well, it cannot determine how well the students manage their savings. A good quality of mobile banking services allows consumers to manage an effective and good savings management, which has a substantial impact on the management of financial.

Trust is a key component of mobile commerce since it reduces the amount of ambiguity involved in a transaction. Furthermore, trust and confidence level are crucial in every economic partnership. Similarly, it is critical for providers of mobile banking services to gain clients' first trust. There are several factors that lead to MB's consumers' lack of trust and confidence in the institution. Some of the criteria are personal ingenuity, the type of the task being done, social influence, and how one views risk. This is one of the aspects influencing customer trust. Their empirical data corroborate this idea (Swedbank, 2015).

The similar logic might be utilized to MB: in direction to gain customers' trust and convince them to adopt this technology, banking must present persuasive explanations. As a result, the atmosphere in which individuals live has the capacity to alter the relationship between mobile banking assurance and the previously outlined factors by the research. The urge to analyze this issue by respondents inspired the development of this research. Mobile banking is beneficial to banks since it fosters greater effectiveness and facility excellence. Customers benefit from mobile banking as well since it maximizes the efficacy of their time, provides rapid information, improves connectivity, provides a great lot of convenience, and increases engagement.

Trust and confidence level are an important component of mobile banking since it reduces the overall amount of uncertainty connected with a transaction. Furthermore, trust is an essential component of every successful commercial relationship. Similarly, firms that provide mobile banking services must first gain the trust of their target audience, which in this case is the customer. A wide range of factors contribute to mobile banking clients' lack of confidence in a certain banking app, resulting in significant differentiation. Some of the concerns are the person's imagination, the sort of task being performed, the impact on society, and how one perceives the level of risk. As a result, the environment in which individuals live has the ability to alter the

relationship that exists between confidence in mobile banking and the factors that were previously stated by the study.

According to Dr. Shamsher Singh (2014), in a research study aims to explore the customer perception on the different dimensions of mobile banking based on respondents' perception on various mobile banking applications. Amongst others, variables discussed was "Security/Privacy, Reliability, Efficiency, and Responsiveness" where the main problem is today more than half the population in another country has a mobile phone. However, less than 1% of that uses mobile phone as a medium for banking. The findings relatively indicate that higher education level in Delhi NCR provides the opportunity to the banks to create awareness and promote the use of mobile banking. Study population comprised the residents of NCR Delhi using mobile banking services. Majority of the respondents were either graduate (54.5%) or post graduate (35.5%). According to the respondents' profiles, graduates are young, educated, and reasonably employed characteristics of the new generation, which is also tech-savvy and demands services at single click. The method in which this generation lives with technology presents a tremendous potential for the banking industry to improve services through the use of mobile, the internet, or other technical applications.

Four aspects of mobile banking services have been identified in this study and several other investigations. These factors may be used by managers and banking professionals to gauge how effectively banking players are serving customers. The information may be utilized to manage organizational resources and give clients better services. This will minimize the cost of gaining new customers and result in client retention.

2.3 Conceptual Model

The study's ultimate purpose is to examine the various way via which consumers make decisions to utilize and continuous utilization to adopt mobile technologies in connection to the mobile banking system, and the secondary objective is to propose the optimal mediator of app features grounded on the conclusions of this investigation. This section emphases on the hypotheses developed for each variable. These hypotheses will be dissected into their component elements and analyzed in depth. The conceptual model is represented by the framework proposed in this study, which is composed of independent variables, a mediator, and a dependent variable.

By incorporating a wide range of concepts and theories, this framework will help in evaluating the issue at hand. It outlines the expected outcomes of the study and describes the important variables so that interrelationships could be mapped out. It is constructed before to data gathering and is portrayed visually.

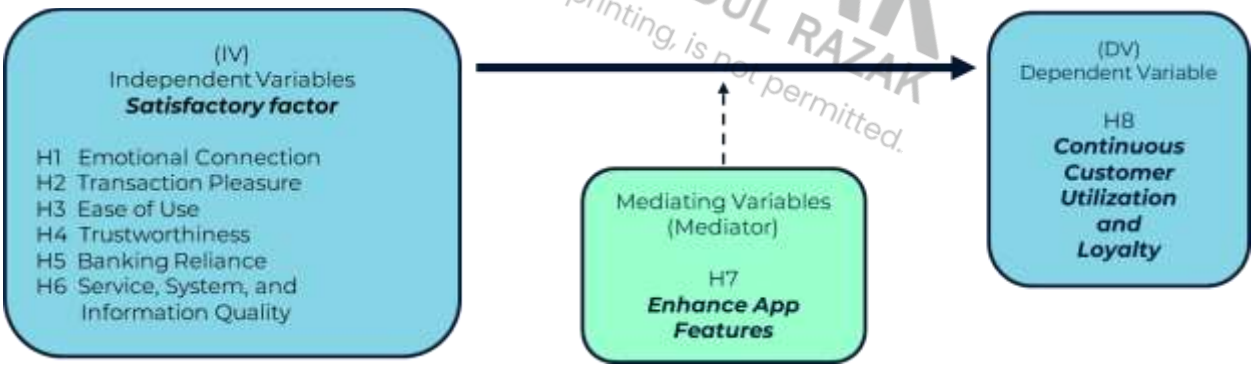


Figure 3: Conceptual Model

2.4 Hypothesis Development

PART 1 - SATISFACTORY FACTOR

2.4.1 Emotional Connection (EC)

Emotion, loyalty, and interdependence are the foundations of a partner's affective responsibilities to another in business; its a manifestation of one party's psychological dependence on the other. In this instance, the presence of a psychological connection indicates a strong bond. The rationale for differences in particular data between new and returning clients. Despite having distinct expectations, both new and returning clients respond in the same way (Zhou, 2010).

Hypothesis One (H1) : Customer engagement leads to the creation of a favorable link between an individual's emotional connection and an interaction-focused bank.

2.4.2 Transaction Pleasure (TP)

Transaction conducive refers to the ease and speed with which the transaction may be executed. The main factor that renders transactions conducive is the ability to obtain the transactional service in a short period of time. Transactions without interruption, notification of completed transactions, straightforward logout procedures, and inconsistent pricing are additional features that enhance transaction convenience. Mobile banking allows users to do a transaction with a few clicks, regardless of their location, and to conduct multiple transactions simultaneously. Those who choose to use conventional banking methods are often forced to wait in long lines to perform financial transactions (Statista, 2014). Consequently, the ease of making transactions is a driving force behind the widespread adoption of mobile banking.

Hypothesis Two (H2): The pleasure of the transaction made is positively correlated with mobile banking usage, supporting the theory.

2.4.3 Ease of Use (EU)

An increase of effort needed to obtain a position as a result of new technology is assessed individually using a concept known as perceived ease of usage (Ease of Use). Concerning the requirement of effort, the usability of mobile technologies is crucial for enabling consumer participation in the joint creation of valuable experiences. It has been amply shown that mobile technology may boost benefits for bank customers, and user friendliness is a crucial element in ensuring consumer acceptability.

Numerous studies have demonstrated a correlation between Perceived Ease of Use (PEU) and the accelerated adoption of new technology in the banking industry. However, the introduction was difficult, and it has been suggested that the tendency of consumers to utilize mobile banking services is not automatically linked to employment chances (Alsheikh, 2012). This shows that studies into PEU and its effect on consumer attitudes, as well as the interactive technique, are both deserving of further investigation.

Hypothesis Three (H3): Customers' positive sentiments toward the ease of use of mobile banking to improve the accessibility of financial services are correlated with mobile banking's ease of use (EU).

2.4.4 Trustworthiness (T)

The maximum bound of the technology's perceived dependability is the level to which a person has independently determined that the platform technology is a reliable one. It is crucial to make sure that the system is trustworthy in order to deliver a dependable technical service, which in turn enables the user to achieve their desired goal. Utilizing unreliable technology demonstrates a lack of faith in oneself; as a result, its usage should and will be restricted.

The seeming reliability of a technology has a substantial effect on consumer happiness, perceived value, and perceived quality, according to research on mobile technology and information systems. Furthermore, the level of legitimate trust that consumers have in a corporation is seen as a crucial precondition for trusting that organization when conducting mobile commerce (Alsheikh, 2012). Even though mobile is a wireless technology, it is highly prone to breaches and attacks.

Customers are frequently prompted to provide personal information concerning themselves when using mobile technology and make purchases for products and services, including their personal details, and the essentials of their debit and credit cards. To provide customers more assurance that the confidentiality of their personal information, it is crucial to improve the dependability of mobile technologies. It is stated that the following theories is proposed:

Hypothesis Four (H4): The perception of mobile banking's dependability enhances both customer confidence and trustworthiness in the ease of financial services and mobile banking.

2.4.5 Banking Reliance (BR)

This theory defines trust as an individual's belief in another group's competency, honesty, skill, and friendliness toward persons or consumers. Confidence has emerged as a vital factor in minimizing risk, but the inherent dangers of conducting business online are viewed as inhibiting its mitigation. (BankID, 2014). Furthermore, it is stated that confidence in the banking sector is always associated around reliability and level of privacy that is considered high and safe. The first interaction between a customer and a financial institution will typically have a substantial influence on the customer's degree of confidence level in the financier.

Hypothesis Five (H5): A consumer's increased use of mobile technologies and positive attitude on utilizing the services directly correlate with an increase in confidence and reliance in mobile banking.

2.4.6 Service, System, and Information Quality (SSIQ)

The overall efficiency of the mobile banking system in terms of the privacy of the service providers is the primary metric used to evaluate system reliability and quality. The reliability of a mobile banking system is mostly determined by how easy it is to use, how appealing the app is on user interface and user experience (UIUX), how trustworthy the user is, and other similar variables. If the user is confident in the system's dependability, customers will most likely keep using it for their future business needs. The effectiveness of the service in terms of personalization, reliability, latency, and other characteristics are evaluated to determine the quality of the service, which is mostly dependent on the mobile banking system. Improving service quality is crucial to the quality of m-banking, as poor service may result in low customer trust and dissatisfaction. This is because poor service quality is essential to its improvement. (index., 2014). The phrase "information quality" typically relates to how reliable, complete, precise, and relevant the information being sought is, as well as how conveniently it may be obtained. Customers' frequency of usage, confidence in, and overall satisfaction with the m-banking system are all impacted by the accuracy and reliability of the information provided by the system.

Hypothesis Sixth (H6) : The level of service, system, the data and information all strengthened, resulting in a rise in the quality of mobile banking and user satisfaction level.

PART 2 – MEDIATOR

2.4.7 Enhance App Features (Mediator)

In order to gauge better engagement and experiment, a mediator is added to understand the acceptance and satisfaction level improvement by providing the best app features to be developed in addition to the existing services to improve the service level and ultimately will help end user to have a better sensation toward mobile banking app and continue adopting upon recognizing the improvement of app features suit their needs.

The propose app features to be enhanced are to be measure based on the rating of five points Likert scale, users may express their preferences and selection based on their need on different features in a mobile banking application 1= Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree. The customer's choice to buy a product is heavily influenced by product information that includes appealing pictures and a succinct description of the product. Even though it is regarded an additional feature, its importance is not less than that of other main features, particularly in an app designed for the banking industry. And the propose new enhanced app features examples are; Total Spend/Expenses Analytics and Automatic Savings features which allows customers to save and hide the amount separately within the same app and few others more which will be part of the opinion in the survey.

(H7) : Enhance App Features

Enhance App Features is an important mediator to define the relationship between customer satisfaction and continuous customer utilization and loyalty.

2.5 Summary of Chapter Two

This section describes a general introduction to mobile and online banking including a summary of its component development growth in Malaysia. Furthermore, this chapter examines the literature associated with internet banking in Malaysia. Several authors have emphasized the significance of using online banking in previous studies. There has been a notable growth in the volume of Malaysian customers who are comfortable consuming online banking. The theoretical foundation is also completed proposed, which entails a comprehensive review of the literature on the topic of online banking. From this review, the conceptual framework is constructed. Additionally, the study's conceptual framework is provided, detailing how the independent variables, mediator and dependent variables are interconnected. At the final chapter, developed a working hypothesis based on the relationship between the independent, mediator and dependent variables, as well as nine proposed hypotheses based on those correlations. A mediator is aimed to have a better understanding on the proposed app feature improvement based on Malaysian public sampling.

CHAPTER 3
RESEARCH METHODOLOGY

3.0 Introduction

This chapter will enlighten to justify the choices made regarding the methodologies used throughout the suggested area of investigation. The structure will be segmented based on the following parameters to promote efficiency: research technique, study methodology, research validity and reliability, data analysis, as well as the generalization.

Despite the fact that few fundamentals of this segment will be presented prior to the collection of empirical data, it is expected that some components will be elaborated on as the study progresses. As a result, the overall image of the processes employed is appropriately portrayed.

3.1 Research Design

The technique of research is the deductive method, which entails applying theory to examine and provide evidence in order to response the supplied research questions. According to Sunil and Bell (2014), when deductive method implements in a research, researchers are concerned with developing hypotheses that are based on prior hypotheses and must then be subjected to empirical scrutiny (BankID, 2014). Across this research, the arguments will be produced by way of studies and fundamental inquiries, allowing for a logical progression throughout the project. In order to affirm the outcome as an evidence of this study, quantitative methodology is utilized by numerical data collection from a google form survey of straightforward questionnaires. The data collection will start with the review and distribution of 46 questionnaires through communications channels

such as WhatsApp and email via google form. This followed by testing and validating the reliability, regression, correlation and analyzing the database to support the findings.

The procedure will be as follows: theory, questions, data collection, outcomes, responding to research questions, and further altering theory.

Because the financial institution placed a great importance on the safety of customer information and privacy, the research may begin by assembling secondary data in the form of previous knowledge and expectations concerning the matter that is the investigation's topic of inquiry. After that, it was time to start gathering the core empirical data that would be used to evaluate how nearly or how differently the forecast matched reality.

The deductive theory is a superior option for the research because it is practical and a perfect focus to this research study. The aim of this investigation is to acquire additional knowledge on mobile banking, a subject that is gaining popularity amongst Malaysia market. Another name for the technique used in quantitative research methodologies is deductive reasoning. Although the deductive method is more well-suited to the issue at hand, that the current project provides, it is essential to remain cognizant of the risks and downsides that are associated with the adoption of this strategy. It's possible that once the data have been collected, the best viable theory will emerge or that the findings won't be pertinent to the study's goals (Alsheikh, 2012).

The design of the quantitative approaches that employed will also receive significant attention in addition to the research project. This will guarantee that such unforeseen results are prevented. It's feasible that further theories will be developed, whether or not there is still a lack of explanation in light of the results there is still a lack of theory, it is possible that more ideas may be invented.

3.2 Study Population and Sampling Procedures

There is a very large number of different alternatives when comes to sampling that are worth considering. The main purpose of the research should always serve as the principal focus of the investigation in order to identify the numerous advantages and limitations of the process, in addition to the applicability of various sampling strategies. A sample is considered to be representative of the population as a whole if findings from it may be extrapolated to the whole population. When a study's results can be extended to the entire population, it is representative of the population. Malaysian public will make up the sample population in this study. Randomized sampling gives each unit in a sample frame an equal opportunity to be chosen as reported by Sunil and Bell (2014). After careful design, this kind of sample appears to be the most appropriate, providing results that are just as reliable as if the entire population had already been surveyed.

To reach a large audience in the mentioned range, almost 500 survey was blasted via own contacts through communication channels consist of work colleague, vendors, classmate, childhood circle as well as business circle. WhatsApp and email channel distribution are inclusive, around social network such as UniRazak Postgraduate student and other circle such as external motivation seminar was blasted via individual email too. This type of sample appears to be the most appropriate and easy to access after detailed planning, delivering results that are just as trustworthy as if the full population will be in reflection. And this is due to both, our time and resources are subject to certain limitations and restrictions.

Sample size determination comprises of the aims and the dimensions of the population under study, the likelihood of making an error during the study and the extent to which this study allows the error when selecting samples. It also consists of the standards of a sample size that are determined through the degree of sample correctness, the confidence level employed, and the extent of

unpredictability of the features being studied (Israel, 2013). According to ministry of economy department of statistics Malaysia official portal, Malaysian citizen consist of 29.8 million as of Feb, 2022 hence, it is recommended to have number of samples as per Raosoft as per below figure 4.The information the calculator analyzes is derived from the amount of error acceptance, the size of uncertainty, the number of the sample, and the distribution of the given responses (Raosoft, 2013). Based on the survey distribution, the feedback received is 228 which parallel to the calculated sample size of 196 sampling is minimally essential with 7% margin of errors is accepted.

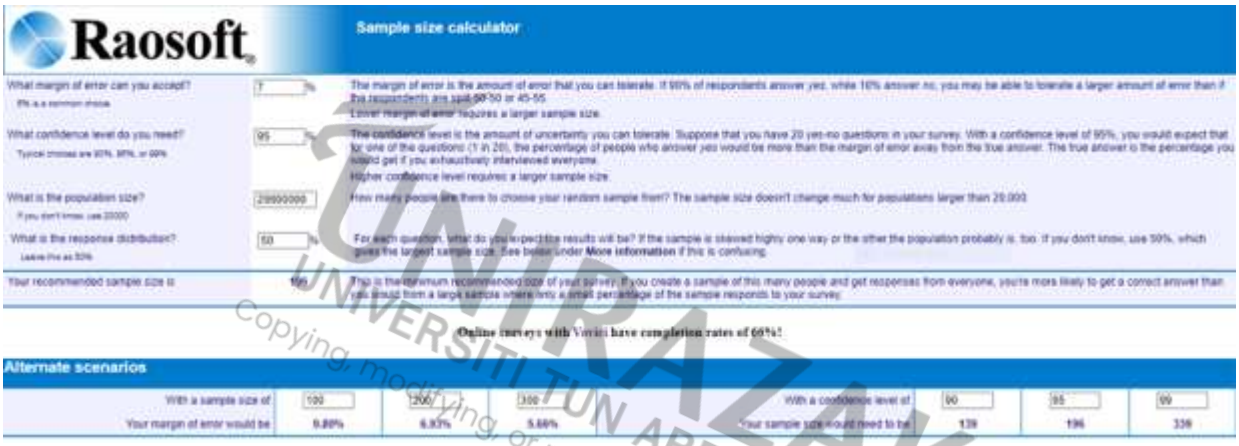


Figure 4 : Sample Size Calculator by Raosoft

3.3 Data Collection Method

In order to gather information, there will be a questionnaire to complete the research. It is essential to develop a research instrument before beginning a quantitative study. This instrument most frequently takes the form of a questionnaire, along with the responses to that questionnaire. The questionnaire distributed through an online survey that developed straightforward questions reflected into three section, namely demographic, satisfactory factor and enhance app features which analyze using both excel and SPSS. On the other hand, both the research-related rules and the instructions for filling out the questionnaire to be presented in English. Each question on the

survey will be a closed-ended one, given in a manner similar to a tick box or dropdown. As detailed by Sunil and Bell (2014), “when presented a closed question, respondents are given a limited set of predetermined answers from which to select the best response”.

Questions will use a Likert scale with a range from 1 to 5, with 1 indicating strongly agree and 5 indicating strongly disagree, as this is the most prevalent way of survey gathering and is therefore simple to comprehend. While replies may be measured and susceptible to quantitative analysis, respondents are not obligated to take a stance on any issue (Bloch, 2009).

In order to better reflect the nature of the investigation at hand, the questionnaire that will be used will take quantitative approach.

3.4 Operationalization and Measurement

3.4.1 Independent Variables

Propose independent variables for satisfactory factor are as follows;

1. Emotional Connection (EC)
2. Transaction Pleasure (TP)
3. Trustworthiness (T)
4. Banking Reliance (BR)
5. Ease of Use (EU)
6. Service, System, and Information Quality (SSIQ)

Questions that associated to each of the IV/DV is to be measured based on customers direct answer from the option provided or will be based on scaling of Likert scale:

- (1) Strongly Agree ; (2) Agree; (3) Neither Agree nor Disagree ; (4) Disagree; (5) Strongly Disagree
- Yes / No

3.4.2 Mediating Variables

Enhanced App Features

Customer satisfaction can be measured by collecting quantitative data on how satisfied consumers are with a product or service after adopting it. Customers who are pleased with their purchases are more inclined to make more purchases. Multiple researchers have been active in this field since that time (index., 2014). One of the most important things that makes for a great customer service experience is how well customers' needs and wants are met while customers are using the products or services that the business offers. This component can range from very little to a great deal. In addition, customer happiness is a reflection of the degree to which expectations are fulfilled while also catering to the consumers' actual interests.

Utilizing one's own personal expectations in conjunction with one's own personal assessment has the potential to have a sizeable effect on the amount of satisfaction attained by a customer. To put it in a different context, this indicates that the mediator variable has been presumptively presumed to have an impact on the outcome of the variable. Mediation happens when the mediating variable is only responsible for a part of the relationship between independent & dependent variables. If the mediating variable is eliminated, there will still be a relationship between the independent and dependent variables; it just will not be as strong as with mediator existence.

It is proposed, on the basis of the most recent features of the mobile banking app, to have another set of questionnaires to determine which app features would be most beneficial to be improved for a better engagement and to be enhanced to the existing mobile banking app. The features that are being considered for improvement, in addition to those that have already been mentioned.

This mediator to be measured based on the rating on customers using the choice of one preferred answer for the significance of certain elements in a mobile banking application. The customer's choice to buy a product probably influenced by product information that includes appealing simplified pictures, functionality and a succinct description of the product.

3.4.3 Dependent Variable

Dependent variable of the research includes;

Continuous Customers Utilization and Loyalty

Continuous Customer Utilization and Loyalty refers to the amount to which customers engage with a specific product or service on a regular basis while also having a good attitude towards it. This can be measured in the context of mobile banking apps by the frequency with which the app is used, the number of transactions done through it, and the general pleasure of the user (BankID, 2014). A high level of consumer utilization and loyalty to a mobile banking app indicates that the app has been successful in providing features and services that fulfil the user's financial management demands. Such devotion can lead to long-term customer relationships, which can result in higher income and profitability for the financial institution. Therefore, understanding the factors that contribute to continuous customer utilization and loyalty in mobile banking apps is crucial for financial institutions to improve their services and maintain a competitive advantage in the market. Measurement is the same per independent variables using a five-point Likert scale.

3.5 Data Analysis Techniques

In order to measure what is offered in the proposed investigation, the analysis will be enhanced such as the one indicated above, the population of Malaysian public. This will be done in order to measure what is presented. The research will take into account the public that identified around own circle randomly in an attempt to produce a comprehensive grasp of the setting of the study and to narrow in on its most important characteristics. In order to "look for correlations between multiple sets of data," statistical tools will be applied to the data obtained from the questionnaire once it has been completed. In light of the theory that has been presented, the objective here is to assess the various approaches that have been taken. In order to communicate the findings of this research, descriptive statistics, which place more of an emphasis on describing the data rather than developing hypotheses based on it. These statistics utilized in the process of creating visual representations of the data obtained from the questionnaires and surveys.

Furthermore, the findings of the research will point to a range of factors; hence, the bivariate analysis is the method that is best suited for this competition. The objective of a bivariate analysis is not to establish a cause-and-effect relationship between two variables; rather, this type of analysis only illustrates how the variables are connected to one another. This is due to the fact that bivariate analysis places an exclusive emphasis on describing the ways in which the variables are connected to one another. This suggests that bivariate analysis, which is aware of the existence of a link amongst values, might be used to normalize the data. Bivariate analysis is aware of the fact that there is a relationship between values. This is because bivariate analysis is aware of the presence of the link. For the correlation analysis as well as the other statistical analyses, SPSS is utilized.

3.5.1 Descriptive Analysis Techniques

Analyzing this kind of data typically involves making use of structural equation modelling (SEM). When researchers have a large enough sample size, the use of SEM to simply build up and reliably evaluate hypothesized correlations, not only across theoretical constructs, but also between the constructs and observed indicators (N). SEM also enables researchers to test relationships between the constructs and observed indicators. The data for the study will be collected and evaluated using descriptive analysis and structural equation modelling (SEM), both of which will also be utilized to test the hypotheses that will be developed as a result of the investigation.

The study's data will be collated, and descriptive analysis will be performed to look at respondents' general descriptions and characteristics as well as the relationship between those qualities and factors that affect respondents' interest in mobile banking. After assessing the general description and traits of responses, this will be done. The acquired data will be analyzed using IBM SPSS to perform a structural equation modelling (SEM) analysis to test the hypothesis. This study was carried out in two stages: first, a measuring model was created, and then, using the data, a structural model was created.

3.5.2 Inferential Analysis Techniques

Inferential analysis is used simultaneously to draw conclusions on a sampling population based on data received from a certain portion of that overall population and to evaluate the degree that such findings are supported by the evidence of statistic. Both of these processes take place based on data obtained from a subset of the population. The conclusion about the population based on the data obtained from the subset of the population is the focus of the conclusion that will be made. This is done by drawing inferences from the data collected from the subset of the population. Since

inferential analyses do not sample the entire population, there is typically some degree of uncertainty associated with the results.

To conduct descriptive and inferential analyses on quantitative data using social science data analysis software (SPSS). The descriptive analysis of the study variables included percentages, frequencies, means, and standard deviations (Tavakol, 2011). Inferential statistics such as multiple regression analysis and correlation will be utilized to examine the extent of the relationship that exists between the variables under consideration. For the purpose of communicating the findings of the investigation, various infographics, including but not limited to charts and tables, is exploited.

3.6 Summary of Chapter Three

In this section, detailed out the techniques that implemented throughout the research and the way in which will analyze the findings. Evaluation of the study's methodology comes first. This indicates a deductive strategy, where theory is employed to inquire into and offer information for the purpose of answering the research questions posed. The proposed sampling approaches and methods show that the population of the study consists of Malaysians public, either currently with mobile banking applications or otherwise on any circumstance. Surveys are to be sent out to the respondents intentionally and randomly to collect the intended data sampling. In the research final chapter, the ideas of independent variables, variables that mediate relationships between other variables, and dependent variables are discussed.

CHAPTER 4
DATA ANALYSIS AND RESULT

4.0 Introduction

In this chapter, the results are presented consist of analysis of the data collected during the research phase. Analysis focused on examining the relationships between the variables identified in Chapter 3, and on exploring the research questions and hypotheses formulated in Chapter 1. All of the data generated for this study was examined using IBM SPSS 25.

The first section of this chapter provides a descriptive overview of the data, including relevant demographic information about the study participants, as well as the distribution and frequency of key variables. The preceding sections will be taken up by this section., which delve deeper into the relationships between the variables and the research questions.

The second section of this chapter presents the results of our bivariate analysis, which examines the associations between pairs of variables. The graphical and numerical methods is utilized to visualize and summarize the relationships between the variables and interpret the findings in light of the relevant literature and theoretical frameworks.

Finally, the third section of this chapter builds upon the bivariate analysis by conducting multivariate analyses, which allow to examine the relationships between multiple variables simultaneously. Regression models to explore the extent to which various independent variables predict the outcome variable and assess the statistical significance and strength of these relationships.

4.1 Coded variable in SPSS

Variables	Category	Coded
Gender	Male	1
	Female	2
Age	18-24 years	1
	25-34 years	2
	35-44 years	3
	45-54 years	4
	55-64 years	5
Race	Malay	1
	Chinese	2
	Indian	3
	Others	4
Marital Status	Single	1
	Married	2
Education Level	High School Graduate	1
	Professional degree	2
	Master degree	3
	Diploma	4
	Doctoral	5
	Bachelor degree	6
Employment Status	Employed full time	1
	Employed half time	2
	Self-employed	3
	Unemployed	4
	Student	5
	Retired	6

Table 3 : Coded Variables in SPSS

4.2 Pilot Test

Before performing a larger study, a pilot test is established in a small-scale preliminary study used in statistics to determine whether a research design or methodology can be carried out and is effective.

A pilot test's major goals are to identify possible problems or problems that might come into the larger study and to improve the research methods to make sure the larger study is successful and reliable.

Reliability analysis: If the Cronbach's alpha coefficient is high (i.e., > 0.7), it suggests that the research instrument is reliable and consistent. If the coefficient is low, it may indicate issues with the items in the instrument, and it may need to be revised.

Correlations: Correlation analysis findings can be used to find links between different variables. While negative correlations show that the variables move in opposition to one another, positive correlations imply that the variables move together in the same direction. The usage of correlations can be used to test hypotheses and to identify any confounding variables that must be taken into consideration in subsequent analyses. Overall, the pilot test is an important step in the research process, as it helps to identify and address any potential issues before conducting the full-scale analysis.

4.3 Reliability Analysis

A statistical technique called reliability analysis is used to evaluate a measure or test's consistency and stability over time or under various conditions. One common reliability measure is Cronbach's alpha, which estimates the internal consistency of a test by computing the average correlation among its items. The test is dependable if it has a high alpha coefficient (often over 0.7 or 0.8), which shows that the test's items are substantially connected.

No	Reliability Statistics	No. of Questions	Sample size	Cronbach's Alpha Standard	Cronbach's Alpha	Findings
1	Overall	46	228	0.7	0.943	Reliable
2	Demographic	06	228	0.7	0.737	Reliable
3	Emotional Connection	05	228	0.7	0.729	Reliable
4	Transaction Pleasure	05	228	0.7	0.936	Reliable
5	Trustworthiness	05	228	0.7	0.879	Reliable
6	Banking Reliance	05	228	0.7	0.904	Reliable
7	Ease of Use	05	228	0.7	0.903	Reliable
8	Service, system, & information quality	04	228	0.7	0.880	Reliable
9	Enhance app features	05	228	0.7	0.895	Reliable
10	Continuous customer utilization & loyalty	06	228	0.7	0.802	Reliable

Table 4 : Reliability Statistics

The overall reliability statistic for our data is 0.943, which is good for analysis, as shown in Table 4. There are 46 questionnaires in total reflected onto the survey, which were then divided into different groups. Sampling consists of 228 people. Almost all the results are reliable. The demographics portion of our questionnaire comprises 6 items and a Cronbach's Alpha score of 0.737. The initial name for the independent variable, "emotional connection," indicates that it has a valid or reliable alpha value of 0.729. The second independent variable, transaction pleasure, has an alpha value of 0.936. Trustworthiness, the third independent variable, has an alpha value of 0.879. Banking reliance, the fourth independent variable, has an alpha value of 0.904.

The fifth independent variable, ease of use, has an alpha value of 0.903. The sixth independent variable, service, system, and information quality has an alpha value of 0.880. Enhance app

features, the mediator variable, has an alpha value of 0.895. The dependent variable, Continuous customer utilization & loyalty, also has a category variable.

4.4 Demographic profile

A demographic profile is a set of characteristics used in statistics to characterize a specific group of individuals or population, based on parameters such as age, gender, education, occupation and marital status. Demographic profiles are frequently utilized in market research, governmental and social policy planning, and other sectors requiring a comprehensive knowledge of human populations involved. This will aid the researcher's understanding and analysis of the entire dataset.

4.4.1 Descriptive Analysis Techniques

To summarize and describe data, descriptive analysis use measurements such as mean, variance, standard deviation, minimum, and maximum. These measures aid in identifying patterns, trends, and linkages in data, as well as describing the data's central tendency and distribution.

The first stage of statistical analysis is typically descriptive analysis, which can be used to summarize and display data in an easy-to-understand and analyze format. It can be used to describe the characteristics of a population or sample and to seek for any correlations between variables.

Overall, descriptive analysis is a useful technique for researchers and analysts to comprehend and express the properties of data.

Characteristics	Categories	Percentage (%)
Gender	Male	50.4
	Female	49.6
Age	18-24 years	14.1
	25-34 years	33.0
	35-44 years	31.3
	45-54 years	18.5
	55-64 years	3.0
Race	Malay	72.4
	Chinese	12.3
	Indian	12.7
	Others	2.6
Marital Status	Single	39.9
	Married	60.1
Education Level	High School Graduate	8.3
	Professional degree	14.9
	Master degree	25.0
	Diploma	16.7
	Doctoral	2.6
	Bachelor's	32.5
Employment Status	Employed full time	53.9
	Employed part time	5.7
	Self employed	19.3
	Unemployed	2.6
	Student	16.7
	Retired	1.8

Table 5: Demographic Profile

According to table 5, Males make up 50.4% of the population, while females make up 49.6%. 14.1% of respondents are under the age of 25 which reflected to be students, 33% are in the 25 to 34 age range, 31.3% are in the 35 to 44 age range, 18.5% are in the 45 to 54 age range, and 3.0% are over the age of 55. Compared to 60.1% of persons who are married, 39.9% of people are single. Malay make up 72.4% of the population, followed by Indians (12.7%), Chinese (12.3%), and

others (2.6%). Among the respondents, a high school graduate by 8.3%, a professional degree by 14.9%, a Master degree by 25.0%, a diploma holder by 16.7%, 2.6% with Doctoral degree, and a Bachelor degree held by 32.5%. Participants who worked full-time (53.9%), part-time (5.7%), self-employed (19.3%), unemployed (2.6%), enrolled as a student (16.7%), and retired (1.8%) make up the participants.

4.4.2 Respondent Overview Analysis

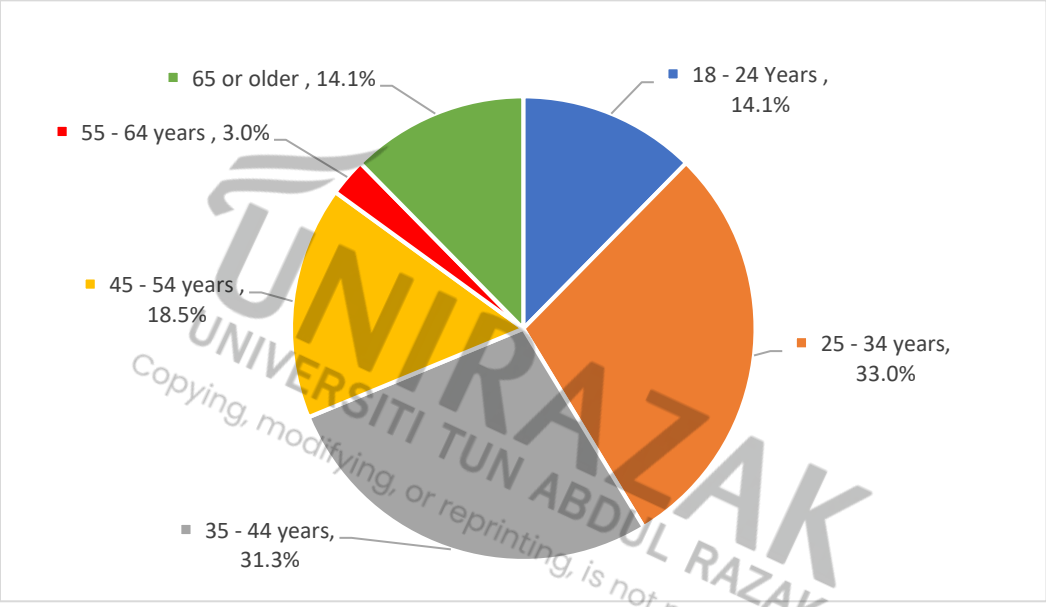


Figure 5: Respondents Age Range

As we can see from this graph, it is effective in differentiating between all of the groups. This graph divided by categories and colors them according to their percentage or frequency. By examining these percentages, it is determined which category has a higher involvement % in the variable. This figure shows that 14.1% of respondents are under the age of 25, 33% are in their 25s to 34s, 31.3% are in their 35s to 44s, 18.5% are in their 45s to 54s, and 3% are over the age of 55. This demonstrates that the Millennials, or individuals aged 25 to 34, are the largest cohort participated in this research which is very encouraging to have them share their preferences towards utilizing mobile banking.

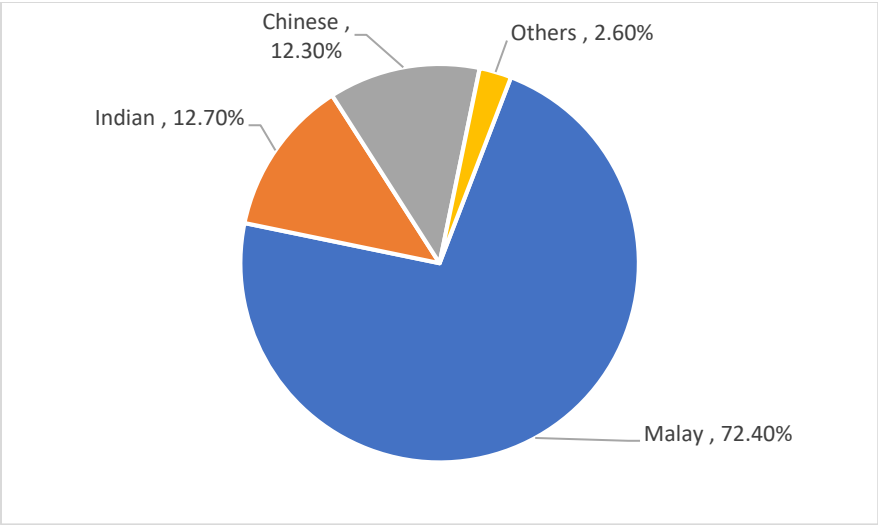


Figure 6: Respondents Race

This graph breaks down all the categories and displays in different color based on its percentage or frequency. As we can see which category larger participation percentage in the variable has by looking at these percentages. According to this data, Malay make up 72.4% of the population, followed by Indian (12.7%), Chinese (12.3%), and others (2.6%). This pie chart replicates the majority of Malay is the largest respondent participated in this research survey.

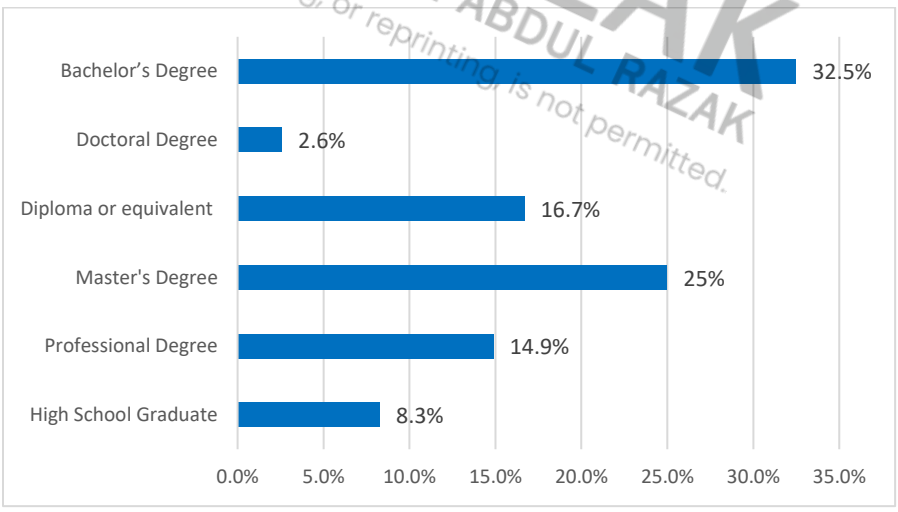


Figure 7: Respondents Education level

This bar chart breaks down all the categories and displays each one in a different color based on its percentage or frequency. As can see which category a larger participation percentage in the variable has by looking at these percentages. According to this data, among the respondents, a high school graduate by 8.3%, a professional degree by 14.9%, a Master degree by 25.0%, a diploma holder by 16.7%, 2.6% has Doctoral degree, and a Bachelor degree being the most participated by 32.5%.

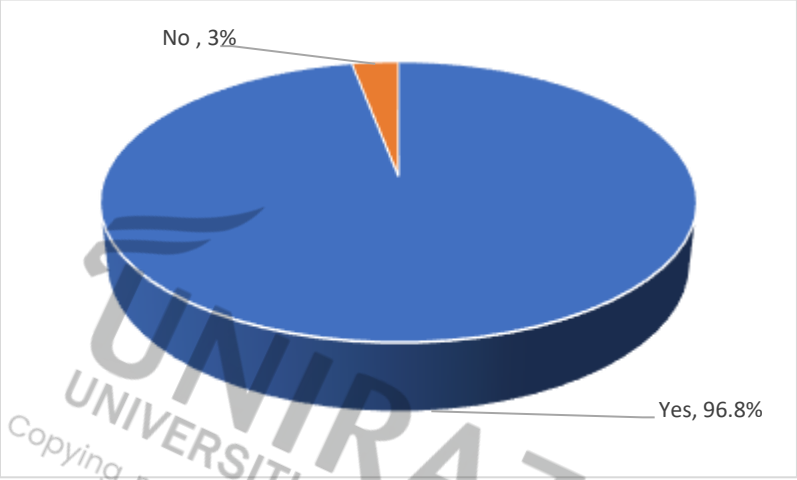


Figure 8: Respondent Mobile Banking User

The above chart reflected user adopted mobile banking app amongst the respondent. This graph breaks down all the categories and displays each one in a different color based on its percentage or frequency. According to this graph 96.8% equal to over 220 individuals is actively utilizing the mobile banking app and only 3% is not having it utilized. It is probably this type of customers have it not activated so far or choose to perform manual financial management with third party help due to very minimal activity performed throughout their daily lives.

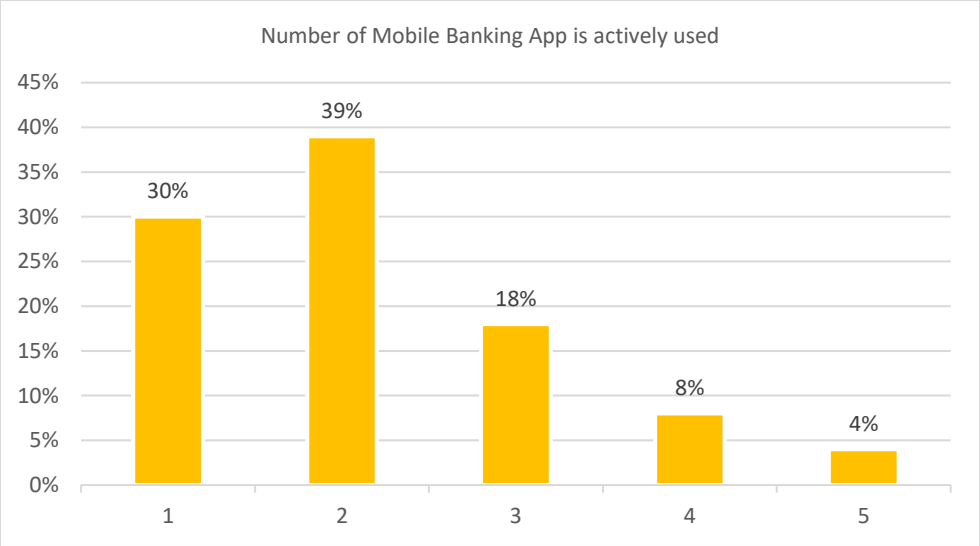
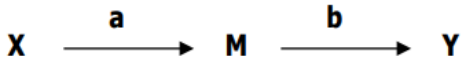


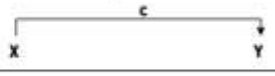
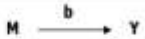
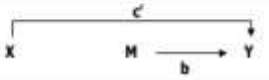
Figure 9: Number of Mobile Banking App actively used by respondents

Based on the above data, two installed mobile banking app are the most reflected in above diagram with 39% and actively used based on the respondents population, the interpretation could be respondent has the other banking mobile app as a secondary app incase the primary one goes offline or the other banking app is meant for other purposes such as savings and investment.

4.5 Testing Mediation with Regression Analysis

The mechanism by which an independent variable (IV) influences a dependent variable (DV) through a mediator, which is an intermediate variable, is examined using a statistical approach called mediation analysis. The mediator variable describes how the IV and DV are related, and mediation analysis helps to determine whether the effect of the IV on the DV is direct or indirect through the mediator. Regression analysis is one of the most common methods used to test mediation.



	Analysis	*Visual Depiction*
Step 1	Conduct a simple regression analysis with X predicting Y to test for path ***c*** alone, $Y = B_0 + B_1X + e$	
Step 2	Conduct a simple regression analysis with X predicting M to test for path ***a***, $M = B_0 + B_1X + e$.	
Step 3	Conduct a simple regression analysis with M predicting Y to test the significance of path ***b*** alone, $Y = B_0 + B_1M + e$.	
Step 4	Conduct a multiple regression analysis with X and M predicting Y, $Y = B_0 + B_1X + B_2M + e$	

Overall, regression analysis is a powerful tool for testing mediation in social science research, and it can be used to investigate complex relationships between variables. However, it is important to ensure that the assumptions of regression analysis are met, including linearity, independence of errors, homoscedasticity, and normality of residuals.

In the data, effect between emotional connection, transaction pleasure, trustworthiness, banking reliance, ease of use, service, system and information quality, and continuous customer utilization and loyalty has the probability mediated by enhance app features variable.

X_1 = emotional connection X_2 = transaction pleasure

X_3 = ease of use X_4 = trustworthiness

X_5 = banking reliance X_6 = service, system, & information quality

Y = Continuous customer utilization & loyalty

M = Enhance app features

Step 1:

Run the regression between **Emotional Connection** as predictor **(X)** and Continuous customer utilization & loyalty (y).

$$Y = B_o + B_1X_1 + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.277	.079		28.648	.000
	EC	.019	.036	.035	.525	.600

a. Dependent Variable: CCUL

Interpretation:

Model-1: As p-value (0.600) > α Therefore, do not reject the null hypothesis. Model-1 has so produced insignificant results.

Run the regression between **Transaction pleasure** as predictor (X) and Continuous customer utilization & loyalty (y).

$$Y = B_o + B_2X_2 + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
2	(Constant)	2.270	.059		38.591	.000
	TP	.026	.029	.059	.887	.376

a. Dependent Variable: CCUL

Interpretation:

Model-2: As p-value (0.376) > α Therefore, do not reject the null hypothesis. Model-2 has so produced insignificant results.

Run the regression between **ease of use** as predictor (X) and Continuous customer utilization & loyalty (y).

$$Y = B_o + B_5X_3 + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
3	(Constant)	2.203	.066		33.442	.000
	EU	.061	.032	.125	1.892	.060

a. Dependent Variable: CCUL

Interpretation:

Model-3: As p-value (0.060) > α Therefore, do not reject the null hypothesis. Model-3 has so produced insignificant results.

Run the regression between **trustworthiness** as predictor (X) and Continuous customer utilization & loyalty (y).

$Y = B_o + B_3X_4 + \varepsilon$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
4	(Constant)	2.200	.075		29.275	.000
	T	.058	.035	.110	1.661	.098

a. Dependent Variable: CCUL

Interpretation:

Model-4: As p-value (0.098) > α Therefore, do not reject the null hypothesis. Model-4 has so produced insignificant results.

Run the regression between **banking reliance** as predictor (X) and Continuous customer utilization & loyalty (y).

$Y = B_o + B_4X_5 + \varepsilon$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
5	(Constant)	2.232	.070		32.031	.000
	BR	.042	.032	.087	1.320	.188

a. Dependent Variable: CCUL

Interpretation:

Model-5: As p-value (0.188) > α Therefore, do not reject the null hypothesis. Model-5 has so produced insignificant results.

Run the regression between **service, system, and information quality** as predictor (X) and Continuous customer utilization & loyalty (y).

$$Y = B_o + B_6X_6 + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
6	(Constant)	2.248	.072		31.201	.000
	SSIQ	.034	.033	.068	1.031	.304

a. Dependent Variable: CCUL

Interpretation:

Model-6: As p-value (0.304) > α Therefore, do not reject the null hypothesis. Model-6 has so produced insignificant results.

Step-2:

Direct Effect X_i and M We run the regression **independent variable's and enhance app features as a predictor.**

$$M = B_o + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
7	(Constant)	.182	.090		2.009	.046
	EC	.173	.057	.166	3.047	.003
	TP	.022	.061	.026	.365	.715
	EU	.037	.082	.039	.455	.650
	T	.165	.077	.160	2.137	.034
	BR	.103	.060	.110	1.717	.087
	SSIQ	.431	.067	.443	6.476	.000

a. Dependent Variable: EAF

Interpretation:

Model-7 : As p-value (0.000) ≤ α Therefore, we reject the null hypothesis. Model-7 has produced significant results. In other words, SSIQ, T and EC have the significant effect on the variable EAF.

Step 3:

Run the regression between **enhance app features as a predictor and Continuous customer utilization and loyalty** as a dependent variable.

$$Y = B_o + B_1M + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
8	(Constant)	2.293	.075		30.391	.000
	EAF	3.312	.054	.023	10.339	.035

a. Dependent Variable: CCUL

Interpretation:

Model-8 has shown significant results as p-value is less than the alpha.

Step-4: Mix effect of M and X_i on Y.

Run the regression with emotional connection, transaction pleasure, trustworthiness, banking reliance, ease of use, service, system and information quality and enhance app features as predictors and Continuous customer utilization & loyalty as a dependent variable.

Model 9:

$$Y = B_o + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7M + \varepsilon$$

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
9	(Constant)	2.243	.088		25.531	.000
	EC	-.013	.056	-.025	-.241	.810
	TP	-.060	.059	-.138	-1.025	.306
	EU	.132	.079	.271	1.677	.095
	T	.055	.075	.104	.736	.463
	BR	.009	.058	.019	.159	.874
	SSIQ	.007	.070	.015	.104	.917
	EAF	-4.88	.065	-.171	-1.355	.007

a. Dependent Variable: CCUL

Interpretation:

As per above model 9, as can see that all independent variables are not significant as p-value is greater than alpha. But, enhance app features which is our mediator shows the significant relation. So, it is concluded that the complete mediation is present with the given variables. As a result, the

overall model has been accepted in accordance with the data. Because the p-value is below the level of significance, the regression coefficient is also significant.

4.6 Correlation

A statistical measure known as correlation describes the strength of an association or relationship between two variables. It is an evaluation of the degree to which two variables are connected to one another.

A positive correlation means that the other variable tends to rise when the first one does. A negative correlation means that the other variable tends to decrease when the first variable rises. There is no association between the two variables if the correlation coefficient is 0.

		CCUL	EAF	AC	P	BT	PEU	SSIQ
CCUL	Correlation	1						
EAF	Correlation	0.358**	1					
EC	Correlation	0.254**	0.530**	1				
TP	Correlation	0.247**	0.593**	**0.764****	1			
T	Correlation	**0.240****	0.521**	0.705**	0.685**			
BR	Correlation	0.352**	0.525**	0.578**	0.533**	1		
EU	Correlation	0.344**	0.610**	0.678**	**0.702****	0.634**	1	
SSIQ	Correlation	0.261**	0.588**	0.676**	0.679**	0.654**	**0.707****	1

Table 6 : Correlation Statistics

Interpretation:

As each of these variables has a significant value, are all related to one another. There are several variables that show weak correlation with one another. It all show a high correlation of shows and indicate as 0.764 between the variable's TP and EC. In addition, there is a 0.240 weak correlation between T and CCUL over all subjects. All variables are positively correlated. It indicates that the

variables positively interacted with one another. If one variable rises, the second variable's correlation coefficient will rise as well.

4.7 *F-Test*

Models	F-test	Decisions
Model	30.742***	At least one independent variable explains the dependent variable.

Table 7 : Results of F-test

The F-value is a test statistic in statistics that is used to compare the variances of two or more samples. It is sometimes referred to as the F-ratio or the F-statistic. Regression analysis and analysis of variance (ANOVA) frequently employ it. The F-value in an ANOVA is used to determine whether the means of the groups being compared are equal, which is the null hypothesis. The null hypothesis is rejected, and it is inferred that at least one group mean differs significantly from the others if the F-value is higher than the critical value for the selected level of significance. The F-value in regression analysis is used to evaluate the model's overall significance.

The model is deemed significant if the F-value is larger than 1, indicating that at least one of the independent variables significantly affects the dependent variable. At a 5% level, the model's F-test value of 22.742 is significant. The results show that the independent and dependent variables have at least one significant association that contributes to the explanation of the relationship.

4.8 Conclusion

Mobile banking app features are becoming increasingly vital for people to use mobile banking and stay committed while managing their finances. Individuals can keep a closer verify on their finances and make smarter financial decisions by accessing financial information and making transactions from mobile banking app at any time and from any location. Account balance and transaction history, bill payments, fund transfers, budget tracking, and investment management are just a few of the tools available in mobile banking apps designed to help people manage their financial savings and spend. Individuals can use these capabilities to monitor their financial behavior in real time, manage their spending, create financial objectives, and make sound financial decisions. Mobile banking apps also provide a high level of security and safety for users' financial information, giving consumers piece of mind when completing transactions and managing their accounts on reliable and trusted mobile banking app. One of the primary objectives of this study is to investigate consumers' perceptions towards mobile banking potential.

The adoption of mobile banking by banking technology users (P) is influenced by the values of variables like emotional connection (EC), transaction pleasure (TP), trustworthiness (T), banking reliance (BR), ease of use (EU), service, system and information quality (SSIQ) by analyzing the hypothesis and determining the connection between these many components, the model is studied.

According to model 9, as p-value (0.000) $\leq \alpha$ so we reject hypothesis and conclude that model has shown significant results. As can see that all independent variables are not significant as p-value is greater than alpha. But, enhance app features which is the mediator shows the significant relation.

Consequently, it is concluded the complete mediation is present and with significant impact and exist with the given variables. As a result, the overall model has been accepted in accordance with the data. Model-7 has produced significant results. In other words, SSIQ, T and EC have the significant effect via mediator on the variable EAF.

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In the previous chapters, it was discussed the growing popularity and adoption of mobile banking app and their impact on the banking industry. This chapter aims to explore the importance of specific mobile banking app features on continuous utilization and loyalty. It delves into various variables that influence the adoption of mobile banking app and the correlation with enhance app features towards continuous utilization and loyalty. In this context, the study tested using a questionnaire survey on mobile banking in Malaysian public. Data was collected from a survey and were analyzed using SPSS and further analyze in Microsoft Excel as well. This chapter discusses further about the results from the previous chapter. Next, recommendations for future research will proposed and lastly, conclusion is also further described.

5.1 Discussion of Research Finding

The study's ultimate purpose is to examine the various way via which variables consumers make decisions based on satisfactory factor to continue utilize and remain loyal in connection to the utilization of mobile banking app, and the secondary objective is how the moderating variables of enhance app features will affect the direction in relation between IV & DV.

5.2 Satisfactory Factor as Independent Variable

Correlation and association analysis can be used to better understand the impact of these variables on financial management. Positive correlations suggest that the variables interact positively with one another and positively influence user continuous utilization and loyalty.

With presence of enhance app features. In other words, if one variable grows, so does the correlation coefficient of the second variable. Analyzing the data reveals that all of the criteria indicated above have a positive link with mobile banking adoption outcome.

Based on figure 10 below, the scatter chart depicted that H2 : Transaction Pleasure (TP) and H3 : Ease of Use (EU) leading the board as this is the main criteria for a user to continue and actively utilize the mobile banking app. Hence, it is a worthy that the financial institution to continue emphasis and concentrate on enhance app features, as well as user interface and user experience (UIUX) to deliver the utmost minimal and excellent customer journey to offer seamless experience continuously and more scoring details as we can see from table 8 below of satisfactory statistic as well.

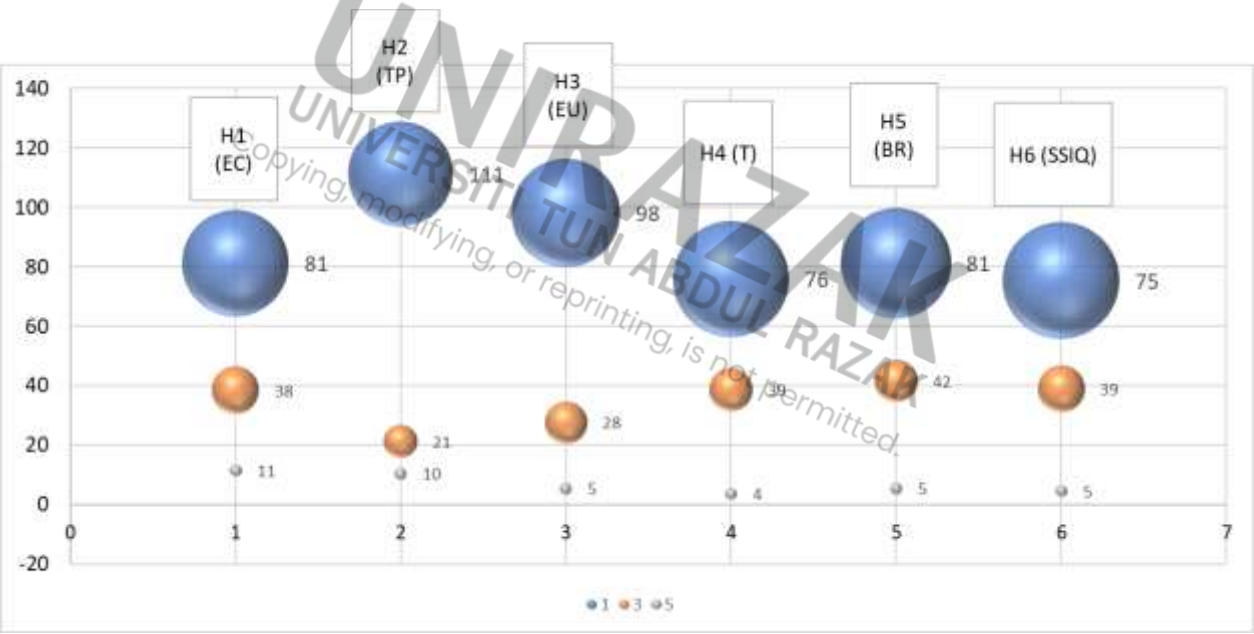


Figure 10: Independent Variables Outcome

Score in Percentage %	1	2	3	4	5
H1 : Emotional Connection (EC)	36	36	17	7	5
H2 : Transaction Pleasure (TP)	49	34	9	3	5
H3 : Ease of Use (EU)	43	37	12	6	2
H4 : Trustworthiness (T)	33	42	17	6	2
H5 : Banking Reliance (BR)	36	38	18	6	2
H6 : Service, System, and Information Quality (SSIQ)	33	43	17	7	2

Table 8: Satisfactory Factor Statistics

This suggests and concluded that when emotional connection, transaction pleasure, ease of use, trustworthiness, service, system, and information quality, and banking reliance improve, and with an enhance app features added as the mediator, based on positive outcome, customers are more likely to stick and continue to trust the same mobile banking app and actively manage their funds digitally. Financial institutions are then strongly advised to continue investing in app feature development to suit the entire mobile banking capacity while fulfilling customers' demands and requirements, which are changing rapidly in this contemporary period. Overall, based on below figure 11, the loyalty of current app utilization is highly reliable on how well the current app would be able to serve the current customers, while retaining the customer and prospect baseline as a whole.

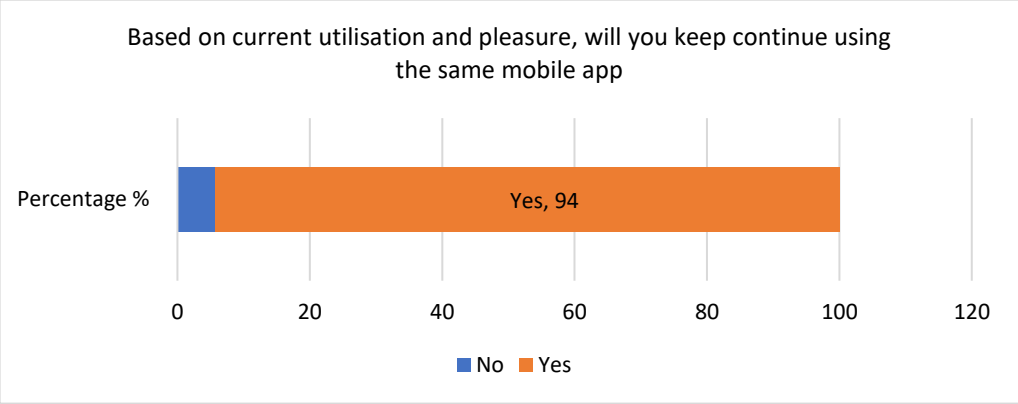


Figure 11: Loyalty Verdict on current app utilization

5.3 Theoretical Implication

This investigation demonstrated that there is a favorable association in terms of theoretical implications based on the previous outcome in the influence of Mobile Banking App Features on Continuous Utilization and Loyalty through mentioned variables. Thus, this study supported the existing theory in past study for independent variables and to understand the impact of these variables on continuous utilization and loyalty, correlation and association analysis conducted. Positive correlations indicate that the variables positively interact with one another and the mediating enhance app influence is significantly impacted the implications of the independent variables positively. Alternatively, when one variable increases, the correlation coefficient of the second variable will also increases.

After analyzing the data, it is clear that all of the characteristics indicated above have a positive correlation following the adoption of mobile banking and its continued use. This suggests that users are more likely to use the app on a regular basis if customers have an emotionally connected, with transaction pleasure, feels convenience of usage, App trustworthiness, an upgraded service, system, with information quality and bank reliability is at the top. The significant relationships between the independent variables (emotional connection, transaction pleasure, ease of use, banking reliance, service, system, and information quality, and trustworthiness) as well as the dependent variables (continuous utilization and loyalty) help to explain the relationship between these variables.

For example, if users find the mobile banking app to be trustworthy, customers are more likely to trust the bank and feel emotionally linked to it. This emotional connection increases their engagement with the app and has a favorable impact on their financial management and transactions. Individuals find it easier to make financial transactions and actively manage their

finances when the app provides transaction pleasure and convenience of use. Furthermore, the app's versatility, trustworthiness and personalized financial information increases consumers' encouragement to make use of mobile banking apps for their own financial management digitally.

The overall positive correlations and statistically significant relationships between these factors indicate the significance of mobile banking app features for ongoing usage, which ultimately focuses on customer retention for the same app utilization. Understanding of these interactions and the relationship, will enables financial institutions and app developers to prioritize and improve specific app features that favorably affect users' adoption of mobile banking and their potential to properly manage their finances continuously.

Moreover, it was discovered that the usage of mobile banking apps was positively correlated with banking reliance. Users were more inclined to adopt a mobile banking app if users depended extensively on it for their financial needs. This emphasizes how crucial it is to offer thorough banking services through the mobile app, ensuring that customers can conveniently complete a wide range of financial tasks.

Additionally, it was discovered that the adoption of mobile banking apps is significantly influenced by service quality as well as system and information quality (SSIQ). Users who thought the app's SSIQ and service quality were high, felt more inclined to use it. This highlights how crucial it is to provide dependable and effective service as well as accurate and up-to-date information in order to earn people' trust and credibility. The total quality of the mobile banking app in terms of user experience, system responsiveness, and information availability and accuracy are referred to as service, system, and information quality. High SSIQ promotes better financial management and improves the user experience. In conclusion, reliability became an important element in the popularity of mobile banking apps.

Users were more likely to use the app if it is thought it was reliable. This emphasizes the necessity of effective security controls, open communication, and privacy protection to foster user trust and reduce concerns about data breaches or unauthorized access. Convenient transactions are a key feature of mobile banking apps. The simplicity and convenience of carrying out financial transactions at any time are major factors in this study. Transaction pleasure is increased by the availability of app functionalities including fund transfers, bill payments, and account management in a user-friendly interface and design. Customers' faith in the bank that offers the mobile banking app is referred to as banking reliance. Users must have confidence in the security of their financial information and the integrity and flexibility with which the bank conducts its business. The engagement and active use of the mobile banking app for personal financial management are positively influenced by trust in a financial institution.

5.4 Enhance App as a mediator

The study's findings have significant implications for financial institutions to enhance mobile banking development strategy, particularly on app features. Satisfaction factor known as the independent variables have strong relevance in retaining utilization, loyalty and expanding customer baseline to remain competitive to retail mobile banking app in banking industry and are considered among the most important factors for customer to continuously adopt decision and remain loyal to specific app. Customer satisfaction elements in this study are highly impacted for a decision making and retain loyal with an enhance app existence.

In figure 12 below, the most preferred choice of enhance app features would be first, spent and transaction tracking and history and second would be budgeting tools and it is potential due to transfer money is the most used features based on the outcome in figure 13 and customer would prefer to have an overview what customers and users have spent so far by reflecting the entire

financial overview, potentially by monthly or quarterly diagram. This could potentially improve better financial management for not to spend on unnecessary merchandise or goods.

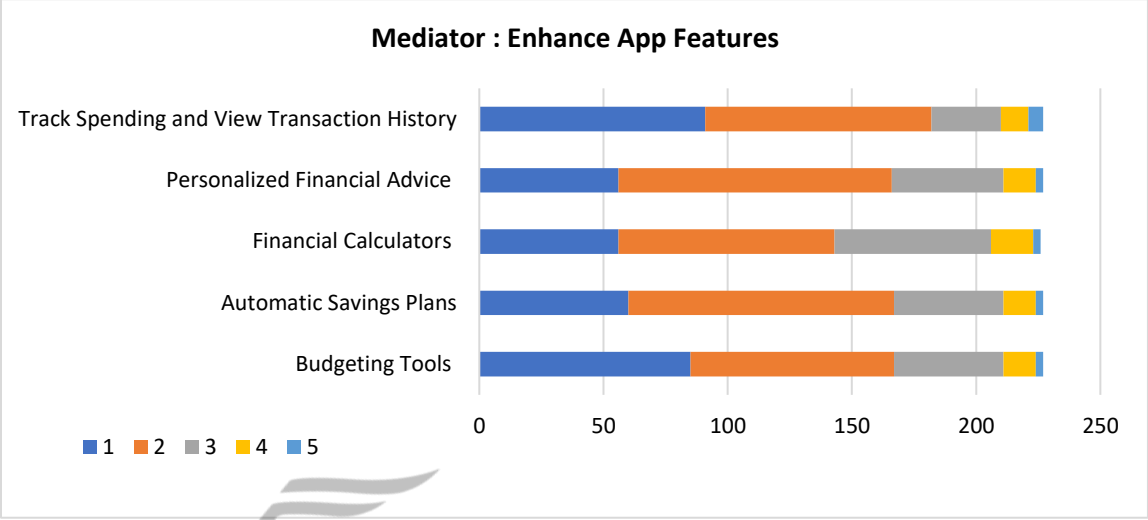


Figure 12: Enhance App Features leader board

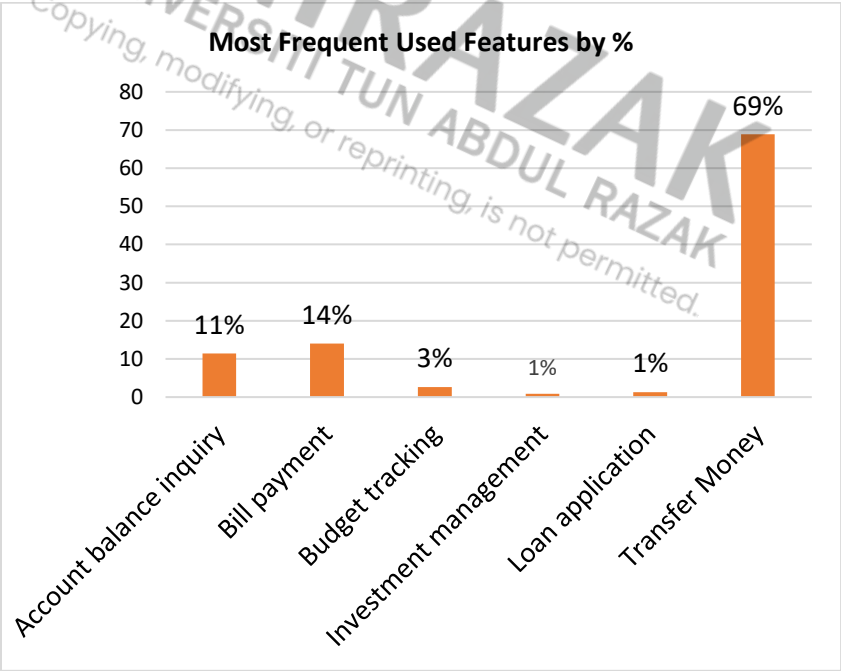


Figure 13: Most Frequent Used App Features

Additionally, in highly competitive markets with an increase in the number of available mobile banking apps, offering customers high-quality products and excellent services tailored to their needs can boost the brand image and enable such product or service brands to sustain competitive advantage in long run and become the leading brand in the current competitive and intense market amongst financial institutions in Malaysia. In reference to figure 14, it is reflected that 39% of total respondents have been utilizing the same app for more than four years and 23% more than two years. This figure may be raised in connection with the consistent improvement of the app's features and to help prevent losing users to competitors.

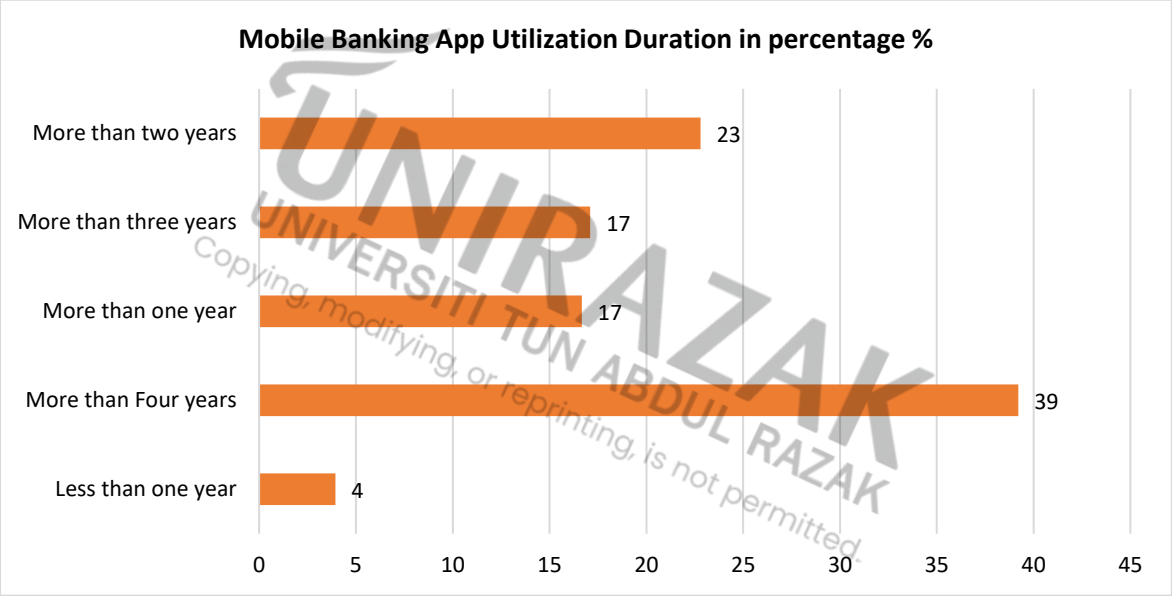


Figure 14: Mobile Banking App Utilization Duration Statistic

Additionally, this study can be a parameter in banking business to progress approaches on enhancing the app features to retain customer and enable them to build strong brand through quality of mobile banking app. By understanding customer preferences and requirements, banking services to focus on the ways that online banking can help customers, such as convenience and ease of use and the enhanced app features available and customized for each customer needs.

5.5 Limitations of the Research

There are various limitations in this study that can be addressed and to provide opportunities for new research prospects. The sample size of this study has been restricted as a result of the time constraints, which is the primary drawback, the respondents are solely connected based on own circle via online communications channels to suit the quantitative strategy and it is recommended, next researcher with extended timelines to apply mixed research design to both quantitative and qualitative research such as interviews and survey for a better result and outcome based on targeted focus group or customers which may elicit a different response from other user perspectives.

5.6 Recommendation for Future Research

It is advised the next researchers whom carry out similar studies in the future with greater geographic coverage and or specific focus group customers of specific financial institution. Additionally, because this study relies on respondents who were chosen from the researcher circle, conducting an interview with an expert such as digital leader or mobile banking professional. In addition, by collaboration with an app UIUX design specialist and developer specialist would be useful to support the findings with qualitative data. Thus, the outcomes would be strengthened, and it would be a reliable reference for businesses or industries to practice possible strategies for creating and maintaining the greatest mobile banking app and gaining competitive advantage as an ultimate goal. Additional element that propose for future study is impact of Artificial Intelligence known AI, that focuses on creating intelligent machines capable of performing tasks that typically require human intelligence involves the development of algorithms and systems that can learn from data, adapt to new information, reason and make decisions, understand natural language, and perceive and interact with the environment as a variables. Some other recommendations based on the outcome of this study for development of the app features is to

have extra focus in transfer money journey and features by making it more enjoyable such as collection continuous feedback, build on gamification features to make it more enjoyable and enhancing the transaction pleasure by simplifying the user interface and user journey while customers are online performing and accessing the mobile banking app.

5.7 Conclusion

The finding of this study has established that there was a positive substantial relationship between enhance app features and user satisfaction variables positively influence customer utilization and loyalty towards mobile banking.

Hence, it is important and crucial for financial institutions in Malaysia to ensure consumers are happy with the goods or services offered by mobile banking through continuous enhanced and modernized mobile app functionality and features based on individual need and wants which will increase satisfactory indicator element significantly in a continuous manner. When consumers are satisfied with the product or services, consumer will adopt, continue to trust and utilize the best mobile banking app that suits them well and ultimately proposed the similar app or brand to others around customers circle which will beneficial the specific mobile banking app.

Indeed, this positive influence in enhance app features able to grow brand sustainability in competitive market especially in banking industries to improve individual financial management in a single click align to fast growing mobile banking market nowadays subsequently increase the utilization and consistency. By exploring the interplay between enhance mobile apps features, user satisfaction, utilization and loyalty, which provide a comprehensive understanding of how banking industries can leverage and grasp mobile technology to create a seamless and rewarding continuous improvement of financial experience for their customers. Perhaps, it is crucial for financial

institutions to stay updated with the latest market trends, user preferences, and technology advancements to continuously enhance their mobile banking app and provide a superior customer experience in Malaysia's competitive banking landscape by way of a continuous technology investment and gain profit over a specific period of time.

REFERENCES

Hamid, K., Iqbal, M. W., Muhammad, H. A. B., Fuzail, Z., Ghafoor, Z. T., & Ahmad, S. (2022). Usability evaluation of mobile banking applications in digital business as emerging economy. Int. J. Comput. Sci. Netw. Secur, 22, 250-260.Accumulate (2015). Mobile payment. Retrieved from:http://www.accumulate.se/solutions/mobile-payment

Hamid, K., Iqbal, M. W., Muhammad, H. A. B., Fuzail, Z., Ghafoor, Z. T., & Ahmad, S. (2022). Usability evaluation of mobile banking applications in digital business as emerging economy. International Journal of Computer Science and Network Security, 22(1), 250-260.

Maja Iskandar1 *, Hartoyo Hartoyo2 , Irman Hermadi3 (2019). Analysis of Factors Affecting Behavioral Intention and Use of Behavioral of Mobile Banking Using Unified Theory of Acceptance and Use of Technology 2 Model Approach

Oh, Yun Kyung and Kim, Jung-Min (2022) "What Improves Customer Satisfaction in Mobile Banking Apps? An Application of Text Mining Analysis," Asia Marketing Journal: Vol. 23 : Iss. 4 , Article 3. Available at: https://doi.org/10.53728/2765-6500.1581

Saprikis V, Avlogiaris G, Katarachia A. A Comparative Study of Users versus Non-Users' Behavioral Intention towards M-Banking Apps' Adoption. Information. 2022; 13(1):30. https://doi.org/10.3390/info13010030

Zhu D, Xu Y, Ma H, Liao J, Sun W, Chen Y, Liu W. Building a Three-Level User Experience (UX) Measurement Framework for Mobile Banking Applications in a Chinese Context: An Analytic Hierarchy Process (AHP) Analysis. Multimodal Technologies and Interaction. 2022; 6(9):83. https://doi.org/10.3390/mti6090083

Zhu J and Wang M (2022) Analyzing the Effect of People Utilizing Mobile Technology to Make Banking Services More Accessible.Front. Public Health 10:879342.doi: 10.3389/fpubh.2022.879342

Esmaeili, A.; Haghgoo, I.; Davidavičienė, V.; Meidutė-Kavaliauskienė, I. Customer Loyalty in Mobile Banking: Evaluation of Perceived Risk, Relative Advantages, and Usability Factors. Eng. Econ. 2021, 32, 70–81.

Barbu, C.M.; Florea, D.L.; Dabija, D.C.; Barbu, M.C.R. Customer experience in fintech. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 80.

Iskandar, M.; Hartoyo, H.; Hermadi, I. Analysis of factors affecting behavioral intention and use of behavioral of mobile banking using unified theory of acceptance and use of technology 2 model approach. Int. Rev. Manag. Mark. 2020, 10, 41–49.

Widanengsih, E. Technology acceptance model to measure customer's interest to use mobile banking. J. Ind. Eng. Manag. Res. 2021, 2, 73–82.

Jung, J.-H.; Kwon, E.; Kim, D.H. Mobile payment service usage: U.S. consumers' motivations and intentions. Comput. Hum. Behav. Rep. 2020, 1, 100008

Zhou, T. Examining mobile banking user adoption from the perspectives of trust and flow experience. Inf. Technol. Manag. 2012, 13, 27–37.

Hwang, S.; Park, H.; Oh, K.; Hwang, S.; Joo, J. Rethinking a Designers' Rule of Thumb: Influence of Information Seeking and Consumption Goals on Mobile Commerce Interface Design. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 92.

Shahbudin, F.E.; Chua, F.F. Design patterns for developing high efficiency mobile application. J. Inf. Technol. Softw. Eng. 2013, 3, 1

Alsheikh, L. & Bojei, B. (2012). Customer's perceived value to use mobile banking services. International Conference on Management, Behavioral Sciences and Economics

Ayto, J. (2009). Oxford dictionary of english idioms. Oxford: Oxford University Press.
BankID. (2014). This is BankID. Retrieved from: https://www.bankid.com/en/om_bankid/detta_ar_bankid

Barnes, S. J. & Corbitt, B.(2003). Mobile banking: concept and potential. International journal of mobile communications, 1 (3), s. 273. Doi: 10.1504/IJMC.2003.003494

Bloch, P. H., Commuri, S., & Arnold, T. J. (2009). Exploring the origins of enduring product involvement. Qualitative Market Research, 12(1), 49-69. doi:10.1108/13522750910927214

Bryman, A. & Bell, E. (2011). Business Research Methods (third edition). New York: Oxford University Press Inc.

Central Intelligence Agency (CIA). (2012). The world factbook. Retrieved from: https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sw.html

Chen, C. (2013). Perceived risk, usage frequency of mobile banking services. Managing Service Quality: An International Journal, 23(5), 410-436. doi:10.1108/MSQ-10-2012-0137

Dineshwar, R. & Steven, M. (2013). An investigation on mobile banking adoption and usage: a case study of Mauritius. In: Proceedings of the 3rd Asia-Pacific. Business Research Conference, Kuala Lumpur, Malaysia.

Findahl, O. (2013). Swedes and the Internet. SE| internetstatistik.

Federal Financial Institutions Examination Council. (2010). Wells Fargo HSBC Trade Bank, National Association Uniform Bank Performance Reports. Retrieved from https://cdr.ffiec.gov/public/SelectReportFormat.aspx?reportType=283&idrssd=2332808&ReportPeriod=3%2f31%2f2010+11%3a59%3a59+PM&Name=WELLS+FARGO+HSBC+TRADE+BANK%2c+NATIONAL+ASSOCIATION

Federal Financial Institutions Examination Council. (2014). Regions Bank Uniform Bank Performance Reports. Retrieved from https://cdr.ffiec.gov/public/SelectReportFormat.aspx?reportType=283&idrssd=233031&ReportPeriod=12%2f31%2f2015&Name=REGIONS+BANK

Gopal, Pandey, Batra (2012). Mobile Banking in India: Practices,Challenges and Security Issues. International Journal of Advanced Trends in Computer Science and Engineering. Volume 1, No.2, May – June 2012

Handelsbanken. (2015). Mobiltjänst Privat. Retrieved from: http://www.handelsbanken.se/shb/INeT/IStartSv.nsf/FrameSet?OpenView&iddef=&a

mp;navid=A_Sjalvbetjaning__Effektivisera&sa=/Shb/Inet/ICentSv.nsf/Default/q6C11BD80287CAC54C125772A0028E9E8

Internet Society (2012). Global Internet user survey 2012. Retrieved from: http://www.internetsociety.org/surveyexplorer/key_findings

Javelin Strategy and Research. (2014). [The bar graph depicts the growth in mobile banking adoption by adults in the U.S. from 2011 to 2019.] Mobile Banking Adoption Increased 40% in 2013. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=8&ved=0ahUKEwjAoL78qczMAhWHMyYKHYGGBKEQFghJMAc&url=https%3A%2F%2Fwww.javelinstrategy.com%2Ffile%2F19721%2Fdownload%3Ftoken%3DpkjQISMH&usg=AFQjCNFVRxFxEZISbHNbpBBzDFPWFuX7tw&bvm=bv.121421273,d.eWE

Johnson, A. (2011). Banks Saturate Mobile Banking Market with Apps. American Banker, 176(130), 9.

Khan M. Z. A., & Khan, S. (2012). Internet versus mobile banking: A study of peshawar city (pakistan). Journal of Internet Banking and Commerce, 17(3), 1.

Laukkanen, T. (2007). Internet vs. mobile banking: Comparing customer value perceptions. Business Process Management Journal, 13(6), 788-797. doi:10.1108/14637150710834550

Leiner, B., Cerf, V., Clark, D., Kahn, R., Kleinrock, L., Lynch, D., . . . Wolff, S. (2009). A brief history of the internet ACM. doi:10.1145/1629607.1629613

Lin, H. (2011). An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust. International Journal of Information Management, 31(3), 252-260. doi:10.1016/j.ijinfomgt.2010.07.006

Lin, H. (2013). Determining the relative importance of mobile banking quality factors. Computer Standards and Interfaces, 35(2), 195-204. doi:10.1016/j.csi.2012.07.003

Luo, X., Li, H., Zhang, J., & Shim, J. (2010). Examining multi-dimensional trust and multifaceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. Decision Support Systems, 49(2), 222-234.

MacDonald, S. & Headlam, N. (2009). Research methods handbook: Introductory guide to research methods for social research. Centre for local economic strategies. Retrieved from: http://www.cles.org.uk/wp-content/uploads/2011/01/Research-Methods-Handbook.pdf

Mobile Marketing Association (MMA). (2009). Mobile banking overview (NA). Retrieved from: http://www.mmaglobal.com/files/mbankingoverview.pdf

Mookerjee, A. (2001). A study of the influence of source characteristics and product importance on consumer word of mouth based on personal sources. Global Business Review, 2(2), 177-193. doi:10.1177/097215090100200203

Nordea. (2015). With mobile banking you do your daily banking conveniently. Retrieved from: http://www.nordea.fi/personal+customers/everyday+finances/mobile+services/mobile+bank/1005852.html

Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. International Journal of Nursing Studies, 47(11), 1451-1458. doi:10.1016/j.ijnurstu.2010.06.004

Research gate. (2013). Cronbach's alpha below 0.7. Retrieved from: http://www.researchgate.net/post/Cronbachs_alpha_below_07

Internetstatistik. (2014). The Swedes and the Internet 2014: An annual study of the Swedish people's Internet habits. Retrieved from: http://en.soi2014.se/#tc2=*

SEB .(2012). SEB launches new mobile payment service Swish. Retrieved from: http://sebgroup.com/press/press-releases/2012/seb-launches-new-mobile-payment-serviceswish

SEB .(2015). Mobile banking. Retrieved from: http://www.seb.ee/eng/everydaybanking/service-channels/mobile-bank

Shaikh, A. A., & Karjaluoto, H. (2014). Mobile banking adoption: A literature review. Telematics and Informatics, 32(1), 129-142. doi:10.1016/j.tele.2014.05.003

Shams-Ur-Rehman, Shareef, A., & Ishaque, A. (2012). Situational and enduring involvement: impact on relationship marketing tactics. Interdisciplinary Journal of Contemporary Research in Business, 4(1), 598.

Singer, D. D., Baradwaj, B. G., Flaherty, S., & Rugemer, F. (2012). The mobile frequency and intensity of experience in online banking use. Journal of Internet Banking and Commerce, 17(1), 1.

Statista. (2014). Online banking penetration in Sweden from 2005 to 2014 & Number of Internet Users in Malaysia Retrieved from:
http://www.statista.com/statistics/380882/online-banking-penetration-in-sweden/
https://www.statista.com/statistics/553752/number-of-internet-users-in-malaysia/

Suoranta, M. (2003), Adoption of mobile banking in Finland , doctoral thesis, Jyva¨skyla¨, Finland, Jyva¨skyla¨ Studies in Business and Management 28.

Swedbank .(2015). Mobile banking. Retrieved from: https://www.swedbank.ee/business/d2d/ebanking/mobile?language=ENG#2

Tavakol, M., & Dennick, R. (2011). Making sense of cronbach's alpha. International Journal of Medical Education, 2, 53-55. doi:10.5116/ijme.4dfb.8dfd

Te'eni-Harari, T., & Hornik, J. (2010). Factors influencing product involvement among young consumers. The Journal of Consumer Marketing, 27(6), 499-506. doi:10.1108/07363761011078235

Te'eni-Harari, T., & Lehman-Wilzig, S. N. (2009). The importance of product involvement for predicting advertising effectiveness among young people. International Journal of Advertising, 28(2), pp. 203–229. DOI: 10.2501/S0265048709200540

Teo, T. S. H., & Pok, S. H. (2003). Adoption of WAP-enabled mobile phones among Internet users. Omega: The International Journal of Management Science, 31(6), 483–498.

To, W., & Lai, L. S. L. (2014). Mobile banking and payment in china. IT Professional, 16(3), 22-27. doi:10.1109/MITP.2014.35

Urken, R.K (2012). Why banking on your smartphone is safer than using you PC. Retrieved from: http://www.dailyfinance.com/2012/07/17/why-banking-on-yoursmartphone-is-safer-than-using-your-pc/

Vasiljeva, T., and Lukanova, K. 2016. "Commercial Banks and Fintech Companies in the Digital Transformation: Challenges for the Future," Journal of Business Management (11:1), pp. 25–33.

Web index. (2014). Web Index 2014 data. Retrieved from: http://thewebindex.org/data/?indicator=ACCESS_AND_AFFORDABILITY&country=SW

Xue, R., Gepp, A., O'Neill, T. J., Stern, S., and Vanstone, B. J. 2020. "Financial Literacy and Financial Strategies: The Mediating Role of Financial Concerns," Australian Journal of Management.

Zhang, D., Hu, M., and Ji, Q. 2020. "Financial Markets under the Global Pandemic of COVID-19," Finance Research Letters (36), Article 101528.

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. Computers in Human Behavior, 26(4), 760-767. doi:10.1016/j.chb.2010.01.013

OECD (2020), Digital Transformation in the Age of COVID-19: Building Resilience and Bridging Divides, Digital Economy Outlook 2020 Supplement, OECD, Paris, Retrieved from www.oecd.org/digital/digital-economy-outlook-covid

OECD (2020), Digital Disruption in Banking and its Impact on Competition, Retrieved from http://www.oecd.org/daf/competition/digital-disruption-in-financial-markets.html

Zippia. "How Many People Use The Internet? [2023]: 35 Facts About Internet Usage In America And The World" Zippia.com. Jan. 12, 2023, https://www.zippia.com/advice/how-many-people-use-the-internet/

By Wendy Weng, 2017. The Asian Banker: "Mobile banking seen to overtake internet banking." Retrieved from: https://www.theasianbanker.com/updates-and-articles/mobile-banking-seen-to-overtake-internet-banking

Mallat, N., Rossi, M., & Tuunainen, V. (2004). Mobile banking services. NEW YORK: ACM. doi:10.1145/986213.986236

Dr. Shamsher Singh (2014). The Impact and Adoption of Mobile Banking in Delhi, International Research Journal of Business and Management – IRJBM ISSN 2322-083X
IRJBM – (www.irjbm.org) January - 2014 - Volume No – I

Marta Szyndlar, 2023, Customer Satisfaction: Why It's Important in 2023. Retrieved from : https://survicate.com/customer-satisfaction/importance-customer-satisfaction/

Raosoft (2004) Raosoft Sample Size Calculator. Raosoft, Inc., Seattle.http://www.raosoft.com/samplesize.html

APPENDIX A: QUESTIONNAIRE

Dear Respondent,

My name Nor Aidawati Kasbani (Student No.: M201111069), final year student of master's In management. Currently I am undertaking a research project as part of the fulfilment in completing my MIM degree. The research project titled, "Mobile Banking App Features: Its Impact on Continuous Utilization and Loyalty".

This survey is to examine the effect of satisfactory indicator as a variable and enhance app features as a mediator towards its impact on mobile banking continuous utilization and loyalty. As such, seeking your kind support and participation in this survey of which all information will be solely for academic purposes only.

Thank you very much.

QUESTIONNAIRE / *SOAL SELIDIK*

Adapted from : Teo, T. S. H., & Pok, S. H. (2003). Adoption of WAP-enabled mobile phones among Internet users. Omega: The International Journal of Management Science, 31(6), 483–498.

SECTION A: OVERALL AND DEMOGRAPHIC QUESTIONS

Gender

- Male
- Female

Do you have Mobile Banking App ?

- Yes
- No

Age

- 18-24 years
- 25-34 years
- 35-44 years
- 45-54 years
- 55-64 years
- 65 or older

Race

- Malay
- Chinese
- Indian
- Others

Marital status

- Single
- Married

Highest Level of Education

- High School Graduate
- Professional Degree
- Master's Degree
- Diploma or equivalent
- Doctoral degree
- Bachelor's Degree

Employment status

- Employed full-time
- Employed part-time
- Self-employed
- Unemployed
- Student
- Retired

Section B - H1 : Emotional Connection (EC)

(Choose one Answer. 1 = Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

The mobile banking app features are important to me for managing my financials.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

I am NOT likely to use a mobile banking app that lack the necessary features for managing my financials.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app features available to me strongly influence my level of commitment to my bank.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

I feel a strong emotional attachment to my bank due to the mobile banking app features available 24/7 to me for managing my financials.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

I would switch to a different bank that offers better mobile banking app features.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section B - H2 : Transaction Pleasure (TP)

(Choose one Answer. 1 = Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

The mobile banking app provides me with easy access to my account information.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app allows me to perform transactions quickly and easily.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app is convenient to use for financial transactions.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app saves my time compared to other methods of managing my finances.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app offers a wide range of features that make it easy to manage my finances.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section B - H3 : Ease of Use (EU)

(Choose one Answer. 1 = Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

The features of mobile banking apps are easy to understand.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Using mobile banking apps to manage my personal finances is easy.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

It is easy for me to navigate through the mobile banking app to find the features I need.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

I find it easy to use mobile banking apps to track my expenses.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Using mobile banking apps to transfer money is easy.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section B - H4 : Trustworthiness (T)

(Choose one Answer. 1 = Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

The mobile banking app I use is reliable.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app I use has consistent performance.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

I can depend on the mobile banking app I use for my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app I use is free from errors and glitches.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app I use ensures the safety of my financial transactions.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section B - H5 : Banking Reliance (BR)

(Choose one Answer. 1 = Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

Do you trust your bank's mobile app to keep your personal financial information secure?

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Do you trust your bank's mobile app to accurately display your account information?

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Do you trust your bank's mobile app to process your transactions correctly?

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Do you trust your bank's mobile app to provide prompt customer service if there are any issues or questions?

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Do you Trust your bank Mobile App highly?

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section B - H6 : Service, System, and Information Quality (SSIQ)

(Choose one Answer. 1= Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

Mobile banking apps Service, System, and Information Quality has increased my mobile banking utilization.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking app Service, System, and Information Quality has influenced my decision to manage financial online/digital fully.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The mobile banking apps Service, System, and Information Quality improve my overall financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Based on my opinion, overall Mobile banking apps Service, System, and Information Quality has improved customer usage significantly as compare to the last five years.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section C: Enhance App Features

(Choose one Answer. 1= Strongly Agree, 2=Agree, 3=Neutral, 4= Disagree 5= Strongly Disagree)

The availability of budgeting tools in a mobile banking app could enhances my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The ability to set up automatic savings plans in a mobile banking app could enhances my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The availability of financial calculators in a mobile banking app could enhances my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The ability to access personalized financial advice and recommendations in a mobile banking app could enhances my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

The ability to track my spending and view my transaction history by type of spending in a mobile banking app could enhances my financial management.

Strongly Agree

- 1
- 2
- 3
- 4
- 5

Strongly Disagree

Section D : Continuous Customer Utilization and Loyalty

(Choose one Answer)

How many mobile banking apps do you have and actively use?

- 1 2 3 4 5

How long have you utilized the current mobile banking app?

- Less than one year
- More than one year
- More than two years
- More than three years
- More than Four years

How often do you use your mobile banking app for personal financial management?

- Multiple times per day
- Daily
- Several times per week
- Once a week
- Less than once a week

What features do you use most frequently on your mobile banking app?

- Account balance inquiry
- Bill payment
- Transfer Money
- Loan application
- Investment management
- Budget tracking

Based on current utilization and pleasure, will you keep continue using the same mobile app with the same bank?

- Yes
- No

APPENDIX B: APPROVAL PAGE

TITLE OF PROJECT: MOBILE BANKING APP FEATURES: ITS IMPACT ON CONTINUOUS UTILIZATION AND LOYALTY

NAME OF AUTHOR: NOR AIDAWATI KASBANI

The undersigned is pleased to certify that the above candidates have fulfilled the condition of the project paper prepared in the partial fulfilment for the awards of the degree of Master in Management.

SUPERVISOR

Signature :

Name :

Date :

ENDORSED BY:

_____

Dean

Graduate School of Business

Date: